Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis

Thesis
Submitted to the University of Calicut
for the award of the degree of
Doctor of Philosophy in Commerce

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Declaration

I hereby declare that the thesis entitled **Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis** done under the guidance and supervision of Prof. (Dr) B. Vijayachandran Pillai, is a record of bonafide research work done by me and that no part of the thesis has been presented for the award of any degree, diploma, fellowship, or other similar title or recognition before.

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Dedicated to those four pillars on which my dream got constructed. It consists of my birth gifted parents, my guide who moulds me every time required, and my aide who stood by my side as a shadow.

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II.	Questionnaire on Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis (Perspective of Customers)

List of Abbreviations

AGFI	:	Adjusted Goodness of Fit Index
AI	:	Artificial Intelligence
ANOVA	:	Analysis of Variance
ASWM	:	Automated Deposit and Withdrawal Machine
AVE	:	Average Variance Extracted
BRSF	:	Business Responsibility and Sustainability Framework
BRSR	:	Business Responsibility and Sustainability Report
CBS	:	Core Banking Solution
CBS	:	Climate Bond Standard
CDLI	:	Climate Disclosure Leadership Index
CDM	:	Cash Deposit Machine
CDP	:	Carbon Disclosure Projects
CEEP	:	Customer Experience Excellence Project
CFA	:	Confirmatory Factor Analysis
CFI	:	Comparative Fit Index
CPCB	:	Central Pollution Control Board
CRM	:	Customer Relationship Management
CSR	:	Corporate Social Responsibility
DCMS	:	Debit Card Management System
EAM	:	Environmental Audit Management
ECDM	:	Electronic Cheques Deposit Machine
E-HRM	:	Electronic Human Resource Management
EIA	:	Environmental Impact Assessment
EMSC	:	Environmental Management System Certification
EnMS	:	Energy Management System
ERP	:	Enterprise Resource Management
ESBP	:	Environmentally Sustainable Banking Practices
ESG	:	Environmental, Social and Governance

E-TAM	:	Extended Technology Acceptance Model
GBF	:	Green Bond Framework
GCC	:	Green Channel Counter
GFI	:	Goodness of Fit Index
GoF	:	Goodness of Fit
GRC	:	Green Remit Card
GRI	:	Global Reporting Initiatives
HDFC	:	Housing Development Finance Corporation Limited
HSD	:	Honestly Significant Difference
IBA	:	Indian Banks Association
ICICI	:	Industrial Credit and Investment Corporation of India
IDBI	:	Industrial Development Bank of India
IGBC	:	Indian Green Building Council
IMPS	:	Immediate Payment Services
IMT	:	Instant Fund/Money Transfer
IR	:	Integrated Reporting
IVR	:	Interactive Voice Response
KP	:	Kyto Protocol
K-S	:	Kolmogrov-Smirnov
LEED	:	Leadership in Energy and Environmental Design
NFI	:	Normed Fit Index
NGRBC	:	National Guidelines on Responsible Business Conduct
NOC	:	No Objection Certificate
NVG-SEE	:	National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business
OTP	:	One-Time Password
PLM	:	Product Life Management
PNB	:	Punjab National Bank
PPP	:	Planet, People and Profit
PUM	:	Passbook Update Machine

RMSEA	:	Root Mean Square Error of Approximation
RVI	:	Real Vision Imaging
SASB	:	Sustainability Accounts Standard Board
SBI	:	State Bank of India
SCM	:	Supply Chain Management
SEED	:	Student Empowerment for Environmental Development
SEM	:	Structural Equation Modelling
SEMS	:	Social and Environmental Risk Management System
SEMSP	:	Social and Environmental System Plan
SIB	:	South Indian Bank
SLPP	:	Sustainable Lending Policy and Procedures
SMART	:	Specific, Measurable, Attainable, Realistic and Timely
STEPS	:	Service, Transparency, Ethics, Politeness & Sustainability
SWC	:	Single Window Counter
SWOC	:	Strengths, Weaknesses, Opportunities and Challenges
TAM	:	Technology Acceptance Model
TLI	:	Tucker Lewis Index
TPD	:	Transaction Processing Device
UNFCCC	:	United Nations Framework Convention on Climate Change
UN-SDGs	:	United Nations Sustainability Development Goals
UPI	:	Unified Payment Interface
WaSH	:	Water, Sanitation and Hygiene
WCED	:	World Commission on Environment & Development

Chapter 1

Introduction

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1.1 Preamble

"Sustainability is no longer about doing less harm;
it's about doing better" – Jochen Zeitz

The strategic empowerment of economic and industrial structure has witnessed the giant developments without realizing the adverse effects on Planet, People and Society. "The side effects of this development process however also been equally enormous loss of bio-diversity, climate changes, environmental damage etc." (Mishra, 2013). The demand-driven developmental process puts the ecosystem under fast depletion. Therefore, there is a need for an hour to discuss the activities that are equally important to protect biodiversity, wildlife, eco-system, climatic conditions, and society at large. Moreover, a well-balanced, self-regulated and sustainable eco-system is a need to defeat environmental disorders and distractions. The availability of needful resources should not be the reason to destroy the same. Gandhiji described this situation as, "the world has enough for everyone's need, but not enough for everyone's greed". It means, there is no reciprocal balancing for the sustainable development of the planet and people, so that an equilibrium should be maintained for the preservation of ecological balance.

In this context, the World Commission on Environment & Development (WCED), 1987, popularly known as Brundtland Commission reports and recommends that all projects and programmes must be designed for sustainable development. United Nations Framework Convention on Climate Change (UNFCCC), 1992 and Kyto Protocol (KP), 1997 are the other global benchmarks similar to the Brundtland Commission for ensuring sustainable growth. India is also signed UNFCCC in 1992 and KP in 2002. Asper Brundtland Commission report (1987), sustainability generally refers to the fulfillment of present needs without compromising for the future. Further, United Nations Sustainability Development Goals (UN SDGs), UNFCCC Conference of Parties (COP) 21 Climate Agreement, World Economic Forum on Global Environmental Risk Assessment are considered as the global indicators towards immediate and responsible actions required for the sustainable future. All these indicators/ benchmarks are considered as the gateways of commitments to perform ethics and integrity for the responsible organization.

Regarding the banking sector, they are generally not polluters as compared to other manufacturing sectors, but they have the commitments towards the environmental sustainability, social responsibility, and economical accountability under the perspective of Triple Bottom Line Approach (Planet, People and Profit). It is because the main consequence of environmental demolition is generally due to the massive carbon emission from industrialization; and the banking sector is the primary lending institution for these manufacturing units. Therefore, they are indirectly responsible for the ruination of natural resources. Likewise, the excessive use of paper, wastage of water, heavy power consumption and such other activities from internal operations of the banks emit greenhouse gases and other polluting substances heavily. Therefore, the banking sector should take due care of in-house energy management practices. Moreover, as a service sector, stakeholders perceive that banks will maintain ethical standards for conducting eco-friendly business and green protocol system. Therefore, in order to maintain business ethics and integrity towards the environment and society, the banking sector should follow environmental-friendly banking practices, community development programmes, etc.

According to Indian Banks Association (IBA) 2014, "sustainable banking is just like a normal banking which considering the social, environmental and ecological factors through technological advancement, changing clients' habits, community livelihood initiatives and environmental stewardships". As a financial institution, the banks are ensuring the judicious use of natural resources and creating positive impact for sustainable value creation by considering large and widespread operations. Hence, an equitable economy, flourishing community and healthier planet are the main objectives of the banking sector in building economically, socially, and materially viable investments. Moreover, they are actively working towards India's transition to an environmentally sustainable economy through the transformation of in-house and out-house operations such as, achieving low-carbon footprints, sustainable/ responsible lending, renewable energy investment, material/ resource efficiency management, paperless banking, sustainable sourcing, green building constructions, protection of wildlife, etc. to add value to the quality of sustainability.

1.2 Significance of the Study

The constitutional vision of our country is to promote inclusive development and sustainable growth of the economy. The word sustainability is associated with the balancing of environmental, social, and economic aspects of business operations. Consequently, the combination of these three pillars of sustainability is very important in the present scenario. To achieve business responsibility, the push from the stakeholders has accelerated the movement of sustainability performance, evaluation, disclosure, and reporting. Hence, the reporting framework is aligned with the global standards of sustainability for measuring, monitoring, and disclosing the ESG Performance. Accordingly, Global Reporting Initiatives (GRIs), Integrated Reporting (IR), Sustainability Accounts Standard Board (SASB), United Nations' Global Compact (UNGC) and Carbon Disclosure Projects (CDP) are the main yardsticks to report the key performance indicators of Business Responsibility and Sustainability Framework. In addition, National Guidelines on Responsible Business Conduct (NGRBC), 2018 initiated by Ministry of Corporate Affairs, Government of India is the disclosure guidelines for Indian Companies.

In this scenario, the relevance of sustainability framework has been measured in the point of view of banking sector. More specifically, environmental sustainability is taken as the key pillar of Triple Bottom Line Approach for the study purpose. It is because of the fact that without attaining environmental sustainability, social responsibility and economic development are meaningless. Accordingly, the planetary boundaries of the banking sector are evaluated and compared. Moreover, the banking sectors have taken great efforts to maintain a balance between social, financial, natural, intellectual, and human capitals associated with them. Therefore, the integration of these capitals is considered as the core value of the bank. In order to conserve the natural capital, climate change mitigation and environmental conservation are taken as the essential elements of sustainable banking. Subsequently, the banking sector strives to fulfill their role as the corporate citizen through the multi facet value chain interventions to maintain the low carbon economy. The study is significant in the context that there is a paradigm shift in the outlook of banking sector from the traditional profit-oriented approach to modern threefold approach.

1.3 Statement of the Research Problem

The society is concerned about the human impact on natural resource extraction, environmental protection, ecological preservation etc. Even though people bothered about their commitments, adverse climate change, pollution, land degradation, deforestation, unstable eco-system is still existing. In order to recoup the present situation, there is a sustainability framework for all the primary, secondary and tertiary sectors of the economy. Hence, the people should consider the environmental sustainability and social responsibility as their privilege of lifestyle. It is due to the fact that, environment and development are inseparable when working for sustainable growth. Here, the environment is where we live; and development is what we all do in attempting to improve the standard of living; hence these are interconnected. Consequently, sustainable development through environmental stability, social responsibility and economic prosperity is considered as the organizing principle for meeting the national development of the country.

The banking sectors have the aim to integrate environmental and social due diligence into the internal management framework and remain committed to support sustainable sectors that combat with the reduction of carbon footprints from the environment. They have identified the importance of environmental stewardship along with ESG framework to discuss the impact on natural capital/ resources. Subsequently, the banks have adopted best environmental practices to address the strengths, weaknesses, opportunities, and challenges of sustainable development.

At this juncture, it is highly relevant to conduct an investigation on the level of adoption of Environmental-Sustainable Banking Practices along with SWOC and SMART Green Goals. The evaluation from the perspective of the customers on paperless/ green channel banking to understand their participation in ensuring environmental sustainability is also useful. Moreover, it is found imperative to evaluate the Environmental, Social and Governance performance of the banks regarding Business Responsibility and Sustainability Framework under the Principles of National Guidelines on Responsible Business Conducts (NGRBC). Hence, the present study has been undertaken.

1.4 Research Questions

The present research work attempts to investigate into the following major issues.

1. Is there any difference in the level of adoption of Environmentally Sustainable Practices among sectors and banks selected for the study?
2. What are the SWOC and SMART Green Goals and is there any significant difference among sectors and banks?
3. Is there any relationship between adoption level of Environmentally Sustainable Practices and SWOC & Importance of SMART Green Goals?
4. What is the level of awareness and acceptance regarding Environmentally Sustainable Banking Practices perceived by the customers?
5. What are the enabling and disabling factors of Digital Banking Acceptance?
6. What is the level of customers' perception and satisfaction towards Digital Banking Acceptance? and
7. Is there any difference in the ESG Performance of selected Public, Old Generation and New Generation Banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC)?

1.5 Scope of the Study

The scope of the present study is limited to a comparative analysis of the Environmentally Sustainable Banking Practices in the Public and Private Sector (Old and New Generation) Banks in the State of Kerala. Here, SBI, Canara & PNB from Public Sector Banks, Federal Bank, SIB and IDBI from Old Generation Private Sector Banks and HDFC, ICICI and AXIS Bank from New Generation Private Sector Banks are taken for the detailed analysis.

Further, the ambit of the work is confined under two perspectives. Firstly, Adoption level, SWOC Analysis and Importance of Green Goals of Environmentally Sustainable Banking Practices from the perspective of Bankers. Secondly, it covers the Awareness, Acceptance and Satisfaction of Digital Banking Acceptance from the perspective of Customers. Further, the Enabling and Disabling Factors of Digital

Banking and Perception of Technology Acceptance have been measured with the help of Confirmatory Factor Analysis and Extended Technology Acceptance Model.

In order to specify the meaning of respondents, Managers from Head Offices/ Local Head Offices/ Zonal offices/ Circle Office/ Regional Offices/ Main Branches are considered as the bankers of the study. They belong to the department of Digital Wing, Corporate Social Responsibility as well as Sustainability. Additionally, the customers who have idea about paperless banking and have been using digital banking are purposefully selected for the study.

Further, the research work attempts to review and compare various dimensions of Environmental-sustainability and Digital Banking among Sectors/ Banks selected for the study. Besides that, the study also demonstrates the ESG Performance of the samples banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC), 2018.

1.6 Objectives of the Study

Based on the scope of the study, the following specific objectives are set forth.

1. To investigate into and compare the adoption level of Environmental-Sustainable Practices among the sectors and banks selected for the study.
2. To identify and compare the SWOC and importance of SMART Green Goals of Sustainable Banking.
3. To analyze the relationship between adoption level of Environmentally Sustainable Banking Practices and SWOC analysis & importance of SMART Green Goals.
4. To examine and compare the awareness and acceptance level of Environmental-Sustainable Practices among the customers of the banks.
5. To identify the enabling and disabling factors of Digital Banking Acceptance and Frequency of use of Digital Initiatives.
6. To assess the perception and satisfaction level of customers regarding Digital Banking Acceptance and
7. To evaluate and compare the ESG Performance of selected Public, Old Generation and New Generation Banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC).

1.7 Hypotheses

In line with the above stated objectives, the following hypotheses formulated and tested with the help of appropriate Statistical tools.

Based on Objective No. 1

$H0_1$: There is no significant difference in the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices and Products) among Public, Old Generation and New Generation Banks.

$H0_2$: There is no significant difference in the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices and Products) among the sample banks.

Based on Objective No. 2

$H0_3$: There is no significant difference in the Strengths, Weaknesses, Opportunities and Challenges of Sustainable Banking among Public, Old Generation and New Generation Banks.

$H0_4$: There is no significant difference in the SMART Green Goals of Sustainable Banking among Public, Old Generation and New Generation Banks.

$H0_5$: There is no significant difference in the Strengths, Weaknesses, Opportunities and Challenges of Sustainable Banking among the sample banks.

$H0_6$: There is no significant difference in the SMART Green Goals of Sustainable Banking among the sample banks.

Based on Objective No.3

$H0_7$: There is no significant relationship between adoption level of Environmental-Sustainable Banking Practices and SWOC Analysis.

$H0_8$: There is no significant relationship between adoption level Environmental-Sustainable Banking Practices and Importance of SMART Green Goals.

$H0_9$: There is no significant relationship between the importance of SMART Green Goals and SWOC Analysis.

Based on Objective No.4

$H0_{10}$: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the demographic profile of the customers.

$H0_{11}$: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the digital banking details of the customers.

$H0_{12}$: There is no significant difference in the Digital Banking Acceptance among customers according to their demographic profile.

$H0_{13}$: There is no significant difference in the Digital Banking Acceptance among customers according to their digital banking details.

Based on Objective No.6

$H0_{14}$: External Stimulus has significant positive impact on Cognitive Responses of Digital Banking Acceptance.

$H0_{15}$: Cognitive Responses have significant positive impact on Affective Response of Digital Banking Acceptance.

$H0_{16}$: Cognitive Responses have significant positive impact on Intention of Digital Banking Acceptance.

$H0_{17}$: Affective Response has significant positive impact on Intention of Digital Banking Acceptance.

$H0_{18}$: Intention has significant positive impact on Behavioral Responses of Digital Banking Acceptance.

1.8 Operational Definition of Terms and Concepts

The terms and concepts used in the study are briefly explained in the following table.

Table 1.1

Operational Definitions of Terms and Concepts

Sl. No	Terms/ Concepts	Operational Definition
1	Environmental Sustainability	It is the responsibility to protect nature and its resources for the well-being of the society.
2	Sustainable Banking	It is the integration of Environmentally Sustainable, Socially Responsible and Economically Viable criteria into traditional banking concepts.
3	Environmentally Sustainable Banking	These are the responsible banking practices for reducing the carbon footprints from the environment.
4	Green Processes	These are the specific actions taken for the protection and preservation of ecological balance
5	Green Practices	These are the procedures followed for the resource efficient activities throughout the life of operations.
6	Green Products/ Services	These are the paperless activities of the bank with the objective of energy efficiency and low carbon emission
7	SWOC	It refers to the Strengths, Weaknesses, Opportunities and Challenges towards Sustainable Banking Practices.
8	SMART Green Goals	This indicates desirable Specific, Measurable, Attainable, Realistic and Timely Goals towards the go-green initiatives of banks.
9	Green Innovation	This is specifically Digitalized Innovation by using Sophisticated Technology and Artificial Intelligence for promoting branchless banking.
10	Green Policy	It is the bank's statement towards the commitment on environmental protection and management.
11	Green/ Responsible Financing	It is the financial flow from the banking sector to environmentally responsible priories/ priority sector lending.
12	Green Channel Counter	It is a Transaction Processing Device (TPD) attached to the terminal of a bank; customers can swipe their debit cards to conduct transactions.

Sl. No	Terms/ Concepts	Operational Definition
13	Green Remit Card	It is a simple magnetic strip-based card without any PIN. The card can be used by even non-account holder to remit money to SBI account.
14	Remote Deposit	It is the ability of bank customer to deposit cheque electronically at remote locations usually at customer's office for virtually instant credit to account.
15	Public Sector Banks	These are the Government owned banks where majority of stake (more than 50%) is held by the Ministry of Finance.
16	Old Generation Private Banks	The banks have comparatively low level of usage in Sophisticated Technology, Artificial Intelligence, Blockchain technology, Machine learning, etc.
17	New Generation Private Banks	These are the banks with high level usage of Sophisticated Technology, Artificial Intelligence, Blockchain technology, Machine learning, Robotic System etc.
18	Banker	It represents Managers from Digital Wing and CSR & Sustainability Department of the bank.
19	Customer	Customer means individual Customer who has awareness about Paperless Banking and use Digital Banking Practices
20	ESG Score	This score is associated with the Environmentally Sustainable, Socially Responsible and Governance Performance of the banks.

Operational Definitions of Terms and Concepts of Extended Technology Acceptance Model (E-TAM)

Table 1.2

Operational Definitions of Terms and Concepts of Extended TAM

Sl. No	Terms/ Concepts	Operational Definition
1	Extended TAM	Extended Technology Acceptance Model is the innovated version of Technology Acceptance Model (Davis, 1986) by adding Service Awareness, Subjective Norms, Self-Efficacy, System Quality and Schemes Availability as the External Stimulus of the proposed model.
2	External Stimulus	External Stimulus are the external variables of Extended Technology Acceptance Model.

Sl. No	Terms/ Concepts	Operational Definition
3	Service Awareness	Service Awareness is the idea or knowledge about the products and services of Digital Banking.
4	Subjective Norms	Subjective norms refer to the belief that a person or group of people approve and support a particular behavior related with Digital Banking Practices.
5	Self-Efficacy	Self-efficacy is related with the ability of the Digital Banking user to transact with online platform.
6	System Quality	System quality is the degree to which the system is easy to use and complies with functionality, reliability, flexibility, data quality and integration requirements of the devices used as the medium of online transactions.
7	Schemes Availability	It is the fact or possibility that the banking customers can buy, get or have something related with the schemes, offers and features of Digital Banking.
8	Cognitive Responses	It is the reaction or reply of the person after knowing, learning and understanding the situations/ things/ matters.
9	Perceived Ease of Use	Perceived Ease of Use is defined as the degree to which a person believes that Digital Banking Platforms and Mobile Banking Applications will be free of effort.
10	Perceived Usefulness	Perceived Usefulness is the subjective perception of the banking customers where they believe that using online technologies can improve the performance of their quality.
11	Perceived Risk	Perceived Risk is the degree to which some sort of ambiguity and unfavorable conditions associated with consumers' expectation towards third party involvements.
12	Affective Response	It is defined as the general psychological state of the customers of banks regarding particular banking transactions.
13	Attitude towards Use	Attitude refers to the positive or negative feelings (evaluation capacity) of the Digital Banking users about performing a particular task with the help of online platform.
14	Intention	It is referred as the action of performing/ determining towards a result or an accomplishment.
15	Behavioral Intention to Use	Behavioral Intention refers to the degree to which a customer has formulated cognizant plans to perform or not perform some specified future banking transactions.
16	Behavioral Responses	Behavioral Response is the first reaction of Digital Banking users towards the present condition of every transaction.
17	Actual Use	Actual use is the sum total of actual activity towards Online transactions conducted through the platform.
18	User Satisfaction	It is the fulfillment of desire or wish of an individual according to his/ her action or exertion.

1.9 Methodology and Database

The methodology followed in the present research work is briefly explained in the following pages.

1.9.1 Method of Research

The present research work is both descriptive and analytical in nature. This is a fact-finding study attempts to identify the desirable facets and dimensions of the problem by explaining the descriptive information for the construction of variables. Therefore, it is called descriptive research. Since the study investigates the cause-and-effect relationship between the variables using first-hand data; these variables can be measured typically on constructs and the relationship of quantitative data measured with the help of statistical procedure, it can be described as analytical study also.

1.9.2 Sources of Data

Both the Secondary and Primary data are collected and used for the research work. The sources are given below.

1. Secondary Data

The secondary data required for the study are collected from the following sources.

- RBI, SEBI and Bank's websites
- Annual Reports of RBI and Sample Banks
- Business Responsibility Reports
- Corporate Social Responsibility Reports
- Sustainability Reports
- Integrated Reports of the banks
- Reports of National Guidelines on Responsible Business Conduct
- Reports of National Voluntary Guidelines on Social, Environmental, Economic Responsibilities of Business
- Reports of United Nations' Sustainability Development Goals
- Reports of Global Reporting Initiatives (GRIs)
- Reports on ESG Reporting and Disclosure Framework
- Reports of Global Sustainability Standards Board

- Research Dissertation and theses
- Books related to the study area
- Brochures, Journals, Publications, Study Reports, Periodicals, Research Papers, Banking Statistics etc.

2. Primary Data

Primary data are collected from the bankers and customers of the selected Public and Private Sector (Old & New Generation) Banks in the state of Kerala. For this purpose, two set questionnaires were developed and used. First one for the managers of different department namely, Digital Wing, Sustainability as well as Corporate Social Responsibility in Administrative Offices namely Head offices/ Local Head Offices/ Circle Offices/ Zonal Office/ Regional Offices and Main Branches of the sample banks. The second questionnaire is prepared for the customers of the banks (who have the idea about Paperless Banking as well as only those who using Digital Banking).

1.9.3 Sample Design

A four-stage sampling procedure has been adopted for the selection of Banks, Districts, Managers (Bankers) and Customers of the proposed study. A detailed explanation of the sample design is given below.

Stage 1: Selection of Sample Banks

In order to conduct a detailed study, Public and Private Sector (Old and Generation) Banks are selected from the state of Kerala. More precisely, State Bank of India (SBI), Canara Bank, Punjab National Bank (PNB) from Public Sector Banks, Federal Bank Limited, South Indian Bank (SIB), Industrial Development Bank of India (IDBI) from Old Generation Private Banks and Housing Development Finance Corporation Limited (HDFC), Industrial Credit and Investment Corporation of India (ICICI) and AXIS Bank from New Generation Private Banks are selected. The banks are selected as per the available secondary records regarding Disclosure Status of National Voluntary Guidelines, ESG Integrated Reporting (BRSR) and Sustainable Development Criteria for Global Reporting Initiatives (GRI).

Stage 2: Selection of Districts in Kerala

The districts of Kannur, Kozhikode, Malappuram from the northern region, Palakkad, Thrissur and Ernakulam from central region and Kottayam, Kollam and Trivandrum from southern region are selected. This is due to the fact that the Head offices/ Local Head Offices /Circles Offices/ Zonal Offices/ Regional Offices/ Main Branches of the sample banks are located in these districts. Hence, total nine districts selected from the state of Kerala.

Stage 3: Selection of Managers

The Managers of different departments of the Administrative Offices of the bank including Digital Wing, Sustainability as well as Corporate Social Responsibility are selected. The Administrative Offices of the banks means, Head offices/ Local Head Offices/ Circle Offices/ Zonal Offices/ Regional Offices and Main Branches of the sample banks situated in Kerala. Hence, nine bank managers are selected from each nine banks of the sample districts and the total sample bank managers are 81 which comprised of 27 from Public Sector, 27 from Old Generation Private Banks and 27 from New Generation Private Banks.

Stage 4: Selection of Customers

The method adopted for the selection of sample customers is described below.

(i) Population

The population of the study consists of customers of Public and Private Sector (Old & New Generation) Banks in the State of Kerala.

(ii) Determination of Sample Size of Customers

The sample size of the customers is determined by using Bill Godden, 2004 formula for infinite population (where the population is greater than 50,000). The formula applied to calculate the sample size is.

$$SS = \frac{Z^2 \times (p) \times (1-p)}{C^2} \text{ (Godden, 2004)}$$

SS = Sample Size

Z = Z value (e.g.: - 1.96 for a 95% confidence level)

p = Percentage of population picking a choice, expressed as decimal

C = Confidence interval expressed as decimal (e.g.: - 0.05)

Therefore, SS = $(1.96)^2$ x (0.5) x (0.5) / $(0.05)^2$

= 3.8416 x 0.25/ 0.0025

= 0.9604/0.0025

= 384 (to get an equal division of sample banks, **405** customers are selected))

(iii) Sampling Technique

Purposive Sampling: - Purposive Sampling is employed as the sampling technique to select the sample customers for the study. Here, two criteria (purposes) are used to select the customers such as.

1. Those who have the idea about Paperless Banking as well as
2. Those who use Digital Banking to conduct their banking transactions.

(iv) Selection of Sample Banks and Customers

Table 1.3

Selection of Sample Banks and Customers

Zones	Districts	Banks	Customers
North	Kannur	9	45
	Kozhikode	9	45
	Malappuram	9	45
Central	Palakkad	9	45
	Thrissur	9	45
	Ernakulam	9	45
South	Kottayam	9	45
	Kollam	9	45
	Trivandrum	9	45
Total	**9**	**81**	**405**

1.9.4 Tools/ Instruments for Data Collection

A structured questionnaire is used as the instrument for the collection of primary data to fulfill the objectives of the study. It is designed after suitable consultation and discussion with the experts in the field of Banking, Quantitative Techniques and Psychology for subject clarification, statistical validity, and scale developments. In order to collect data from bankers as well as customers, two set questionnaires were prepared.

The first questionnaire for bankers starts with general details on Environmentally Sustainable Banking Practices such as, Period of Adoption, Guidelines followed, areas of Green Strategies and reasons for 'going-green'. It is followed by the questions relating to Adoption level, SWOC Analysis and Importance of SMART Green Goals (See the Appendix). The Likert scale is used to acquire data regarding the main constructs of the study. In order to obtain data regarding Adoption level and SWOC Analysis, agreement scale is used, and the bankers are asked to fill the questionnaire on five-points ranging from 5 for 'strongly agree' to 1 for 'strongly disagree' with 3 for neutral point. Further, the data regarding importance of SMART Green Goal is measured in importance scale ranging from 5 for 'extremely important', 4 for 'very important', 3 for 'moderately important', 2 for 'less important' and 1 for not at all important'. Here, 81 copies of questionnaire distributed to bankers (managers) and all are filled and returned (response rate is 100%).

The second questionnaire for customers starts with demographic profiles and banking details. It is followed by the questions concerning to the awareness level on Environmental-Sustainable Practices, where the respondent's awareness to the given statements is asked on five-point scale ranging from 5 for 'extremely aware' to 1 for 'not at all aware' with a neutral point 3 as 'somewhat aware'. Next category of questions relating to enabling & disabling factors and perception level of Digital Banking Acceptance. These questions are measured in agreement scale ranging from 5 for 'strongly agree' to 1 for 'strongly disagree' with 3 for neutral point. Further, frequency of using digital initiatives is also found out by using five-point scale ranging from 5 for 'always' to 1 for 'never'.

1.9.5 Scale Evaluation and Validation

a) Pilot Study and Pre-test

The pilot study is conducted for testing the feasibility of the research questions related to the objectives of the study. Therefore, the researcher can test the reliability, validity and efficiency of the research instruments and thereby improve design of study before actual data collection procedure. Accordingly, the researcher can evaluate the wordings, measurement, clarification of each question in the questionnaire. Here, a pilot study was conducted among 27 managers (9 each from Public Sector, Old Generation and New Generation) and 135 customers (15 each from nine sample banks) before finalizing the instruments for primary data collection. After pilot study, suitable modifications are incorporated in the questionnaire and thus pretested & finalized. Primary data are collected during the period from January 2019 to August 2019. Secondary data during the period April 2016 to March 2021 is used for the study.

b) Test of Reliability

Reliability of the questionnaire is measured to ensure the similar results under consistent conditions. "Reliability concerns the extent to which a measurement of a phenomenon provides stable and consistent results" (Carmines & Zeller, 2005). A reliability test using Cronbach's Alpha Reliability Co-efficient is employed to check the internal consistency of the scale variables in the questionnaire. "An alpha value of 0.70 or above is considered to be a criterion for demonstrating strong internal consistency and alpha value of 0.60 or above is considered to be significant" (Cronbach & Meehl, 1995). In this context, the constructs and variables used for the study is measured. Accordingly, the Cronbach's Alpha Reliability Co-efficient values of all the variables coming under the constructs of the study are above 0.7, hence strong internal consistency is assured, and the questionnaire is considered as highly reliable. The below mentioned table is presented the constructs, indicators, number of statements used in the study along with the values of Cronbach's Alpha Reliability Co-efficient.

Table 1.4

Reliability Statistics

Constructs	Indicators	No. of items	Cronbach's alpha
Adoption	Green Processes	4	.703
	Green Practices	7	.710
	Green Products & Services	5	.712
SWOC	Strengths	5	.768
	Weaknesses	6	.754
	Opportunities	5	.720
	Challenges	5	.741
SMART Green Goals	Specific	5	.811
	Measurable	5	.799
	Attainable	5	.782
	Realistic	5	.820
	Timely	5	.798
Awareness	Green Policies	3	.754
	Green Financing	6	.776
	Green/ Digital Innovation	8	.789
	Internet Banking	9	.899
	Mobile Banking	8	.872
Enabling Factors	Information & Communication	3	.902
	Clear & Easiness	3	.843
	Convenience & Flexible	3	.786
	Trust & Confidence	3	.871
	Self- Esteem and Prestige	3	.848
Disabling Factors	Security & Privacy	3	.798
	Risk & Threat	3	.735
	Knowledge & Awareness	3	.809
	Cost & Charge	3	.788
	Complexity & Problems	3	.801

Constructs	Indicators	No. of items	Cronbach's alpha
Perception on Acceptance	Service Awareness	5	.869
	Subjective Norms	5	.950
	Self-Efficacy	5	.911
	System Quality	6	.946
	Schemes Availability	5	.886
	Perceived Ease of Use	5	.954
	Perceived Usefulness	5	.922
	Perceived Risk	5	.743
	Attitude towards use	5	.890
	Behavioral Intention to use	5	.903
	Actual Use	5	.833
	User Satisfaction	8	.785

c) Test of Validity

"A perfectly reliable assessment may not measure anything of value. Validity information gives some indication of how well as test or other assessment instrument measures a given characteristics, under certain circumstances and with a given set of subjects or objects" (Burns & Burns, 2008). While reliability relates to the accuracy and consistency of the indicators, validity relates to the appropriateness of the indicators to the constructs. Hence, the objective of validity is to measure the relationship between the indicators and the underlying constructs of the study. Accordingly, validity is the answer for the question that, "to what extent does the testing instrument actually measure the construct/ concept/ variable it purports to measure" (Burns & Burns, 2008). There are different types of validity to measure the variables such as, Face Validity, Content Validity and Construct Validity (it is further classified in to Convergent and Discriminant Validity). A brief explanation of different types of validity ensured for the research work is given below.

1. Face and Content Validity

The first step of validity assessment is called face validity. It is done by showing the instruments to a professional/ experts in the field of subject. Robert B. Burns defined that, "It is the validity of appearances that disguises the real intent of the assessment". In the present study, the researcher has ensured the face and content validity by conducting discussion and consultation with experts in various disciplines such as Banking (retired RBI Officer, Managers in CSR & Sustainability department, Managers in Digital Wing), Statistics & Quantitative Techniques and Psychology (for scale development). According to the experts' opinion, suitable modifications incorporated in the instrument, thereafter, the experts ensure that the questionnaires are able to collect the primary data for the study.

2. Construct Validity

It explains the empirical relationship between measuring instruments and theoretical concepts. Therefore, theoretical frameworks and scientific explanations are needed to test the hypothesized relationship. There are two types of construct validity, Convergent Validity and Discriminant Validity.

i) Convergent Validity

Convergent validity refers to the degree to which two measures of constructs that theoretically should be related are in fact related (Fiske & Campbell, 1959). It has been measured with the help of Confirmatory Factor Analysis. In the present research work, there is convergent validity for all the measurement scales has ensured by considering the factor loading of greater than 0.5 and the 'p' values are less than 0.01.

ii) Discriminant Validity

The measurement scale of one variable is sufficiently different from other constructs (different variables are unrelated), discriminant validity can be ensured. "Discriminant validity is assessed by comparing the shared variance (squared correlation) between each pair of constructs against the average of the AVEs for these two constructs" (Shiu, et al., 2011). In this study, the square root of the Average Variance Extracted (AVE) is higher than correlation between latent variables. Hence discriminant validity is ensured.

d) Test of Normality

Normality test is employed to identify whether the data is normally distributed or not. To test the normality of data, One Sample Kolmogorov- Smirnov (One sample KS) test is applied. But the data is said to be not normal as well the 'p' values are less than 0.05. Hence it is essential to test the Skewness and Kurtosis to check whether the deviation is problematic or not. As a result, the values of Skewness and Kurtosis coming under the range of ± 2.58 and ±1.96 (Hair, Black, Babin, Anderson, & Tatham, 1998). Hence, the normality is assumed and researcher go for Parametric Test assuming Normal Distribution.

e) Test of Randomness

In order to check the randomness (random selection of samples from population) of the data, Run Test is applied. The result exhibits that the 'p' values of all the variables are above 0.05. Therefore, the study assumes the randomness of primary data.

f) Test of Data Independence

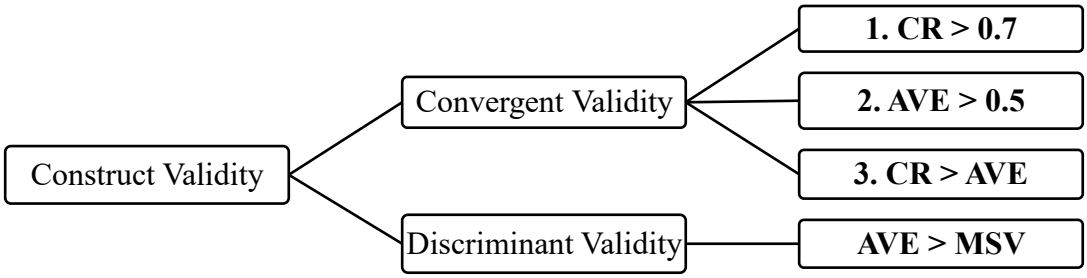
In order to conduct multiple regression, general linear models etc., independence of data is considered as the main assumption. Therefore, it is necessary to test the same and it can be ensured only if the value of Durbin – Watson Co-efficient should be within the range of 1.5 to 2.5 (Garson, 2012). The present research work has conducted the test for data independence and the value are within the recommended limit. Hence, in this study data independence is assumed.

1.9.6 Period of Data Collection

Primary data are collected during the period from January 2019 to August 2019. Secondary data of Annual Reports, Business Responsibility Reports, Corporate Social Responsibility Reports, Sustainability Reports, Integrated Reports etc. of the sample banks are used during the period from April 2016 to March 2021. Further, the reports of National Voluntary Guidelines on Environmental, Social and Economic Responsibilities of Business, 2011 and National Guidelines Responsible Business Conduct, 2018 are used as the secondary data.

1.9.7 Validation of Measurement Scales

A Confirmatory Factor Analysis (First Order CFA) is applied to validate the measurement scales used for the study. It explains the quality of factor structure for measuring proposed constructs of the study. The result of CFA is explained with the help of model, model fit indices and validity & reliability results. The criteria for describing Convergent and Discrimant Validity is given below.



Source: Secondary Data

Figure 1.1

First Order CFA Measurement Model – Adoption Level of ESBP

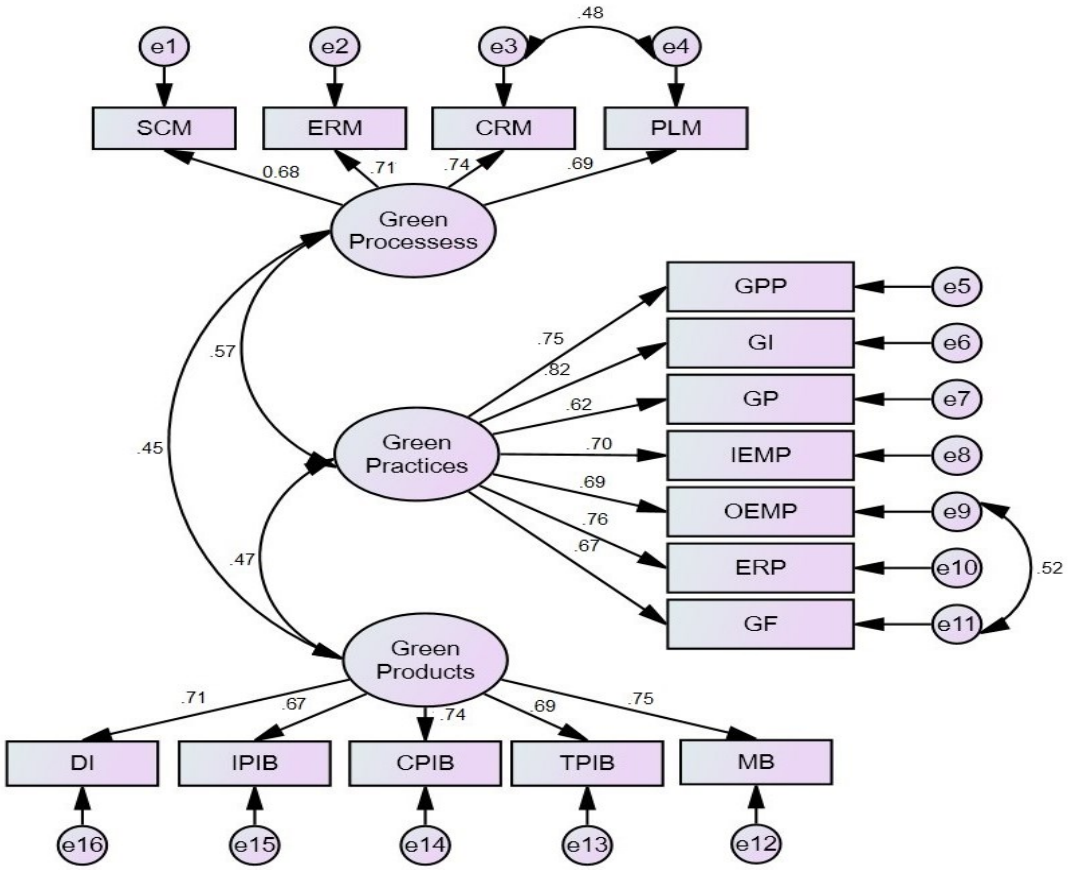


Table 1.5

Model Fit Indices – Adoption Level of ESBP

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	2.990	>0.05
Normed chi-square (CMIN/df)	1.210	≤3
Root Mean Square Residuals (RMR)	0.042	≤0.05
Comparative Fit Index (CFI)	0.876	≥0.90
Goodness of Fit Index (GFI)	0.911	≥0.90
Adjusted GFI (AGFI)	0.899	≥0.90
Incremental Fit Index (IFI)	0.901	≥0.90
Tucker Fit Index (TLI)	0.912	≥0.90
Mormed Fit Index (NFI)	0.879	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.061	≤0.08

Source: Primary Data

The acceptability of first order CFA (Figure 1.1) is measured with the help of the above specified modification indices. Here, the important measures (GFI, IFI, TLI) are above the recommended limit of good fit. On the other side, CFI, AGFI and NFI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Therefore, the model used to measure the level of adoption of ESBP is acceptable to measure the validity of scale.

Table 1.6

Validity and Reliability of Adoption Level of ESBP

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Green Processes	SCM	0.68	0.72	0.509	0.324
	ERM	0.71			
	CRM	0.74			
	PLM	0.69			
Green Practices	GPP	0.75	0.77	0.512	0.221
	GI	0.82			
	GP	0.62			
	IEMP	0.70			
	OEMP	0.69			
	ERP	0.76			
	GF	0.67			
Green Products	DI	0.71	0.78	0.519	0.221
	IPIB	0.67			
	CPIB	0.74			
	TPIB	0.69			
	MB	0.75			

Source: Primary Data

Table 1.6 describes the Standardized Factor Loadings, Composite Reliability, Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) of each dimension used for the study. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. In respect of Convergent Validity, three conditions are fulfilled namely, the values of Composite Reliability (CR) are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is proved. Furthermore, the Discriminant Validity of the scale is proved with the help of MSV and AVE. Here, AVE of all the dimensions is greater than the values of MSV. Hence, the criteria for Discriminant Validity also proved.

Figure 1.2

First Order CFA Measurement Model – SWOC of ESBP

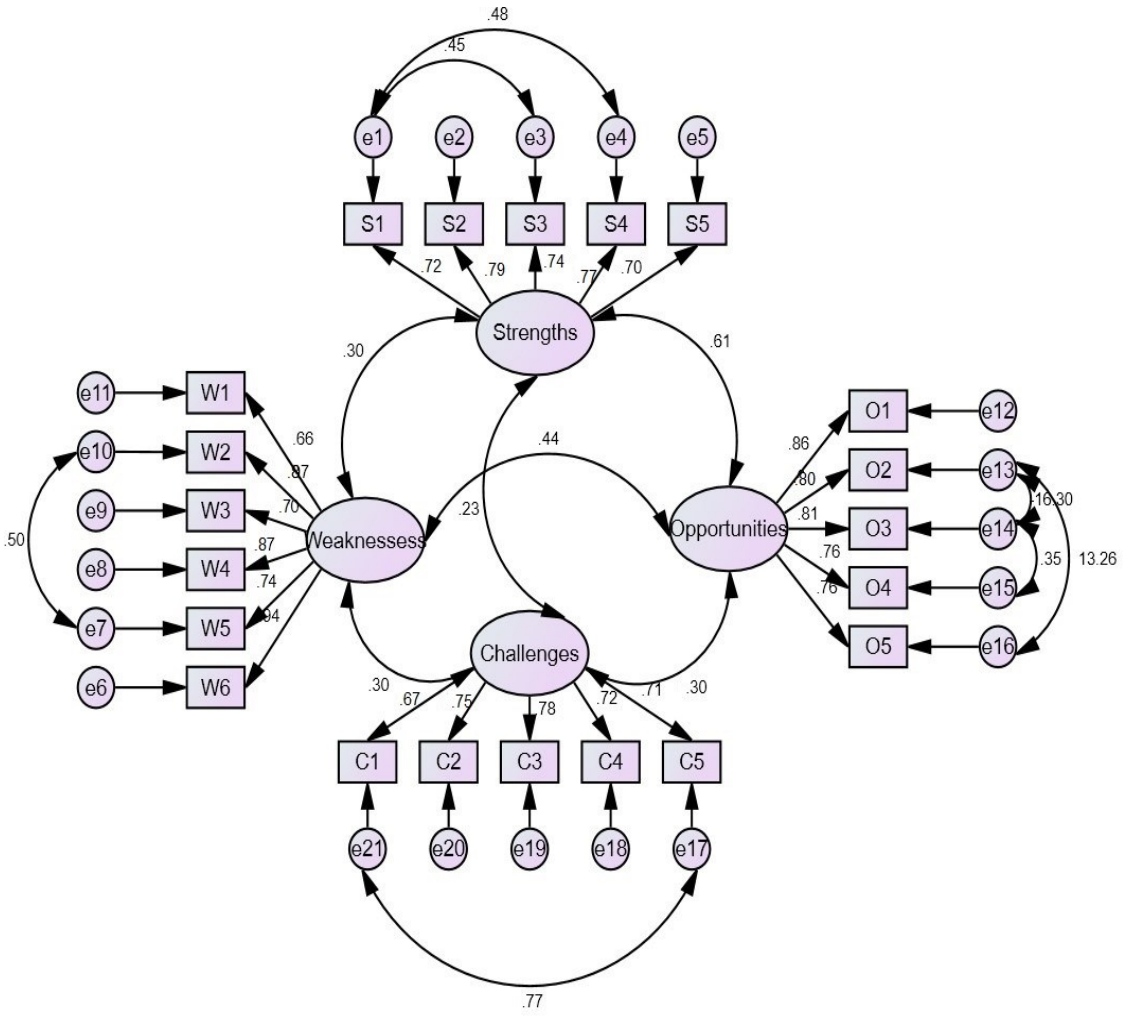


Table 1.7

Model Fit Indices – SWOC of ESBP

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	1.774	>0.05
Normed chi-square (CMIN/df)	2.601	≤3
Root Mean Square Residuals (RMR)	0.032	≤0.05
Comparative Fit Index (CFI)	0.912	≥0.90
Goodness of Fit Index (GFI)	0.901	≥0.90
Adjusted GFI (AGFI)	0.877	≥0.90
Incremental Fit Index (IFI)	0.931	≥0.90
Tucker Fit Index (TLI)	0.950	≥0.90
Mormed Fit Index (NFI)	0.890	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.057	≤0.08

Source: Primary Data

The suitability of first order CFA (Figure 1.2) is measured with the help of the above specified modification indices. Here, the important measures (CFI, GFI, IFI, TLI) are above the recommended limit of good fit. On the other side, AGFI and NFI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Therefore, the model used to measure the SWOC of ESBP is acceptable to measure the validity of scale.

Table 1.8

Validity and Reliability of SWOC of ESBP

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Strengths	S1	0.72	0.80	0.554	0.372
	S2	0.79			
	S3	0.74			
	S4	0.77			
	S5	0.70			
Weaknesses	W1	0.66	0.79	0.645	0.193
	W2	0.87			
	W3	0.70			
	W4	0.87			
	W5	0.74			
	W6	0.94			
Opportunities	O1	0.86	0.83	0.638	0.372
	O2	0.80			
	O3	0.81			
	O4	0.76			
	O5	0.76			

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Challenges	C1	0.67	0.74	0.531	0.101
	C2	0.75			
	C3	0.78			
	C4	0.72			
	C5	0.72			

Source: Primary Data

Table 1.8 proves the standardized factor loadings, Composite Reliability, AVE and MSV of each dimension of the constructs used for the study. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. According to Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is proved. Additionally, the Discriminant Validity of the scale is proved with the comparison of MSV and AVE. Here, all the dimensions have the greater values of AVE than that of MSV. Hence, the criteria for Discriminant Validity also proved.

Figure 1.3

First Order CFA Measurement Model – SMART Green Goals of ESBP

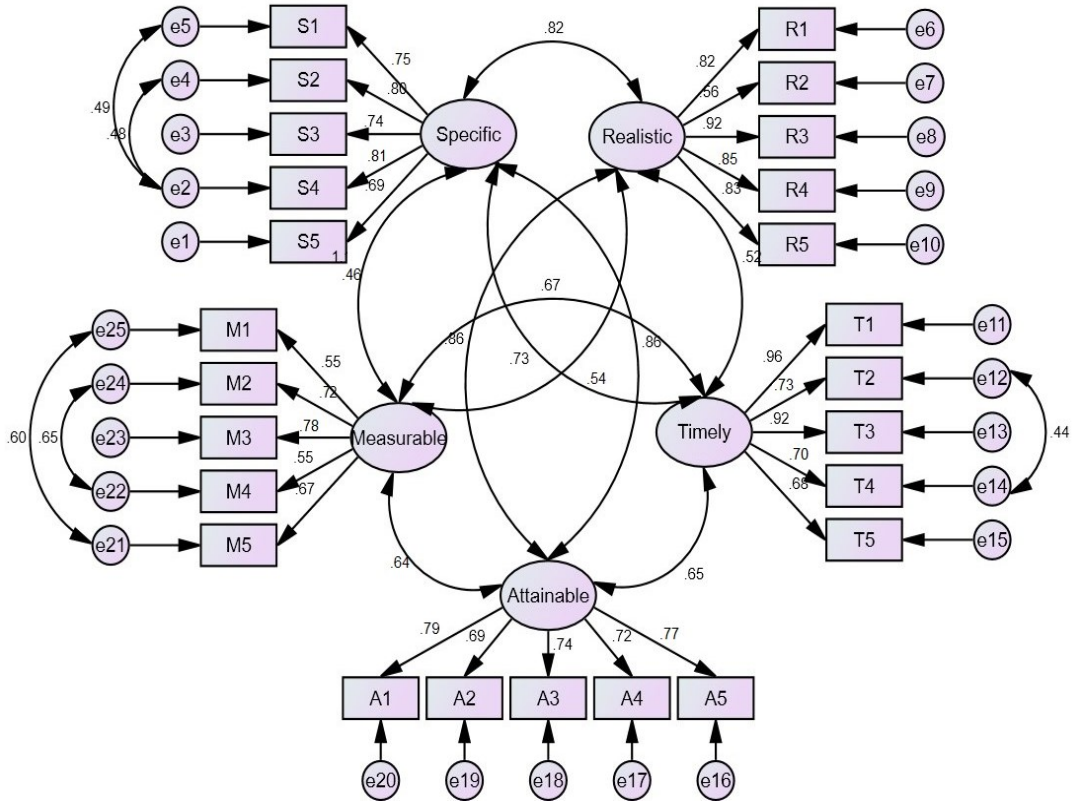


Table 1.9

Model Fit Indices – SMART Green Goals of ESBP

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	3.781	>0.05
Normed chi-square (CMIN/df)	1.987	≤3
Root Mean Square Residuals (RMR)	0.039	≤0.05
Comparative Fit Index (CFI)	0.931	≥0.90
Goodness of Fit Index (GFI)	0.910	≥0.90
Adjusted GFI (AGFI)	0.856	≥0.90
Incremental Fit Index (IFI)	0.927	≥0.90
Tucker Fit Index (TLI)	0.898	≥0.90
Mormed Fit Index (NFI)	0.918	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.044	≤0.08

Source: Primary Data

The adequacy of first order CFA (Figure 1.3) is measured with the help of the above specified modification indices. Here, the important measures (CFI, GFI, IFI, NFI) are above the recommended limit of good fit. On the other side, AGFI and TLI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Therefore, the model used to measure the SMART Green Goals is acceptable to measure the validity of scale.

Table 1.10

Validity and Reliability of SMART Green Goals of ESBP

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Specific	S1	0.75	0.76	0.576	0.313
	S2	0.80			
	S3	0.74			
	S4	0.81			
	S5	0.69			
Measurable	M1	0.74	0.71	0.515	0.401
	M2	0.72			
	M3	0.78			
	M4	0.64			
	M5	0.67			
Attainable	A1	0.79	0.74	0.552	0.422
	A2	0.69			
	A3	0.74			
	A4	0.72			
	A5	0.77			

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Realistic	R1	0.82	0.82	0.648	0.313
	R2	0.56			
	R3	0.92			
	R4	0.85			
	R5	0.83			
Timely	T1	0.96	0.84	0.651	0.448
	T2	0.73			
	T3	0.92			
	T4	0.70			
	T5	0.68			

Source: Primary Data

Table 1.10 exhibits the Standardized Factor Loadings, CR, AVE and MSV of each dimension used for the study. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. Regarding Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is verified. Moreover, the Discriminant Validity of the scale is established with the higher values of AVE than that of MSV.

Figure 1.4

First Order CFA Measurement Model – Awareness level on ESBP

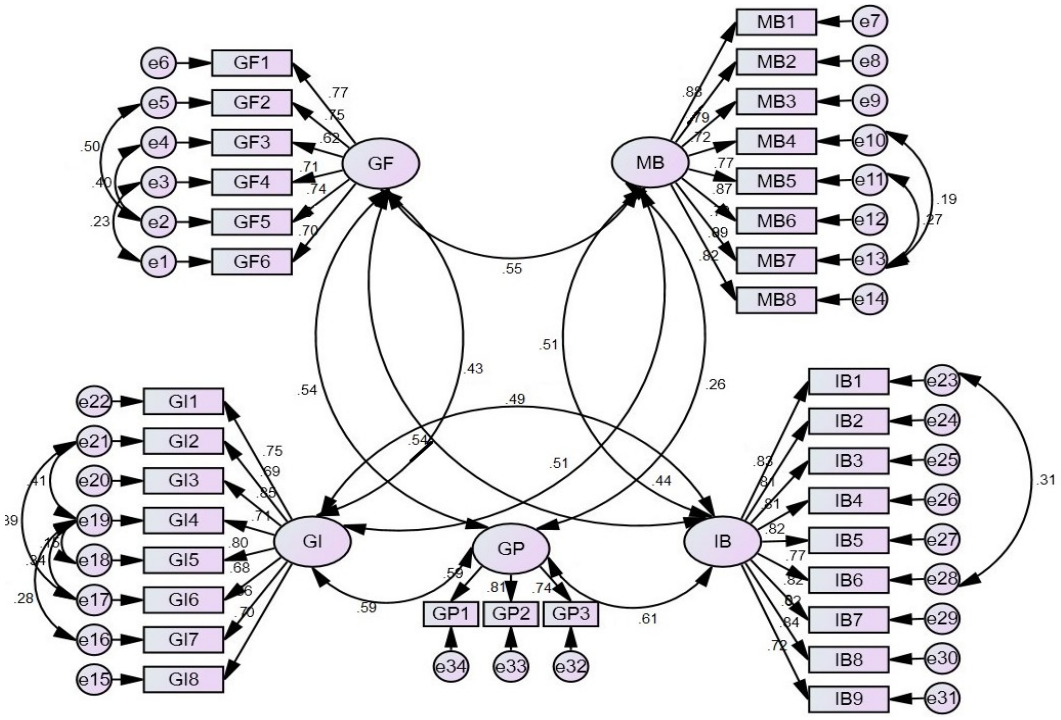


Table 1.11

Model Fit Indices – Awareness level of ESBP

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	5.110	>0.05
Normed chi-square (CMIN/df)	0.901	≤3
Root Mean Square Residuals (RMR)	0.009	≤0.05
Comparative Fit Index (CFI)	0.917	≥0.90
Goodness of Fit Index (GFI)	0.920	≥0.90
Adjusted GFI (AGFI)	0.877	≥0.90
Incremental Fit Index (IFI)	0.890	≥0.90
Tucker Fit Index (TLI)	0.931	≥0.90
Mormed Fit Index (NFI)	0.901	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.005	≤0.08

Source: Primary Data

The appropriateness of first order CFA (Figure 1.4) is measured with the help of the above specified modification indices. Here, the important measures (GFI, IFI, TLI) are above the recommended limit of good fit. On the other side, CFI, AGFI and NFI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Therefore, the model used to measure the level of awareness of ESBP is acceptable to measure the validity of scale.

Table 1.12

Validity and Reliability of Awareness level of ESBP

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Green Finance	GF1	0.77	0.70	0.514	0.302
	GF2	0.75			
	GF3	0.62			
	GF4	0.71			
	GF5	0.74			
	GF6	0.70			
Green Innovation	GI1	0.75	0.74	0.575	0.348
	GI2	0.69			
	GI3	0.85			
	GI4	0.71			
	GI5	0.80			
	GI6	0.68			
	GI7	0.86			
	GI8	0.70			
Green Policies	GP1	0.59	0.78	0.517	0.372
	GP2	0.81			
	GP3	0.74			

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Internet Banking	IB1	0.83	0.80	0.648	0.347
	IB2	0.81			
	IB3	0.81			
	IB4	0.82			
	IB5	0.77			
	IB6	0.82			
	IB7	0.82			
	IB8	0.84			
	IB9	0.72			
Mobile Banking	MB1	0.88	0.77	0.667	0.302
	MB2	0.79			
	MB3	0.72			
	MB4	0.77			
	MB5	0.87			
	MB6	0.78			
	MB7	0.89			
	MB8	0.82			

Source: Primary Data

Table 1.12 demonstrates the standardized factor loadings, CR, AVE and MSV of each dimension of the constructs used for the study. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. In the case of Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is established. Besides, the Discriminant Validity of the scale is verified with the help of MSV and AVE. Here, all the dimensions have higher values of AVE than that of MSV. Hence, the criteria of Discriminant Validity also proved. Therefore, the Construct Validity of the measurement scale of awareness is proved.

Figure 1.5

First Order CFA Measurement Model – Enabling Factors of DB

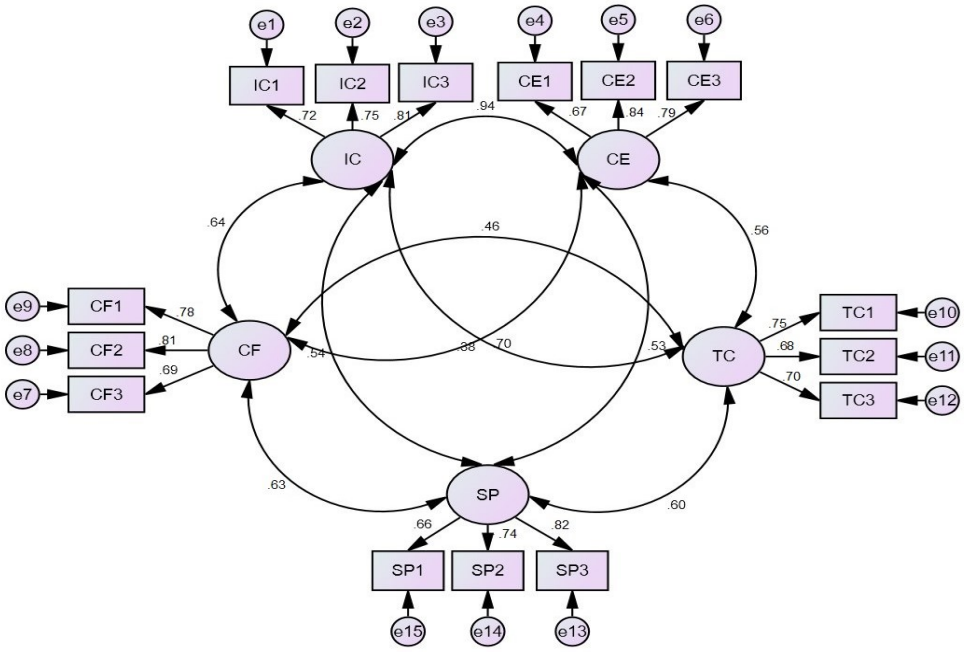


Table 1.13

Model Fit Indices – Enabling Factors of DB

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	1.986	>0.05
Normed chi-square (CMIN/df)	2.334	≤3
Root Mean Square Residuals (RMR)	0.009	≤0.05
Comparative Fit Index (CFI)	0.914	≥0.90
Goodness of Fit Index (GFI)	0.935	≥0.90
Adjusted GFI (AGFI)	0.870	≥0.90
Incremental Fit Index (IFI)	0.915	≥0.90
Tucker Fit Index (TLI)	0.896	≥0.90
Mormed Fit Index (NFI)	0.932	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.012	≤0.08

Source: Primary Data

The adequacy of first order CFA (Figure 1.5) is measured with the help of the above specified modification indices. Here, the important measures (CFI, GFI, IFI, NFI) are above the recommended limit of good fit. On the other hand, AGFI and TLI are in the acceptable fit of the proposed model. Likewise, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Therefore, the model used to measure the enabling factors of DB is acceptable to measure the validity of scale.

Table 1.14

Validity and Reliability of Enabling Factors of Digital Banking

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Information & Communication	IC1	0.72	0.73	0.579	0.490
	IC2	0.75			
	IC3	0.81			
Clear & Easiness	CE1	0.67	0.76	0.593	0.314
	CE2	0.84			
	CE3	0.79			
Convenience & Flexibility	CF1	0.78	0.74	0.580	0.397
	CF2	0.81			
	CF3	0.69			
Trust & Confidence	TC1	0.75	0.71	0.514	0.490
	TC2	0.68			
	TC3	0.70			
Self-Esteem & Prestige	SP1	0.66	0.72	0.552	0.397
	SP2	0.74			
	SP3	0.82			

Source: Primary Data

Table 1.14 validates the standardized factor loadings, CR, AVE and MSV of each dimension of enabling factors of digital banking. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. Relating to Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is proved. Also, the Discriminant Validity of the scale is proved with the help of MSV and AVE Here, all the dimensions have the values of AVE greater than that of MSV. Hence, the criteria for Discriminant Validity also proved and the measurement scale is valid to test the enabling factors of Digital Banking.

Figure 1.6

First Order CFA Measurement Model – Disabling Factors of DB

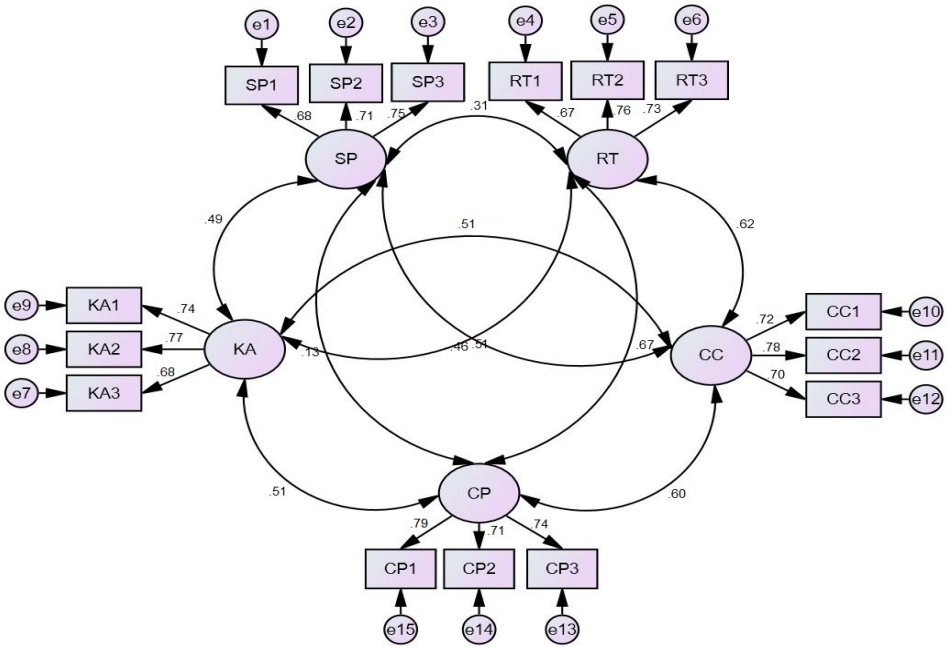


Table 1.15

Model Fit Indices – Disabling Factors of Digital Banking

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	3.110	>0.05
Normed chi-square (CMIN/df)	1.098	≤3
Root Mean Square Residuals (RMR)	0.018	≤0.05
Comparative Fit Index (CFI)	0.903	≥0.90
Goodness of Fit Index (GFI)	0.907	≥0.90
Adjusted GFI (AGFI)	0.895	≥0.90
Incremental Fit Index (IFI)	0.932	≥0.90
Tucker Fit Index (TLI)	0.890	≥0.90
Mormed Fit Index (NFI)	0.917	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.043	≤0.08

Source: Primary Data

The suitability of first order CFA (Figure 1.6) is measured with the help of the above specified modification indices. Here, the important measures (CFI,GFI, IFI, NFI) are above the recommended limit of good fit. On the other side, AGFI and TLI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and

RMSEA are within the limit of good fit of the model. Therefore, the model is fit to identify the disabling factors of digital banking with the constructs and dimensions.

Table 1.16

Validity and Reliability of Disabling Factors of Digital Banking

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Security & Privacy	SP1	0.68	0.71	0.518	0.291
	SP2	0.71			
	SP3	0.75			
Risk & Threats	RT1	0.67	0.72	0.520	0.448
	RT2	0.76			
	RT3	0.73			
Knowledge & Awareness	KA1	0.74	0.74	0.534	0.360
	KA2	0.77			
	KA3	0.68			
Cost & Charges	CC1	0.72	0.75	0.539	0.448
	CC2	0.78			
	CC3	0.70			
Complexity & Problems	CP1	0.79	0.77	0.556	0.360
	CP2	0.71			
	CP3	0.74			

Source: Primary Data

Table 1.16 authenticates the standardized factor loadings, CR, AVE and MSV of each dimension of the constructs used for the study. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. With regard to Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Consequently, Convergent Validity is proved. Besides, the Discriminant Validity of the scale is proved with the help of MSV and AVE. Here, all the dimensions have the values of AVE greater than that of MSV and, the criteria of Discriminant Validity also proved for the dimensions of disabling factors of digital banking.

Figure 1.7

First Order CFA Measurement Model – External Stimulus of DB Acceptance

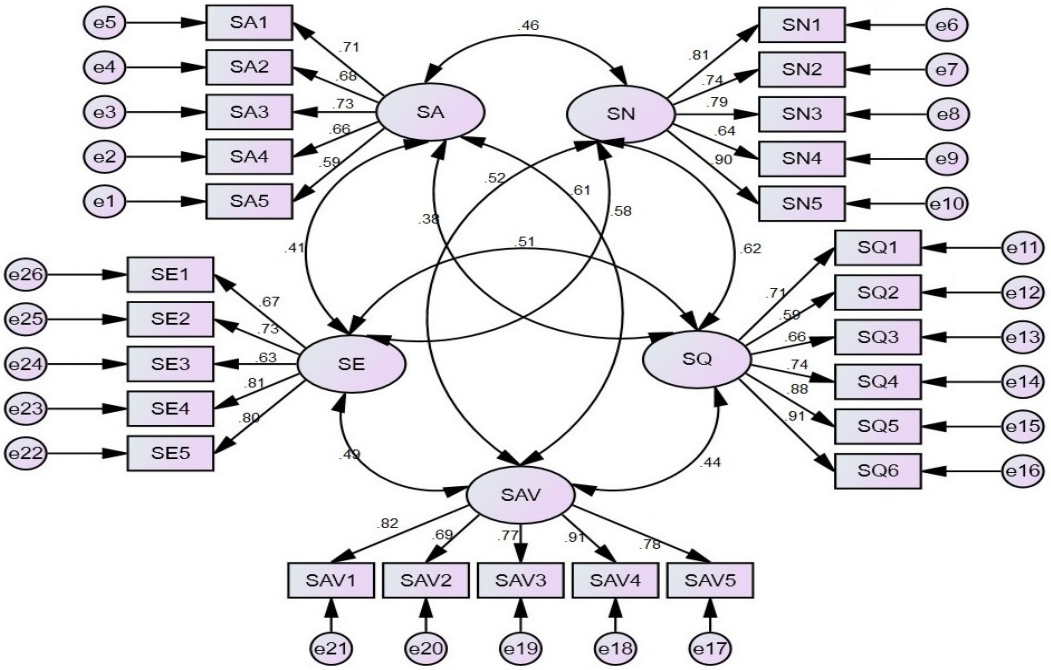


Table 1.17

Model Fit Indices – External Stimulus of Digital Banking Acceptance

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	2.906	>0.05
Normed chi-square (CMIN/df)	1.775	≤3
Root Mean Square Residuals (RMR)	0.030	≤0.05
Comparative Fit Index (CFI)	0.930	≥0.90
Goodness of Fit Index (GFI)	0.908	≥0.90
Adjusted GFI (AGFI)	0.885	≥0.90
Incremental Fit Index (IFI)	0.914	≥0.90
Tucker Fit Index (TLI)	0.927	≥0.90
Mormed Fit Index (NFI)	0.889	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.053	≤0.08

Source: Primary Data

The adequacy of first order CFA (Figure 1.7) is measured with the help of the above provided modification indices. Here, the important measures (CFI, GFI, IFI, TLI) are above the recommended limit of good fit. Instead, AGFI and NFI are in the acceptable fit of the proposed model. Correspondingly, CMIN/df, RMR and RMSEA are within the limit of good fit of the model. Consequently, the proposed CFA model is acceptable to measure the external stimulus of Digital Banking Acceptance.

Table 1.18

Validity and Reliability of External Stimulus of Digital Banking Acceptance

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Service Awareness	SA1	0.71	0.71	0.512	0.372
	SA2	0.68			
	SA3	0.73			
	SA4	0.66			
	SA5	0.79			
Subjective Norms	SN1	0.81	0.76	0.609	0.384
	SN2	0.74			
	SN3	0.79			
	SN4	0.64			
	SN5	0.90			
Self-Efficacy	SE1	0.67	0.73	0.535	0.336
	SE2	0.73			
	SE3	0.63			
	SE4	0.81			
	SE5	0.80			
System Quality	SQ1	0.71	0.75	0.573	0.384
	SQ2	0.59			
	SQ3	0.66			
	SQ4	0.74			
	SQ5	0.88			
	SQ6	0.91			
Schemes Availability	SAV1	0.82	0.80	0.641	0.336
	SAV2	0.69			
	SAV3	0.77			
	SAV4	0.91			
	SAV5	0.78			

Source: Primary Data

Table 1.18 substantiates the standardized factor loadings, CR, AVE and MSV of each dimension used to measure the external stimulus of Digital Banking Acceptance. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. Regarding Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is proved. Moreover, the Discriminant Validity of the scale is proved with the help of MSV and AVE. Here, all the dimensions have the values of AVE greater than MSV. Hence, the criteria of Discriminant Validity also proved.

Figure 1.8

First Order CFA Measurement Model – Cognitive & Affective Responses of DBA

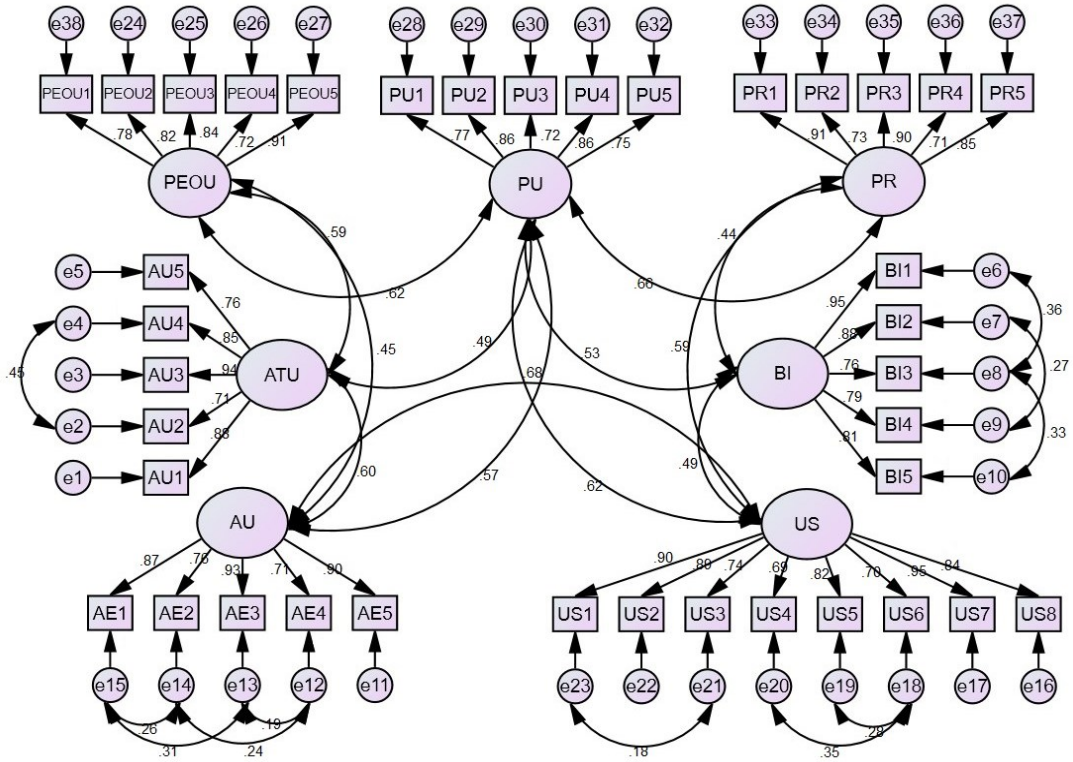


Table 1.19

Model Fit Indices – Cognitive & Affective Responses of DBA

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	4.118	>0.05
Normed chi-square (CMIN/df)	2.330	≤3
Root Mean Square Residuals (RMR)	0.010	≤0.05
Comparative Fit Index (CFI)	0.941	≥0.90
Goodness of Fit Index (GFI)	0.932	≥0.90
Adjusted GFI (AGFI)	0.887	≥0.90
Incremental Fit Index (IFI)	0.928	≥0.90
Tucker Fit Index (TLI)	0.944	≥0.90
Mormed Fit Index (NFI)	0.894	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.050	≤0.08

Source: Primary Data

The appropriateness of first order CFA (Figure 1.8) is measured with the help of the above mentioned modification indices. Here, the important measures (CFI, GFI, IFI, TLI) are above the recommended limit of good fit. Then, AGFI and NFI are in the acceptable fit of the proposed model. Similarly, CMIN/df, RMR and RMSEA are

within the limit of good fit of the model. Therefore, the CFA model is acceptable to measure the cognitive and affective response scale of DBA.

Table 1.20

Validity and Reliability of Cognitive & Affective Responses of DBA

Constructs	Dimensions	Factor Loadings	CR	AVE	MSV
Perceived Ease of Use	PEOU1	0.78	0.81	0.666	0.384
	PEOU2	0.82			
	PEOU3	0.84			
	PEOU4	0.72			
	PEOU5	0.91			
Perceived Usefulness	PU1	0.77	0.79	0.631	0.435
	PU2	0.86			
	PU3	0.72			
	PU4	0.86			
	PU5	0.75			
Perceived Risk	PR1	0.91	0.85	0.679	0.435
	PR2	0.73			
	PR3	0.90			
	PR4	0.71			
	PR5	0.85			
Attitude towards Use	AU1	0.76	0.82	0.693	0.462
	AU2	0.85			
	AU3	0.94			
	AU4	0.71			
	AU5	0.88			
Behavioural Intention to Use	BI1	0.95	0.84	0.707	0.348
	BI2	0.88			
	BI3	0.76			
	BI4	0.79			
	BI5	0.81			
Actual Use	AE1	0.87	0.83	0.703	0.360
	AE2	0.76			
	AE3	0.93			
	AE4	0.71			
	AE5	0.90			
User Satisfaction	US1	0.90	0.82	0.675	0.384
	US2	0.89			
	US3	0.74			
	US4	0.69			
	US5	0.82			
	US6	0.70			
	US7	0.95			
	US8	0.84			

Source: Primary Data

Table 1.20 confirms the standardized factor loadings, CR, AVE and MSV of each dimension used as cognitive and affective responses of digital banking acceptance. The values of standardized factor loadings are above 0.5, which indicates all the dimensions are satisfactorily contributes to the constructs. In respect of Convergent Validity, three conditions are fulfilled namely, the values of CR are greater than 0.7, the values of AVE are greater than 0.5 and the values of CR of the constructs are greater than AVE. Therefore, Convergent Validity is proved. Furthermore, the Discriminant Validity of the scale is proved with the help of MSV and AVE. Here, all the dimensions have the values of AVE greater than that of MSV. Hence, the criteria for Discriminant Validity also proved.

1.9.8 Methods of Analysis and Variables Used for the analysis

In this section, the methods adopted for the analysis of primary as well as secondary data and the variables used for the analysis is presented.

1. Adoption level

Before analyzing the adoption level, the researcher presented the general details including period of adoption, guidelines followed, areas of Green Strategies and reasons for 'going-green'. After the discussion, the level of adoption is measured with the help of following constructs and dimensions. Moreover, the questions asked in five-point Likert Scale ranging from 5 for 'fully adopted' to 1 for 'not at all adopted' along with neutral point of 3 as 'somewhat adopted.

In order to fulfill the objective, the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Green Practices and Green Products & Services) is compared among sectors and banks selected for the study. For this purpose, Descriptive Statistics (Mean & SD), Levene's Test of Homogeneity of Variance, One-way ANOVA, Tukey HSD Post-hoc Test for Multiple Comparison are employed as the statistical methods of data analysis. The variables used for the analysis of adoption level are presented below.

Table 1.21

Dimensions used for the Adoption Level of ESBP

Construct	Dimensions
Green Processes	Supply Chain Management Enterprise Resource Management Customer Relationship Management Product Life Management
Green Practices	Green Policies and Procedures Green Investment Green Partnership Inhouse Energy Saving Practices Outhouse Energy Saving Practices Employee Related Practices Green Financing
Green Products/ Services	Digital Innovation Informative services of Internet Banking Communicative services of Internet Banking Transactional services of Internet Banking Mobile Banking Services

2. SWOC Analysis

Here, Strengths, Weaknesses, Opportunities and Challenges of the banks regarding ESBP is measured in five-points Likert Scale ranging from 5 for 'strongly agree' to 1 for 'strongly disagree' along with the neutral value of 3. The discussion is done with the help of Descriptive Statistics (Mean and SD) and comparison of SWOC among sectors and banks has done by using Levene's Test of Homogeneity of Variance, One-way ANOVA, Tukey HSD Post-hoc Test for Multiple Comparison. Moreover, the relationship between adoption level of ESBP and SWOC has examined by using the measurement model formulated as a result of Structural Equation Modelling. The dimensions used for SWOC analysis are presented below.

Table 1.22

Dimensions used for the SWOC Analysis

Construct	Dimensions
SWOC/SWOT	Strength Weakness Opportunities Threats/ Challenges

3. Importance of SMART Green Goals

In order to discuss the importance of SMART Green Goals of ESBP, the researcher has used five-point Likert Scale ranging from 5 for 'extremely important' to 1 for 'not at all important' along with the neutral point of 3 for 'moderately important'. In this section, the SMART Green Goals of banks are identified by using Descriptive Statistics (Mean and SD) and the comparison among sectors and banks selected for the study has exhibited with the help of Statistical Methods like, Levene's Test of Homogeneity of Variance, One-way ANOVA, Tukey HSD Post-hoc Test for Multiple Comparison. In addition, the relationship between adoption level of ESBP and importance of SMART Green Goals has measured with the help of measurement model of Structural Equation Modelling. The dimensions used to measure the importance of SMART Green Goals of ESBP are given below.

Table 1.23

Dimensions of importance of SMART Green Goals

Construct	Dimensions
SMART Green Goals	Specific Measurable Attainable Realistic Timely

3. Awareness level

The study is also intended to measure the perspective of customers towards environmental-friendly banking practices. It is because of the fact that, customers are the end user of paperless banking initiatives and responsible financing measures. Hence, there is need to measure their awareness level regarding the same. Accordingly, it has identified in five-points Likert scale type questions ranging from 5 for 'extremely aware' to 1 for 'not at all aware' along with the neutral point of 3 for 'somewhat aware'. In order to analyze the significant difference in the level of awareness among customers, demographic profile and banking details are considered as the categorical variables. Further, to demonstrate the results, Descriptive Statistics, Independent Sample 't' test, Levene's Test of Homogeneity of Variance, One-way ANOVA, Tukey HSD Post-hoc Test for Multiple Comparison are employed. Following table describes the dimensions used for the measurement.

Table 1.24

Dimensions of Awareness Level

Construct	Dimensions
Awareness level	Green Policies Green Financing Green/Digital Innovation Internet Banking Mobile Banking

4. Enabling Factors

These are the positively influencing factors of Paperless Banking initiatives (Digital Banking) of the bank. In order to measure the Digital Banking Acceptance of the customer, it is necessary to list out the enabling factors of the same. Hence, this section presents the dimensions used to identify these factors. Here, five-points Likert Scale ranging from 5 for 'strongly agree' to 1 for 'strongly disagree' is used as the measurement tool. Likewise, Confirmatory Factor Analysis is employed as the statistical technique to exhibit the results. Table 1.9 presents the dimensions used for the analysis.

Table 1.25

Dimensions of Enabling Factors

Construct	Dimensions
Enabling Factors	Information and Communication Clear and Easiness Convenience and Flexibility Trust and Confidence Self Esteem and Prestige

5. Disabling Factors

These are the negatively influencing factors of digital banking acceptance. As enabling factors, the disabling factors are also important to measure. It is due to the fact that online platform is not free from the security, privacy, threat and risk issues. Consequently, this section exhibits the dimensions used to measure the disabling factors of Digital Banking. Here, the questions are in the form of five-points Likert Scale ranging from 5 for 'strongly agree' to 1 for 'strongly disagree' along with the neutral point of 3. Confirmatory Factor Analysis has employed as the statistical method to exhibits the results. Table 1.10 presented the dimensions of disabling factors.

Table 1.26

Dimensions of Disabling Factors

Construct	Dimensions
Disabling Factors	Security and Privacy Risk and Threat Knowledge and Awareness Cost and Charge Complexity and Problems

6. Perception level

The perception level of digital banking acceptance has measured with the help of Extended Technology Acceptance Model of External Stimulus, Cognitive Responses, Affective Responses, Intention and Behavioral Responses. In order to mark the opinion, agreement scale is used in five-points ranging from 5 for 'strongly agree' to 1 for strongly disagree. Here, Structural Equation Modelling is employed as the statistical method to construct a measurement model for explaining the cause-and-effect relationship between the variables. Following table demonstrates the dimensions of perception level on digital banking acceptance.

Table 1.27

Dimensions of Perception level

Construct	Dimensions
Perception level	Service Awareness Subjective Norms Self-Efficacy System Quality Schemes Availability Perceived Ease of Use Perceived Usefulness Perceived Risk Attitude towards Use Behavioral Intention to Use Actual Use User Satisfaction

6. ESG Performance

Here, secondary data from Annual Reports, Business Responsibility Reports, Sustainability Reports, Corporate Social Responsibility Reports and Integrated Reports are used to identify the ESG Performance of the sample banks. In order to evaluate the performance level of the bank, the researcher has formulated an ESG score according to the disclosure status of Essential and Leadership Indicators of Principles of National Guidelines of Responsible Business Conduct, 2018 (NGRBC). The principles of NGRBC have framed in the Environmental, Social and Governance framework of the bank. Therefore, it is taken as the benchmark for ESG performance evaluation of the sample banks.

1.9.9 Tools used for Data Analysis

In this section, the Statistical and Mathematical tools and techniques used for the analysis of primary data are described. In order to fulfill the objectives of the study, parametric tests are used to analyze the primary data according to the assumption of Normality and Homogeneity. Hence, Levene's test of Homogeneity of Variance, Independent Sample 't' test, One-way ANOVA and Tukey HSD Post-hoc test for Multiple Comparison is used for the analysis of data. In addition, Confirmatory Factor Analysis and Structural Equation Modelling are employed as the statistical techniques to identify the influencing factors and measurement models of the variables respectively. These are briefly explained below.

1. Descriptive Statistics (Mean and Standard Deviation)

Descriptive Statistics are used to explore, summarize and describe the data collected from the primary sources. It is designed to provide information regarding distribution of the selected variables. Here, Measures of Central Tendency (Mean) and Measures of Variability (Standard Deviation) are used to describe the data. Mean is the average value of the distribution; it has identified by sum of all the values divided by the number of values. Standard deviation is the amount of variation/ deviation of set of values or the positive square root of the variance.

In the present study, descriptive statistics are used to describe the level of adoption, SWOC analysis, importance of SMART Green Goals, awareness and

perception of selected variables. The results of measurement scale have interpreted and summarized with the help of Mean and Standard Deviation.

2. Levene's test of Homogeneity of Variance

This test has used to test the equal variances across the samples selected. Levene's test has used to verify the assumption of homogeneity of variance in the statistical test used to check the mean differences. It tests the H0 that the population variances have homoscedasticity and H1 that the population variances have heteroscedasticity. The result has obtained from the 'p' value, if it is less than 0.05, the equal variances can be assumed and go for ANOVA and 't' – tests.

Definition of Levene's test given by (Levene, 1960)**.**

The Levene test is defined as:

H0: $\sigma 21=\sigma 22=\ldots=\sigma 2k$ Ha: $\sigma 2i\neq\sigma 2j$ for at least one pair (i,j).

Test Statistic: Given a variable Y with sample of size N divided into k subgroups, where Ni is the sample size of the ith subgroup, the Levene test statistic is defined as:

$$W = (N - k)/(k - 1)\ (\sum_{i=1}^{k} N_i\ (\bar{Z}_{i.} - \bar{Z}_{..})^2) / \sum_{i=1}^{k}\sum_{j=1}^{N_{ij}} (Z_{ij} - \bar{Z}_{i.})^2$$

3. Independent Sample 't'-test

Independent Sample 't' test is used to check the significant mean difference between two independent groups in order to obtain whether the population means are equal or not. Similarly, to conduct the test statistics, two variables are required, one is a categorical variable (nominal variable) with two choices and another is the continues variable. The test has certain assumptions to be satisfied, these are:

- Assumption of Independence: - It means the sample data are independent of each other as well as not related to the score of variables.
- Assumptions of Normality: - Here, the dependent variable should follow normal distribution within the two populations.

- Assumption of Variance: - In order to prove this assumption, the variances of the test variables are equal (not different).

- Outlier free distribution: - This test has the assumption of outlier free distribution of sample data.

In the present study, the Independent Sample 't' test is used to compare the mean score of awareness level according to the demographic profile (with two groups of categorical variables) of the customers.

4. One-way Analysis of Variance

One-way ANOVA is the parametric statistical test used to test the significant difference between two or more groups as well as the interaction between two independent variables on the dependent variable. Here 'f' ratio enables to identify the ratio of between group variances to within the group variances. The main difference between Independent Sample 't' test and One-way ANOVA is that the former test is limited two treatments conditions and the later has the tremendous advantages of comparison among two or more treatment conditions and several dependent variables. Moreover, it is a statistical procedure to compare the significance difference in the sample means and the population means of corresponding population distributions. The 'f' value is tested either in 1% or 5% level of significance to derive a conclusion about the same. This test statistic has the following assumption:

- Assumption of Homoscedasticity: - In order to the assumption of equal variances, Levene's test is used before conducting One-way ANOVA.

- Assumption of Normal Distribution: - The data should be normally distributed. In order to prove the assumption, skewness and kurtosis is used.

- Assumption of Independence: - There should be data independence among the sample groups selected to conduct One-way ANOVA.

- Outlier free distribution: - This is also related with the distribution of sample data to avoid the outliers for conducting One-way ANOVA. "Samples with a larger

portion of extreme outliers have a higher type-I error probability than the expected level" (Halldestam, 2016).

In the present study, One-way ANOVA test has used to compare the significant mean difference in the adoption level, SWOC and SMART Green Goals of Environmentally Sustainable Banking Practices among sectors and banks selected for the study. Furthermore, it is employed to compare the awareness and acceptance of Digital banking practices among customers according to their demographic profile and banking details.

5. Tukey HSD Post-hoc Test for Multiple Comparison

If there is any significant difference among sample groups (if null hypothesis is rejected), requires the post-hoc analysis. Post-hoc test is used to check the multiple comparison of the categorical variables. Tukey's Honestly Significant Difference (HSD) test is more relevant post-hoc analysis to exhibits the exact pair-wise comparison of sample groups. The word post-hoc means, after the fact and Multiple Comparison means, compare all possible pairs of factors selected. The post-hoc analysis of the present research work explains the pair-wise comparison of banks/ sectors with regard to adoption level of ESBP, SWOC and SMART Green Goals.

6. Confirmatory Factor Analysis (CFA)

CFA is a multivariate statistical method used to check the relationship between measured variables and their constructs. It is a special form of factor analysis to specify the pattern of factor loadings based of the theoretical and empirical data and information. Hence, it is applied to determine the fitness of predetermined factors to an observed set of data. It demonstrates the number of factors required in the sample data in which measured variables influence the latent variables. The hypothesis of CFA is that the significant relationship between the observed variables and their underlying latent constructs. In order to construct a proposed model and measurement model to define the factor structure of observed variables, Structural Equation Modelling is used.

Procedures of CFA

- Defining Individual Constructs: - The first step of CFA involves the formulation and testing of individual construct of the measurement model with the help of pre-test procedures.

- Developing an Overall proposed model: - Then prepare a proposed model to draw a theoretical relationship between the observed variables and their underlying latent constructs.

- Empirical analysis of the measurement model: - Thereafter, with the help of Structural Equation Modelling, the researcher has to design a measurement model in respect of two methods namely, rank condition and order condition.

- Assessment of validity of the measurement model: - This is the final step of CFA. In order to test the validity of the measurement model, a number of model fit indicators are there. For example, CMIN, CMIN/DF, CFI, NFI, GFI, AGFI, RMR, RMSEA, etc. with their recommended limits. The measurement model should be satisfying the model fit indices to test the goodness of fitness.

In the present research work, Confirmatory Factor Analysis is used to identify the Enabling and Disabling Factors of Digital Banking Acceptance. Similarly, the relationship between variables and its constructs is established and the fitness of measurement model has verified with the help of recommended indicators.

7. Structural Equation Modeling (SEM)

Structural Equation Modeling is a multivariate statistical technique used to analyze the causal relationship between dependent and independent variables with the help of structural models. It is the combination of confirmatory factor analysis and multiple regression between the variables of the study. It also demonstrates the hypothesized path of directional linkage among a set of observed variables. Accordingly, SEM is designed to define the linearity of the latent constructs by computing the value of Regression Co-efficient to exhibits the explanatory power of

the independent variables to the dependent variables. Therefore, it has used to solving a set of equations formed between the constructs of the model before analyzing the validity through the below specified values of Model Fit Indices.

Table 1.28

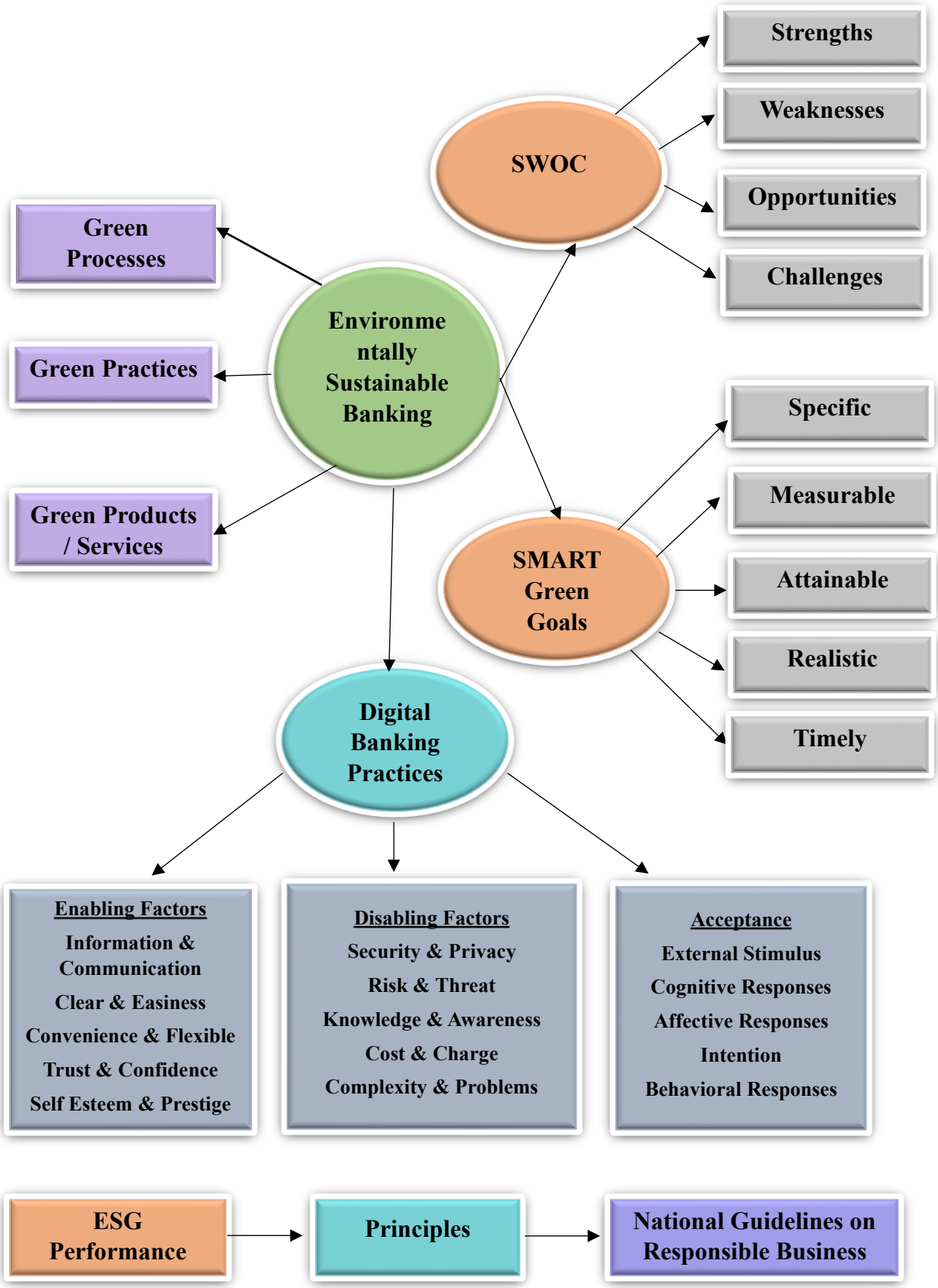
Recommended Values of Model Fit Indices

Sl. No	Indices	Value of Good Fit	References
1	CMIN/DF	<5	(Wheaton, Muthen, & Summers, 1977)
2	Root Mean Square Residuals (RMR)	<0.05	(Tabachnick & Fidell, 2007)
3	Goodness of Fit Index (GFI)	>0.90	(Byrne, 2010)
4	Adjusted Goodness of Fit Index (AGFI)	>0.90	(Hooper, Coughlan, & Mullen, 2008)
5	Comparative Fit Index (CFI)	>0.90	(Wheaton, Muthen, & Summers, 1977)
6	Incremental Fit Index (IFI)	>0.90	(Bollen, 1989)
7	Tucker Lewis Index (TLI)	>0.90	(Bentler & Bonnet, 1980)
8	Normed Fit Index (NFI)	>0.90	(Bentler & Bonnet, 1980)
9	Root Mean Square Error of Approximation (RMSEA)	<0.08	(MacCallum, Browne, & Sugaware, 1996)

1.9.10 Software used for Data Analysis

In order to conduct the analysis of primary data, Microsoft Excel, SPSS (Statistical Package for Social Science) version 20.0 and AMOS (Analysis of Moment Structure) version 20.0 are used as the statistical software. Here, Excel used to draw the graphs & diagrams, SPSS for comparative analysis and AMOS for modeling.

1.9.11 Conceptual Model



1.10 Limitations of the Study

1. The primary data regarding Adoption level of Environmentally Sustainable Banking Practices are collected from the perspective of managers without referring any authenticated or reliable records.

2. The present study is limited to the Individual Customers of the bank only and excluded the Corporate Customers. Therefore, the Digital Banking products and services are listed from the point of view of Individual Customers.

3. The Digital Banking Acceptance is investigated under the purview of Technology Acceptance Model only. However, other theories of adoption are not considered.

4. The study measures Overall ESG score according to the disclosure status of sustainability framework. It has not been considered the specific scores of Environmental, Social and Governance/ Financial Performance.

5. The disclosure scores of the banks are different due to the fact that the Business Responsibility and Sustainability Reporting Framework is voluntary, not compulsory/mandatory (it will be mandatory from 2023 onwards).

6. Finally, the scope of the study is limited to the banks that have Head Offices/ Local Head Offices/ Zonal Offices/ Circle Offices/ Regional Offices/ Main Branches are situated in Kerala only.

1.11 Structure of the Thesis

In this section, the layout of thesis is presented. The research report has designed in eight chapters from Introduction to Recommendations. Brief explanation of the contents of the chapters is given below:

Chapter 1 – Introduction

This chapter covers a brief introduction to the topic, significance of the study, research problem, scope and research questions, objectives of the study, research

hypotheses, operational/ conceptual definition of terms and concepts, methodology and database, variables used for the analysis, statistical tools and techniques for analysis, conceptual model, limitations of the study and the layout of the thesis.

Chapter 2 – Review of Literature

This chapter exhibits the review of past literatures based on the research work. This chapter has presented in three sections. Part I deals with general studies on Environmentally Sustainable Banking Practices, Part II includes the studies on Digital Banking Acceptances and Part III represents the studies on Sustainability Performance. Lastly, the research gap is presented.

Chapter 3 – Environmentally Sustainable Banking Practices – A Theoretical Framework

Chapter 3 is the theoretical overview of Environmental- Sustainable Banking Practices in the Public, Old Generation and New Generation Private Sector Banks. This chapter starts with an overview of sustainability, sustainability framework and environmental-sustainability of the banking sector. Then the detailed explanation of Green Products/ Services, Green Policies/ Procedures and Green Practices followed by the sample banks is presented.

Chapter 4 – ESBP: The Level of Adoption, SWOC Analysis and Importance of SMART Green Goals – From the perspective of Bankers

In this chapter, the banker's perspective on adoption level, SWOC analysis and importance of SMART Green Goals of Environmental- Sustainable Banking Practices have discussed and compared among sectors and banks selected for the study. In the introductory part of this chapter, general details regarding period of adoption, guidelines followed, areas of Green Strategies and reasons for 'going-green' are exhibited. In addition, the relationship between adoption level, SWOC and SMART Green Goals are revealed with the help of Structural Equation Modeling.

Chapter 5 – ESBP: The Level of Awareness, Acceptance and Satisfaction – From the perspective of Customers

In this chapter, the customers' perspective on Awareness, Acceptance and Satisfaction on Environmentally Sustainable Banking Practices have discussed and compared with their demographic profile and banking details. Further, the present chapter also exhibits the Enabling and Disabling Factors of Digital Banking with the help of Confirmatory Factor Analysis. In addition, the frequency of use of Digital Initiatives have identified among sample banks. Moreover, the chapter has also presented an Extended Technology Acceptance Model used to demonstrate the perception level of Digital Banking Acceptance.

Chapter 6 - ESG Performance Evaluation of Selected Public Sector and Old and New Generation Private Sector Banks

This chapter discusses the ESG performance of the bank according to the Disclosure Status of Essential and Leadership Indicators of Principles of National Guidelines on Responsible Business Conduct. Further, in this chapter the researcher presented an ESG score of the sample banks according to the completeness of Business Responsibility and Sustainability Framework.

Chapter 7 – Summary, Findings and Conclusions

This chapter is the nutshell of the thesis including summary of the chapters, findings based on objectives and conclusions of the research work.

Chapter 8 – Recommendations, Implications and Scope for Further Research

This chapter is designed to express the major recommendations, implications (contribution of the study) and scope of further research in this study area.

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Chapter 2

Review of Literature

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2.1 Introduction

The present research work attempts to conduct a Comparative Analysis on different aspects of Environmentally Sustainable Banking Practices in the Public and Private Sector (Old and New Generation) Banks in the State of Kerala. More specifically, the investigation covers the areas of Reason for Going Green, Areas of Green Strategies/ Practices adopted, Adoption Level of Environmentally Sustainable Banking Practices, SWOC Analysis and Importance of SMART Green Goals from the perspective of Banks. Further, the work identifies the Enabling and Disabling factors which influence the use of Digital Banking and analyses the Level of Awareness on Environmentally Sustainable Banking Practices and the Perception & Satisfaction on Digital Banking Acceptance from the perspective of Customers.

The researcher has taken sincere efforts to review the relevant literature available with a view to identifying exactly the research gap. It has done by reviewing published and unpublished research dissertations in India and abroad, research articles published in journals, working papers, study reports, standard text books in the area and various reports (Annual Report, Corporate Social Responsibility Report, Business Responsibility Report and Sustainability Report) published by the Banks. From the available literature survey, it has found that different studies have conducted on various facets of Environmentally Sustainable Banking Practices under different areas such as Process and Practices, Awareness and Adoption level, Enabling and Disabling factors etc. at National and International levels. Hence, it is quite relevant to examine the available literature on this particular area to identify the research gap. The present chapter is an attempt in this direction.

For the convenience of presentation, the relevant studies are classified into three parts as shown below.

Part I – General Studies on Environmentally Sustainable Banking Practices
Part II – Studies on Digital Banking Acceptance
Part III – Studies on Sustainability Performance

A brief review of the available literature coming under the above-mentioned parts is presented in alphabetical order of their Author's name in the following pages.

Part I

2.2 General Studies on Environmentally Sustainable Banking Practices

For the purpose of effective presentation, **Part I** is again divided into four sections. Section A discusses the studies related to Environmentally Sustainable Banking Practices. Section B deals with studies on Motivational Factors and that of C is concerned with studies on Awareness and Adoption Level. Section D presents the Banking Sector wise studies. The relevant studies under these heads are briefly reviewed below.

Section A – Environmentally Sustainable Banking Practices
Section B – Motivational factors of Sustainable Banking
Section C – Awareness and Adoption level
Section D – Banking Sector wise studies

Section A

2.2.1 Environmentally Sustainable Banking Practices

Ahuja (2015) analyzed the concept of Sustainable Banking in the approach of dual strategies, i.e. (1) judicious use of all energy and resources for reducing carbon footprints (2) encouraging and financing environmentally friendly investments. It elucidates how the strategies will be effective by the analysis of concepts, needs and avenues of sustainable banking. Finally, the major findings of the study reflected that in India there is huge opportunity available to move towards sustainable banking for the environmental sustainability. Therefore, the study suggested to handover the process and procedure of sustainable banking to the concerned authorities for proper implementation.

Alexander (2015) discussed the need of including environmental sustainability in Banking policies. It shows how G-20 countries are using banking policies to meet environmental sustainability challenges through different approaches, whereas, these practices are not well developed for the economic growth. Therefore, the study suggested (1) regulatory measure to include sustainable risk management and

governance practices of banks, (2) process of analyzing financial risk with environmental sustainability and (3) ensure transparency of banks in environmental strategy development.

Bardway & Malhothra (2013) focused on the role of innovation and venturing on corporate entrepreneurship through sustainable banking. The study found that sustainable banking is an innovative strategy for corporate entrepreneurship by analyzing the model of organizational performance and growth in financial performance. The study concluded that the effect of sustainable development, environmental aspects, corporate social responsibility, local community engagement have a positive impact on the growth of financial performance.

Bhahl (2012) discussed the benefits and strategies of sustainable banking of Public and Private Sector Banks in India. Garett Ranking Technique is employed by the researcher to examine the most significant strategies of sustainable banking. The assigned strategies and outcomes of such ranking are converted into score values by using the equation, Percent Position = 100 (Rij – 0.5) where, Rij means, rank given for the item by the jth respondent. After ranking, the researcher found out the best strategies of sustainable banking practices as, providing loans at concessional rates to environment friendly products and projects such as fuel-efficient vehicles, green buildings, solar energies, etc.

Bihari & Pandey (2014) made an attempt to give conceptual clarity about sustainable banking and how environmental management is important in the present context. The study narrated that the banks are not the polluters themselves, but they usually have a relationship with companies/investment projects that may or mayn't be the polluters. Therefore, the bank should take care of their financial policy by considering their green protocol while financing for or investing with them. They suggested that Environmental Management should be treated like risk management of banks by encouraging environmentally responsible investments.

The report of **CEEW (2012)** tried to explore the importance of Green Banks in the financial market by denominating the difference of Sustainable banking from other Conventional Banking activities by the way of its mandate, objectives and legal

structure. The study reveals that the greener system can aggregate market information and facilitates best practices to increase transparency, boost investors' confidence and reduce perceived risks in clean energy investment.

Chawdhary & Dey (2016) examined the contribution of the Bangladesh Central Bank on sustainable initiatives by formulating policies, strategies and allocated budget for commercial banks. The objectives of the study were measured with the help of the variables like policy formulation and implementation, sustainable banking unit formulation, budget allocation and utilization, online banking and in-house Environmental Management. The study found that majority of Bangladesh banks (41 out of 47) formulated Sustainable banking policy and 45 banks established a Sustainable Banking Unit. There is no significant association between allocation of budgets for green finance & climate risk funds.

The report of **IDRBT (2013)** provided the guidelines for green processes, products, services & strategies and green infrastructure. The report pointed out, the initiatives to create common protocols to manage environmental concern such as, United Nations' Environment Program Finance Initiatives (UNEP FI) and the Equator Principles (EPs). The study depicted the reasons for going green such as, increasing energy consumption, growing consumer interest for green products, expectation of environmental responsibility, emerging stricter regulatory measure, investor behavior towards go-green activities.

Garg (2015) advocated the extent of green banking in the reduction of external carbon emission and internal carbon footprints. The study suggested that the reduction of external carbon emission can be possible through financing green technology & pollution reduction projects and the avoidance of internal carbon footprints achieved through the reduction of massive use of energy, use of green buildings, online system of banking, solar power for equipment installation and maintenance.

Jarin, Rahat, & Kashim (2014) initialized the greening strategies for eco-banking and constructed a theoretical model through an elaborated literature survey. These strategies, incorporated in three major areas, green indoor, green processes and green outdoor activities focused to achieve competitive advantages in product

differentiation with low cost. The study evaluated three strategies of Michael Porter competitive advantages in the light of green banking such as competitive advantages, green differentiation and green focus. The green indoor activities are categorized into, green building of banks, e-training to staff, combined transportation system, waste management etc. On the other hand, green processes are divided as, green regulation, procedures and eco-information processing system. Finally, green outdoor means, green Accounting, auditing and reporting.

Kavitha & Usha (2016) reviewed Triple Bottom Line approach (Planet, People, Profit) instead of Single approach (Profit) for achieving environmental, social and economic performance of banks simultaneously for attaining sustainable growth. The researcher found the two aspects of green banking, the first is, the way banking is being done and the second is, where the bank puts its money. The first aspect deals with the paperless activities of banks otherwise second denotes the priority sector lending to those industries which have already turned green and are trying to go-green. The study result suggested to introduce SMART Green Goals as the internal targets to reduce carbon footprints and to achieve Triple Bottom Line approach.

Khedekar (2013) examined Technology Banking from the perspective of Sustainable Banking. The study analysed the banking operations like, green channelising, green auditing, Insta banking, green engagement, green communication, energy-saving management through Social and Environmental Management System Plan. It concluded that the expansion of environmental protection activities in the banking business operations, credit extension and investment decision will mitigate the risk of climate change.

Lalon (2015) investigated the process of adopting green policies, environmental issues and inhouse activities of state-owned banks, private commercial banks and foreign bank in Bangladesh. The study identified different phases of green banking such as policy formulation and governance, incorporation of environmental risk in core risk management, introducing green financing, initiating in-house environmental management, online banking, supporting employee training and consumer awareness,

reporting green banking practices, introducing green marketing and creating climate risk fund.

Mahesh, Nirosha, & Pavithra (2016) addressed the environmental issues in Small Scale industries and the role of green lending to avoid such a situation. The study explored that the Small-Scale industries may not be able to install the necessary equipment to meet emission standards prescribed by the competent authorities due to financial constraints. The study found that Small Scale industries have small scale of operations in nature, but they are not free from environmental regulations and compliances. Therefore, the study suggested that the banks need to introduce lending procedures for environmental clearance of Small-Scale Industries.

Nath, Nayak, & Goel (2014) highlighted the Green Rating Standards given by RBI, World Bank's Environmental and Social Norms, Bank's Initiatives towards Green Banking. They opined that green banking is the process of technological changes, operational improvements and diversity in client habits in the banking industry. The study reviewed the Green Coin Rating Standards in the areas of green rewards, carbon emission, green buildings, paperless work, green investment and reuse/ recycle/ refurbish activities of banks. After analyzing the Rating Standards, the researcher made a conclusion that green banking practices followed by the Indian banks are in the startup stage. Therefore, the study recommended that there is a need for an efficient mechanism for business operation regarding Environmental Standards while making credit extension and project investments.

Rajesh & Dileep (2014) examined the role of selected Indian banks in sustainable development through green banking. They conceptualize the initiatives taken by the banks such as, PNB has signed "Green Pledge" of Ministry of New and Renewable Energy, ICICI introduced "Go-Green Mantra" by funding and managing green technology partnership with the World Bank and UNAID, SBI is the first bank with the venture of Green Home Loan by offering a concessional rate of interest and HDFC launched "Carbon Credit Plus" to finance Clean Development Mechanism Projects.

Rajput, Kaura, & Khanna (2013) stated that green banking operations are mainly for credit extension in the form Green Financing by applying the Triple Bottom Line

Principles of Sustainability. The Indian Banks are slow in responding towards the principles compared to Global banks.

Sahitya & Lalwari (2014) discussed the theory based on Green Disclosure Policy of different banks. It revealed that HDFC Bank is one of the most active banks in India in the field of Green Disclosure. The bank has measured its carbon footprints since 2010 and has been describing the same in the Carbon Disclosure Project (CDP). CDP recognizes companies with high quality disclosure as top scoring in the Carbon Disclosure Leadership Index (CDLI). HDFC is one amongst 16 companies in India that has maintained the CDLI in 2012 with a score of 71.

Sahoo & Nayak (2012) conducted a study to explain the influence of green banking in risk management activities. The researcher made an empirical observation to identify the importance of green banking for avoiding credit risk, market risk and environmental risk involved in the banking industry. It indicates that the adoption of sustainable banking strategies will reduce these kinds of risks by the adoption of Environmental Accounting and Risk Disclosure and identifying the opportunities of innovative environmental-friendly financial products.

Sahoo & Nayak (2013) conducted an empirical study to understand the present situation of Sustainable Banking in India. They investigated that the banks should take measures to introduce policies regarding environmental sustainability, protection of human health, biodiversity, pollution prevention and waste management before making financial assistance to large scale industrial projects. They suggested that investment in environmental projects by combining ecological concern as well as social concern will result long life to economic and environmental development.

Shetty & Unnikrishnan (2017) compared the sustainable banking practices in India and USA. The study reviewed the formation of a Coalition of Green Capital accelerated for private finance for renewable source of energy. It offers low-cost financing facility for clean energy projects. On the other hand, in India, sustainable banking practices have two dimensions such as (1) paperless banking and (2) priority lending to the industries complying environmental standards. But due to the absence of specific guidelines, Indian banks are only concentrating on paperless activities. The

study recommended that Indian Banks should adopt Green Coalition Capital for financing sustainable projects.

Singh & Singh (2014) underlined the resourceful contribution of green banking towards sustainability. For banking professionals, green banking involves the level of sustainable ethics in lending and conservation of energy efficiency. The study challenged to analyze the way of mitigating the risks and ensure sustainability by way of product differentiation. The findings revealed that there is utmost need to create awareness, implementation and follow up strategies on Green Banking to enrich the environmental sustainability. The study recommended that there is a need for the adoption of Environmental Standards for lending practices.

Tara, Singh, & Kumar (2015) reviewed four stages of Sustainable Banking and tried to integrate these stages with environmental impact and risk under the perspective of green banking. Sustainable development of green banking in different stages are Defensive Banking, Offensive Banking, Preventive Banking and Sustainable Banking. The study found that these stages tend to shift the focus of banking sector from the Traditional Single Line Approach (Profit approach) to Triple Bottom Line Approach (Planet, People and Profit). The PPP focus of this approach is Planet on Environmental Sustainability, People on Social Responsibility and Profit on Economic Development.

Tehran (2015) argued that the banks are looking at Sustainable banking in three areas, namely, operational, technological and client acceptance. The Exploratory Factor Analysis is used to find the strategies of Sustainable Banking such as, paperless banking, green financial products, socially responsible services, energy consciousness, green building and mass transportation system. The study recommended that Environmental Auditing is required to determine the environmental status of the facility, property and operations of the banks.

Teiswal, et al. (2016) tried to reveal the Mission, Capital Structure, Ownership of Green banks. Here, Mission is to maximize the deployment of clean energy by lowering its cost. The capital acquired from Central and State Govt. grants, Climate Finance, Green Bonds, Utility Rate Payer Bonds, Renewable Portfolio Standards and India's National Clean Environment Fund. The ownership of Green Bank is dealt by Publicly owned, and leverage the public funding to attract private finance.

Section B

2.2.2 Studies on Motivational factors of Sustainable Banking

Azad & Samalou (2016) examined the five components, including Competitive Green Strategies, Green Investment, Green Marketing, Green Banking Process and models for identifying and ranking the influencing factors of Green Banking in the competitive market. In terms of important statistical results, the study found that Competitive Green Strategy is the important factor affecting Green Banking. Green Investment and Green Banking Process are the second and third enabling factors simultaneously. The study recommended that before making competitive advantages, there should be an institutional strategy for products, processes, employees and localization.

Islam (2015) studied about the influencing factors of United Lease Company for adopting Sustainable Practices like, economic factors, policy guidelines, loan demand, stakeholders' pressure and environmental interest. The study identified the key issue of United Lease Company in assessing climate change regarding the asset quality of lending and investments. Therefore, the study suggested the United Lease Company to develop environmental business model to recoup the situations.

Jayadatta & Nithin (2017) identified the major reasons for going green such as, consumer interest in environmentally friendly goods and services, higher expectation of the public on social responsibility and regulatory compliance. The study found out the purposes of green banking and to perform banking activities with an additional plan for taking advantages of ecological aspects and conservation of natural resources. Finally, it identified the opportunities of green banking by the way of Investment in Renewable Energy.

Shampa & Jobaid (2017) identified six important constructs of customer expectation towards Green Banking Practices i.e., construct Financial Products and Services, Internet Banking, commitment to Energy Savings, Economic factors, compliance with Environmental & Ethical Regulation and eco-friendly Technology. Here, the factor influencing expectation is known as "information availability and customer needs"

which generates high variance in values. The study concluded that information availability, spirit of ethics, energy efficiency, product benefits and personalization are the five factors that leverage the customer expectation on green banking practices.

Sharma (2013) mentioned the necessary factors for sustainable development by using the notations of 3 C's and 3 P's. 3 C's are Cost, Control and Customer Services related on banking practices without compromising 3 P's i.e Planet, People and Profit. The study presented the need of green banks in the form of commercial objectives and social responsibility. The study found that the bank can mitigate the risk of its activities by the way of adopting factors like, carbon credit business, carbon footprint calculation, core banking solutions, integrated IT environment, evolution of centre of excellence, thin-computing and e-waste management. The study concluded that the major hindrance in the implementation of sustainable practices is the absence of proper policy and regulations of RBI and Govt. Hence, study recommends to the authority to (1) formulate proper go-green regulations (2) recognize and provide reward for existing green practices (3) set up a green rating agency to rate the green loans/funds (4) make tax concession for green investments (5) provide green insurance for environmental risk, etc.

Mahdi, Alireza, & Mohsen (2017) presented a model of the influentail factors on creating sustainable banking resources such as financial risks, amount and quality of equity, amount of assets, human resources, liquity, deposits, operational productivity etc. Here, Expressional-Geodesic research method is taken in to account and Interpretive Sturctural Modeling (ISM) has employed to identify the influential structure of the factors selected for the study. The results of the analysis exhibits that the management of equity and human resources are the two most influencing factors for the dvelopment of Sustainable Banking. Furthermore, the study also provided some of practical suggestions for the establishment of Equity Management System.

Shamshad, Sarim , Akhtar, & Tbash (2018) established a relationship among the factors of Sustainable Banking through the opinion of experts from banking sector. Interpretive Structural Modeling (ISM) is applied to analyze the complexity of relationship among factors, ranking of factors and dependency among other factors with the help of systemetic model. The findings of study exhibited that the Legal and Environmental Compliance is the key factor for Sustainable Banking and these are

conidered as the drivers of sustainability. Further, the study provides a Sustainable Banking Framework for Indian Banks and helps to develop a correlation between convetional & sustainable dimensions of banking.

Que, Huy, Thach, & Thang (2022) analyzed the sustainability structure of the Exim Bank (EIB) of Vietnam via impact of various factors on net profit with the help of Econometrics Model. The model displays qualitative analysis and inductive method for the structural analysis of factors. It has concluded that total revenue and growth rate have significant positive impact on profitability of the Exim Bank of Vietnam. Thereby, the Sustainability Structure is established and the Proper Risk Management is the major recommended area for the Sustainable Banking Development.

Section C

2.2.3 Studies on Awareness and Adoption level

Girish (2016) reviewed and discussed the concept of RBI's "Green Coin Rating Scheme", the standard rating for green competent banks and banking practices in India. The rating process is mainly done on the basis of green practices like green rewards, carbon emission, green building, green financing, green investment and paperless works. The study found that the majority of the stakeholders of selected banks are supporting greener activities by positive utilization of resources for the well-being of the environment.

Malliga & Revathy (2016) conducted a survey to measure the customer's satisfaction level on green banking products by considering the variables like internal process, technology-based transactions and energy saving practices. They also enlightened the reason behind going green such as, fundamental shift in the usage of technology and attitude of accepting natural products for the preservation of the ecological balance. They found that Private Sector Banks are reorienting their strategies to compete with technology without compromising environmental sustainability.

Masukujjaman, Siwar, Mahmud, & Alam (2016) tried to explore the most significant factors concerned with sustainable banking. The study used the following constructs such as, green banker, adoption complexities, benefits and strategies of green banking. Higher adoption cost of Solar ATMs resembled as the major adoption

complexity of green innovation. On the other hand, the study also found the relevant strategies of green banking such as, reduction of paper consumption, tree plantation programs, power consumption reduction and recycling.

Purohit, Sharma, & Sharma (2017) investigated green banking with special emphasis on its awareness, adoption level, perception, perceived advantages, issues and challenges. The level of awareness and perception shows significant difference in customer's opinion of Public Sector Banks. But these banks are not free from issues and challenges regarding the same practices. Adoption level and Perceived Advantages show a moderate positive correlation (correlation, r=0.045) in the case of Private Sector Banks.

Rajput, Bharti, Bhutani, & Oberoi (2014) discussed the responsiveness of banks in India towards the adoption of sustainable banking practices based on the parameters like awareness, implementation, gaps and drivers etc. The performance of Regional Rural Banks is also mapped in this study. The validity of the questionnaire and factor construction is done by using Kaiser-Meyer-Olkin measure and Bartlett's test of Factor analysis. The important implication of the study is that the awareness level of customer is low and also the Indian banks probably thinks that there is risk of losing business to competitor whereas major drivers are stakeholders' pressure and value addition. RRBs are faster in embracing the initiatives and they have contributed more to the green banking channels. The study recommended a separate dedicated establishment of green cell or unit in every bank to measure the practices of green banking using a measurable index.

Sahoo & Singh (2016) stated that green banking is different from conventional banking in terms of security, profitability and morality. The adoption level of green banking practices by customers were analyzed according to their demographic profile. The result showed that adoption level among the younger age group is more than that of middle and senior age groups. On the other hand, there is no significant difference in the level of adoption of green banking practices according to the education status. The study concluded that awareness campaign should be needed among customers as well as employees to understand about environmental standards and principles.

Sahoo, Singh, & Jain (2016) conducted a study to assess the significant difference among age groups and the adoption level of green banking products by using One-way ANOVA and Post-hoc Multiple Comparison Test. It is depicted that there exists significant difference in the adoption of digital initiatives between young and old age groups of respondents. Therefore, the study suggested to create more awareness among other age group regarding green banking products.

Saleena (2014) examined the comparison between SBI (Public Sector bank) and ICICI (Private Sector bank) with respect to the initiatives in green banking. The study exhibits the reason for going green such as, increase in the consumption rate of energy, consumer interest in eco-friendly products, higher expectations of the public on environmental responsibility, etc. The study also made an attempt to highlight the strategic aspects of green banking through the opportunities and challenges in India. It found that the Public Sector Banks have taken more initiatives than Private Sector Banks in the area of green initiatives of internal operations and environmentally sustainable financing.

Sharifi & Hossein (2015) carried out research work with the purpose of presenting the conceptual framework of green banking initiatives of Public Sector Banks and its SWOC analysis regarding the same. The study presents a theoretical background on green banking practices of SBI, PNB, CANARA, BOB i.e., the backbone of Indian Public Sector Banking Industry. The study revealed the contribution of these banks and found out a SWOC analysis regarding green banking. It is important to notify that the research work contributes to the future of green banking seems to consider three aspects of Triple Bottom Line Approach i.e., Planet, People and Profit by the introduction of different operations like, green excellence, green rating, green investment, green insurance and environmental accounting disclosure.

Sharma, Sarika, & Gopal (2012) examined the drivers that influence "go-green" activities of banks. Increasing energy consumption, energy price, growing consumer interest in environmental-friendly goods and services, higher expectations of the public on the bank's environmental responsibilities and emerging stricter regulatory requirements are identified as the significant drivers of go-green activities of banks.

The three-dimensional structure persistent to understand the green initiatives are, sustainable activities, economic environment and social dimensions.

Sudhalakshmi & Chinnadurai (2014) attempted to address the awareness and satisfaction level on green banking practices. In this study, green banking practices are green checking of accounts, green loans, green mortgages, use of energy, solar ATMs, paperless practices, recycling practices, etc. The study found that 77% of the respondents have approached ICICI and HDFC bank for their paperless banking activities and 73% of the AXIS bank customers are unaware about the green banking practices.

Section D

2.2.4 Banking Sector wise studies

Aasa, Adepoju, & Aldejebi (2016) reviewed green innovation under 3 P's, Product, Process and Path. Process Innovation means electronic dissemination of communication and Product/Path innovation means Technological Upgradation. The study carried out the relationship between 3 Ps on environmental sustainability with the help Relative Effectiveness Index (REI) and Pearson Correlation Co-efficient value. The result shows significant positive correlation between 3 Ps on environmental sustainability by using the following constructs like, area of installation, first use experience, performance of expected services, network availability, bank's response and cost of usage.

Bala Krishna & Srinivas (2014) assessed the satisfaction level of customers regarding various aspects of electronic banking that is a part of green banking and problems of green banking. The results show that level of satisfaction is high in the case of e- banking practices, but it is not free from problems they have faced. The opinion of the customer regarding green banking is to increase its usage level for excellent rating. Therefore, the researchers suggested that there should be an official website of banks for familiarizing the idea of green banking.

Chakrabarti (2014) tried to examine the role of Private Sector Banks in green banking initiatives, where ICICI bank stands in the first position by taking various

initiatives like, promoting environmental awareness campaign, giving weightage to environmental-friendly industrial projects, promoting environmental management system and pollution control measures along with digital banking initiatives.

Deka (2015) revealed about "Equator Principle" guidelines for project finance. It is a risk management framework adopted by financial institutions for determining, assessing, managing environmental and social risk in project finance. They provide an insight regarding the benefits of green banking practices from the point of view of the customers, banks, environment and traders. They identified SBI as the leader of Indian Banks in the adoption level of green banking practices. The bank initiated different schemes like green home loan, carbon credit plus scheme, carbon emission reduction receivables etc.

Dhingra & Mittal (2014) revealed the major thrust area of Corporate Social Responsibilities such as, child welfare, community welfare, education, environment, health care, poverty eradication, rural development, vocational training, women empowerment and employment. But in absence, there is a small diversification of CSR activities in the areas of child welfare, education, environmental protection and human capital. The study demonstrated the environmental-friendly banking practices such as, (1) RBI decided to construct the green buildings, (2) SBI trying to reduce the amount carbon footprints, (3) ICICI shows commitment to Corporate Environmental Stewardship, (4) IDBI set up Carbon Desk, (5) YES bank launched India's first Social Deposit Account, etc. The study concluded that most of the banks use CSR practices as marketing tools and very less banks are doing token of effort for the well-being of the society as well as the environment.

Narang (2015) identified the major strategies for green banking inclusion in policies of Indian Bank's, namely, engaging with key stakeholders, conduct energy audit, review equipment purchase, waste management and disposal policies, setting smart green goals as internal target etc. The study indicated the RBI guidelines regarding green banking in the preview of Green Coin Rating. It is a standard rating for green efficient banks and banking practices among Indian Banks. The banks are evaluated

on the basis of rate of carbon emission, recycle/reuse/refurbish and number of green projects financed by them.

Ragupathi & Sujatha (2015) demonstrated that Public and Private Sector Banks make efforts to contribute their activities towards green banking on the basis of their market share. It concluded that Public Sector banks have introduced "Go-Green" mantra as a part of sustainable banking practices than Private Sector Banks. The work attempted to recommend that there should be a procedure to follow environmental standards for lending/financing.

Singh (2015) addressed different level of green banking initiatives across the global strategies, approach or phases of green marketing by Indian banks. The study has identified different strategies like SMART Green Goals, energy auditing, green building and green financing etc. It concluded that the green banking activities are coming under the phases of green marketing such as ecological, environmental and sustainable green marketing. It found that commercial banks in India except Yes Bank are mainly included in the phase of environmental green marketing.

Yadav & Pathak (2013) categorized the phases of green marketing in terms of green banking namely, 'Ecological' (identification of products, companies having negative impact on environment), 'Environmental' (Focus on innovative products/services) and 'Sustainable' (Preservation of ecological balance) marketing. The study revealed that the Public Sector banks along with ICICI bank (Pvt) are taking various initiatives for the conservation of environmental sustainability by giving more preference to green projects and processes. They concluded that most of the green banking practices taken by Indian Banks are coming under the phase of "Environmental Green Marketing".

Part II

2.3 Studies on Digital Banking Acceptance

This part is divided into two sections. Section 'A' deals with the Studies on Factors influencing adoption level of Digital Banking and that of 'B' is concerned with studies on Perception regarding Digital Banking Acceptance. These studies are briefly reviewed below.

Section A – Factors influencing adoption level of Digital Banking

Section B – Perception regarding Digital Banking Acceptance

Section A

2.3.1 Studies on Factors influencing adoption level of Digital Banking

Ghasemi, Joodzadech, & Shahecki (2015) offered an Exclusive Model for assessing the factors affecting intention to use mobile banking services. Here, Exploratory and Confirmatory Factor Analysis are used for data analysis and SPSS and LISREL Software are used as the analytical software. The study identified that the customer's perception, perceived cost, self-efficacy and perceived usefulness are the most important factors and need of communication, ease of use and reliability are the least important factors of Intention. According to the values of variance explained table, these variables are explained 68% of variances related to customer's intention. Perceived cost has the variance of 0.91, self-efficacy 0.89, perceived usefulness of 0.88, need of communication of 0.56, ease of use of 0.61 and reliability of 0.68 explained the behavior of intention to use adoption.

Hough & Chan (2018) established some inferences regarding dimensions of Technology Acceptance Model including Compatibility (C), Perceived Usefulness (PU), Perceived Time Risk (PR), Attitude (A), Trust (T) and Behavioral Intention (BI). The inferences are (1) compatibility has significant positive impact on perceived usefulness, (2) perceived time risk has significant negative influence on attitude, (3) trust makes significant positive changes in perceived usefulness and (4) attitude identify significant positive affect on behavioral intention.

Misra, Vashisht, & Pandey (2019) attempted to identify the behaviour of consumers while considering perception, intention and usage of ICT based Electronic Banking Services. The study is the combination of Exploratory and Descriptive Research Design by adopting Multistage Simple Random Sampling. For the purpose of studying the factors affecting consumer behavior; Multi Linear Regression is used. The derived factors are perceived usefulness, perceived ease of use, intention of use, perceived trust, social influence, personal innovativeness, attachment, motivation, perceived risk and perceived convenience. The study derived some conclusions on the basis of analysis such as (1) familiarity has significant and positive impact on adoptability of digital service, (2) social influence has no direct impact on intention to use services and (3) spreading financial literacy is the role of Public Sector Bank through FLCCs.

Raza & Harif (2011) applied Confirmatory Factor Analysis with Multiple Regression to check the cause-and-effect relationship between factors affecting internet banking adoption among internal and external customers. The result shows that perceived ease of use, information of internet banking, perceived risk, security and privacy have strongly influenced the adoption level of internal customers with $F = 34.65$, $P = 0.000$ and $R^2 = 45.6\%$. On the other side Government support provides strong impact on adoption level of external customers with $F = 53.674$, $P = 0.000$ and $R^2 = 63.7\%$. It is recommended that the bank should minimize their procedures for capturing convenience at optimum level and provide more safety features for attaining security and privacy.

Saibaba & Murty (2015) identified the key factors determining behavioral adoption of internet banking including, performance expectancy, effort expectancy, social influence, facilitating conditions, attitude, trust, perceived security, personal innovativeness, self-efficacy, awareness, reputation and behavioral intention. The study has employed 'Multi Group Analysis' for the variables. This analysis explained that the positive belief about performance expectancy is highly influenced by the usage of internet banking. The relationship between facilitating conditions (availability of resources and people support) and intention to use is found to be

significant at 5% level of significance. The study also checked the mediating effect of self-efficacy (belief, Knowledge and skill) which has a significant impact on the performance expectancy and behavioral intention.

Singhal & Pathmanabhan (2008) assessed the level of perception towards internet banking under the framework of various factors like, (1) convenience way of operating banking transaction (2) flexible Virtual Banking System (3) Reliability (4) time factor (5) access of information (6) saving transaction cost (7) faster transfer (8) easy to use and (9) user friendliness. Here the customers' perception on Internet Banking Acceptance is significantly differed with regard to the factors affecting it.

Yashoubi & Bahmani (2010) undertaken perceived ease of use, subjective norms and perceived behavioral control as independent variables, perceived usefulness and attitude as intervening variables and intention to use as dependent variables for measuring adoption intention of online banking. The Structural Equation Modeling is employed for the statistical purpose. The result shows that the intention to use online banking is positively influenced by behavioral control ($\beta = 0.33$) followed by perceived usefulness ($\beta = 0.32$), subjective norms ($\beta = 0.23$) and attitude ($\beta = 0.20$). This implies that behavioral control is the important predictor of adoption intention of online banking.

Szopinski (2016) explained a Social Diagnosis research project to identify the factors exerting an influence in the adoption of online banking in Poland. Here, Linear Regression Analysis is applied and reveals how different factors affect the use of online banking. The study identified the most influencing banking products such as, mortagages and credit cards for the adoption of online banking. The study suggested for the proper implementation of technology innovation with customer consent.

Section B

2.3.2 Studies on Perception regarding Digital Banking Acceptance

Aboelmaged & Gebba (2013) demonstrated the adoption level of Mobile Banking practices by examining Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). The result of adopted theories shows a significant positive influence of perceived usefulness and subjective norms on attitude towards use. The analysis of path co-efficient identified that attitude, perceived subjective norms and perceived usefulness are the most powerful predictors of adoption level of mobile banking. Whereas, perceived ease of use has unexpectedly emerged as insignificant predictor of adoption.

Abrol & Sharma (2009) examined different dimensions of the adoption intention such as trust, service quality, perceived ease of use, perceived usefulness and commitment. Here trust, service quality and commitment have positively affected and influenced the level of satisfaction of online banking. Further, service quality, ease of use and usefulness have positive influence on business performance of banks. Confirmatory Factor Analysis is carried out for the scale validation and checking relationship between observed and latent variables.

Ahiya (2009) compared banker's performance and customer satisfaction among Public, Private and Foreign Banks. The methodological part of the study conveys the impact of internet banking on banks growth, profitability, reduction of cost, customer base, reduction of work pressure and queuing system. The level of satisfaction is examined in terms of time, convenience and security. The major findings of the study are (1) the most common reason for increased impact of internet banking is convenience, it's extent is significantly higher in foreign banks (80.56%), (2) the level of satisfaction is high in foreign banks (96%) compared to Private (90%) and Public (83.25%) sector banks and (3) the important factors for the satisfaction level is good & timely service, interest rate, better provision of service (Public sector banks), co-operative staff (Private Sector) and extra working hours (Foreign Banks).

Ajain & Nor (2013) analyzed the emotional dimensions of Individual's Technology Readiness in Arab countries. The emotional dimensions comprise of attitude, subjective norms and perceived behavioral control. These variables are considered as predictor variables of Technology Readiness by using Theory of Planned Behavior (TPB). The study found that attitude ($\beta = 0.796$, CR = 23.777, $P< 0.001$) and subjective norms ($\beta = 0.110$, CR = 4.986, $P< 0.001$) have direct significant positive influence on individual's Technology Readiness. But the changes in perceived behavioral control have no significant change in intention to use technology.

Akhilandeswari & Malliga (2014) analyzed the level of perception regarding efficiency, fulfilment, trust and responsiveness. They found that the Public Sector Banks are always known for trust, that they have developed with the customers and their existence in the society for a long period of time. They identified a quote for online banking i.e.; online banking is increasingly becoming a "meet to have" than a "nice to have" service. The study highlighted the benefits of banks in the form of developments of operational efficiency, reduction of cost, provision of value adding services and fulfillment of essential pre-requisites for flourishing banking industry.

Alam & Dangarwala (2012) conducted a qualitative study with the help of Parasuram SERVQUAL Model to measure service quality of internet banking. The study identified different factors influencing satisfaction level including, reliability, service quality, system expectation, privacy issues, tangibility and efficiency. The research concluded that reliability, expectation, secrecy and tangibility have a positive impact on customer satisfaction level. Whereas, efficiency and service quality have a negative impact on customer satisfaction.

Alsoufi & Ali (2014) evaluated the Extended TAM model for measuring impact of mobile banking adoption. The Extended TAM model includes social influence process and cognitive instrumental process. social influence process involves; subjective norms, voluntarism and image. On the other hand, cognitive instrumental process involves; job relevance, output quality, result demonstrability and perceived ease of use. This model omitted attitude towards using technology due to weak predictor on behavioral intention and actual system use. The study found that the perceived

usefulness is strongly affected by customer service (beta co-efficient of 0.389) and efficient transaction factor (beta co-efficient of 0.325). Perceived ease of use is affected strongly by compatibility with 0.460 co-efficient value.

Alwan & Alzubi (2016) investigated the adoption level of internet banking of Jordanian Commercial Bank customers. Here, Factor Analysis is used to identify the dimensions of the study and Simple Regression is employed to understand the relative influence of these dimensions on internet banking adoption. The study considered privacy and security, perceived ease of use, web service quality, customer trust and customer feedback as independent variables and adoption intention as dependent variable. The researchers concluded that website quality and customer trust are significantly affected on the adoption level of internet banking. Furthermore, feedback is considered as negatively influenced dimension on adoption intention. That means the customers are never fully satisfied with online banking services and they are not able to give their feedback about what they actually received from banks.

Amrutha (2016) aims to impart the preference of using e- banking facilities, such as easy & convenient access, confidentiality, service quality and time saving. The sample respondents are opined that reliability is the very important dimension of service quality of internet banking. The study found that frequently used online banking transactions are bill payment and fund transfer. There is significant difference among sample respondents with regard to service quality dimensions like reliability, anytime and anywhere banking, convenience way etc.

Aydin (2014) analyzed customer satisfaction with different influencing factors of internet banking by using 'Multiple Regression Model'. The study has formed a Multiple Regression Equation i.e.,

$Y= A1+B1 (X1) + B2 (X2) + B3 (X3) + B4 (X4) + B5 (X5) + E$

Here Y= Customer Satisfaction

And X1, X2, X3, X4 and X5 are security factor, ease of use, cost factor, awareness and accessibility respectively.

B1, B2, B3, B4 and B5 are the beta co-efficient of all factors respectively and
E is the standard error.

It is forecasted that the regression co-efficient in addition with t- ratios and probability values. According to regression analysis and results, the perceptions on security, ease of use, cost and accessibility factors are statistically significant and that have a positive influence on customer satisfaction.

Bagley, et al. (2010) pointed the international trends about client expectation, branch network, digital usage and technological development. They meant that digital channel is the collective outcome of exponential development of technology, digital penetration and client behavior. This report indicated four reasons for changed customer behavior such as (a) traditional role of banks has replaced by the rapid emergence of social media (b) greater access of data and information (c) the scheme of comparison of competitive financial products and (d) transformation in design of branch.

Behli (2011) measured the service quality by using SERVQUAL & SERVPERF model. The findings indicated that speed of delivery, ease of use, reliability, pleasure, control and privacy are positively correlated and significant at 1% level of significance. The regression analysis indicated that except the variables pleasure and control, all other variables have significant influence on customer satisfaction of internet banking. The model value of 0.66 explained that the service quality dimensions like speed of delivery, reliability, ease of use, enjoyment and privacy accounted for 66% of variation in customer satisfaction.

Biyani (2015) demonstrated the difference between e-banking and internet banking in the light of usage of mobile banking, smart, debit and credit card. The study addressed the satisfaction level of electronic banking as well as internet banking under two parameters, transactional satisfaction and security satisfaction. These dimensions are tested with frequency of usage and operational facility. The tested result is said to be significant and shows a positive relationship between transactional satisfaction v/s operational facility and security satisfaction v/s frequency of usage. The researcher recommended that (1) to bankers- designing of separate website for easy access and (2) to customer- repeat usage of IB services for the better utilization of resources and minimization of risk factors.

Camileri, Cortis, & Ferech (2014) examined the five service quality dimensions such as, reliability, responsiveness, communication, access and security. Around 84% of the sample customers are satisfied with the service quality being offered. The study has compared the response difference on service quality between satisfied and unsatisfied customers. And the result is said to be significant at 5% level of significance with respect to reliability, responsiveness and access dimensions. Therefore, the study detects that these dimensions are more likely to impact on user's perceived satisfaction. The study also ranks the five dimensions in the order of importance, and the reliability emerged as the most important service quality dimension followed by access, security, continuity and responsiveness. The customers' response is contrast with the response of bank's representatives who cited security as the most important dimension.

CGI Group (2011) identified top five types of digital banking usage such as (1) reward me for my business (2) give anytime & anyplace access to my balance (3) see me as a person (4) provide me wealth building advice and (5) tell me what I am spending money on and how can I save. The findings of the study witnessed digital banking characterized as "deep digital". It means, the digital transformation of the bank's organization and processes. It also deals with channel integration of banks; it means the key to providing a personalized and consistent customer experience that builds brand value.

Eistert, Gorden, Deighton, Ullrich, & Maria (2008) studied the environment of digital banking and its reasons such as, regional banking capabilities, domestic customer demands, external market dynamics and regulations. The study identified the role of leading players of online banking services in the form of smartness, convenience and demand. The transformation of digitalization can be carried out by fast and robust decision making with revised governance mechanism & agile and high-performance IT landscape. They denoted that psychological and cultural barriers may affect this transformation. Therefore, they have suggested for the need of customer awareness and campaign.

El Aziz, Badwary, & Huzzaien (2014) explored and compared different dimensions and barriers that affect consumer's intention to use or adopt different self- service banking technology. The study considered three groups for comparison such as customer convenience, cost reduction and maintaining liquidity. The results indicate that the three groups differ significantly with respect to usage, value, risk and traditional image barriers. And the study also compared adopters and non-adopters of online banking regarding perceived ease of use, usefulness, risk, need for interaction, cost and demography. The difference shows significant variation between this category of customers. Therefore, the authors suggested that the banks should make a demonstration of how the services can be used and allow practical session for actual use of the service.

Farzianpour, Pishdar, Shakib, Reza, & Toloun (2014) tried to explore the different aspects of consumer's perceived risk and to analyze the influence of total perceived risk and consumer's willingness to embrace innovation on online banking service adoption. Result of the study shows that the consumer's total perceived risk and willingness to accept innovation have a direct effect on the online banking services adoption; while willingness to adopt innovation has no significant influence on the consumer's total perceived risk. The study has undertaken performance risk perception, security risk perception and social risk perception for the measurement of risk perception about Internet banking.

Fawzy & Esawai (2017) extracted a Regression Equation of ease of use (0.932) = 0.181 X1 + 0.530 X2 + 0.221 X3 – 0.719 X4. Here the X1, X2, X3 and X4 denotes the impact of information content, usability, website characteristics and customization simultaneously. This illustrates an increase in Information Content, Usability, Website Characteristics by 0.181, 0.530, 0.221 will cause an increase in ease of use by this amount, but a decrease in customization by 0.179 will cause an increase in ease of use by this amount. Therefore, the study suggested to innovative techniques and continuous attention for better customization by co-operative handling of customer queries at any time.

Fozia (2013) found out the way for successful implementation of e- banking strategies with deeper understanding of customer needs. Bank should concentrate on attitude of customers in order to have effective e- banking practices. The study recommended that the customers are mainly concerned on safety issues, so, the banks should educate their customers on the safety use of password and PIN number and it should insist the customers to change it frequently.

Gallager (2015) explained various reasons for using banking digitalization such as speed, anywhere- anytime, paperless, fast, accuracy and friendly. The survey evidenced a strong correlation between the customer's digital experience and bank's avenue. The study identified different usage of digital banking like payment, credit facility, credit card, savings and investments. The study made a conclusion that (1) brand positioning and mobile services secure customers (2) reputation and digital online process of banks aids conversation and (3) digital sign-up process across desktop and mobile reduces sign up barriers.

Gupta (2008) examined and compared consumers' behavior of internet banking and conventional banking. The study also explained the possibility of blending these banking systems. The author found that there is a gap between expected performance and actual performance of conventional banking. The least mean score of performance parameters like accuracy, confidentiality, safety and empathy indicate significant difference between expected and actual performance. Highest mean score is obtained for the parameter 'trust' and the least mean score is obtained for 'speed and customization'. Therefore, the transformation to digital banking is accepted by the customers with the feature of speed, accuracy and timelines.

Gupta & Dhunna (2007) employed Parasuram SERVQUAL Model for identifying customer perception about service quality of internet banking. The study also measured the relationship between perception of automated banking services and their profitability via customer satisfaction. The researcher developed an equation for satisfaction i.e.,

Satisfaction = Perception – Expectation (with the consideration of aspiration).

The Exploratory Research used performance, reliability, service quality features and perceived quality as independent variables and overall service quality as dependent variable. The findings from the gap score and the Importance and Performance Grid displayed poor performance of electronic banking compared with an ideal banking service.

Haque, Tarofder, Rahman, & Raquib (2009) argued that only protected transactions have significant impact on consumer perception about e-banking security followed by service quality and regulatory framework issues. Here, the sufficiency of e-banking operations mechanism directly effects customers perception of using e-banking and the service quality has a positive impact on perception level. Finally, the awareness of regulatory framework is the key element of customer satisfaction about e-banking security. This variable is the significant determinant of customer satisfaction and has a positive impact on customer's perception.

Hobbs, Stephen, Baner, Mahdi, & Weggenmans (2015) focused on driven factors of banking such as regulations, erosion of public trust, collapse of liquidity, reduces risk appetite among customers. The research revealed that there is high positive correlation between digital engagement and share of wallet for a customer. The study suggested that however these are unlikely to displace banks as the primary providers of financial services, especially in markets where banking is widely accessible. It concluded that the focus on gaining trust, building engagement and creating value for the consumer should be the guiding principles for doing this.

Hude & Wagh (2011) stated the hypotheses that (1) existence of language barriers in adoption of net banking, (2) awareness of security has positive impact on net banking adoption, (3) existence of procedural barriers in adoption of net banking. The Yule's Co-efficient result indicated that security, comfort, language and procedure in manual system are the main obstacles in acceptance of net banking.

Jadhav, Lohana, & Dargad (2010) focused the research on consumer attitude and adoption of e-banking. It shows that there are several factors that influence the customer's attitude towards online banking such as person's demography, motivation & behavior towards different banking technologies and individual acceptance of new

technology. The study found that consumer's attitude towards e-banking is influenced by the prior experience of computer & new technology. The discussion about the adoption of e-banking focused to the consideration of password integrity, privacy, data encryption, hacking and the protection of personal information.

Josefsson (2017) argued that perceived trust is the very important dimension for measuring adoption level of internet banking at today's context. They reveal the importance of privacy and security for feeling safe and less worrying about online service provided by the bank. In today's internet world, hacking and cracking push back the users to adopt internet banking technology to some extent. Therefore, the study obtained the importance of trust, privacy and security other than ease of use and usefulness. They also suggested that the consideration of trust will result in greater consumer loyalty for the distributors. They also recommended to use TAM model by considering the missing variables to make it up to date.

Jyengar & Balvalkar (2009) defined simplicity, security and services dimensions for user-centric methods beyond technology-centric methods. customer-centric method has systematic investment from satisfied customers at reduced cost and increased revenues. The study clarified behavioral based segmentation of customers for addressing the user needs and expectations. The authors have calculated user outlook and priorities through an equation by adding fast centric, security assured and services-oriented solutions and deducting the technological challenges.

Kale & Gite (2016) studied about Core Banking Solution of State Bank Group with the objective of measuring the level of process, practice, effectiveness, necessity and problem. The researcher derived some inference based on analysis such as (1) customers are strongly satisfied about optimum level services and facilities, (2) introduction of CBS practices and procedure leads to efficiency and development of banks and (3) transformation of traditional banking system to Core Banking Solutions requires data compilation, data base creation and storage renovation of practices and procedures.

Karma (2014) reviewed the requirement of banking sector like, innovative robust, secure, optimized and ready to meet the expectation of empowered and tech savvy

customers. They identified a way of transformation from traditional banking to digital banking by way of 'Omnichannel Approach'. Omnichannel is a multichannel approach to customer service where all the channels are tightly integrated, keeping customer in the center of integration. The study also deals with the quality of Omnichannel implementation by way of improved brand recognition, revenue recognition, increase in customer base, enhanced customer experience and competitive differentiation. They concluded that the Omnichannel approach is based on customer centric experience by focusing on individual bank for every customer.

Kharb & Verma (2015) extracted five reasons of non-adoption of internet banking, including unawareness, unavailability of information, lengthy procedure, security concern etc. The researcher has used Simple Random Sampling for selecting adopters and non-adopters of internet banking. The level of preference about modes of banking differs between adopters and non-adopters while considering the reasons behind it. Net banking adopters prefer phone banking and online banking with high perception of usefulness. On the contrary, non-adopters are reluctant to use online system because of high level of anxiety. Therefore, the researcher provides some suggestions for banks for the better inclusion of non-adopters. These are; awareness through advertisement, assurance of safety by secured PIN and password, assurance of privacy protection, easiness of internet site usage, demonstration of operation and fast handling of problems.

Kim, Prabhakar, & Park (2009) attempted to examine the role of trust, perceived risk and trusting behavior in adoption of internet banking. These dimensions are used interchangeably with the help of contextual model. In this model two directions are measured (1) direct effect of trust and perceived risk on trusting behavior, (2) mediating effect of perceived risk on the relationship between trust and trusting behavior. Before analyzing these effects, the research also checked bi-directional causality between trust and perceived risk. Principal Component Analysis with Oblique Factor Rotation, Path Analysis with Multiple Regression is employed to check direct effect, mediating effect and bi-directional causality. The study found that (1) there is inverse relationship between trust and perceived risk, (2) there is

significant positive relation between trust and trusting behavior and (3) perceived risk mediates the relationship between trust and trusting behavior on the adoption of internet banking.

KOFAX Group (2017) underlined the shifting forces of digital disruption in the field of banking such as Customer, Competitor, Cost and Complaints (4Cs). The study revealed the benefits of digital transformation for banks to meet shifting customer experience. They suggested some of the techniques for improving customer experience and expectation regarding digital banking such as, advice and support by video banking, leveraging additional information than what they expected and continuous engagements with customers.

KPMG Group (2016) discussed the push factors of bank to modify their digital strategy for expected performance. The factors are digital skill gap, lack of user awareness and adoption, regulatory restrictions and limited infrastructural support. The study found that simple, reliable and secure online payment system not only facilitates ease of payments but also evoke trust and paves way for rapid adoption of e-commerce.

Kumar, Bansal, & Ipshita (2012) conducted Quantitative Research to understand the Importance and Performance of overall service quality dimensions. Here the level of satisfaction is used as a mediating factor between importance and performance analysis. The study is employed IPA framework for identifying Importance and Performance Matrix. The researcher used Exploratory and Confirmatory Factor Analysis for capturing the dimensions of service quality like security, privacy, reliability, efficiency, responsiveness and site aesthetics. The study concluded that the overall performance score of 3.74 with high importance in responsiveness followed by security and privacy.

Kumar & Anandkumar (2015) investigated the banking pattern of Visually Impaired Customers (VICs) and their perception towards current online banking system. For this purpose, the researcher developed an Extended Technology Acceptance Model specifically for Visually Challenged Persons (EMTA – VIC). The cross-sectional study focused on group interview using purposive snowball sampling. The EMTA –

VIC introduced the dimension called, 'perception towards existing system'. The study concluded that perceived behavioral control, usefulness, ease of use, attitude, intention to use have a strong influence on technology acceptance. On the other hand, perception towards existing system and anxiety are the main hindrances for the acceptance of technology according to VICs.

Lecastio, Erdmam, Krishnan, Kullami, & Pande (2012) revealed that the digital modernization gives a second chance for traditional banks. They discussed about alternative strategies taken by banks for going fully digital such as infrastructure strategy, data strategy, user experience strategy, content strategy, social & mobile strategy, analytics strategy and business process strategy.

Maenpaa, Kauto, Kausela, & Paul (2006) compared and contrasted two sets of consumers; those who prefer more experimental view of consumption (More Hedonic Consumer) with those who believe in less experimental view of consumption (Less Hedonic Consumer). More hedonic consumers perceive the dimensions of Internet banking services very differently from less hedonic consumers. In particular, it is found that more hedonic consumers give more value for convenience (e.g., time savings and service quality) than the second group. The research shows that all of these dimensions (except security) are statistically significant in differentiating more hedonic consumers from less hedonic consumers.

Maenpaa (2010) examined user's perception of internet banking services and define user segments on the basis of perception. The process of perception undertaken for this study is, (1) Determinants (Prior knowledge, Orientation, Situation, Cognitive style) (2) Intermediary states (Schemes, Frames, Expectation, Involvements) and (3) Perception effects (Completing perception, Selective perception, Biased perception, Differentiation). The study found that security dimensions, convenience and exploration are positively correlated with familiarity.

Maenpaa (2011) examined the users of internet banking services by clustering them on the basis of differences in perceptions of proposed service dimensions. The researcher considered convenience, security status, auxiliary features, personal finance, investment and exploration as perception factors. Based on the awareness,

pattern of usage, opinion, satisfaction of digital banking; the customers are classified in to four i.e., suspicious, eager, reluctant and practical. The smallest cluster; 'suspicious' is formed by consumers who question the security and convenience dimensions. The 'eagers' are the biggest cluster comprising the youngsters, positively valued proposed dimensions. The 'reluctant' are the second biggest cluster and they are just opposite of 'eagers.' They don't perceive dimensions positively. The last and fourth consumer clusters are the practical. They have given more priority to security and convenience.

Majhi (2012) revealed the factors such as customer relationship management, word of mouth and attitude of customers play an important role in increasing the productivity with respect to internet banking. The hypothesis test also demonstrates that there is a significant difference in the usage of mobile banking and SMS banking with regard to demographic factors. It concluded that the quality of service also influenced the customer to choose Internet Banking as a best alternative.

Marakarkandy & Yajnik (2013) focused on deductive approach of research for addressing the research problem. The study measured the reasons of low usage of internet banking channels and the relationship between adoption level and financial performance of banks. The result found that there is a negative impact of subjective norms, trialability and image on intention to use internet banking. There is a partial correlation between web traffic and financial performance across all categories of banks. Finally, the satisfaction level is identified by using EUCS instrument including five constructs such as, content, accuracy, format, ease of use and timeliness. It concluded that perceived risk has low influences on intention to use Internet Banking, hence; the level of satisfaction regarding perceived trust is very high. Therefore, the researcher suggested that the bank should have to introduce dedicated help desk with trained staff for the timely response on queries.

Meleis, Musto, & Israel (2013) analyzed and verified three model of digital banking for better results such as (1) Sales & Service Model, (2) Relationship Management Model, (3) Client Development Model. The study found that these factors have

boosted organizational effectiveness by using customer analytics to generate targeted leads based on client needs.

Mishra, Suyash, Tanveer, & Sunita (2015) compared two bank groups with respect to efficiency, productivity and services rendered to customers. The study employed different statistical techniques like Annual Growth rate, Compounded Annual Growth rate, Correlation, Regression, Cronbach alpha, Data Development Analysis, Structural Equation Modelling and Mann Whitney U-test for measuring efficiency, productivity and service. The efficiency in Public and Private Sector Banks are compared before and after 2009-2010. It depicted that prior to this period, Public Sector Banks were more efficient than Private Sector Banks. But, after this period Private Sector Banks are dominated with greater efficiency and productivity. The result of performance analysis shows a high positive correlation with efficiency and productivity.

Mukhtar (2015) adopted Technology Acceptance Model and Task Technology Fit Model for the descriptive analysis of research findings. It has evaluated that customers have good level of perception on reliability, convenient, time saving and security features of internet banking. The Technology Fit Model elaborated the Technology Acceptance Model by using knowledge as the independent variables. The authors put a suggestion for the banks to introduce risk free products and practices for the better access of internet banking without security issues.

Murthi, Mahalakshmi, & Karthik (2012) revealed in their study that the perception of the consumers can be changed by conducting awareness program, friendly usage, less charges, proper security for the best response of services. The study identified that the attitude towards usage and adoption levels are positively correlated with high influential characteristics. It found that the intention to use internet banking can be determined only on the basis of positive attitude towards the same.

Narayana, Srihari, & Paramasivan (2013) analyzed the innovated model of service quality by considering customer's need, satisfaction, loyalty and retention. The study used standardized co-efficient for checking the relationship of overall satisfaction with core banking services, convenience, risk and privacy. The standardized co-efficient is highest for the independent variable; banking needs ($\beta = 0.52$, $t = 8.642$

and p = 0.000) and second highest for the variable; core banking services (β = 0.509, t = 8.619 and p = 0.000). It can be concluded that these factors have a strong influence on overall satisfaction.

Pandey, Priyanka, Mayya, Sureshramana, & Joshi (2017) identified various factors influencing customers' decisions to adopt internet banking. These factors are individuals' demography, psychology, opinion and perception regarding Information and Communication Technology (ICT). The study also ascertained the adoption of banking strategies with respect to individual behavior and perception about Information and Communication Technology (ICT). Therefore, the banks are ready to combine perceived factors with banking strategies for high-performance scale.

Patel & Bhatt (2018) developed a model to evaluate service quality gap in the generation of digital banking. To study the service quality dimensions, Parasuram SERVQUAL model is employed. The study is carried out by using Multivariate analysis tools like, MANOVA, Correlation, Multiple Regression and Discriminant Analysis. There are seven constructs of service quality adopted from SERVQUAL model including, Materiality, Accessibility, Complexity, Competence, Assistance, Security and Connectivity. The result of MANOVA described a significant difference between age, education and income regarding all constructs of service quality. Correlation and Multiple Regression analysed the cause-and-effect relationship between overall service quality and its dimensions. It proved that 90% changes in overall service quality are due to 100% changes in all dimensions. Finally, the discriminant analysis shows, there is a significant co-variance amongst all independent variable and the discriminant score influences overall service quality.

Penindogen, Yaprakli, & Yilmaz (2010) demonstrated difference between users and non-users of Internet banking with regard to risk perception. The study considered time risk, financial risk, safety risk and confidentiality risk of using internet banking. It concluded that non users have perceived high risk of safety, financial and psychology on internet banking. But the careful usage of technological upgradation is importantly marked by the users of internet banking.

Pikkarainen, Pikkarainen, Kanjulauto, & Pahula (2004) investigated online banking acceptance in the light of Traditional Technology Acceptance Model (TAM). Here the influence of perceived usefulness, perceived ease of use, perceived

enjoyment, information of online banking, security & privacy and quality of internet connection are taken as the TAM variables. The results explored the relationship on consumer acceptance and it is found that perceived usefulness and amount of information are the most influencing factors on acceptance of technology.

Raju & Kumar (2016) conducted a study on Self Service Banking Technology (SSBT), which consists of ATM, internet banking and mobile banking. Here SSBT is valued in the perspective of operational excellence, delivery of high value-added customer service. The study focused on purposes, factors, adoption, satisfaction and problems of SSBT. The adoption level is measured under Technology Acceptance Model by considering Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Privacy and Security (PS), Reliability and Trust (RT), Efficiency and Economy (EE) and Demonstrability and Trialability (DT) as independent variables. The research has found that economy and demonstrability have a direct influence on the acceptance of technology, However, PEOU has no direct effect on SSBT acceptance. Finally, customer satisfaction level is high in the case of website authenticity, competency of employees, efficiency of banks etc.

Rajyaguru & Pratapsinh (2013) discussed the objectives including perception, customer service, satisfaction level, popularity, response level and barriers of innovative banking. These proposed objectives are measured by using five parameters like service level, trust level, usefulness, satisfaction level and employee behavior. The result of analysis explicated the combined mean score of 3.57and it has proved that all the parameters are effectively valued by the respondents with high satisfaction level. Hence, the quality of service provided by the banks are said to be efficient and effective.

Ravi, et al. (2016) tried to reveal the digital banking expectation among customers under the head of 4Cs, Cost, Convenience, Control and Customer Experience. The study is carried out mainly under four dimensions such as External Exploration (Digital allows world around the customer), Internal Control (Digital helps to manage internal needs), Individual Performance (Digital lets to focus as an Individual) and Shared Connection (Digital enables to have shared experience with others.

Reddy & Reddy (2015) discussed and compared customer perception and satisfaction for customer retention and loyalty. The sample respondents have highly

perceived the acceptance of digital banking and they are highly satisfied. But it is found that some respondents hesitated towards e-banking services because of their lack of knowledge in digitalization. So, the authors suggested that the bank should impart their promotional and communicational strategies regarding digital services according to the customers' perception level.

Rodrigies & Giauvechio (2015) employed Combined Mixed Model approach of questionnaire survey and interview for achieving the research objectives. The analysis is done by adopting service quality model of reliability, responsiveness, ease of use, personalization, security & trust, website authenticity, efficiency, fulfillment and contact. Analysis of raw data shows, security and trust are the most influencing variables for evaluating online service quality in the Irish Context.

Safeena, Kamani, & Hindwali (2012) analyzed the predetermined factors and technology acceptance factors for measuring adoption level of Mobile Banking. It shows, there are several factors predetermining the consumer's attitude towards mobile banking such as demography, motivation, behavior towards different banking technologies etc. These factors are analyzed for checking the acceptance of new technology by using Technology Acceptance Model. The analysis results concluded that usefulness, ease of use and awareness are the main pursuing factors to accept online banking system. These factors have a strong and positive effect on customers' acceptance of mobile banking system.

TEMENOS Group (2014) compared customer experience and execution experience of banks about digital banking. It explained each concept in very detail; Customer Experience means, the sum total of experiences that enable the customer to self-service via multiple devices. Execution Experience means, the sum total of experience that enable the organization to deliver demand-based service with minimal human involvement. They also innovated a fundamental Digital Equation for digital banking solution, i.e.

A+B+C=D

A = Anytime, Anywhere and Any Channel

B = Better Banking beyond Traditional Banking

C = Contextual (Services, Communication, Products& rewards to meet Customer Expectation)

D = Digital Banking

Thomas, Chattarjee, & Banarjee (2019) measured and compared the use of alternative banking channel between users and non-users of mobile banking and features discriminating between them. The survey used questionnaire as data collection instrument with dichotomous and multichomous questions through "traditional drop off/ pick up/ household drop off" method. The study analysed the variables by using non-parametric test namely, Friedman test, Chi square test, Cramer's V, Mann Whitney U test, Spearman Rank Correlation and Discriminant Analysis. The result of Spearman Rank Correlation shows a significant positive relationship between users and non-users with regard to the usage of alternative banking channels. Finally, discriminant analysis identified the discriminating factors of Mobile Banking such as, Mobility, Accessibility, Ease of Use, Language medium, security of transaction, grievance redressal, available source of education and coverage of banking needs. These variables are responsible for discriminating the usage of mobile banking between users and non-users.

Ting, Kwen, & Xien (2013) compared online banking intention under the head of perceived usefulness, perceived ease of use, perceived credibility, perceived enjoyment and social norms. The study has used Pearson Correlation Co-efficient and Multiple Regression for comparative analysis. The authors also examined influence of customer perception on adopting online banking based on different risk factors such as financial, time, security, performance and social risks. The study concluded that security risk has significantly contributed for the variation of customers' behavioral intention to use online banking. The security risk has the highest magnitude of co-efficient. Unstandardized co-efficient (β) value for security risk is interpreted as for every 1 unit increase in security risk will decrease by 0.314 units in customer's behavioral intention to use and holding other variable constant.

Tripathi, Poddar, & Erande (2014) revealed the extraordinary gains of digital revolution such as (1) productivity in the banking industry, (2) dramatic improvements in the quality of customer experience and (3) fundamental shift in the nature and intensity of competition. They identified the major implication of digital banking in the form of eradication of paper from banking system. This paper exists in the form

of cash in circulation, cheque issued to make payments and massive use of application, statements, credit memorandum etc.

Viji, Khanna, Supriya , & Tripathi (2017) explained about 24x7 Banking Model, Omni Channel Distribution, Partner Eco-System Set up, Big Data, Multichannel CRM etc. The study discussed about SMART (S- Scalable & Secure, M- Modern IT Architecture, A- Agile Platform, R- Reimage business model, T- TCO Reduction) digital platform for the cash-light India. They concluded that the transformation of technology mobility, social calculations and analytical ability have led to changing consumer behavior.

Part III

2.4 Studies on Sustainability Performance

Aurino (2014) investigated the relationship between green banking and financial performance of commercial banks in Kenya. The study considered aggregate profit before tax as the measure of financial performance of all sample banks. On the other hand, the internet banking and mobile banking services are taken for measuring the green banking growth. The data were analyzed by using the following model,

$Y = B_0 + B_1 X_1 + B_2 X_2 + E$ where,

Y = Financial performance as measured NPAT

X_1 = Amount of Fund Channeled through Mobile Banking

X_1 = Amount of Fund Channeled through Internet Banking

B_1 & B_2 = Coefficient of X_1 and X_2

B_0 = Constant. The study concluded that there is a significant relationship between Green Banking Practices adopted and Financial Performance of the banks.

Biswas (2011) stated that the adoption of green banking practices is a useful measure for bank's operational efficiencies, lower vulnerability of manual errors, cost reduction etc. The study tried to examine how the environmental management practices will adopt by the financial institutions. Consequently, there are different procedure recommended for banks, namely, (1) project financing while considering environmental impact assessment, (2) project should protect human health and

biodiversity, (3) analyzing the project in terms of scale, nature and magnitude of environmental impact, (4) evaluate the value of properties and potential environmental liabilities, (5) monitor post transaction for the ideal environmental risk management.

Grigoryeva, Morrison, Mason, & Gardliner (2007) established the fact that the International Financial Corporation has the leadership in creating and applying high social standards and business models. The major finding of the study is that individual banks should design their own sustainable business practices. The report provided insight into some of the most prominent business opportunities in four fasting growing area, Sustainable energy, clear production, biodiversity conservation and banking services to low income and unserved groups.

Maibashetty, Mudayal, & Matur (2019) examined the way to go-green through green initiatives, and explain interconnection between Finance, Environment, Social and Governance (FESG). It is considered as a sustainability model for the eco-friendly banking practices.

M D & Kalince (2014) in their study, measured the relationship between green banking and bank's performance. The result of Granger F-test shows that there is a bidirectional causality between green banking and the variables like deposits paid up capital, investment, net profit after tax etc. The study found that the usage of technological innovations in banking sector will reduce the cost of conventional paper-based banking practices and the expense for hiring employees for the branches.

Mishra (2015) emphasized on green banking without considering online banking. It clearly conveyed the meaning of online banking as, "part of green banking, but it is not constructed green banking, which empowered with latest technological revolution making banking activities easier, convenient, quick, transparent, accurate, accountable and accessible". It denotes the side effects of economic development in biodiversity, climatic conditions and environmental damage. The main demerit of the Indian Banking Sector is, they failed to catch vast inherent potentials in promoting environmental sustainability by comparison with foreign banks. Therefore, the study needs to encourage, adopt and audit the project lending principles of banks. He recommended that the project should be, 'prevent pollution, use renewable sources, protect human health and bio-diversity'.

Oyegunle & Weber (2015) investigated the existing code of conduct and practices on the sustainability practices of the financial sector. The research hypothesis is tested to know whether the regulatory and code of conduct has any significant effect on the environmentally sustainable business practices of banks. The study gave an insight about opportunities & barriers and Benefits & drawbacks regarding adoption strategies of sustainable performance.

Rajput, Arora, & Khanna (2013) discussed and compared the environmental performance and financial performance of banks in the context of green banking. The researchers have identified net income, expenses, profitability as dependent financial variables and exhibiting green banking variable as independent variables. The data are analysed by using Panel Regression Method while considering the dependent and independent variables. The study found that there is no significant relationship between environmental performance and financial performance of banking sector in India. They identified that there is a need of huge capital for the initiatives of green banking and it reduces bank's profitability without considering other extraneous macro-economic variables.

Ramila & Guruswamy (2015) conducted a study to measure the relationship between green banking initiatives and profitability of Public Sector Banks. Secondary data i.e., annual report of banks over a period of five years were used for analyzing the relationship. The dependent variable is the profitability and independent variables are used for the measurement are, NEFT, RTGS, ECS, ATM, POS and Mobile Banking. The study disclosed that the implementation of ECS and ATM strongly effect on the profitability of banks and it shows high positive correlation.

Septina (2017) explored the relationship between green banking performance and Bank Index Securities price of SRIKEHATI. The dependent variable used for the study is the security's price from 2010-2015 and the independent variables are, Non-Performing Loan (NPL), Loan Prime Rate (LPR), Return on Earnings (ROE), Net Interest Margin (NIM), Capital Adequacy Ratio (CAR) between 2010-2015. Risk, Profit, Good CG, Earnings, Capital (RPGEC) method is chosen by the researcher to identify the independent construct and Multiple Regression with time series data is applied for analyzing the method. The result shows that the NPL shows significant effect on SRIKEHATI Banking Index Securities Price.

Shaumya & Vajah (2017) categorized the green banking practices in four heads, namely, employee related practices, daily operation related practices, customer related practices and banking policy related practices. environmental training and education, green performance evaluation and green reward system are the variables taken under the head 'employee related practices.' Under the 'daily operation related practices', four variables are taken for the study such as, reduce paper usage, energy efficient equipment, e-waste management and eco-friendly banking practices. On the other hand, green loan, green projects, green enterprises and green credit evaluation are the constructs taken for measuring customer related practices. Lastly, bank's policy related practices are measured by using its green branches, green strategic planning, green procurement and green partnership. Karl Pearson Correlation Co-efficient and Multiple Regression is employed to analyze the significant relationship between green banking practices and financial performance. The study concluded that employee related practices, daily operation relation practices and bank's policy related practices were found to have significant positive correlation on bank's financial performance, but customer centric practices are not significantly correlated with it.

In a report of **Weber (2016)** studied about the Chinese Green Credit Policy by measuring the relationship between financial performance and sustainability performance. The study starts with the goal of Chinese Green Credit Policy, i.e., Mitigation of Financial Risk and Increment of Financial Performance of lenders. Multiple Regression analysis is conducted to verify the extend of relationship between financial performance (constructs of FP are: - total assets, net profits, ROA, ROE and non-profit loans) and sustainability performance (constructs of SP are: - green loans, mortgages, funds, bonds, projects, sustainable investment and policies). The study derived a conclusion that the sustainability performance score has high positive correlation on financial performance, that means, a 1% increase in sustainability performance leads to 0.85% increase in financial performance.

Ozcelik & Avcioztusk (2014) examined the sustainability performance in Turkey based banks. Here the important area of the study, is the usage of Grey Relational Analysis for the sustainability performance evaluation. In this analysis, specified ratios relating to bank's economic, social and environment performance are measured and the rank of each banks are calculated based on their performance. In this study,

three banks are considered, such as; TSKB, Akbank and Garanti Bank. The researchers have used different indicators to measure sustainability performance including capital adequacy ratio, return on equity and return on asset as economic indicators, electricity consumption, water consumption, paper consumption and CO2 emission as environmental indicators and employee turnover rate and education/training hour per employees as social indicators. The research work is concluded that TSKB bank ranks first in sustainability performance followed by Garanti and Akbank Bank respectively. But Akbank is first in terms of social performance with lower turn over rate and higher education/training hour rate.

Weber, Scholz, & Michalik (2010) proposed a model for comparing sustainability and risk management. The study has employed Multiple Regression Analysis for predicting credit risk by taking sustainability criteria as independent variable and Discriminant Analysis for combining traditional criteria and sustainability criteria for validating non defaults from defaults. With $R^2 = 0.790$, the independent variables of economic, social and environmental risk are able to predict a significant amount of (79%) variance of credit risk. The amount of loan (non default item) with higher rating in sustainability and low rating in traditional criteria demands deeper analysis.

Raut, Naoufel, & Kharat (2017) industrialized Multi-Criteria Analysis for evaluating sustainability practices of banks. Here the evaluation process is based on Multi Stage Proposed Fuzzy Multiple Criteria decision making models that integrates balanced score card, Fuzzy Analytic Hierarchy Process and Fizzy TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution). The model evaluated sustainability under four perspectives; financial stability, customer relationship management, internal service process and environmental-friendly management system. The analysis part has compared the critical aspects of evaluation criteria and sustainability performance. The results found that the sustainability performance and the banks have misunderstanding about the Corporate Social Responsibilty with respect to tripple bottom line approach of sustainability.

2.5 Identification of Research Gap

Thus, from the foregoing review of literature on various aspects of Environmental Sustainability at the National and Global levels, it is clear that none of the studies reports and research works has made any attempt to conduct a detailed comparative investigation on the Environmentally Sustainable Banking Practices in the Public and Private Sector (Old and New Generation) Banks in the state of Kerala. Most of the studies concentrate on the Green Banking Initiatives, factors influencing Go-green, awareness & adoption level etc. No attempts have been made in the areas of adoption level of Environmentally Sustainable Banking Practices, SWOC analysis, importance of SMART Green Goals from the perspective of bankers in Public and Private Sector Banks. Further, there had been no attempt to identify the awareness, acceptance and satisfaction level of Paperless Banking activities of Sustainable Banking from the perspective of customers. Additionally, none of the studies are conducted by combining the Environmental, Social and Governance Aspects of the Public and Private Sector (Old and New Generation) Banks and its disclosure status under the purview of Responsible Business Conduct. Therefore, in this context, the present research work is a novel attempt undertaken by the researcher to fill the lacuna by evaluating Sustainability Framework and Responsible Business Conduct as per National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGSEERB).

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Chapter 3

Environmentally Sustainable Banking Practices – A Theoretical Framework

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3.1 Introduction

The previous chapter exhibits the elaborative discussion on earlier literatures based on Environmental-Sustainable Banking Practices, its adoption level, SWOC Analysis and Importance of SMART Green Goals, Perception on Digital Banking Acceptance. From the literature it is clear that most of the research works conducted under the perspective of paperless banking practices. To demonstrate the clear picture of Environmentally Sustainable Banking Practices adopted and followed by Public and Private Sector Banks in Kerala, there is a need to elaborate the theoretical background of the sample banks. The present chapter is designed in this direction/context. Accordingly, the Sustainability Framework has formulated in accordance with the disclosure status of Annual Report, Business Responsibility Report, Sustainability Report, Corporate Social Responsibility Report and Integrated Report of the sample banks. Moreover, the UN Sustainability Development Goals, Equator Principles, ESG Framework, National Voluntary Guidelines on Responsible Business Conducts are benchmarks followed by the bank to disclosure the Sustainable Banking Practices.

3.2 Sustainability

Sustainability is an integrated concept of Economic Growth, Environmental Care and Social well-being to fulfill the needs of current generations without compromising the wants of future generations. Accordingly, Environmental, Social and Economic consideration is considered as the three dimensions/ pillars of Sustainability. The main objective of sustainability is to ensure environmentally sustainable and socially responsible activities along with economic developmental criteria for the fulfillment of Triple Bottom Line Approach.

In the context of the banking sector, sustainable development is a globally accepted approach for internal as well as external operations to sustain economic growth without harming ecological balance and community welfare. To ensure the integration of stakeholder's engagement, the banking sector identified six capitals to

align with Global Reporting Initiatives for Integrated Reporting Framework. It includes Financial, Manufacture, Intellectual, Human, Social & Relationship and Natural Capital of the banks. To address the sustainable development initiatives, the banking sector has followed United Nations Sustainable Development Goals (UN-SDGs) and National Voluntary Guidelines of Responsible Business Conduct (NVGRBC), Ministry of Corporate Affairs, Government of India. These standards are the benchmarks for reporting the status and performance of Environmental, Social and Governance aspects of the banks.

3.3 Sustainability Framework

It is the structure formulated to determine the sustainable strategies of ESG (Environment, Social and Governance) profile of the banks. It defines the vision, values, goals and objectives of sustainable development practices. The reporting framework of the banks discloses ESG commitments, Engagements of employees & customers, Environmental footprint reduction, preparation of Materiality Metrics for ESG Progress, Social Responsibility Integration, Governance aspects etc. Moreover, the banking sector has considered ESG commitments as the pre-requisite for long-term value creation. The framework on Corporate Governance of the banks is based on the Governance Philosophy, Board Composition, Board Committees & Policies, Stakeholder Engagement, Risk Governance & Management, Remuneration & Nomination Committee, Code of Conduct, Management of Cyber Security & Privacy, Customer Service & Redressal, Taxation, Employee Welfare Measures, etc. Likewise, the Environmentally Sustainable Framework deals with Sustainable/ Responsible Lending, Energy Management, Renewable Energy Investment, Emission and Climate Change Mitigation, Waste Management, Resource- Efficiency activities, Carbon Neutrality Initiatives/ Investment in Carbon Disclosure projects, Green Buildings Construction/ Renovation, Paperless Banking Initiatives etc. Similarly, the Social-responsible framework discloses the details of Rural Development Initiatives, Skills Training & Livelihood Enhancement, Promotion of Education, Healthcare & Hygiene, Financial Literacy & Inclusion, Women Empowerment, Gender Equality, Environmental Protection, Micro Lending, etc.

3.4 Environmental-Sustainability

Environmental Sustainability is one of the important pillars of ESG Framework. It is vital because human survival depends on it and it denotes the maintenance of natural capital. The sustainable development used to integrate the social and economic development with Environmental Sustainability, without which the Triple Bottom Line theory will be meaningless. "It is defined as responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality. The practice of environmental sustainability helps to ensure that the needs of today's population are met without jeopardizing the ability of future generations to meet their needs" (Environmental Sustainability: Definition and Application, 2013).

As far as the banking sector is concerned, they committed to the underlying principles of sustainable development – economic growth, environmental stability and equitable social development. Accordingly, they have considered these dimensions as the central aim of prosperity. Moreover, they remain conscious about the role in broadening the concept of Environmental Sustainability, Climate Action, Emission Reduction, etc. through In-house and Out-house operations. To address the objectives of environmental sustainability and impact of Bank's activities, products and services on environment, separate Policies and Procedures are formulated and followed. It includes, Green Financing Policy, E-waste Management Policy, Social and Environmental Risk Management System (SEMS), Sustainability Policy, Environmental, Social and Governance (ESG) Policy, Sustainable Lending Policy and Procedures (SLPP) and Corporate Social Responsibility Policy. According to the framework of these policies & procedure, the banking sector has adopted corporate objectives for environment-conservation activities in accordance with the standards of 'International Organization for Standardization and Sustainability Development Goals (SDGs)' for environmental management systems. Further, they have formulated environmental-friendly strategies for Energy-efficiency initiatives, sustainable lending, material-efficiency measures, renewable energy investments, Green-house gas emission reduction, carbon footprint calculation, paperless banking digital innovation, etc.

3.5 Environmentally Sustainable Banking Practices in the Public Sector Banks

Here, State Bank of India (SBI), Punjab National Bank (PNB) and Canara Bank are taken as the Public Sector Banks in Kerala.

3.5.1 Environmentally Sustainable Banking Practices in the State Bank of India

SBI is the largest multinational, public sector bank in India. It is a Govt. owned corporation with its headquarters in Mumbai, Maharashtra. SBI has a proud legacy of 200 years from 1806 by the introduction of Bank of Calcutta. SBI is the largest commercial bank in India in terms of assets, deposits, branches, advances, employees, customer retention and technology upgradation. The bank has provided wide range of services for individuals, corporates, enterprises, public bodies, projects, and corporate customers with the advancement of Information and Communication Technology.

Vision – "Be the Bank of Choice for a Transforming India" (SBI, 2017-2018)

Mission – "Committed to providing Simple, Responsive and Innovative Financial Solutions" (SBI, 2018-2019)

Values – **S**ervice, **T**ransparency, **E**thics, **P**oliteness, **S**ustainability (SBI, 2019-2020)

The bank has prominent in Personal, SME Banking, International, Rural, Government and Corporate Banking & Investments. The values of this bank are the STEPS (**S**ervice, **T**ransparency, **E**thics, **P**oliteness, **S**ustainability) for growth to sustainable developemnt of banks by way of Economic Progress, Social Development and Environmental Protection. The bank has a vision to achieve Carbon Neutrality in 2030 by combinig digital environment with overall sustainable policies. SBI delegrated their sustainable strategies in the field of Social responsibility and environmental sustainability by the way of Health Care, Education, Sanitization, Culture, Sports and Environmental Protection. The strategy of environmental protection witnessed in the area of Green Financing and Clean Energy. For major contribution of digital innovation, their investments in Artificial Intelligence, Internet

of Things (IoT), Robotics, Branch Server Consolidation have made energy efficiency and reduction of carbon footprints from in-house activities. The bank has taken different steps for sustainable growth for protecting eco-system. Their value chain activities caring both the needs of nature, people and economy. Bank takes organizational disclosure on Environmental, Social and Governance (ESG), which is madatory in regulatory reforms. Therefore, the consideration of sustainable practices is mandatory for sustainable development. The interest of stakeholders shows tramendous increase on Sustainability Reporting. Therefore, the bank is ready to release their report on every year on 5th June, World Environment Day. The sustainability report is prepared under the framework of Integrated Reporting Framework (IR) and National Voluntary Guidelines (NVG).

Green Products/ Services

1. Paperless Banking/ Green Channel Banking

a. Internet Banking

SBI's online website is the most popular online global financial site in India. The site is highly secured and cost-effective channel of network for the customers. The Internet Banking services is a customer-centric approach and keep the eye of safety and assurance of online services. The web portal of SBI, provides for individual customers to operate their accounts from anywhere and anytime by avoiding the restriction of geographical boundary and time. It is a platform for normal banking activities and value-added services with the help of desktop and internet connection.

Table 3.1

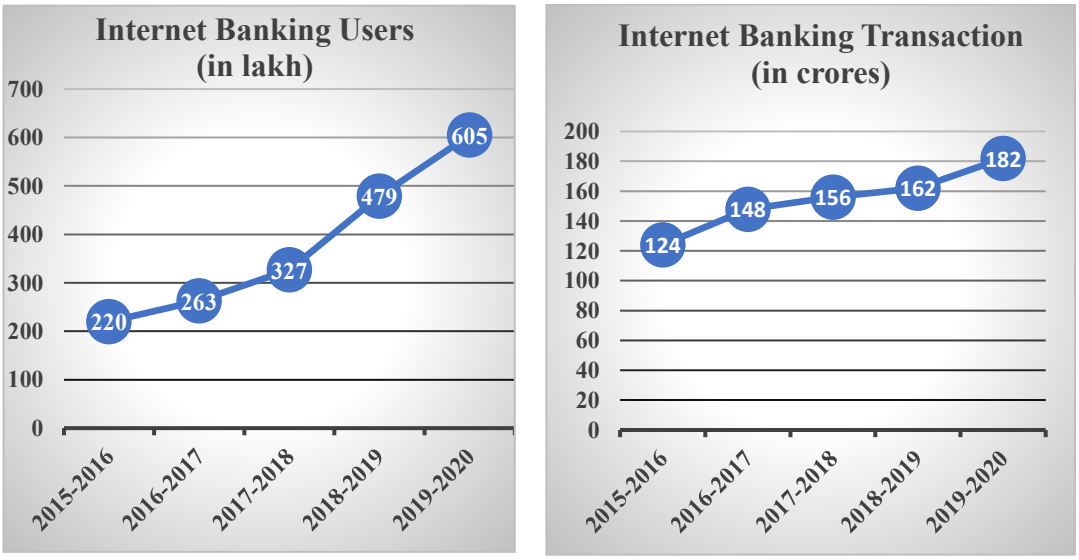
Internet Banking Services of SBI

Normal Banking Activities	Value Added features
Transfer funds to own and third-party accounts	Online Ticket Booking for travel by Road, Rail and Air
Group Transfers to accounts in State Bank Group	SBILIFE, LIC and other insurance premium payments
Inter Bank Transfers to accounts with other Banks	Online Shopping and instant recharge features.
Online deposit products (Fixed, Recurring, Flexi, Tax Saving etc.)	SBI and other Mutual Fund Investments
IMPS Funds Transfer	Utility bill payments
Western Union Service	Tax Payment
Credit beneficiary accounts using RTGS/NEFT feature	SBI and other Credit Card dues payments

Source: SBI Annual Report (SBI, 2017-2018)

Figure 3.1

Performance Analysis of Internet Banking of SBI



Source: Annual Report

The digital banking channel of network is secured large number of users with high volume of transaction in last 5 years. During the FY 2019-2020, there is tremendous growth in users of internet banking and volume of transactions. An

addition of 26% of new internet banking users are registered over the year 2019-2020 and 10% of increase in volume of transaction from the year 2018-2019 to 2019-2020.

b. Mobile Banking

Introduction of Smart phones change the face of Indian Banking sector. It also changed the shape and behavior of SBI by providing convenient functionalities in the hands of customers. The bank is currently the market leader of mobile banking with large number of users and high volume of transactions. The innovative mobile application closes the customers and employees in one device with the aim of branch less banking. The superior quality of their mobile application is customer trust, they can verify their transaction by using UPI Pin and password without any safety compromise. The following functionalities are available: - Funds transfer (within and outside the bank), Immediate Payment Services (IMPS), Enquiry services (Balance enquiry/ Mini statement), Cheque book request, Demat Enquiry Service, Bill Payment (Utility bills, credit cards, Insurance premium), etc.

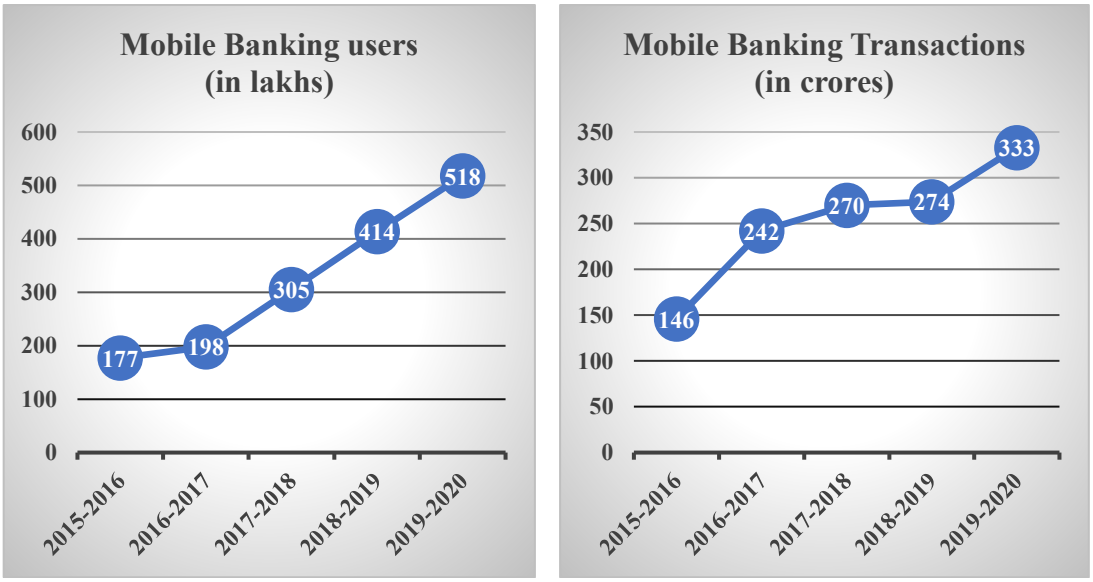
Mobile Banking Applications

1. **YONO SBI: -** It is an integrated digital application called 'You Only Need One', offer banking products such as transfer of funds, bill payment, online purchase, travel and hospitality services, management of account etc. It provides all the products and services of bank account, Card, Mutual Fund, Life Insurance, General Insurance and Securities.
2. **State Bank Anywhere: -** This is the widely used mobile banking application with a variety of features such as, inter/intra bank fund transfer (NEFT/RTGS/IMPS), opening of account, management of accounts, Aadhar linking process, e-statement subscription etc.
3. **SBI Pay (BHIM): -** "It is a Unified Payments Interface based-app provides the convenience of transferring funds across different Bank accounts through multiple modes (Virtual Payment Address, Bank Account Number, IFSC and scanning QR Code), making it a truly inter-operable offering". (SBI, 2017-2018)

4. **SBI Buddy: -** This is a card-based service provided by Fintech Companies for banking customers to send and receive money. This is a wallet which is called 'virtual debit card' can use to payment of bills and withdrawal of money.

Figure 3.2

Performance Analysis of Mobile Banking of SBI



Source: Annual Report

State Bank of India is retained good position in Mobile Banking growth by expedited 3326 lakhs of transactions during the financial year 2019-2020. It shows 14% of gradual growth from the previous year in volume of transactions. There is large hike in registered users of Mobile Banking in last 5 years.

c. TAB Banking

Tab banking is a new digital innovative idea to provide the banking processes in an easy and convenient manner. The services are;

- **Savings Bank Account Opening: -** SBI has used TAB banking for opening new bank account by using TAB in online mode. The bank employees visit the customers for opening bank account with TAB and helping them to complete all the formalities like filling the application, taking photographs, uploading KYC norms etc. Thereafter, they uploaded the details in CBS platform and the account number is given to the customers.

- **Home and Auto loan in-principal approach: -** As the case of opening of bank account, bank employee visits the customer those who need home loan/ Auto loan. The employees collected and entered their data in TAB and send this information to the bank. Then, bank verified the income level, details of loan, details of security, repaying capacity, KYC norms of the customers and replied them with the feature of project, its cost, principal amount, EMI amount and loan amount.
- **The Digital Inspection Application (DIA): -** "Digital inspection application (DIA) Tab Apps for recording the pre-sanction and post-sanction inspections of the customers are available for 7 products. DIA is integrated with IOS, CBS and HRMS where the customer data is pre-populated and field staff needs to capture the photographs of borrowers, collateral, factory, stock etc. with the date, time and geo-coordinates" (SBI, 2016-2017)**.**

2. Cash less Banking/ Plastic Money

State Bank of India identified the role of cash less society in the earlier stage. Therefore, they take steps to be at the forefront of establishing plastic money for preserving eco-system.

a. Green Remit Card (GRC): - SBI has introduced Green Remit cards for deposit of cash using Green Channel Counter (GRC)/ Cash Deposit Machine (CDM)/ Automated Deposit and Withdrawal Machine (ADWM) to the beneficiary's State Bank account. It is magnetic-strip based card without a PIN. During the FY 2019-2020, on an average of 1 lakh transactions are directed through GRCs each day.

b. Green Credit Cards: - "The benefit of using a green credit card is that will donate funds to an environment friendly non-profit organization for every rupee you spend on your credit card to a worthwhile cause of environment protection. It also allows the balance transfer the cash advances by card owned to such institutions" (SBI, 2015-2016)

c. Debit Cards: - State Bank of India is now turned as market leader of Debit cards issuers in the country with 23 crores users. After Digital Economy announcement by Govt. of India, SBI giving importance for introducing Comprehensive Electronic Infrastructure for accepting Debit card. The bank attempted some new developments in the area of debit card such as, Proactive Risk Management Tool

(PRM), de-hot listing (Unblocking of card), Green Personal Identification Number (Green PIN) etc.

d. **Credit Cards:** - "The bank offers extensive credit card portfolio to individual cardholders and corporate clients which includes lifestyle, rewards, travel & fuel and banking partnerships cards along with corporate cards covering all major cardholders' segments in terms of income profile and lifestyle. It has diversified customer acquisition network that enables to engage prospective customers across multiple channels". (SBI, 2019-2020).

Green/ Digital Innovation

1. Customer Experience Excellence Project (CEEP)

Customer Experience Excellence Project (CEEP) is introduced for and emphatic mark in the area of digital innovation through Anytime channels. The project is installed with different services like ATM, CDM/Recyclers, SWAYAM for passbook printing, Electronic Dropbox, Internet Enabled PCs, Cash/cheque Collector etc. The important aim of this venture is Integrated Queue Management System. As we know, the customers entering into the branch with hurry burry and not having time for waiting in queue. Therefore, the banks give priority for their customers by taking time as an important factor. These services are provided self-service machines and customer can transact with the bank without any delay. Customer Excellence Service Experience is measured on the basis of Real Time Monitoring and Branch Choreography. These services are,

a. **ATM, CDM/Recyclers: -** ATM, the Automated Teller Machine, which is the largest network in the world. SBI has improved the features and functionalities of ATM with new and latest technology. There is a tremendous growth in the installation of CDM/Recyclers during the year 2018 to provide different service in 24x7 basis. This is an Anywhere channel of network at Any time. With respect to demography of the country, the bank has 50:50 coverage of urban, semi urban and rural areas. Around 80% of banking transactions possible through ATM, CDM/Recyclers. On an average of 1 crore of transactions per day is carried out through this widely accepted network. Some of the advanced technologies through ATMs are,

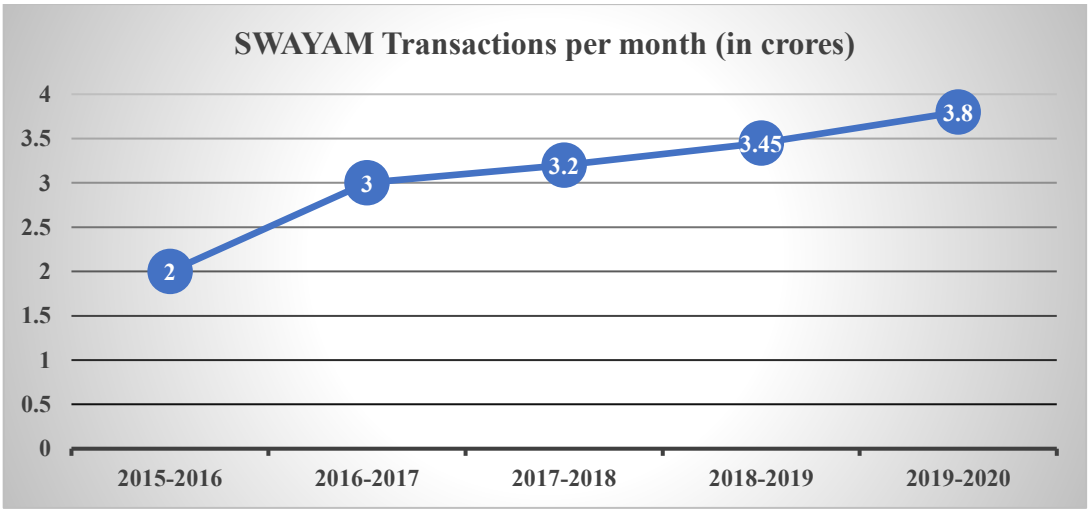
- Debit Card Management System (DCMS) to deal with various customer request related to linking/delinking, blocking/unblocking etc.
- Generation of Green PIN through ATM, INB, IVRS, SMS etc.
- Disabling ATM receipts for reducing paper consumption
- Option of quick cash withdrawal facility
- Instant Money Transfer facility

b. SWAYAM: Barcode based Passbook Printing Kiosks

This is a new technology introduced for customers for printing their passbook by using barcode in mother tongue. Recently, the bank has set up a new feature for this passbook printing kiosks called as "Though the Wall", which extended the working hours beyond the time of banks.

Figure 3.3

Performance Analysis of SWAYAM Service of SBI



Source: Annual Reports

SWAYAM, the passbook printing kiosk shows tremendous growth from 2015 to 2020. On an average of 3.8 crore transactions per month are carried out through this technology. 60% of increment in monthly transaction from 2015-2016 to 2016-2017, and the growth was declined to 10% during the next financial year 2017-2018. But it has recouped in the year 2019-2020 at 30% of growth in monthly transactions.

2. SbiINTOUCH

SbiINTOUCH is a SMART strategy for Digital Banking experience to customers through futuristic branch with the sub brand "SbiINTOUCH". These branches are rigged with state-of-art device/kiosks, enabling the customers to transact on self-service mode. The customers also available advisory services from employees through hi-definition audio video conference. This digital network offered different services like, account opening using AOK, Debit card printing kiosks, cash deposits, personal loan segments etc.

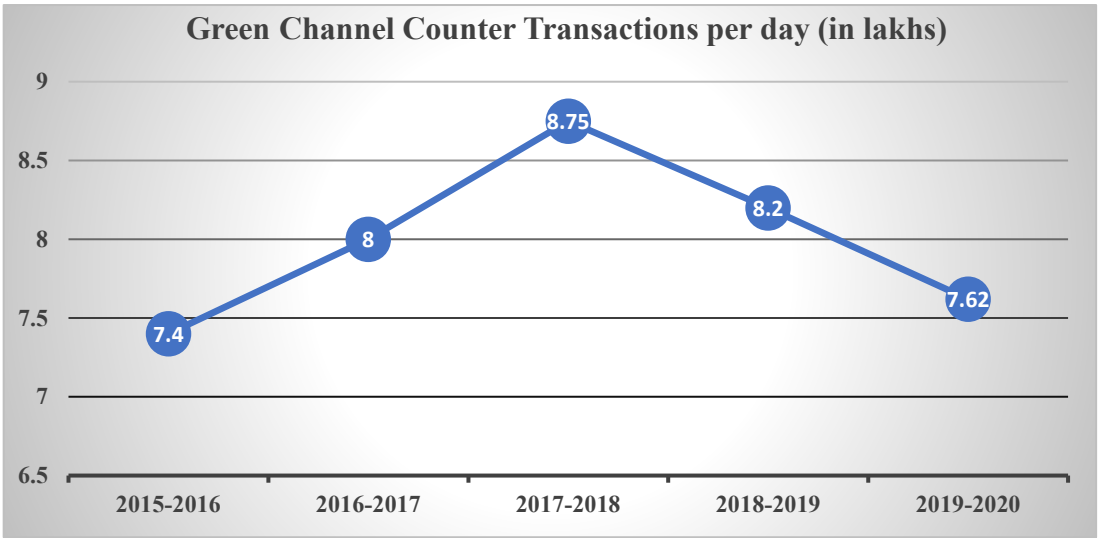
3. Green Channel Counter (GCC)

This is the facility available for those who prefer branch banking especially senior citizens. It helps the customer to transact any of the banking operations without the help of paper works (pay-in-slip, withdrawal forms) for saving paper consumption, and there by contributing the concept of Green Banking. The main objective of GCC is paper reduction and queue management. At the Green Channel Counter (Single Window Counter (SWC)) there is a Point of Sale Terminal (POS) called as Transaction Processing Device (TPD) on which the customer can swipe their card and select the options of cash deposit, cash withdrawal and fund transfer with SBI up to 40,000 per transaction.

It has rolled out almost all retail branches of SBI, which gives the customers ease and comfort way of doing banking transactions. GCC provides customer easy, convenient and quick way of banking transactions without the need of account number, passbook, pay-in-slip, withdrawal forms, etc. Therefore, it attempts to the transformation of voucher-based banking to card-based banking. "This has led the Bank to indirectly save approximately 445 MT of paper, thereby saving an estimated 11,700 trees from being cut. Considering the life cycle of a paper, this is estimated to have reduced water consumption by 39,746 m3, waste generation by around 262 tonnes and carbon emissions by 4,000 tCO2e" (SBI, Resposible Finance, Sustainable Growth, 2019-2020)

Figure 3.4

Performance Analysis of Green Channel Counter of SBI



Source: Sustainability Report

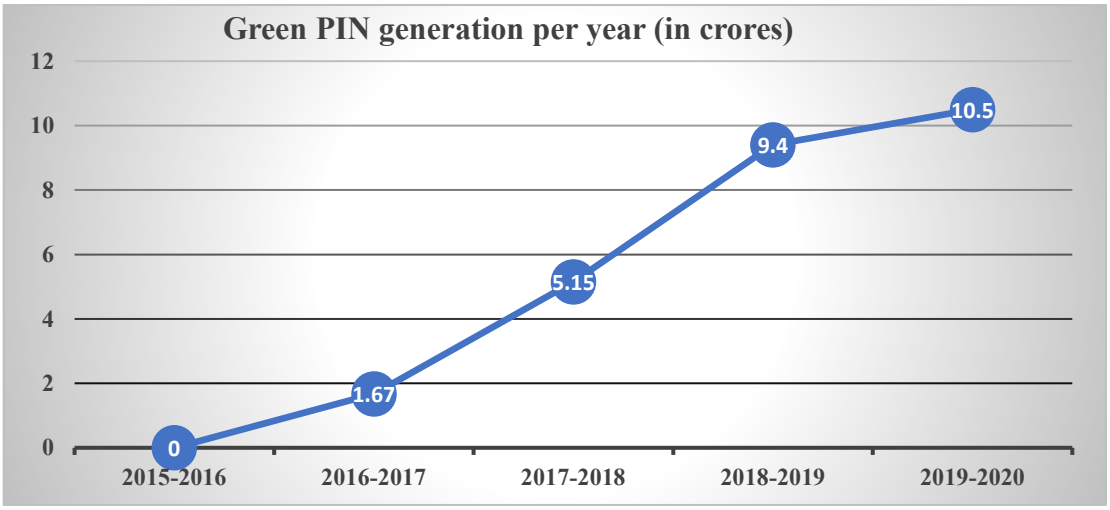
The transactions through GCC have made a change in the face of voucher (paper) based banking system. The growth has gradually improved from 2015 to 2018. But its growth has declined due to the introduction of CDM/ Recyclers. The facility of deposit, withdrawal and fund transfer also available in ATM, CDM/Recyclers.

4. Green PIN

Green PIN is a new green initiative towards paperless banking for generating debit card/credit card PIN by using different paperless channels like ATM, Internet Banking, Mobile Banking, IVR and Bank's Contact Centre. The bank has quantified the volume of paper saved after the introduction of Green PIN. During the financial year 2019-2020, the sustainability report disclosed that the generated Green PIN has indirectly saved 8120 trees. "Considering the life cycle of paper and paper savings by 117%, 27,400 m3 reduction in water consumption, and lowered waste generation and carbon emissions by around 180 tonnes and 2,767 tCO2e, respectively" (SBI, Resposible Finance, Sustainable Growth, 2019-2020).

Figure 3.5

Performance Analysis of Green PIN Service of SBI



Source: Sustainability Report

Green Pin is launched in the year 2015-2016 and it gradually increased its growth over 4 years. In the year 2016-2017, more than 1.67 crores PINs generated through paperless banking channels. It has increased to 5.15 crore in 2017-18, 9.4 crore in 2018-19 and 10.5 crore in 2019-20 respectively. There is 12% of increase in PIN generation during 2019-20 compared to PY.

Green Practices

1. Green Financing

"In recognition of the leading role in renewable energy financing, the Bank received the Outstanding Performance Award-2015 from the Govt. of India" (SBI, 2015-2016). The major green financing activities are: -

a. Eco System Financing/ Project Shikhar

The project is designed for financing merchants selling through e-commerce platforms. The bank has offered various technological benefits for SMEs based on Credit Risk Model to sanction automated e-tailor seller financing. "Bank has started financing for seller/ drivers/ partners/ franchisees of e-tailors/ m-taxi aggregators/ franchisors under tie-ups with Snapdeal, Flipkart, Ola, Uber, Lakme, anytime fitness,

etc." (SBI, 2015-2016) it has taken by the bank for making competitive advantages in the field of e-commerce. Therefore, the growth of e-commerce opens a world for MSME with the demand of B2B, B2C space.

b. Green Home Loan Scheme

This is the project started for supporting eco-friendly construction and renovation of green homes rated by Indian Green Building Council (IGBC). Green Home loans are available for customers who ready to construct a home/green project with an aim to reduce carbon emissions by using eco-friendly materials and renewable energy for lighting, heating, ventilating, etc. "This loan is available with 5% discount on margin, 0.25% concession on interest rate and waiver of processing fee" (SBI, 2019-2020). According to Green Building Council (IGBC), "A green building is a construction that lesser energy, water and natural resources, create less waste and healthier for the people living inside compared to standard building. These buildings are known to energy savings up to 30% and save up to 50% of water resources apart from giving people the option of leading a healthier life style". The scheme is allocated for the buildings certified by rating agency of Leadership in Energy and Environmental Design (LEED).

c. Green Car Loan/ Loan for e-rickshaw

The eco-friendly green loans for electric vehicles introduced by the bank at lowest interest rate and highest loan term. This financing scheme is facilitated for purpose of maintain clean environment with high fuel efficiency and less carbon emission. "As on 31st March 2020, the Bank has a portfolio of 55 cars and 994 e-rickshaws financed under its Green Car loan and e-rickshaw loan schemes respectively, giving a boost to clean mobility in the country" (SBI, 2019-2020)

2. Green Energy Saving Practices

The bank all efforts to conserve energy and minimize carbon footprints through the innovative ideas of energy management practices. Energy efficiency measures are promoted for all their establishments with the help of in-house renewable energy generation capacity also. The bank achieved largest renewable

energy lending portfolio in the Indian Banking Sector. The bank has rolled out several steps in order to control energy consumption.

Table 3.2

Performance of Green Energy Saving Practices of SBI

Energy Management Practices	Year				
	2015-2016	***2016-2017***	***2017-2018***	***2018-2019***	***2019-2020***
Saving Electricity Consumption	28%	40%	57%	61%	65%
Deployment of power management tools	Less than 60	100 branches	All branches up to March	All branches	All branches
Installation of windmills	3	6	10	10	10
Solar panel on Corporate Centre rooftop	43	100	178	229	376
Solar ATMs	950	1150	1200	2000	2460
Investment in Renewable Energy	280 projects	320 projects	512 renewable energy projects of 10,290 MW capacity	656 renewable energy projects of 12,334 MW capacity	608 renewable energy projects of 11,488.48 MW capacity
In-house Energy Efficiency Initiatives	Switchover to LED lights, Installation of star rated ACs, and solar powered water heater	LED lights and Energy Efficient ACs.	Replacement of CFL fixtures with LED lights and split ACs with a VRV HVAC systems.	IPM+ desktop Software Installation, Branch Server Consolidation (BSC) and Data Server Consolidation-Private Cloud 'MEGHDOOT' deployment	IPM+ desktop Software Installation, Branch Server Consolidation (BSC) and Data Server Consolidation-Private Cloud 'MEGHDOOT' deployment

Source: SBI, Sustainability Report

a. Power Management Practices

The bank requires more power consumption for digital innovation. Therefore, an efficient power management tool is needed for reducing the consumption of electricity. Hence the bank introduced an energy conservation software for deploying power management. During the first stage, the bank has replaced normal lights with LED lights and installed star rated Air Conditioners and thermal sensors. In second stage, different energy saving initiatives are implemented such as (1) IPM+ desktop software, (2) Branch Server Consolidation (consolidation of physical servers to centralized location in a virtual system), (3) replacement of generator with solar backup batteries and (4) Data Server Consolidation.

b. Investment in Renewable Energy

The bank has invested in renewable energy for its internal operations.

- Installation of windmills in different state of the country. It captured low power consumption and cost saving up to 125 crores over 5 years.
- Placed and maintained solar panel on the rooftops of bank branches for reducing power consumption
- "Committed to Govt of India for financing viable renewable energy over 5 years, completed 656 renewable energy projects of 12,334 mw capacity and sanctioned Rs. 29,821 crores" (SBI, 2019-2020).

c. Resource Management

i. Water Management

For the purpose of conservation and recycling of water, SBI has made investments in rain water harvesting projects. "An on 31st March 2020, the bank had 248 rain water harvesting system set up across its branches, offices and other establishments" (SBI, 2019-2020). The bank also maintained one waste water recycle plant for recycling waste water from hostels and quarters, which is then used for irrigation purposes.

ii. Waste Management

The waste generated by the banks can be classified in to three; dry, wet and e-waste. The food waste is reduced by making awareness among staff, employees and canteen workers. The wet waste is eliminated by composing it in a bio-digester for decomposition and the resulted compost is used in residential quarters of the bank. For this purpose, the branches are built separate waste segregation units. The dry waste and e-waste are given to the authorized recycle vendors. During the year 2019, the bank designed two statues, Manasvi and Tapasvi by using e-waste at local head office, New Delhi under the theme 'e-waste to wonder'. "Manasvi reflects the principles of integrity, honesty, trust, touch and care, while Tapasvi is a testament to the bank's commitment, dedication, resilience and empathy towards its customers. These e-waste wonders embody SBI's value system of STEPS (Service, Transparency, Ethics, Politeness and Sustainability). The chairman shared that protecting environment is everyone's duty and resolved to take banking services towards the paradigm of 3Rs (Reduce, Reuse and Recycle)" (SBI, 2019-2020).

iii. Paper Management

Digitalization is the only way to reduce paper consumption of in-house banking practices. If customers are used majority of their banking transactions through paperless banking such as, internet banking, mobile applications, card-based banking etc. can help to transform the paper based traditional banking system. On the other hand, the bank itself needed to reduce paper usage by digital means of communication, video conferencing, sending e-files, reporting through electronic medium, keeping e-documents, etc. as operational strategy. The main advantages of paper less banking is increasing financial inclusion, enhancing customer satisfaction, reducing paper usage, etc.

3. Green Building Certification

SBI is a founding member of the Indian Green Building Council (IGBC). "The council was formed in the year 2011 with a vision to usher in the green building movements in India and help to facilitate the country to become one of the global leaders in green building. IGBC is tasked with the creation of awareness on how green building will help to reduce energy and water consumption" (SBI, 2019-2020).

4. Achieving Carbon Neutrality

Carbon Neutrality is a phase used to define the actions taken by organizations, institutions, individuals for removing the volume of Carbon Dioxide from environment. SBI is the first public sector bank in the cap of achieving Carbon Neutrality. For maintaining carbon neutrality, the bank developed Carbon Neutrality Strategy under three phases; (1) the first phase for the preparation of comprehensive Green House Gases inventory or domestic operations, (2) development of GHG strategies and (3) implementation of strategy by using third party suppliers of renewable energy. "This strategy has focused some areas of environmental intervention to achieving Carbon Neutrality such as; investments in renewable energy, adopting energy saving efficient technology, implementing energy saving initiatives and reducing quantity of waste generated" (SBI, 2017-2018).

5. Green Bond Framework

This framework is defined for measuring and evaluating process and proceeds for the selection of a project. The bank issued two types of green bonds for re-finance green projects, USD 50 & 60 million. The pre-issuance and post-issuance assurance is given by KPMG and certified by Climate Bond Initiatives. The green bond framework if defined for the green projects like solar power projects and sustainable transportation projects. The bank has established a Green Bond Committee to monitor the project's eligibility and viability under Green Bond Framework. The committee has evaluated the projects and tracked in the Core Banking Solution platform.

6. Solar Projects

Some of the investments in solar projects by SBI is listed below,

i. Installation of solar power plants, solar lamps, solar water heaters, solar lights, etc.
ii. Finance for solar pump installation for irrigation purpose to farmers
iii. Solar powered ATMs for protecting power failure and controlling UPS
iv. Replaced generator by solar backup batteries
v. Contributed in National solar Mission and reduce consumption of fossil fuel generation
vi. Solar energy participation to promote renewable energy utilization.

7. Green Initiatives in Corporate Governance

Asper SEBI guidelines, SBI provided annual reports in electronic form to the shareholders whose email address is given to the bank. The bank participated in green initiatives by circulating reports in e-files instead of normal paper files. Further, most of the holding shares are in demat form and the physical shares can be easily converted in to electronic form through dematerialization.

3.5.2 Environmentally Sustainable Banking Practices in the Punjab National Bank

PNB is the second largest public sector bank controlled by Government of India with its headquarters in New Delhi, India. The bank was established in the year 1894 and came in to existence on 12th April 1895 in Lahore. The founders are Dyal Singh Majithia and Lala Lajpat Rai. On 1st April 2020, the bank has merged with United Bank of India (UBI) and Oriental Bank of Commerce (OBI). "The proposed merger would make Punjab National Bank, the second largest public sector bank in the country with assets of 17.95 lakh crore and 11,437 branches" (PNB, Our Identity is the Smile of every Customers, 2019-2020).

Mission - "Creating Value for its Customers, Investors and Employees for being choice for all stakeholders" (PNB, 2018-2019)

Vision – "To position PNB as the 'Most preferred Bank' for customers, the 'Best place to work in' for employees and 'Benchmark of Excellence' for the Country" (PNB, 2018-2019).

"The bank believes in leveraging technology for delivering best customer experience. Bank continue to invest in automation of internal processes to improve efficiency, risk management and reduce the cost of operations" (PNB, 2018-2019)

Green Products/ Services

1. Green Channel Banking/ Paperless Banking

a. Internet Banking

PNB Internet Banking captured the convenience of their customers in the simplest way. The system can be accessible from anywhere and in anytime. The bank

specialized in Internet Banking operations by providing Financial, Non-financial and Value-added services to customers. These services are undernoted: -

Table 3.3

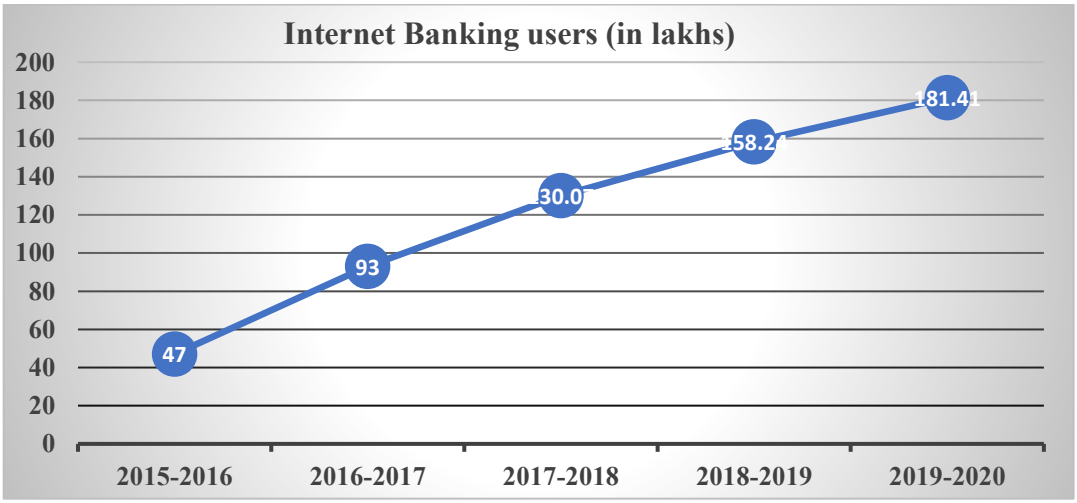
Internet Banking Services of Punjab National Bank

Financial Services	Non-financial Services	Value Added Services
• Fund transfer within PNB • Self-transfer • 3rd party transfer • NEFT/RTGS opening of FD/RD • Modify FD/RD • PPF account opening • Credit card payment • Utility bill payment • Tax payment • Linking of Demat Account	• View account details • Stop payment of cheque • Cheque status enquiry • Raise cheque book request • Request for limit change of cards • Apply for various bank products • Debit card personalization • Break/ renew FD deposit	• Online registration for debit card/ mobile banking • Online password reset option • Aadhar/ PAN/ GSTIN registration • E-filing of IT • E-interest certificate for deposit • Education/ housing loan application

Source: Annual Report

Figure 3.6

Performance Analysis of Internet Banking of PNB



Source: Annual Report

b. Mobile Banking

Mobile banking is the secure way of banking with the help of Smart phones. The customers can accomplish their banking operations on 24x7 basis through Mobile Applications introduced by the bank. As far as PNB concerned they have introduced different Mobile Applications for executing multiple banking transactions. These are PNB ONE, PNB VERIFY, BHIM PNB, PNB GENIE etc.

i) PNB ONE

PNB ONE is the Unified Mobile Banking Application for performing all banking system in a single platform. It is a secure mobile application with biometric authentication, MPIN and user password.

Functionalities available through this App: -

- Details of account (Saving, Deposit, Current etc.)
- Transfer of funds (NEFT/IMPS/UPI/Instant Transfer)
- Facility of Investment of funds in TD, FD, RD, Insurance, Mutual Fund etc.
- Checking the details of transaction already completed
- Management of debit card (Application, POS/ e-commerce transaction, Hotlist Debit Card) and Credit Card (Link/delink, auto payment, card replacement etc.)
- Bill payments for Mutual fund, Insurance, Electricity, DTH etc.
- Transactions through cheque (enquire, stop, request &view)
- Value added services (PAN/ Aadhaar linking, e-mail ID updating, application for locker, application for Govt. scheme etc.)

ii) PNB VERIFY

It is a Mobile Application insisted by the bank to verify the transaction carried out through Retail Internet Banking & Debit Card. It is In-App authentication rather than OTP verification for performing transaction through Internet Banking channel & Debit card (e-commerce). The registration can be possible for one device per user and the user will enroll PNB VERIFY by logging to Internet Banking channel & Debit Card transactions either for financial or for non-financial services. Different transaction sets supported by PNB VERIFY such as, IMPS/RTGS/NEFT, PNB credit

card payment, UPI through Internet banking, send money, receive money, beneficiary information, change transaction password etc.

iii) BHIM PNB

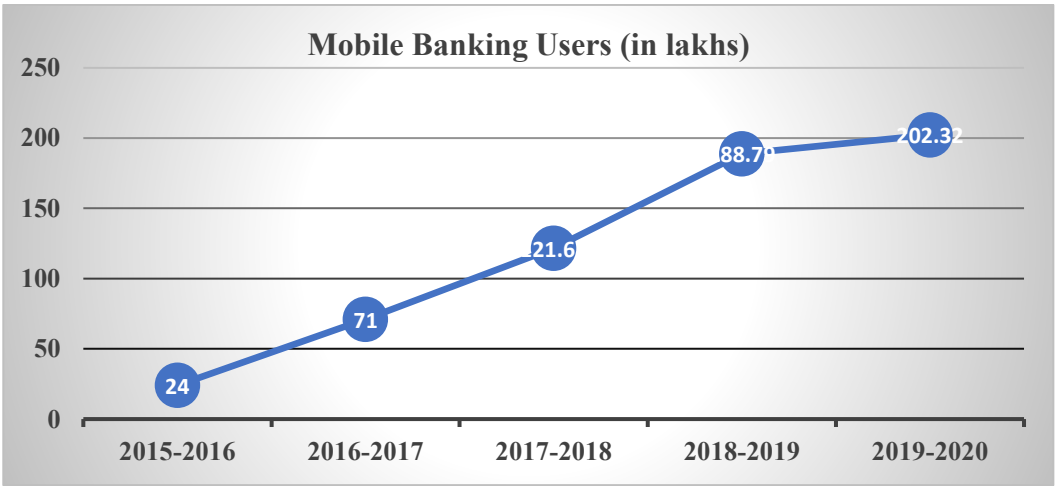
This is a simple Mobile Application initiated for the purpose of making and receiving payments in a single platform without the use of any bank account information of paper/payee. Customers shall be able to make/receive payments to the contacts they have, and the accounts details remains to be confidential for them. Therefore, the transaction can be carried out through virtual address provided. The main feature of this application is, the payee can be linked with more than one participating bank and payer can also transact with multiple bank accounts. Besides, the application also demonstrated the service like, bank account creation, payment address creation, authentication, PIN & password generation.

iv) PNB GENIE

The application is provided with full of features and acts as single point destination for cardholders to operate their PNB credit card. The application helps to enable the transactions by using PNB credit card. The services launched by the bank through this application are; (1) view past statements, (2) details of unbilled transactions, (3) payment history, (4) instant card hot-listing, (5) PIN generation, (6) register for additional credit card, (7) raise service request, (8) login through M-pin, (9) enable/disable various transactions and (10) updating e-mail ID & address.

Figure 3.7

Performance Analysis of Mobile Banking of PNB



Source: Annual Report

c. TAB Banking

The newly launched technique of TAB banking is purely meant for the acquisition of new customers. The employer/staff of the bank will visit at the doorstep of customers for opening an account with Punjab National Bank. They will collect all KYC details in tab, then send it to the bank manager for verification. After that the customer will get account number within minutes. The services especially mean for HNIs (High Net worth Individuals) and NRIs (Non-Resident Indians) customers.

2. Cash less Banking/ Plastic Money

a. Debit Card/ATM Card

PNB has vast expansion of debit card penetration in India. The card can be classified in to three variants such as Platinum, Classic and Gold. These cards are available in Master/Rupay/VISA logo on the front side. Master cards is accepted in all over the world, on the other hand Rupay card is accepted in India. The debit card facility can be available in all ATMs and POS terminals for e-commerce transactions.

ATM: - The bank has set up new features in ATM for the assurance of safety and security doing the transactions. These features are E-surveillance system (to prevent burglaries), Solar Ups (to decrease the downtime of ATM due to electricity failure), ESQ ATM Monitoring System (Corrective actions in the case of ATMs getting down).

Micro ATM: - PNB is the first bank to deploy Micro ATMs with Rupay debit card and Aadhaar based transactions at Business Correspondents location. These are basically POS/Handheld Terminal Machines provided with Magnetic-strip Card Reader and Encrypted Pin pad. The customers can withdraw money and check the account balance through Micro ATMs, and the acknowledgement receipts will be generated immediately with the help of Online Real Time Mode. During FY 2017, there are 4410 Micro ATMs were installed by the bank.

b. Credit Card

PNB has introduced different types of credit cards with specialized characteristics to fulfill the needs of customers. These are (1) PNB Platinum Credit Card, (2) PNB Global Gold Cards, (3) Global Classic Credit Cards, etc. The main features are: - (1) Different purposes can be avail through credit cards like shopping,

pay bills, booking the tickets etc., (2) Exciting offers and rewards for the actual amount spent, (3) Add-on facility of cards for family members, (4) Availability of toll-free call centers, if the cards get lost and (5) Utility bill payment facility.

Green/ Digital Innovation

1. PNB Cash Acceptor cum ATM

It is a multi-functional kiosk for accepting cash deposits and dispensing cash payments. The Kiosk has functioned all the ATM operations. The system which has the capability of accepting 300 currency notes per transaction. The deposit level is limited by 2 lakhs for the customers those who linked the PAN with account. On the other hand, the amount is limited to 49,900 it the PAN is not yet linked. The cash acceptor kiosk also carried out the recycler functionality. Thus, all functions like balance enquiry, mini statement, fund transfer, PIN change and other services can be operated through PNB Cash Acceptor cum ATM.

2. Cash Deposit Machine (CDM)

Cash Deposit Machines are meant for easy and convenient way of depositing cash within minutes. It is a paperless banking device can be accessible from E-lobbies and branches of Punjab National Bank. The customer can save their waiting time for taking token, standing in queue and filling deposit slips. The customer can deposit maximum amount of Rs. 30,000/30 currency notes per transaction and immediate receipt will get after transaction. Cash can be deposited in Savings and Current Account only.

3. PNB Passbook Update Machine (PUM)

The Passbook Printing Kiosk facilitates the service of update of banking transactions in passbook. This Self-Service Terminals placed in e-lobbies or branches of the bank. The customer can visit the branch and use the digital technology without waiting in queue. The transaction details and steps followed will be convey in Mother tongue also. The service will be available in extended business hours also.

4. PNB Electronic Cheque Deposit Machine (ECDM)

This is a digital avenue available for depositing cheque for payment collection. The customer can visit E-lobbies/branches for accessing this technology and they can

deposit their cheque in the Machine by writing name and mobile number on the back side of the cheque. This is a Self-Service Kiosk operated for reducing paper consumption and promoting digital intervention. The system will be accessible in extended business hours also. And the customer need not waiting in counter queue to get the acknowledgement of prescribed transaction.

5. Green PIN

Green PIN is a paperless technique introduced for avoiding physical issue of debit card PIN. The customer can visit nearby ATM for generating new PIN/changing old PIN instead of visiting in branches, taking token and standing in queue.

6. DigiHut

The bank has opened a Digital Branch under the brand name of "DigiHut" with the concept of "Do it Yourself". During 2019, the bank has opened and operated 4 more DigiHuts and they have initiated Instant Issuance Credit Card & Debit Card Kiosks at DigiHut branches for the immediate issue of cards to the customers.

Green Policies and Procedures

1. Green Financing Policy

- ✓ The bank doesn't provide financial assistance to environmentally hazardous projects.
- ✓ For manufacturing units insist pollutants to the environment, the bank obtain No Objection Certificate (NOC) from Central/State Pollution Control Board for the purpose of releasing credit facility.
- ✓ The bank consciously avoids businesses that can have negative impacts on eco systems and society and mitigate environmental and social regulations.
- ✓ Bank has followed environmental and social risks in their lending decisions

2. E-waste Management Policy

Based on this policy, the bank is ready to occupy recycled office materials from e-waste dealers. The materials like old & obsolete computers, servers, monitors, printers, fax machines, ATMs and UPS are purchased through the dealers. The bank also ensured the best use of computer equipment by upgrading/reusing old machines.

Green Practices

The wealth of the country rests in the health of the Planet and People. Therefore, for ensuring Economic Integrity, there is a need of Environmental Sustainability and Social Responsibility. Accordingly, the organizational goal is vested with achieving sustainable development in the field of Planet, People and Profit. Hence the consideration of Triple Bottom Line Approach is important than Traditional Profit Oriented Approach. As far as PNB is concerned, the bank takes care of environment for protecting the eco system and conserving the natural resources. They have given primary importance for business operations as well as Corporate Social Responsibility Initiatives. The bank ensuring environmentally friendly banking practices for reducing internal and external carbon footprints. Various initiatives are, energy efficient technologies, usage of Solar equipment, rain water harvesting for water management, green financing and environmentally friendly investment in projects, etc. The short note of these practices is given below;

1. Green Financing

a. The initiative of PNB Green Ride especially for promoting financial schemes of e-rickshaw for reducing the carbon emission of petrol vehicles.

b. The bank has financing for solar biogas, solar power projects, small hydro and windmill projects for conserving green energy.

c. Corporate Loan Scheme for Roof Top PV Solar Power Projects. "To promote this, the bank has sanctioned a line of credit of $500 million from Asian Development Bank (ADB) for financing Roof Top Photovoltaic Solar Power Projects" (PNB, 2018-2019).

d. "PNB offers medium term loan schemes to farmers for the construction of green houses, setting up of biogas plants with sanitary latrines and has a scheme of PNB's San Urja Yojana for small farmers to finance the purchase of solar home lighting and water heater" (PNB, 2016-2017).

2. Green Energy Saving Practices

The energy management practices of PNB are called as "GREEN PNB" Initiative.

a) Paper Management

For managing paper consumption, most of the operations are done through Core Baking Solution. The files are kept in e-documents and these are sent to the stakeholders through e-mail. The bank is ready to use recycled papers with double side printing for paper-based activities.

b) Energy Management

- Purchasing energy efficient machineries
- Use energy efficient LED bulbs and star rated Air Conditioners
- Conducting Electricity Auditing for measuring the cost benefit of using energy efficient equipment.

c) Water Management

- Investment in Rainwater harvesting projects
- Water treatment plants and purifier in banking premises.

3. Green Vigilance Software and Green energy Auditing

As a part of Green Banking initiative, the Vigilance Department of the bank introduced e-solution for paper less dealing in complaints and vigilance procedures. By the introduction of Green Vigilance Software improve the transparency of cases within less time and cost. The concept of Green Vigilance Software means, the in-house digital initiative introduced for transparent disposal of vigilance cases in bank. The software was adopted by the Disciplinary Authority of the bank.

"The bank has begun to conduct Electricity Audit of offices as an energy conservation initiative. Therefore, they have taken steps to reduce wastage of resources and energy MARD (HO) conducts risk-based management audit of the administrative offices of the bank as Green Initiatives" (PNB, 2015-2016).

4. Green Building

"The bank's new state of art building at Dwarka and Gurgaon are the Certified Green Building having 5-star GRIHA rating" (PNB, 2015-2016). The initiative of "green building" is meant for reduce wastage of resources and energy by utilizing

laminated glass instead of lighting, usage of energy efficient electrical materials, renewable raw material for construction etc.

5. Other practices

- ♣ Solar powered biometric ATMs. In solar ATMs, solar powered UPS are connected for recouping the power failure and voltage issues.
- ♣ The scheme of PNB UJALA launched to provide solar street lights and solar lantern for the rural people.
- ♣ Plantation of trees, gardening etc. at the suitable space of the banking premises.
- ♣ Video/Telephone conferencing, sending large documents electronically, instant exchange of e-mails etc. are the technological paperless initiatives followed by the bank.
- ♣ Celebrate Vana Mahotsav, greening traffic circles, plantation along road sides, maintaining park in residential areas etc.
- ♣ Electronic Human Resource Management practices are adopted for the selection, training and staffing of man power for the bank.
- ♣ "During the FY 2016, the bank has achieved the destination of raising 500 crores of green bonds through IFC Washington for promoting green housing projects in India" (PNB, 2015-2016).
- ♣ The bank has adopted "Center of Excellence" project for promoting agriculture and rural development. These are providing training regarding crop diversification, post-harvest technologies, repair and maintenance of tractors, judicious use of irrigation water etc.

3.5.3 Environmentally Sustainable Banking Practices in the Canara Bank

Canara bank is the largest public sector bank owned by Government of India head quartered in Bengaluru, Karnataka. It was established in the year 1906 at Mangalore by Ammembal Subha Rao Pai and later government nationalized during the year 1969. Asper the announcement of Government of India, Manipal based Syndicate Bank merged with Canara Bank on 1st April 2020, for making it the fourth largest bank of the country.

Vision – "To emerge as the Best Bank to Bank with by pursuing industry benchmarks in profitability, operational efficiency, asset quality, risk management and digital innovation" (Canara, 2019-2020).

Mission – "To provide State-of-the-Art Banking solutions, leveraging technology, aiding Ease of Doing business and enhancing value for all stakeholders through inclusive growth" (Canara, 2018-2019).

Canara bank is originated in rural India; hence the organizational values of the bank is committed to the society and general public. This commitment is laid down in the founding principles of the bank by founder Shri. Ammembal Subha Rao Pai as under "A good bank is not only the financial heart of the community, but also has an obligation of helping in every manner to improve the economic conditions of the common people". The initiatives of Corporate Social Responsibility, the bank take care of Protection of Environment and Conservation of Sustainability for Green Future. Hence, their concern towards Environmental Sustainability promotes Solar Energy Equipment, Green Banking, Water Management, Organic Farming, reduction of paper and plastic consumption, Restrictive Credit Policy for financing projects etc.

Green Products/ Services

1. Paperless Banking/ Green Channel Banking

a. Internet Banking

The bank has conducted different types of Internet Banking transactions for their customers. These services are classified in four heads, such as online banking, online payment, online transfer and online services. The details of these services are given below;

Table 3.4

Internet Banking Services of Canara Bank

Online Banking	**Online Payment**
➢ Online account opening of SB, PPF and APY ➢ View and download statements ➢ Request for issue of Demand Draft ➢ Closure of loan amount ➢ Issue of cheque book	➢ Bharat bill pay ➢ Online bill payment ➢ Online tax payment ➢ Sukanya Samridhi Payment

Online Transfer	**Online Services**
➢ Multiple fund transfer ➢ Fund transfer within the bank ➢ NEFT/RTGS (fund transfer between banks)	➢ Public Financial Management System (PFMS) controlling ➢ FASTag ➢ Updating of Aadhaar information

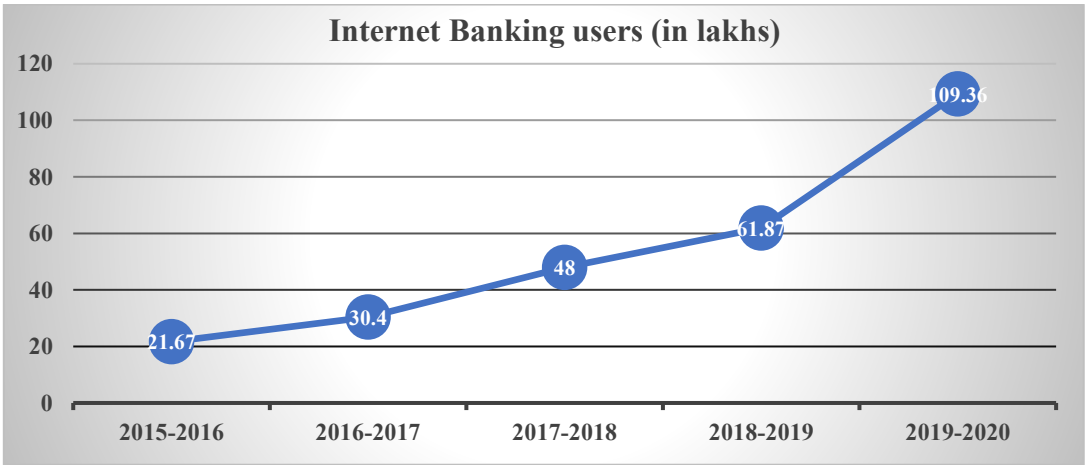
Source: Annual Report

New functionalities of Internet Banking introduced during 2019-2020

- ❖ Presented the option of Multiple Transaction Limit
- ❖ Single beneficiary list introduced for NEFT/RTGS and IMPS services
- ❖ Instant loan application portal for housing/vehicle/education/MSME
- ❖ Subscription to the Social Security Schemes
- ❖ Recycler facility for accepting and dispensing of cash

Figure 3.8

Performance Analysis of Internet Banking of Canara Bank



Source: Annual Report

b. Mobile Banking

The bank has introduced several mobile applications with different functionality for ensuring easiness, convenience of banking products and services. Many of these applications are upgraded by the bank with new features, better navigation and outlook for simplification of procedures during five years. The Info-Tech initiatives are ensured the accessibility of customer friendly banking and services with affordable cost in acceptable devices. The important applications are;

i. **Can Mobile: -** This official mobile banking application facilitates the services like, checking of account, checking of transaction history, opening FD/RD, management of account, management of beneficiary, non-financial service (cheque book request), donation, insurance, bill payments, fund transfer, opening demat account, loan payment etc.

ii. **Canara e-Infobook: -** This is an information based mobile banking application provides details about transaction history, balance of account, summary of account, cheque status, credit information etc.

iii. **Canara DiYA (Digitally Your Account): -** It is a digital application provided for opening account with Canara bank. It helps the customer to avoid queue, filling up of forms, waiting time for enabling an account and getting the account number. Through DiYA app, the customer can open an account by using Aadhaar number, perform electronic KYC details, choose preferred branch, select the type of saving account, add nominees etc. After scrutinization the bank will provide account number with the options of SMS banking, Internet banking and Card based banking within 5 minutes.

iv. **Canara Saathi:** - It is a Credit Card Self Service mobile application provided by Canara bank. Variety of services available through Canara Saathi such as, facility to retrieve username and password, summary details of credit card, summary of unbilled transactions, generate and download credit card statements and credit card payments through debit card and internet banking. If the card is lost, stolen, to be replace, block or unblock, the app will give necessary arrangements.

v. **Canara OTP:** - This application is only for generating OTP for Canara internet banking usage. This is an app generated OTP instead of SMS OTP, even the mobile network is out of coverage area and OTP can generated offline. The facility is beneficial especially for NRI customers and frequent travelling customers.

vi. **CanPass:** - Canara bank launched the Official Authentication Application called CanPass for card holders to authenticate their transactions securely from own devices. When the customer initiates a transaction, the app will give notification

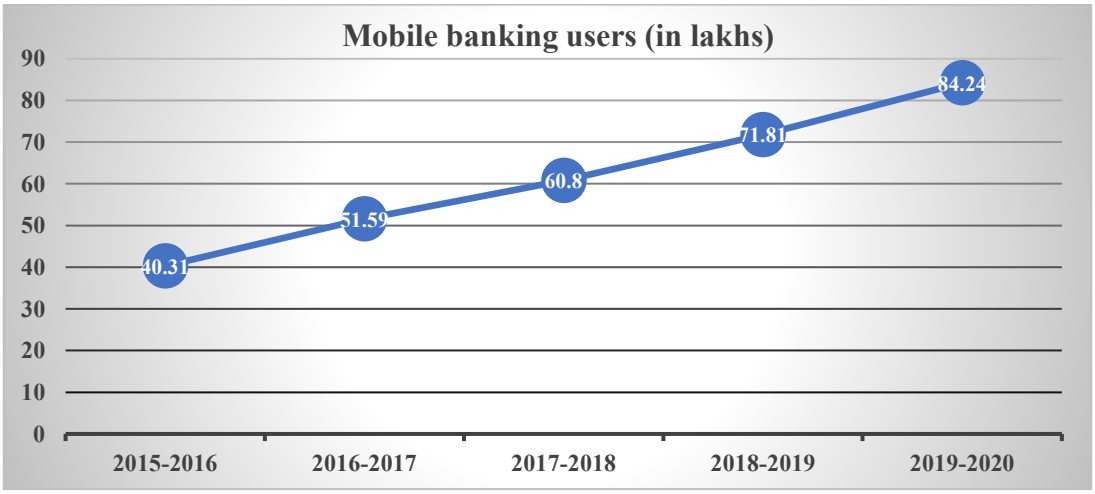
for authenticate the transaction and the user can use finger print for making authentication without waiting for an OTP. Finally, the user can check the history of completed transactions.

vii. **BHIM Aadhaar Pay-Canara Bank: -** This application is designed for accepting payments for the sale of goods/services. Therefore, it is a digital payment solution for merchants. No dependency on POS device, card or cash is the main advantage of BHIM Aadhaar Pay. The transaction can be carried out through Biometric Fingerprint Scanner.

viii. **Canara Cart:** - This is an umbrella app consisting of all mobile banking application of the bank and user can manage all application under this single system.

Figure 3.9

Performance Analysis of Mobile Banking of Canara Bank



Source: Annual Report

Green/ Digital Innovation

1. Hi-tech E-lounges

The system is built in different branches of Canara bank with wide varieties of digital technology services for customers. The bank has opened the hi-tech e-lounges for ensuring alternative delivery channel beyond branch banking with the facilities of ATM, Cash Deposit Kiosk, Cheque Deposit Kiosk, Self-printing Passbook book

Kiosks, Internet Banking Terminal, Online Trading Terminal, Corporate Website Access and Interactive Video Conference System. The details about the facilities are undernoted;

a) **ATM: -** During 2019-20 there are new functionalities introduced in ATM such as (i) EMV compliance for security and risk mitigation, (ii) Aadhaar authentication, (iii) Canara Saathi mobile application and (iv) Rupay EMV Dual Interface Issuer Application through National Common Mobility Card (NCMC).

b) **Cash Deposit Kiosk: -** The technology of CDM is self-service terminal that helps the user to deposit and payment transactions by cash. Canara bank installed Cash Deposit Kiosk with voice guided system especially for Visually Challenged Customers.

c) **Cheque Deposit Kiosk: -** This service is designed for cheque collection operations and issuance of receipts to the user at 24x7 basis. The system which helps to recover the demerit of cheque drop boxes placed in bank premises. This product is engineered in bank premises, cheque payment collection centers etc.

d) **Self-printing Passbook Printing Kiosk: -** This self-service digitalized system helps the bank customer to print their passbook by recognizing the details from the magnetic strip placed on passbook. The automatic system retrieves the details of passbook and print transactions history in passbook.

e) **Online Trading Terminals: -** The computer software-based program can be used to place orders for financial products such as stocks, bonds, derivatives, commodities and others with the help of financial intermediaries such as brokers, investment banks, stock exchanges etc.

2. Core Banking Solution (CBS)

Canara bank has implemented Core Banking Solution for centralized access of their products and services. The efficient and personalized system of Core Banking Solution enables the bank with multiple delivery channels, fastest time-time-market and hi-tech relationship with customers. This solution is only meant for competing with the challenging technological environment by introducing online fund transfer,

application for accounts/loans, online tax payments, online trading facility etc. The major operations of Core Banking Solution are managed centrally through a Central Data Centre. The bank setting all the transactions under Inter-bank/office premises are carried out through Inter Office Adjustment Account.

3. Green PIN

The bank has enabled Green PIN facility for debit/credit card holders. The debit card holders get the option to generate PIN by using ATM and no need to visit the branch premises. On the other hand, credit card holders can use Canara Saathi Mobile Application for generating their Personal Identification Number. This Green PIN facility can be available at the time of issue of card, blocked/forgotten PIN etc.

4. Project Shikhar

Project Shikhar is a new venture of bank branches called Shikhar Branches with digitalized layout and ambience. The premises are designed with Single Window Operations (SWO) for Queue management and Control. Here most of the customer-centric initiatives are implemented for enhancing customer relationship and treat them as loyal members of the bank. The initiatives are, Welcome Desk, Queue Management System, Single Window Operations, Self Service Kiosk etc. The main objective of Project Shikhar is customer delight with quality of services and reduction of waiting time. "In the journey of transformation of branches, number of 'Shikhar Branches' rose to 1548, with 264 branches under 5-star rating and 89 under 4-star rating categories as at March 2018" (Canara, 2017-2018).

5. CANDI- Digital Branch

CANDI, the paperless digital branch opened in different states with complete automation without human intervention. The customers can do banking transactions through Kiosks, Digital Challan, Humanoid Robot and Video banking. CANDI is the digital intervention in the era of banking for the transformation of traditional paper-based banking. The CANDI branch is fully equipped with online technology and the transactions carried out by the customer. The needful assistance will be done by the Humanoid Robot placed in the premises. CANDI, the digital milestone and monopoly invention of Canara Bank.

Green Policies and Procedures

The bank has participated in environment protection for maintaining sustainability. Government around the world are looking for mandatory shift from purely profit oriented approach to triple bottom line approach. Here the triple sections of the economy are taken into consideration for establishing sustainability with higher responsibility. Therefore, consideration of planet and people are necessary for profit making. It means environmental sustainability and social responsibility is essential for economic development. Accordingly, financial sectors are under the pressure of establishing their role in protecting environment and preserving eco-system. Hence, they have to introduce and implement some of the green policies and procedures before financing and investing in projects.

1. Environmental Policies

- For the purpose of Sustainable Sourcing, the bank has setup a policy as per which the suppliers should meet the standards of energy consumption and pollution free climate friendly technologies.
- "The bank is complying with the CPCB (Central Pollution Control Board) rules in usage of generators adopting clean technology" (Canara, 2016-2017).
- Before the appraisal of credit proposal of manufacturing units vomiting toxic pollutants, the bank verified NOC (No Objection Certificate) from Central/State Pollution Control Board.
- "In terms of Credit Risk Management Policy, the bank is not extending finance for setting up of new units consuming/producing Ozone Depleting Substance (ODS)" (Canara, 2019-2020).
- The bank doesn't provide financial assistance for medium/small scale units committed in the manufacture of the aerosol units using Chloro Fluro Carbon.

2. Corporate Social Responsibility (CSR) Policy

CSR policy is designed for the development of social sectors including health care, education, training, women empowerment, arts & sports, infrastructure and environment. The policy is reviewed and updated by Department of Public Enterprises (DPE) guidelines on Social Responsibility and Sustainability Development (SR&SD).

Here the procedure is followed by the bank in their business operations along with day-to-day function for their stakeholders.

Green Practices

1. Investment in Renewable energy

- "Canara bank partnered with UNEP to initiate a solar loan program. During four-year $7.6 million effort launched in April 2003, to help the market for finance solar home system in southern India" (Canara, 2016-2017).
- "Tree plantation project initiate through National Institute of Oceanography, Chennai, Tamil Nadu" (Canara, 2018-2019).

2. Green Financing

- Bank has encouraged green energy by financing solar biogas and windmill projects.
- Agricultural financing and finance for organic farming.

3. Resource/ Energy Management

- Water Management: - The bank has installed water purification plants and used the waste water for gardening for the development of green cover.
- Power Management: - The bank has replaced CFL/Fluorescent lighting with new LED lights and installed star rated Air conditioners for ensuing higher energy efficiency.
- Solar products: - Installed solar street lights, solar roof tops, solar powered UPS and solar powered ATMs for reducing the consumption of electricity.

3.6 Environmentally Sustainable Banking Practices in the Old Generation Private Sector Banks

Here, Federal Bank, South Indian Bank (SIB) and Industrial Development Bank of India (IDBI) are selected as Old Generation Private Sector Banks in Kerala.

3.6.1 Environmentally Sustainable Banking Practices in the Federal Bank

Federal Bank is the private sector bank headquartered at Aluva in Ernakulam, Kerala. The bank was incorporated on April 23, 1931 as Travancore Federal Bank Limited, Nedumpuram under Travancore Companies Regulation, 1961. Late K.P Hormis was the founder of Federal Bank Limited. During 1949, the bank was its name as Federal Bank Limited and licensed under Banking Regulation Act 1949 on July 11th 1959. Now the presence of the bank is in 25 states and 5 union territories in India and the bank is listed in Bombay, Cochin, National and London Stock Exchanges.

Vision - "To be the most admired bank by all stakeholders" (Federal, The Federal Pie, 2015-2016)

Mission - "Devote balanced attention to the interest & expectation of stakeholders and in particular.

Stakeholder: Achieve a consistent annual post tax return of 18% on net worth.

Employees: Develop in every employee a high degree of pride and loyalty in serving the bank

Customers: Meet and even exceed expectations of largest customers by delivering appropriate products and services, employing as far as feasible, single window & 24-hpurs-seven-day-week concepts leveraging a strengthened branch infrastructure, ATMs, other alternative distribution channels, cross selling a range of products and services to meet customers' needs varying overtime and ensuing higher standard of services at all time, guided by principles of being 'Digital at the fore, Human at the core'" (Federal, The Federal Pie, 2015-2016).

Philosophy of the bank

"Digital at the Fore, Human at the Core" (Federal, 2016-2017)

Federal Bank is the forerunner of Technology Adoption and Digital Innovation. They are in the direction of digital offerings and the customers are the prime members in adoption of digital channels. Therefore, the core values of the bank vested in execution, operational efficiency, waste reduction, digitization and human health. The simplified version of their paperless channels executes everything/anything within one click from anywhere. The bank has considered the scope of 'cash-light' India in their banking operations by providing smatter, faster and better services to customers. Federal Bank is continued to adopt cutting edge technology by introducing new features and enriching the existing functionalities. Hence, their philosophy is meant that, 'Digital at the Fore and Human at the Core' by leveraging round the clock services for better customer experience.

In the line with the commitment to conserve environment and natural resources, the bank has taken various steps for environmental sustainability under Corporate Social Responsibility Initiative. Accordingly, the CSR practices of the bank include Environmental, Social and Economical consideration of business operations for the sustainable future. The Corporate Social Responsibility Practices are undertaken with the objectives of –

- Ensuing Environmental Sustainability & Ecological balance
- Animal Welfare
- Protection of flora and fauna
- Conservation of Natural Resources
- Renewable Energy Protection
- Contribution to fund for infrastructure activities etc.

Finally, the bank has considered four pillars for achieving sustainability such as, Environmental Management, Social Responsibility, Economic Development and Urban Governance. They believed that through the integration of these pillars, the bank can achieve Triple Bottom Line Approach of Sustainability. Therefore, they are prepared for Business Responsible Projects under the guidelines of National Voluntary Guidelines for Social, Environmental and Economic Aspects, Ministry of Corporate Affairs, Government of India. The environmentally sustainable practices of Federal Banks are undernoted: -

Green Products/ Services

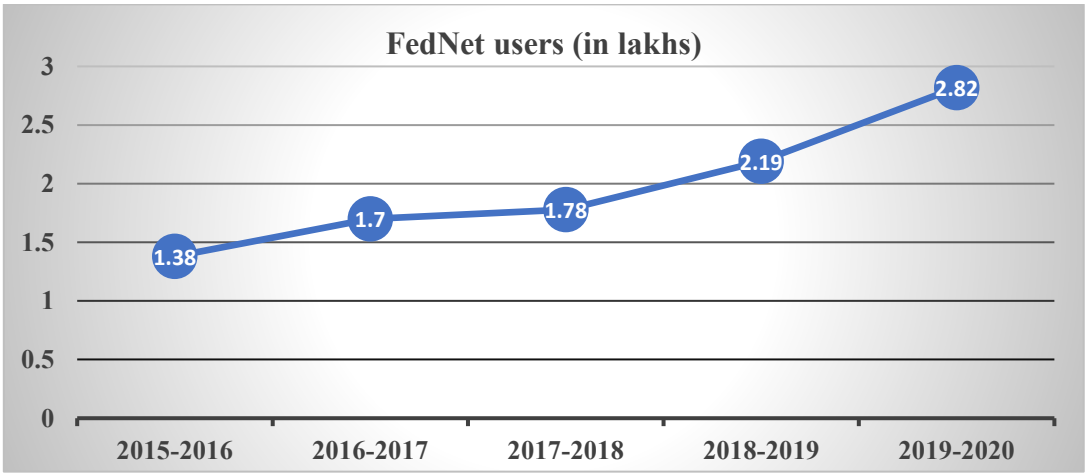
1. Paper less Banking/ Green Channel Banking

a. Internet Banking (Fednet)

Fednet is a virtual banking system/ Net Banking Portal of Federal Bank. It is a 24x7 desktop banking technology facilitates Management of Accounts with wide varieties of banking operations. The customers needn't visit the branches for executing their banking transactions. The FedNet has provided the operations like, viewing account statements, performing fund transfer, opening deposits, utility bill payments, ordering of cheque book & demand draft etc. at anytime from anywhere.

Figure 3.10

Performance Analysis of Fednet Service of Federal Bank



Source: Annual Report

b. Mobile Banking

Mobile Banking is the technique for the transformation of branch-based banking into fingertip system of banking. It is more convenient for banking customers to access the available products and services of the bank in their Smart phones. Hence, they can operate their banking operations by downloading varieties of Mobile Applications introduced by the bank. The short notes about these Mobile Applications are given below,

1) Fed Mobile

Fed Mobile is the secure and smart Mobile Banking Application introduced by Federal Bank with novel functionalities and user-friendly advanced features. The

application is enhanced with computer solution for Banking as well as non-Banking transactions.

Table 3.5

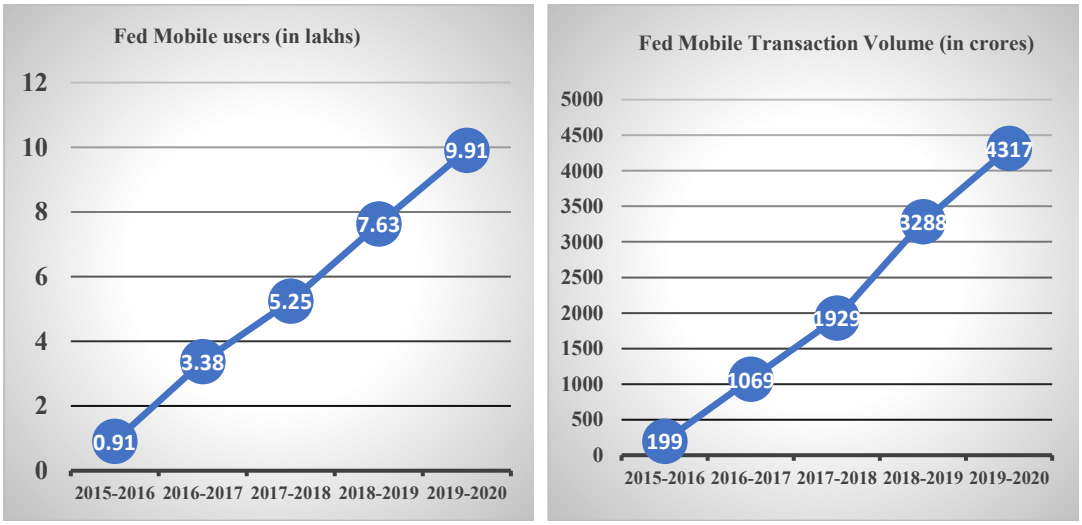
Mobile Banking Functionalities of Federal Bank

Fund transfer	▪ To own a/c, another federal bank a/c and other bank a/c ▪ Quick pay (transfer of funds without adding payee) ▪ Scan N Pay and schedule payments
Mini statements	▪ List of transaction ▪ Account summary
Bill payments	▪ Mobile/DTH/Data card recharge, school fee payment ▪ Utility bill payment (Electricity, Gas, Water, Insurance, Telecom, Mobile, etc.).
Deposits &loans	▪ Open new term deposits (FD/RD) ▪ Avail loan against deposit/ Personal Loan ▪ Closure of loan/repayment of loan
Investments	▪ Mutual fund & Insurance ▪ Gold & various deposit schemes
Account services	▪ Manage the features linked with account ▪ Setting of transaction limit and Nominee Details ▪ PIN/VPA & Biometric Login
Booking	▪ Tickets for bus, hotel, cab, events, movies, flight, etc.
Manage Debit cards	▪ Enable/Disable/ON/OFF/Block/Unblock of debit cards

Source: (Federal, 2020)

Figure 3.11

Performance Analysis of Fed Mobile



Source: Annual Report

2) Fed book Selfie

It is the Mobile Application proposed for instant opening of bank account and management of account via e-passbook. This facility is announced under the moto of 'do it yourself'. The Federal Bank has promoted Fed book Selfie with a simple feature of 'taking a selfie for opening a zero-balance account'. Accordingly, the customer needs to follow very easy steps to open account without any branch assistance. The steps are (i) downloading the App, (ii) take a selfie, (iii) click and scan Aadhaar and PAN card and (iv) send it to the bank. After opening an account, the customer will get an electronic passbook within few minutes.

3) LOTZA BHIM UPI

The Mobile Banking Application consolidates bundles of bank accounts with secured facilities. The LOTZA BHIM UPI is provided the option to linking different account to a single app for banking requirements. "LOTZABHIM UPI is one of the new Unified Payment Interface PSP App to be approved by National Payment Corporation of India Limited" (Federal, 2019-2020).

4) Scan N Pay

It is a QR code based Mobile Banking Application for payment purposes. It facilitates the payments at merchant outlets, e-commerce transaction and individual fund transfer. Through this Scan N Pay facility, the customer can make payments and collection of funds within minutes. The Scan N Pay mobile based service can be accessible from any other Mobile Applications like Fed Mobile, Fed book Selfie, LOTZA BHIM UPI, Federal Store, etc.

5) Federal Store

Federal Store is a Mobile Application that provides a centralized view of all other mobile application introduced by Federal Bank. Whenever the application has downloaded, the first screen shows the symbols and name of other Mobile Applications like LOTZA BHIM UPI, Fed Mobile, Fed book Selfie and Scan N Pay. Accordingly, the customer can select the options needed. Therefore, it is called as the bundle of Federal bank Mobile Apps.

2. Cash less Banking/ Plastic Money

a. Debit/ATM cards: - The bank has quote one sentence about debit cards i.e., "swipe/shop/dine and much more". There are different types of debit cards are popularized by Federal Bank for the transformation of cashless transactions. These are, (i) Rupay Classic Debit Cards, (ii) Contact less Debit Cards etc. The bank has introduced the internationally accepted debit cards in association with MASTER/VISA cards. The customer can make payments through POS (Point of Sale) terminals and withdrawal through ATMs in any country accepting MASTER/VISA cards.

b. Credit Cards: - Federal Bank has administered Internationally accepted credit cards co-branded by SBI and in association with VISA. The card can be accessible for e-commerce operations through point-of-sale terminals. The variants are: - Federal Bank SBI VISA Gold 'N' More and Federal Bank SBI VISA Platinum.

Green/ Digital Innovation

1. BYOM (Be Your Own Master)

This is a web-based application can be accessed from computer/tablet/mobile phone for the purpose of getting a personal loan. The BYOM helps to redefine the face of retail lending by offered online consumer finance without any delay. Through this electronic-based service, the customer can apply for personal loan and the amount will be credited to his/her operative account instantly. The process of loan verification is very simple, customer need not visit the branch for loan verification. This web-based application will help the customer to carry out the procedures of loan application from anywhere at any time.

2. Fed e-POS

At the time of Demonetization, the merchant demands POS terminals for accepting payments on shopping, holiday, dining, etc. But there was a mismatch between demand & supply of POS terminals produced. Therefore, the merchants apply for electronic POS system for accepting payments. The electronic POS in new and innovative digital payment mechanism through card/net banking without a physical POS. It also generated a printed receipt on successful transactions.

3. IT Audit

"In recognition of the need for enhanced systems security, the bank has conducted a wide range of system audits, using internal and external auditors. These range from the quarterly Vulnerability Assessment (VA) and Penetration Testing (PT) to concurrent audits to an annual end audit of IT Infrastructure" (Federal, 2018-2019).

4. Core Banking Solution

As a part of technology-driven society, the bank has experienced Core Banking Solution with effect from 10th October 2016.

Advantages: -

- ✓ Meet the changing needs of customers
- ✓ Improve operational efficiency
- ✓ Strengthen digital capabilities
- ✓ Support gradual dynamic digital growth

The system of Core Banking Solution is the overall improvement in the policies, procedures, products and practices of the banking business.

5. Electronic HRM

Electronic HRM practices followed by the bank to recruit and develop smart teams of federals in the personnel section. The philosophy of the bank demonstrated that 'Digital at the Fore and Human at the Core' with dynamic and competitive new and fresh blood to the organization. The bank has executed the manpower planning, recruitment, training, staffing, attendance making, payroll preparation, division of work, etc. under the preview of electronic methods and techniques. Accordingly, the selected federals have the ability to perform in digitalized world with competitive mind. The bank also provided training regarding Triple Bottom Line Approach of banking business under economically, socially and environmentally viable business decisions.

6. Digi-Locker

Federal Bank is the first bank in the country to become the provider of e-documents through Digi-Locker. Digi-Locker will give the documents of TDS certificates, interest certificates, bank account statements of the customer from

anywhere at any time. It is the innovative digital solution for the complete access of available documents by logging in to Digi-locker account. The customers need to link their Aadhaar number with this amount.

7. Robotic Process Automation

This digital innovation helps the bank to manage repetitive processes in operations. This is a desktop or end-user device level software increase the efficiency in process, recouping the scarcity of skilled personnel, avoid unnecessary cost etc. "Currently 26 processes are run by RPA and more process would use in coming years" (Federal, 2018-2019).

Green Practices

1. Green Partnership with SEED & Palathulli

To ensure environmental sustainability and conserve natural resources, the Federal Bank is partnered in SEED programme along with Mathrubhumi. The main objective of SEED (Student Empowerment for Environmental Development) programme is spreading the message of ecological conservation from the bottom of school students in the areas of planning & protection of saplings, agriculture activities, biodiversity conservation, energy conservation, water conservation, cleanliness of nature, reduce/reuse/recycle of plastic wastes etc. through SEED policies.

Palathulli is a unique initiative partnered with Malayala Manorama with the aim of improving ground water level through innovative ideas. The programme has conducted by providing a mechanism to allow rainwater to seep in to the soil for avoiding drought related issues. The project was implemented through the joint partnership with public/private/educational sectors.

2. Green Energy Saving Practices

- Setting up of Plastic Exchange Counter (Kiosk) at Sabarimala, Kerala for collecting plastic covers, used bottles from pilgrims and handled over them eco-friendly bag at free of cost.
- The bank has installed roof top grid-interactive solar power plants at different branch for promoting green planet initiative
- Solar LED light and solar water heater installation

- Rainwater harvesting units in branch premises for ensuring water management practices
- All branches of the bank have installed energy efficient star rated Air conditioners and LED lights

3. Other practices

- ✓ The bank assessed environmental and social risks associated with large credit proposals.
- ✓ Contributing fund for the rejuvenation of river ganga.
- ✓ Celebrate World Environment Day by planting trees and bushes.
- ✓ Setting up of green cover of plants at the space provided in banking premises.
- ✓ Sponsored different seminar for waste management and organic farming.
- ✓ Setting gardens at highway and traffic circles in different junctions.
- ✓ Conservation of threatened species and wildlife by partnered with World Wide Fund for Nature India (WWF).

3.6.2 Environmentally Sustainable Banking Practices in the South Indian Bank

South Indian Bank Limited (SIB) is one of the major private sector banks in Kerala head quartered at Thrissur in Kerala. The bank was started its business operations on 1929, for the purpose of serving the merchant community of Thrissur in Kerala. During that time, private money lenders charged high rate of interest on merchant finance. By the introduction of South Indian Bank, they are ready to finance them at low rate of interest. And the bank promoted to high position by keeping its popularity and stability. During 1957, the bank gets licensed under section 22 of the Banking Regulation Act 1949 as first Scheduled Bank in Private Sector.

Vision - "To be the most preferred bank in the areas of Customer Services, Stakeholder Value and Corporate Governance" (SIB, 88th Annual Report, 2015-2016).

Mission – "To provide a secure, agile, dynamic and conducive banking environment to customers with commitment to values and unshaken confidence, deploying the best

technology, standards, processes and procedures where customer convenience is of significant importance and to increase the stakeholders value" (SIB, 2015-2016).

South Indian Bank has invested in digital technology for encouraging new customers and deepen the existing customers for the purpose of achieving competitive advantage. The bank is an early adopter of technology in their banking operations for simplifying in-house as well as out-house transactions. The customers feel free, secure and convenient to transact with their banks in financial and non-financial activities. The bank has transformed from branch banking system to anytime anywhere banking system for facilitating better opportunities for their customers.

The bank has leveraged different electronic based services to customers such as ATM/debit cards, credit cards, internet banking, mobile banking etc. for capturing the diversified needs of banking customers. "Bank has set up a separate Digital Product Division to take care of product development, process improvement and promotion of all technology products" (SIB, 88th Annual Report, 2015-2016). The global banking system focused on strategical improvements in technological advancement. Therefore, new digital models are introduced for keeping high satisfaction on customer expectation. Therefore, every banking sector under the directions of Digital Banking Departments and IT Operations Departments in banks. Digital Banking Departments is mainly for achieving the objectives of innovation. On the other side, IT Operations Department facilitated infrastructural arrangement for innovating new models for technological advancement. South Indian Bank is at the forefront of digitalization by adopting new policies and procedures for the quick access of services.

The technology advancement is better for capturing the day life in simple and systematic manner. But these developments may/may not be harmful for environment. Therefore, protection of environment is the duty of every individual. Every business organization should have to obey the principle of 'caring environment' proposed by National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business. It is better to overcome the problems of environment the approach towards nature, natural resources and natural value should have to change. Therefore, banking sectors under the role of adopting Triple Bottom Line Approach

(Planet, People, Profit) rather than Traditional Profit oriented Approach. They are considered planet and people as prime important for maintaining Environmental & Social Sustainability. Thereby they can achieve the Economic Sustainability of profit maximization. For achieving the triple sustainability, the banking sector can save the earth for next generation yet to come before green goes. Hence the banks are working under 'go-green' mantra. The Green Products and Services, green innovation and green practices adopted by South Indian Bank is briefly explained below.

Green Products/ Services

1. Green Channel Banking/ Paperless Banking

a. Internet Banking

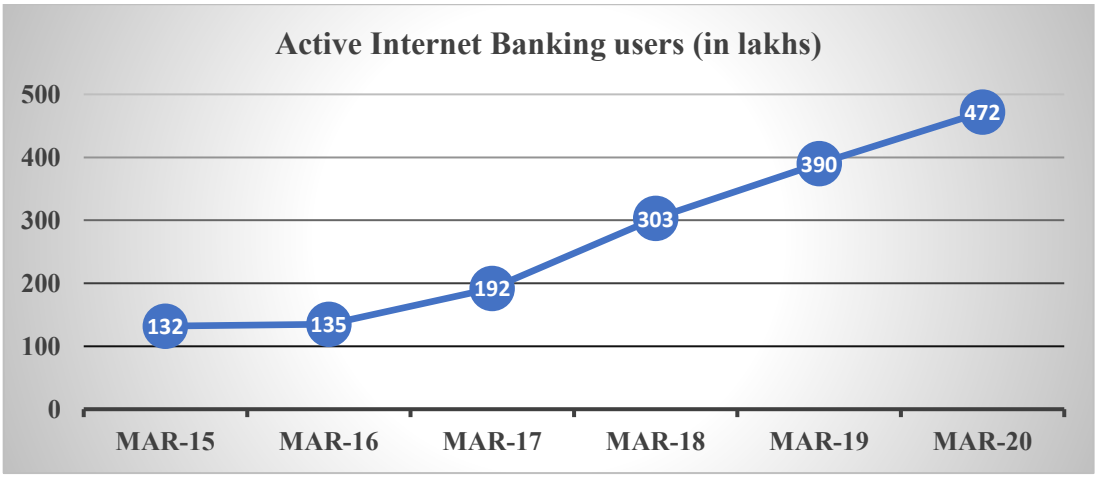
The bank formulated technology-driven approach for introducing the Internet Banking facilities under the brand name of "SIBerNet". This official website helps the retail and corporate customers to carry out their banking operations. The new online service introduced by the bank is called CRAYON for register and active SIBerNet service through online.

Services offered through SIBerNet

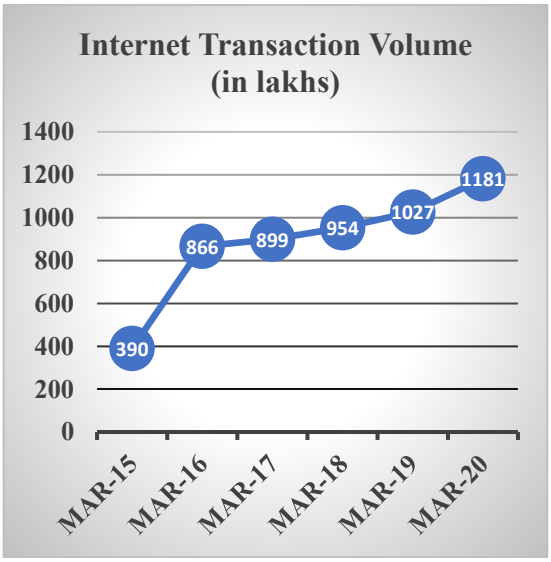
- The facility of fund transfer between own/ SIB/ other bank accounts
- Payment option for loan installments, closure of loan accounts etc.
- Facilitated Online Deposit Schemes and Investment Opportunities.
- Tax payment including GST payment, e-filing of income tax etc.
- Request option available for Cheque Book, Demand Draft etc.
- Provide the option to block/unblock debit cards, credit cards etc.
- Facility to apply for Initial Public Offer (IPO)
- The choice of changing/resetting the passwords

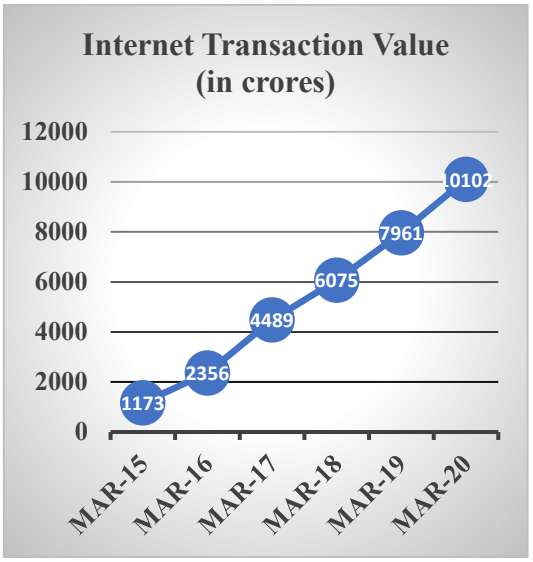
Figure 3.12

Performance Analysis of Internet Banking of SIB



Source: Annual Report





Source: Annual Report

b. Mobile Banking

Mobile Banking is a technology-based revolution for the transformation of traditional branch banking to modern branch less banking. South Indian Bank has introduced different types of Mobile Applications for the efficient and effective utilization banking products and services

i) SIB Mirror: -

As the name itself, it is a reflection for next generation banking. SIB Mirror is the Mobile Banking Application with varieties of features accomplished for excellent

technology acceptance. It has enhanced with lot of unique features such as, checking balance, transfer of funds, retrieving e-passbook, checking of demand draft/ cheque status, bill payment, e-lock options, Voice Recognition Features, etc.

"SIB Mirror has won third prize in IDRBT Banking Application Contest 2016" (SIB, 2016-2017)**.**

ii) SIB Mirror+

SIB Mirror+ is the next generation Mobile Banking Application with impressive feature like, UPI/BHIM payment, Bharat QR code, e-lock facility, management of account, fund transfer, utility bill payment etc.

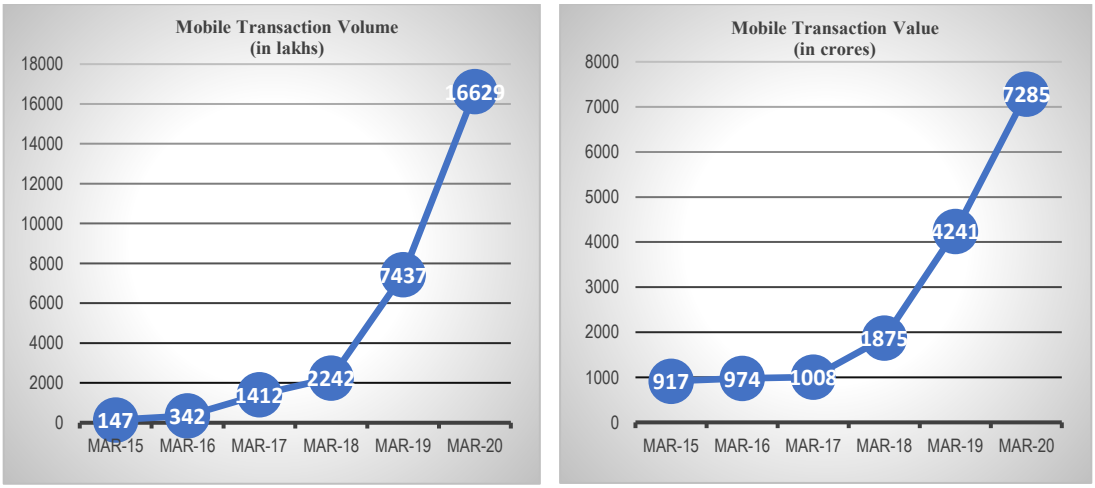
- UPI/BHIM payment: - Unified Payment Interface (UPI) is a system for making the consolidation of different participating bank's account into a Single Mobile Application for fund routing, merchant payments etc.
- Bharat QR: - This is a QR based payment solution by virtualize debit card inside SIB Mirror+. The customer can use this functionality for easy and simple payment of their utilized services.
- E-lock: - "SIB Mirror+ has the unique digital e-lock feature that allows the customer to enable/disable all digital debit transaction in account with a toggle key" (SIB, 2016-2017).
- Management of account: - The customer can have the option to open FD/RD with this account, view their transaction summary, access of mini statement/ M-passbook, download the transaction history etc.

iii) SIB UPI-POS

It is a Unified Payment Interface (UPI) based Merchant POS Application for accepting/making payment on their services provided. The service is very exclusive because, the user need not disclose account number, card number and other details to make payments. At the time of transaction, the merchant can enter the bill number and bill amount in the respective area provided in the app, immediately the QR code will generate instantly. At the same time, the customer needs to scan the QR code through SIB UPI-POS App for making the payment. Once the payment is completed, the confirmation message will be displayed on the App screen of customer's as well as merchant's mobile.

Figure 3.13

Performance Analysis of Mobile Banking of SIB



Source: Annual Report

2. Cash less Banking/ Plastic Cards

a. Debit Cards: - The bank is offered debit cards in different variants such as, Visa, Master and Rupay with differentiated features. The customer can use ATM for withdrawal purpose, CDM for deposit needs and POS as payment option. The international access of debit cards can be possible through EMV chip cards. Currently the bank issues Visa Classic EMV, Rupay Classic EMV, Rupay Platinum EMV, Master card Titanium EMV and Master Card World EMV cards for domestic and international cash-less transactions through ATM, CDM, POS and Internet Banking.

b. Credit Cards: - South Indian Bank has launched credit cards in association with SIB. The bank has issued this co-branded credit cards to customers who come under the selected/designated branch across India. This card is available two variants such as Simply SAVE Credit Cards and Platinum Credit Cards.

Green/ Digital Innovation

1. Core Banking Solution (CBS)

This is an effective digital innovation mainly focused on centralized access of services for reducing the usage of paper consumption and go for digital. All the branches of the bank are interconnected for facilitating real-time transactions from anywhere at any time.

Features

- ✓ The bank is treated the retail customers as their Core Banking Customers
- ✓ Bank introduced paperless alternative delivery channels of ATM, Internet and Mobile Banking etc.
- ✓ A separate software was developed by the bank to centralize the record keeping system and it can be accessed from anywhere
- ✓ Full Fledged implementation of GST for GST collection and update the invoices into GSTIN network
- ✓ Introduced Second Factor Authentication for ensuring security in sharing information
- ✓ Implementation of Straight Through Processing between CBS & SWIFT

2. Green PIN

Green PIN is a paperless initiative helps the customers to create their debit card PIN by using South Indian Bank ATM without the need of physical paper-based ATM. The customer gets the option to self-generate/ reset their ATM/debit card PIN from ATM counter. The project is introduced as part of SIB Green Initiative to save paper.

3. Digi E-lock

This is a new and innovative technique introduced mainly for protecting the data and information of a customer from online fraudulent activity. The customers get the option to lock/unlock their bank account and personal information with a single tap to prevent the malpractices. The bank has announced advanced features on Digi E-lock services such as Augmented Reality, Voice Recognition, QR Code Transfer etc. This Digi E-lock facility can be avail from Internet Banking and Mobile Banking portals.

4. KIOSK Banking

The KIOSK banking services is especially for unbanked and underbanked people who are excluded from banking sector. The bank tried to encourage them to use banking products & services without the help of bank branches. The Digi-lounge KIOSK system helps the user with speedy cash deposit, cheque deposit and passbook printing facility.

5. SIBer Mart

The bank has proposed an online shopping portal for customers. The customer can compare the products and prices offered by the prominent online market places like Amazon, Flipkart, Tatacliq etc. The main aim of SIBer Mart is to ensure the best buy services for their customers in a single platform.

6. Payment Gateway

"Internet Payment Gateway services provides a platform for the online e-payment transaction between a shopper/client and a merchant. Payment Gateway can be integrated in the website of the merchant and customer/client can directly pay the amount using Debit card, Credit card, Internet Banking, e-wallets etc." (SIB, 2017-2018).

7. Other practices

- Hi-Hi Banking (Host to Hots fund transfer facility)
- Fraud Risk Management (FRM) solution for channel and branch operations to ensure safety from unauthorized access of transactions
- Single Window services for instant/quick opening od account, TAB based account opening with real-time online transactions.
- For centralization of activities, Business Process Management (BRM) has initiated with the aim of paper reduction.
- Introduction of Interoperable Cash Deposit (ICD) Machines to promote remittance facility through recyclers.
- Robotic Process Automation & Artificial Intelligence based banking operations.
- E-Academia service provided for students to remit their fees by using Debit card/ Mobile Banking/Internet Banking facility

Green Practices

South Indian Bank is committed Social & Environmental concern in their business operations and practices followed for a better responsible service sector. The protection of environment is mainly for conservation of ecosystem for the coming future. Economic development is needed with the consolidation of Environmental Sustainability and Social Responsibility. Environmental issues, strict regulations, growing customer interest, stakeholders' pressure and higher expectation of general public about environmental responsibilities leads the banking sector to go-green. Hence, for maintaining environmental sustainability by reducing carbon footprints, the bank is accessed and adopted Green Banking practices with Triple Bottom Line Approach of Planet, People and Profit.

1. Green Energy Saving Practices

- ✓ Make awareness campaign among employees of the bank on the concept of "Reduce, Reuse and Recycle" to control waste management
- ✓ Installation of energy efficient lighting system, star rated Air Conditioners, Motion Detector Sensors and other energy conservation measures
- ✓ Promote e-filing, e-documentation and e-statement preparations as paper conservation measures
- ✓ The bank has placed solar power plants at the rooftops of the corporate office and main branches for the conservation of electricity and power
- ✓ As a part of waste management and recycling, the bank has maintained Plastic recycling Machines
- ✓ Circulated all relevant documents in I-pad for reducing printed paper consumption
- ✓ Disabling ATM printing receipts as a part of go-green initiative to prevent the paper usage
- ✓ Double printing of documents in necessary situations
- ✓ Automatic shutdown of computers, lights, fans, air coolers etc. at branches for reducing power consumption
- ✓ Other resource management activities include installation of solar panel, electric/battery operated vehicles for official use, bio-digester for wet waste management, distribution of cloth bags instead of plastic carry bags etc.

2. Green Finance

- The bank has provided Interest Free Cycle Loan to staff members in all cadres of the bank. The main objective of this loan is to minimize fuel consumption and maximize greener and healthier work environment
- The bank offered medium term loan for farmers for the construction of their green houses, setting up of biogas plants, sanitary latrines etc.

3. Green Initiatives in Corporate Governance

- Electronic delivery of documents including the Notice of Annual General Meeting, Annual Reports, Interim Report, Audited Financial Statements, Directors Report, Auditors Report etc. through e-mail address provided.
- The holding shares can also avail in electronic forms for better convenience in access.
- Board Meeting through electronic modes like Video Conferencing.
- The initiative of digital signature of authorization for Certificates

4. Other practices

- South Indian Bank has handed Electric Cars to Jubilee Mission Hospital, Thrissur as a part of Environmental Sustainability initiative for promoting green practices. The electric vehicles are opted for the hospital for patient transport and medical emergency without any kind of air pollution which affects the health of the public.
- For the promotion of green initiatives, the bank has installed Plastic Bottle Recycling Machines at selected stations of Kochi Metro in Kerala. The users can avail this facility with attractive discount coupons of selected brands and it can be redeemed from their outlets.

3.6.3 Environmentally Sustainable Banking Practices in the Industrial Development Bank of India (IDBI)

Industrial Development Bank of India was formed in 1964 an act to provide financial assistance to industries. IDBI has a rich legacy of industrial developments and which was an apex of Development Financial Institution (DFI) mainly for Indian Industrial growth. The sector was stretched its area of operations for financing the viable industrial projects from July 1 1964, to September 20, 2004. On October 2004,

the IDBI was converted into banking company to play the DFI role. Then they were merged with their subsidiaries and changed its name to IDBI Bank Ltd to reflect the spread of business functions. "Initially it operated as a subsidiary of RBI and later RBI has transferred it to Government of India. On 29th June 2018 Life Insurance Corporation of India has get a technical go- ahead from Insurance Regulatory and Development Authority of India (IRDAI) to increase stake in IDBI up to 51%. LIC completed acquisition of 51% controlling stake on 21th January 2019 making it the majority shareholders of the IDBI Bank. RBI has clarified vide a press release dated 14 March 2016, that IDBI bank stands re-categorized as a Private Sector Bank for regulatory purpose with effect from 21st January 2019" (IDBI, Industrial Development Bank of India, 2020).

Vision - "To be the most preferred and trusted bank enhancing value for all stakeholders" (IDBI, 2017-2018)

Mission

- "Delighting customers with our excellent service and comprehensive suite of best-in-class financial solutions,
- Touching more people's line with our expanding retail footprints while maintain our excellence on corporate and infrastructure financing,
- Continuing to act in an ethical, transparent and responsible manner, becoming the role model for corporate governance,
- Deploying world class technology, systems and processes to improve business efficiency and exceed customer's expectations,
- Encouraging a positive dynamic and performance-driven work culture to nurture employees grow them and build a passionate and omitted work force,
- Expanding global presence and
- Relentlessly striving to become a greener bank" (IDBI, 2017-2018)

The integration of business functions and technological aspects is considered as the priority sector with assured speed, simplicity and security. IDBI is the first bank has achieved 100% networking of banking premises under Core Banking Solution Platform. The bank has confronted to the fore fronter of digital adoption both in

customer-centric operations as well as banking functions. Therefore, the banks are considered 5 pillars viz, Business, People, Process, Technology and Capital Management to capture the wide spread transformation of banking operations.

The bank has played a pioneering role in Environmental Banking by taking various eco-friendly activities in their business operations. IDBI is the first commercial bank, raised US $ 350 million of fund through Green Bonds for financing Green Projects including wind energy, solar energy, biomass, water recycling etc. They are given prime importance in paperless banking by offering varieties of alternative channels, taking initiatives for the conservation of renewable energy as in-house and out-house operations, Environmental Risk Assessment, Clean Development Mechanism etc. for the betterment of Environmental Sustainability.

Green Products/ Services

1. Green Channel Banking/Paperless Banking

a) Internet Banking (inet Banking)

This is the net banking portal offered by the bank to connect the account for controlling the finance. The essential parts of banking operations can be accessible for Internet Banking platform as a Green Channel transformation from branch banking. IDBI bank provides 24x7 online services to their customers anytime, anywhere with high security features. The services include Account information, bill payments, fund transfer etc. for ensuring the self-service technology upgradation

Functions/features: -

- ✓ **Account Information: -** The green channel banking tried to provide information regarding bank account balance, account related queries, transaction history, fund flow details, cheque status, loan procedures, application for investment schemes.
- ✓ **Demat Account Information: -** These are, the details of correspondence, account number, holding statements, statements of transaction list, details of security and balances, billing statements etc. for the transparent way of dealing with shares/securities of the bank.

- ✓ **Online Instructions/Requests: -** The customer can make payments for cheque book, opening of FD/RD accounts, closing of loan account, getting debit cards, IPO application through ASBA etc. through the desktop-based banking.
- ✓ **Online Payment Services: -** This is the facility provided for customers to make payments for their mercantile through Merchant Website/e-shops. The customer can use these services for the effective utilization of e-commerce transactions within minutes.
- ✓ **Bill Payment Services: -** EBPP (Electronic Bill Presentment and Payment) allows IDBI bank customers to make their payments for utility services including traveling, dining, infrastructure, recharge etc.

b) Mobile Banking Applications

i. Go Mobile + App: -

IDBI has introduced the user-friendly mobile application with bouquets of products and service. The Mobile App enables the flexibility to transact the functions whenever you needed from wherever you are in 24x7 basis. The customer can download the App first and then activate it by setting personalized MPIN with the authentication of debit card/internet banking. The main services are; Checking account balance, mini statement and transaction history, Demat account information, M-commerce bill payment facility through the website of merchants, Fund transfer to self/third party and other bank accounts by using NEFT, Immediate Payment Service for making instant fund transfer, Bill payment for utility services like rent of water, electricity, travel, dining, recharge etc., Control of debit card by the way of setting transaction limit, hotlist of card, International Usage on/off etc., Request for cheque book, cheque payment cancellation etc.

ii. Pay Mate service – IDBI Bank Online Payment Service

This is a mobile based payment application during the invention of cashless e-commerce transactions with Mobile Phones. The main aim of this service is to make convenient, simple and secure shopping experience without delay in execution. The merchants should have Pay Mate enabled Mechanism for receiving the payments from their consumers. And the customer can make payments of their shopping with any Pay Mate associated merchants by consider their Mobile App as medium similar to credit

or debit card. The unique feature of this mobile wallet is, the customer need not disclose their card number CVV number for making the transactions.

iii. Abhay-Instant, Anywhere Card Control Application

This is a debit/credit card control Mobile Application introduced by IDBI for safeguarding the transactions against the chance of fraudulent errors. The main features/functionalities are; Possible to check the details of debit/credit card, make independent control of cards, temporary Activation/Deactivation of cards, setting of transaction limits for debit cards usage in ATM/POS/e-commerce platforms, permanent deactivation of cards (Hot listing), view balance/history of credit cards etc.

iv. M-passbook

IDBI Bank's M-passbook facilitates the access of physical passbook in electronic format and it is possible to view the transaction history both in online as well as offline mode. In addition to this, the Application is provided several other features with different options. The Application can be acceptable for Individual, proprietors and HUF those who maintain savings/current/term/loan accounts.

v. Paywiz

It is a Unified Payment Interface (UPI) Mobile Application of IDBI Bank. The customer can do the day-to-day banking transaction with cashless features by using any UPI participating bank.

vi. Pay Apt

This is a mobile wallet facility offered by the bank to transfer, transact and make payments with a single touch. Therefore, it is called as 'Mobile Money Payment Solution' for one click payments of day-to-day utility transactions

vii. IDBI Bank BHIM Digital POS Mobile Application

During demonetization, there is a scarcity in POS terminals for accepting merchant payments. Therefore, for recouping the situation, the bank introduced Digital POS for receiving payment through BHIM UPI Mobile Application without any hassle of installing complex hardware infrastructure.

c) Phone Banking

IDBI is the most powerful customer-centric bank by employing quality services to meet the requirements of customers. For making active interactions with

customers, they have offered Phone Banking technology as an effective tool. Phone Banking is a telephonic banking interface with 24x7 assistance for making customer queries from anywhere at any time without any delay.

Features

- Responses are available through Interactive Voice Response (IVR) or manual executive assistance,
- IVR can be access by making authentication of customer ID and Telephone Identified Number (T-PIN) or Debit card number and ATM PIN,
- It is a round the clock services with high security measures for preventing third party entrance,
- If the customer connected with Phone Banking executives, they will ask some verification questions in order to get the details of customer as well as account. It is mandatory for ensuring security of the account and authenticity of the customer.

d) Tab Banking

It is a digitalized system of banking for the convenience of customers. Here, the executives of the bank will visit the comfort space of the customer for inviting their savings account within the bank. They will enter the details customer in a Tablet by taking their photo and feeding Aadhar for improving Turnover Time (TAT). The bank manager will scrutinize all details of the customer within minutes and allow account number instantly.

2. Cashless Banking/Plastic Money

The bank's card portfolio includes the variants of debit cum ATM cards, credit cards and prepaid cards for the best suit in different transactional purpose of the customer.

a) Debit/ATM card

The banks classify their debit cards according to segment wise for fulfilling different needs of these segments. The debit-cum ATM cards can be used to withdraw cash from domestic and international domain and also accessible in POS terminals for making payment. Recently, the bank has launched contactless debit cards with simple tapping facility in Contactless Enabled Reader for payment purpose.

b) Credit Card

The bank has offered different types of credit cards for their customers according to their preference, lifestyle, profile and purposes. Therefore, they are maintained best-in-class privileged credit cards with EMV chip and highly secured PIN & password. The credit card variants are: Royal Signature Card, Euphoria World Card, Imperium Platinum Card, Aspire Platinum Card and Winning Rupay Cards.

Credit Card Welcome e-kit

"The digitalized credit card welcome e-kit is IDBI Bank's constant endeavor towards the Go-Green initiative. The e-kit provides the cardholder with detailed information regarding card usage, cardholders agreement and Most Important Terms and Conditions in downloadable PDF format" (IDBI, 2020)

Green/ Digital Innovation

1. Facebook- i-Engage

The bank has launched Social Media Banking via Facebook-i Engage for retail online banking users. Through this digital initiative, the customer can avail the datils and procedures of banking functions at single touch. The site provided with excellent service and comprehensive set of best financial solution.

2. Green PIN

Green PIN is the facility introduced by the bank instead of physical PIN generation solution. It is a paperless technique of debit card PIN generation with the help of ATM/Interactive Voice Response System (IVR)/ Internet Banking channel/ SMS/Missed call services. The procedure for generating debit card is very simple through Green PIN facility and the customer need not enter in to the branch for collecting physical PIN.

3. Server Virtualization Technology

As a part of green initiatives, the bank has launched 'Server Virtualization Technology' for the purpose of reallocation of resources with lower energy consumption. The main aim of this technology is to reduce server footprints in the data centers, Individual Physical Servers & heat transmission.

4. Digital Guru

It is an information-based system provided for the clarification of digital innovation related queries. For achieving this objective, the bank has designated one officer as a "Digital Guru" to act as single point of contact in every retail branches. If the online banking customer raise any query about electronic products, practices and procedures, the Digital Guru will help them directly or indirectly through online help desk, telephonic conversation, SMS banking service etc.

5. Disabling ATM Receipt

As a part go-green initiative, the bank has taken a step for reducing the use of paper by disabling ATM receipt. The customer will get confirmation message and details of account balance for every ATM transaction.

Green Practices

IDBI is active in the role of environmental banking for over 20 years now. As a part of this significant role, the bank has taken different initiatives including paperless banking, cashless banking, environmental project funding, Clean Development Mechanism, Priority Sector Lending, Solar energy equipment usage, energy efficient inhouse practices etc. for the conservation of eco-system. "The bank has created an exclusive group working on climate change and more specifically on carbon credits advisory services to clients to deal with CDM/Carbon credits of the Kyoto Protocol and Voluntary Emission Reduction (VERs) authorities. This group has advised a structured product for providing upfront finance against the Carbon Credit Receivables" (IDBI, 2019-2020). IDBI is one of the Private Commercial Bank Signatured Carbon Disclosure Project (CDP) as responsible business for low-carbon future. Instead of this initiative, the bank has been taking various in-house practices for the protection of natural resources, and thereby Environmental Sustainability. These activities are, energy saving lighting, solar equipment's installation, awareness campaign for reducing the use of resources, paperless initiatives of video conferencing, e-filing, e-documentation, e-reporting etc.

Awards and Recognitions for Environmental Practices/Green Practices

- ✓ "IDBI Bank's Project on "Initiative for Low Carbon Business Sustainability through Environmental Banking" won ADFIAP's outstanding Development

Project Award 2014 under the Environmental Development Category" (IDBI, 2015-2016).

- ✓ "IDBI Bank won the Association of Development Financing Institutions in Asia and the Pacific (ADFIAP) Award in 'Environmental Development' for its project "Lighting a Billion Lives" (IDBI, 2016-2017).
- ✓ "IDBI Bank's CSR Project, "WaSH" (Water, Sanitation and Hygiene) won the Asia Pacific Customer Engagement Forum (ACEF) Gold Award 2016 and Certificate of Excellence at the Annual FICCI CSR Award" (IDBI, 2016-2017).
- ✓ "IDBI Carbon Newsletter" won Gold Award from the Association of Business Communication of India (ABCI) at the 25th ABCI Award held in March 2016" (IDBI, 2015-2016).
- ✓ "The bank received the 5th Annual Green Tech CSR Award for the year 2015-2016 in the Platinum Category of its Water, Sanitation and Hygiene Project (WaSH)" (IDBI, 2015-2016)

The green practices followed by the bank are undernoted:

1. Green Energy Management Practices

a. Water Management

- ❖ Installed water filters in banking premises
- ❖ Replaced Electric Water heater with Solar Water Heater
- ❖ Rainwater harvesting facility has provided in residential quarters and buildings of employees for maintaining ground water level.
- ❖ Sewage Water Treatment (SWT) plant for reusing the waste water
- ❖ Sensor based wash basin and tap facility in toilets attached with branch

b. Electricity/Power Management

- ➢ All conventional light fixtures are replaced with energy efficient LED/Tube lights
- ➢ Occupant Sensors is used to control Cabin lighting and thereby reduce the power consumption

- Lights with Variable Frequency Drive have installed for the automatic shutdown of system at the time of non-use
- Star rated low power consumed centralized Air Conditioners are fixed instead of conventional ACs
- Installation of solar panels for employing natural power
- Modernization of lifts with energy efficient Variable Voltage Variable Frequency (VVVF) drive and microprocessor-controlled system.

c. Paper Management

- ✓ Conducting Video Conferencing instead of physical meetings
- ✓ Electronic Medium of Communication internally (approvals, circulars), externally to customers (account statement, application forma, fund transfer etc.), to shareholders (annual report, regulations of Govt. etc.)
- ✓ Making payments and disbursement of loan through online channels
- ✓ Automated staff related functions including salary payment, performance appraisal, attendance making, training programme etc.

d. Waste Management

"The bank has installed a non-hazardous wet waste treatment and disposal system at its staff quarters at different places as a Swachh Bharat Mission. The new system installed is an environment friendly one which composts the wet waste naturally in 45 days through an aerobic process. The equipment consists of collection & dewatering bins, waste timbers and garden accumulators. The power consumption is less than 1KWH per month and area occupied in 300 sq.ft. The compost so generated is used in the garden setting in branch premises as manure" (IDBI, 2019-2020).

2. Green Financing

Due to greenhouse effects and environmental hazardous situations, the focus is moved towards generating natural power using renewable sources which are environmentally friendly resources and available in abundance. Hence, the IDBI has participated in renewable energy projects implementation and priority lending

schemes for setting up of wind, solar, hydro power utilization. "At the 1st Renewable Energy Global Meet held on February 15-17, 2015 by the Ministry of New & Renewable energy, Govt. of India, IDBI Bank has given commitment of assistance of Rs. 14,700 crores with capacity addition of 3,000 MW to Renewable Energy Sector during the five-year period 2015-2019" (IDBI, 2015-2016).

The green financing is the lending scheme adopted by the bank for sustainable development in socially and environmentally committed project. These projects are coming under the category of responsible investment for protecting the natural resource. Primarily they are non-pollutants, hence the bank has provided credit facility after Environmental Risk Assessment. Therefore, the bank has been proactively providing project appraisal, debt syndication, structuring and advisory services for different sectors such as, infrastructure, manufacturing, renewable energy etc. "In line with the Bank's Statement "relentlessly striving to become a Greener Bank" the bank has taken initiatives for funding potential green projects based on clean technologies" (IDBI, 2016-2017). The major green financing schemes of the bank are undernoted:

a. Funded for e-rickshaws and cycle rickshaws for avoiding air pollution

b. Encourage and assists innovative hi-tech agricultural practices through financing hydro power projects, thereby the plants are grown by using minerals nutrients in water solution

c. Financing for power projects for ensuring low-cost infrastructure facilities

d. Providing credit facilities under SURYA SHAKTI scheme for solar equipment viz, solar lighting, solar pump, solar panel, solar water heaters, solar lamps, solar water filters etc. to individuals, farmers, Self Help Groups (SHGs) resides at urban/semi-urban/rural areas.

e. Financing assistance for the implementation of Climate Smart Water Management project in selected villages

f. Project financing for Rainwater harvesting facility in residential quarters and villages

g. Financing supporting for executing Water Shed development programs in selected villages

h. Energy Efficient Housing Refinance Scheme under Home Loan: - The housing loan for an individual up to 50 lakhs are disbursed by the Primary Lending Institutions for build/renovate/purchase new renewable energy efficient raw material used residential buildings (eco-homes) certified by GRIHA/LEED in urban/semi urban/rural areas.

i. Upfront Finance against Carbon Credit Receivables: - The projects are coming under the category of Clean Development Mechanism (CDM) projects and it should register/ready to register in CDM executive Board.

j. Extending financing for Solar Photovoltaic (PV) roof-top installation under its home loan category.

3.7 Environmentally Sustainable Banking Practices in the New Generation Private Sector Banks

Here, Housing Development Finance Corporation (HDFC)**,** Industrial Credit and Investment Corporation of India (ICICI) and AXIS Bank are considered as the New Generation Private Sector Banks in Kerala.

3.7.1 Environmentally Sustainable Banking Practices in the HDFC

HDFC Bank Limited is the largest wholly owned subsidiary of Housing Development Finance Corporation in India with its headquarters in Mumbai, Maharashtra. The bank has provided number of products and services such as wholesale and retail banking, diversified loan facilities and Digital Banking Initiatives. HDFC Bank Parivartan is the step towards progress of Corporate Social Responsibility framework. The bank has presented their reports in the line with the guidelines of International Integrated Reporting Council (IIRC) for exposing the value created for all stakeholders on the basis of six capital, namely; Financial, Manufacturing, Intellectual, Human, Social & Relationship and Natural.

Vision – "Be the World Class Indian Bank" (HDFC, 2019-2020).

Mission – "Provider of Banking Services to Retail, Whole sale customers and Health Growth in Profitability and Consistent with Risk Appetite" (HDFC, 2019-2020).

Values – "Operational Excellence, Customer Focus, Product Leadership, People and Sustainability" (HDFC, 2019-2020).

The bank has remarkable grade mark on CSR initiatives with the vision of 'Creating Sustainable Communities' through different activities. Further, they aim to enlightening the products, process and practices by participating in community development, ethical governance, stakeholder engagements and environmental sustainability. As meticulous bank, they have innovated and implemented eco-friendly and resource-efficient services for the well-being of society as well as environment. In this respect, they estimating the Carbon Footprint of the bank and disclosing the same as environmental performance through Carbon Disclosure Project (CDP). Moreover, they have implemented energy efficiency initiatives in in-house infrastructure of the branches and buildings. Likewise, the paper-less and cash-less initiatives are promoted to ensure the minimal consumption of paper-based transactions. To guide the banking practices in ethical, responsible and sustainable manner, the bank was officially included Sustainability as the fifth value during 2014-15. Now, the bank has considered Sustainable Development is the DNA of the bank for ensuring the progress of Social Involvement and Economic Progress.

Green Products/ Services

1. Paperless Banking/ Green Channel Banking

a. Internet Banking

The Internet Banking Platform is the customer-centric approach of the bank to ensure the delivery of differentiated services with the help of Artificial Intelligence and Sophisticated Technology. Hence, the bank has the priority to build digital innovativeness by advocating customer experiences as, Intuitiveness, Context, Relevance, Immediacy and Hyper-personalization. Accordingly, the next-gen technology of Artificial Intelligence gathers insights on customers' transactional and behavioral data and then transform into need-based technologies for satisfying their desires. The main Internet Banking facilities are listed below;

- Money transfer through UPI, IMPS, NEFT, RTGS etc.
- Utility Bill Payment for electricity, insurance, loan and other purchases
- Facility to open, maintain, activate and de-activate accounts
- Online Investment facilities
- Reorder cheques or even cancel the issued one etc.

b. Mobile Banking

HDFC has designed the Mobile Banking services with the Motto of 'Bank the way you live'. It has initiated for enabling the technology-based handheld transactions quickly and easily. The main Mobile Banking Applications are: - Payzapp- UPI & Bill Payment, INSTA- Insta Savings & Salary Account, HDFC Bank e-Token and PFMS -HDFC Bank.

Following are the most innovative Mobile Banking features of the bank.

- Account Management: - Through this facility the customer can get up-to-date information of their accounts. Further, the customers can check the balance details, transaction history and account-related information
- Bill Payment: - It has enabled for the utility bill payment for credit card, electricity, telephone, recharge and other e-commerce transactions. Further, the customer can view bill payment history, pending payments, cancel payments etc.
- Fund Transfer: - The facility has provided for the quick transfer of funds to another account through NEFT/ RTGS/IMPS etc. Additionally, the customer can share the transfer receipts and give application for loans, credit cards etc.
- Task lists: - It is the special innovative idea through Mobile Banking Applications for managing the daily task/ transactions easily. It has enabled to avoid the penalty/fine by forgetting to make payments and customer can add the daily task as favorites in the section provided.
- Security: - The bank has enabled different security features such as, two-factor authentication of ID and password, e-mail confirmation for every transaction, face ID/ fingerprint for access, etc. to ensure the protection of customer privacy and security.

c. Phone Banking

It is the phone-based service of the bank to perform a wide range of transactions to clear the customer queries and requests. It has designed with comprehensive and multilingual assistance for the convenience of the customers. The main features are: -

- Easily transact via Interactive Voice Response System
- Perform different activities at a time for customer convenience

- Customer can operate account, view balance, request for cheque book, check credit card services, information of loan etc.
- It is designed in multilingual format with 24x7 service assistant.

2. Cashless Banking/ Plastic Money

a. Debit Cards

HDFC Bank has provided varieties of debit cards for the account holders. They have suggested the best options of the cards namely, lifestyle, insurance, travel, shopping, cashback, payments etc. Furthermore, the bank has introduced Millennia, Money Back, Infiniti, Imperia Platinum Chip, Preferred Platinum, Classic Platinum, Platinum, HDFC Bank Rewards, Business, Rupay Premium, Rupay NRO, HDFC Signature, Titanium Royale, Easy Shop Gold, Women's Advantage Debit Cards etc. with different features and options.

b. Credit Cards

The bank has offered varieties of credit cards for their account holders with premium options, perks and benefits. The cards are introduced with different features such as, grace period, cash advancement, credit limit, rewards & bonuses, interest rate etc. for all account holders. The popular credit cards are; Money Back Cards, Regalia Cards, Millenia Cards, Tata Neu Plus Cards, Infinity Cards, etc. designed with different features and options for customers.

Green/ Digital Innovation

The bank has promoted innovative products using cutting edge technologies to strengthen the digital solution and better experience with the bank. They aim to develop new technologies like Robotic Process Automation (RPA), Machine Learning (ML), Artificial Intelligence (AI) and Block Chain (BC) to enhance the current digital portfolio of the bank. Moreover, by implementing these techy-based ideas, the bank has focused in the innovation-led initiatives for the customers of the bank. According, the Digital 2.0 initiative led them to transform the banking practices and customer-centric approach. It is the faster measure to understand customer's digital lifecycle and go with them quickly. Similarly, the key initiatives of Digital 2.0 noted below;

EVA, Digital Marketing, Analytics & Digital Origination, Virtual Relationship Manager etc.

1. EVA – Electronic Virtual Assistant

It has offered over all digital platforms of the bank to resolve the customer queries and clarities. This experience has enabled the service by integrating with google assistant and Alexa for interacting through online channels by 24x7 basis. It is established with Android Devices and Google Homes with voice banking system for the customers.

2. IRA – Intelligence Robotic Assistant

It is an interactive humanoid robotic system positioned in the welcome desk of the branches. This system will greet the customers and help them to the relevant counter for transactions such as cash deposit, foreign exchange, loans and others. It has developed by using Robotics and Artificial Intelligence Capacity to enhance the customer service.

3. DCC – Digital Command Centre

This is an innovative solution to understand customer conversation through social media. Further, the in-house state-of-the-art system helps to deepening the brand engagement from the perspective of banking customers. The digital banking experts will monitor the system regularly with real-time visualizations and analytics to understand the online trends and to enhance the brand improvement regarding the same.

4. Video KYC facility

HDFC bank has launched video KYC facility to identify the customer details during the account opening process. It is a paper-less, contactless and recorded interaction between the Bank Staff and Customer. The customer can upload their documents through online media and the bank officials validated the same before activation.

5. VRM – Virtual Relationship Manager

It is the service of the virtual team to interact with the customers through digital channel with a human touch/face. They have admitted to conduct the cross-

selling bank products and building dissemination for paperless banking channels like net/ mobile banking. They have the capability to formulate customer-centric strategies for developing good relationship.

6. HDFC Passbook Update Machine

This is for updating the transactions details in passbook digitally. The customer can enable this service through Self-Service Channel with the help of sophisticated technology. It allows to use the system through the regional languages of the customers in 24x7 basis. Passbook Update system has initiated to protect the time and effort of the customer and they can avail from anywhere at any time.

7. Cash Deposit Machine

This facility helps the customer to deposit their cash in the account without visiting the branch premises. This system has enabled for the convenience of the customer in the absence of physical branch infrastructure. This system has placed near to the ATM counter of the bank.

Green Policies and Procedures

1. Social and Environmental Risk Management System (SEMS)

This system is applicable for the investment selection criteria of projects with a lifecycle of more than 5 years and minimum investment of 10 crores. Regarding the project, the bank appoints independent engineers for conducting due-diligence for environmental, social and health related perspective. Accordingly, the companies need to prepare an environmental management plan for the implementation of environmental, social and health protection measures. The team of the bank has thoroughly checked the compliance and non-compliance projects in every year. In case of non-compliance, the investment is either curtailed or recalled.

2. ESG & Climate Change Assessment Framework

It is the upgradation of Social and Environmental Risk Management System (SEMS) framework to enable more comprehensive assessment of Environmental, Social and Governance aspects and Climate Change matters. The bank has formulated 'ESG & Climate Change Template' for all Credit Assessment Memoranda (CAMs)

with certain thresholds. Accordingly, this template shall be applicable to all CAMs where the customer exposure is above the certain threshold.

3. Sustainability Policy

The policy aims to develop a framework of sustainability practices, commitment towards implementation and reporting and enhance brand value & reputation through structured sustainability reporting. Accordingly, Sustainability Commitments are defined towards all stakeholders of the bank. Moreover, the policy directed for the Corporate Sustainability in the line of CSR. Hence, HDFC has put their action plan on below specified area namely;

- Transparency
- Employee Development
- Dynamism and Resource Efficiency
- Strengthen Stakeholder Engagement
- Governance for Sustainability
- Sustainability Accounting

Green Practices

1. Green Financing/ Responsible Lending

The bank promotes environmental sustainability through sustainable/ responsible lending for the sectors like, solar & wind power, hydroelectricity, natural gas, biogas-based energy generation, etc. that are the environmentally sustainable projects and contribute for the climate change mitigation. Further, there is no access to capital for chemical or biological weapons manufacturing enterprise. The responsible financing activities are conducted with the objective of integration of Environmental and Social aspects into overall risk management. Further, the bank has considered Environment, Health and Safety (EHS) as the integral parameters to overall credit risk assessment and monitoring process. Accordingly, the bank does not make investment in EHS hazardous projects. Additionally, the application exceeding `10 crores in vale and 5 years in tenure are critically examined under the Social and Environmental Management System (SEMS) framework. "In FY 21, 463 loan proposals were screened and approved through the SEMS framework" (HDFC, 2020-2021)**.**

2. Energy Efficiency and Management

As a financial sector, energy consumption & management is one of the most critical aspects. The bank has disclosed the consumption details in Annual Business Responsibility and Sustainability Reports. The bank is looking for the opportunities to minimize environmental footprints via reduction of energy consumption and emission control. "Bank has initiated 'Energy Management Modules' in 100 select branches across 4 metro cities to pull data from sensors to monitor real time usage and based on analytics will help control electricity wastage" (HDFC, 2020-2021). The bank has controlled the consumption of electricity for the effective implementation of Energy Management System. Accordingly, the bank has conducted proper awareness programs and training to employees for resource efficiency as in-house energy management practices. "The bank won an award in National Energy Efficiency Circle Competition 2017 -Winner Best Energy Efficient Case Study held by CII in May 2017" (HDFC, 2017-18)**.** The main energy efficiency and management initiatives are;

- ✓ LEDfication: - Replacement of traditional fluorescent lights with LED lights.
- ✓ Elevator Scheduling: - According to the banking hours, elevators at the banking premises are scheduled and operated.
- ✓ Provision of equipment scheduler: - Signages, sensors and signboards have placed in common and conference hall to switch off the electric equipment.
- ✓ Variable Refrigerant Flow (VRF) System and Invertor ACs: - Installed VRF in ACs for ensuring energy efficiency. And the control system in inverter adjusts the compressor frequency to maintain temperature control.
- ✓ Use of conference call facilities, virtual desktops, printer consolidation, establishing green data centers with state-of-art technologies
- ✓ Mass transportation facility and carpooling system for the staffs
- ✓ Encourage e-statements & electronic communication, Automatic server and desktop shutdown facility, installation of green locks and energy capacitors, etc.
- ✓ Provision of solar panel in large office locations & buildings
- ✓ Deployment of Energy Management System (EnMS) with the help of data analytics and implemented Automated Energy Management Solution.

- ✓ Efficient Data Centres: - The bank has conducted the disposal unused old assets and the bank has rated under IGBC Green Data Centre Rating System.
- ✓ Implemented several energy saving measures like, upgradation to efficient cooling units, cold-aisle containment, new generation hardware, implementation of Smart iPDUs, adoption of new fire suppression system, replacement of UPS batteries with Li-ion batteries.
- ✓ Resource Efficiency: - Washrooms installed with proximity sensors, motion sensors to automatic switch off the lights in unoccupied places.
- ✓ The bank supplements grid power with solar panels for ensuring renewable energy efficiency
- ✓ Effluent Treatment Plants released into municipal sewer system.

3. Paper Consumption and Management

Paper is the important element in the resource consumption of the bank, and it is accounted for about one-third of Scope 3 emission. The bank has formulated different methods to reduce the paper consumption and has partnered with employees to do the same. Some of the methods are:

- ★ The bank has conducted awareness program among employees to develop a behavior towards paper management.
- ★ Followed management practices by the way of electronic means of communication, video conferencing, printing the reports in cocoon silk papers, saving documents digitally etc.
- ★ Promoting e-transaction advices, encouraging e-statements usage and e-communication among customers of the bank.
- ★ Conducted Green Event Guidelines through marketing team to promote 3R practices (Reduce, Replace and Recycle) trough on-ground activation, enhancing visibility of the brand and products.
- ★ Used recycled paper for reporting the Financial, Social and Environmental Performance of the bank.
- ★ Tree Plantation program has conducted as in-house and out-house environmentally sustainable banking practices.

4. Water and Waste Management

Water and Waste Management is an important environmentally sustainable banking practice adopted by HDFC Bank. As regards the banking premises, there are three types of waste generated and managed namely, wet (cafeteria, sewage), dry (paper) and e-waste. The bank has adopted different techniques for the management of waste generated and optimum consumption of water resources.

- Strong emphasis has given for the recycling of paper and plastic waste
- Primary source of e-waste is generated from computers, monitors, modems, switches, laptops, scanners, routers, printer and UPS systems. Its collection, segregation, dismantling, reuse and recycle has done with the help of authorized dealers in structured manner.
- Waste water recycling in major hub of the bank and also encourage the employees to prevent wasteful usage of natural resources.
- Adopted mechanism for recycling of dry waste in to notepads, notebooks and envelopes. Hence, tonnes of paper were recycled and reused.
- Followed multi-specialized involvements in the areas of soil & water conservation, water management, construction, renovation and maintenance of water harvesting, mechanism to improve ground water facility, etc.
- As a part of rural development, the bank has setup water wheels in rural communities to enable wase of access of clean water for drinking.
- Followed a routine activity to phased out all single use plastic bottles and replace multiple use plastic with glass jar at the time of meeting, conference and even working hours.

5. Emission Management

The bank has classified the level of GHG emission under three scopes namely,

Scope 1 – emission regards to travel, paper consumption, e-waste. The emission management has done by identifying the emission factors from India GHG Program, 2015.

Scope 2 – deals with emission include MTCO2 from electricity consumption and diesel consumption. The emission factors have taken from Central Electricity Authority database and GHG Program, 2015.

Scope 3 – includes the emission of CO2, N2O and CH4 from vehicles. The emission has managed asper Global Warming Potentials.

"With respect to emission management, the bank's performance has improved and it featured in Carbon Disclosure Projects (CDP) and Climate Disclosure Leadership Index (CDLI). Further, the bank has set a Carbon Neutral target for FY31-32 asper Science Targets Initiative (SBTi), climate science to meet the goals of Paris Agreement" (HDFC, 2020-2021). Moreover, the bank has compiled an inventory of energy-related emissions from office buildings & retail branches and also environmentally friendly features in infrastructure.

6. Solar ATMs and Projects

Regarding the Renewable Energy Conservation, the bank has set up Solar ATMs/ Lithium UPS powered ATMs in different areas. The facility has initiated under the scheme of Independent ATM Deployment (IAD) model. The rechargeable Lithium-Ion batteries reduces the consumption level of power generated by conventional sources. Further, the bank also arranged financing facility for solar and wind energy projects. And, they invest in solar street lights, solar water pumps, etc. to promote the use of renewable energy.

7. Green Building Management

The bank has incorporated several changes in the building structure to improve energy efficiency. The infrastructure facilities and interior design of the bank is being carried out as per IGBC guidelines. Hence, the bank has LEED (Leadership in Energy and Environmental Design) Gold certified buildings and IGBC (Indian Green Building Council) Gold rated offices in different areas. With respect to Building Management, the bank has initiated in-house energy saving practices.

8. ESG Practices

The commitment of the bank towards the environment, society and stakeholders guided them to ESG (Environment, Social and Governance) practices.

Additionally, the bank was officially included sustainability as the fifth value in core objectives. They published the ESG Practices in Sustainability Report as per Global Reporting Initiative (GRI) standards.

- ✓ Regarding the Environmental initiatives, they measure and disclose the Greenhouse Gas (GHG) emissions details and also initiated a step to calculate the carbon footprints of the bank.
- ✓ The Social Initiatives are the combination of Sustainable Livelihood Initiatives, Promotion of Self-Help Groups, Holistic Rural Development Programme etc. to empower the community.
- ✓ The bank also maintains Ethical Standard of Integrity, Corporate Governance and Regulatory Compliance with the parameters of Internal Control, Risk Management, Cyber Security, Customer Service and Responsible Business.

3.7.2 Environmentally Sustainable Banking Practices in the ICICI

Industrial Credit and Investment Corporation of India (ICICI) was established in the year 1995, headquartered at Mumbai. The bank has offered a wide range of products and services for retail & corporate customers through digital as well as branch banking. ICICI bank is the forerunner of technological innovation to provide simplicity, flexibility and convenience in banking practices. They focused on Information Technology Strategy for engagement, information, communication, security, risk and compliances. They make investments in cutting-edge technologies in the line of Artificial Intelligence, Robotic Automation, etc. In the line of these strategies, the bank has formulated the theme of 'Run, Transform and Re-Imagine' digital initiatives to transform from the traditional banking system. Here, 'Run implies that, focus on running system with affordable changes, Transform means, adoption of Product & Process Innovation to become 'Digital to the Core' and Re-Imagine explains that, delivering customer services according to their comfort and convenience.

Vision: - "To be the leading provider for financial services in India and enhance positioning among global banks through sustainable value creation" (ICICI, 2019-2020).

Mission: - "To create value for the stakeholder by: being the financial service provider of first choice for customers by delivering high quality, world-class products and services, playing a proactive role in the full realization of India's potential and contributing positively in all markets where operate and maintain high standards of governance and ethics; and balancing growth, profitability and risk to deliver and sustain healthy returns of capital" (ICICI, 2019-2020).

According to ICICI, they capture the role of responsible corporate citizen through Environmental, Social and Governance aspects for the well-being of stakeholders of the bank. Subsequently, they have formulated key pillars for the ESG framework namely, Promoting Inclusive Growth, Managing Environmental Footprint, Socially Responsible Banking, Financing with a Focus on Sustainability and Corporate Governance. The activities of these pillars are drive by the United Nations Sustainable Development Goals (UN SDGs). Moreover, the bank evaluating its business operations under the umbrella of environmental footprints & social benefits.

Green Products/ Services

1. Paperless Banking/ Green Channel Banking

a. Internet Banking

The Internet Banking facility of the bank has carried out all the banking transactions, managing financial services, conducting non-financial activities from anywhere at any time. It has experienced the real-time access of around 350 services and features with the help of Internet Banking Platform. The portal offers rich list of features and functions for the account holders for conducting their banking transactions efficiently and effectively. Some of the features are provided below: -

- All Bank account details: - It exhibits the details of balance & account, mini & detailed statement, reward points, account summary, enrolment for pension schemes, Virtual Debit Card services etc.
- Service Request: - It is related with the upgradation of debit card, account conversion, update PAN details, address/ Aadhaar change, opening & blocking of card details, request for cheque book & cheque status enquiry etc.

- Fund Transfer – It explains the fund transfer facility to ICICI Bank account & other linked account through IMPS-IFSC, NEFT, RTGS, MMID, Money2World, Money2India, Virtual account, Quick transfer, SMART transfer etc.
- Insurance Services: - This facility enables to enroll in different schemes of insurance for health, travel, medical, etc. Further, the insurance service request has provided for maintaining linkage with ICICI policies.
- Investment: - This service helps to consolidate investment summary of the account holders in Sovereign Gold Bond, Mutual Funds, Online IPO, Digital Gold etc.
- Bill payment: - This feature facilitates the utility bill payment for recharge, water & electricity services, shopping, travelling, e-commerce, etc.

b. Mobile Banking

To enable a quick and convenient banking service, Mobile Banking technique is the most applicable solution. It is just a platform of digital banking features and facilities with the help of new-age smart phones to explore the simple way of banking transactions from anywhere at any time. Moreover, it is so excited to use the techniques with the experience of end-to-end management of customer accounts and details. Below specified services are the Mobile Banking Solutions of ICICI Bank: -

- IMobile Pay: - This is a comprehensive Mobile Banking Application provided by the bank with extensive range of services namely, transfer of funds, payment of bills, maintenance of deposit, purchase mutual funds, avail forex services, connect to the Bank's query center, avail cardless cash withdrawal, tag frequent transactions, receive account alerts etc.
- Pocket by ICICI Bank: - It is another Mobile Banking Solution with unique feature of 'digital bank'. It is just like a wallet/ virtual place of the customer to store & save the money and can also use the same for various transactions like paying bills, sending gifts, recharge, shopping & travelling purposes and also to open zero-balance account.
- Touch and Pay: - It is retail payment as well as contactless mobile payment solution by enabling Host Card Emulation (HCE) technology. This system enables a payment card on mobile devices and its details attached with the bank's cloud.

The customer can use this virtual card by just waving the phone near a contactless merchant terminal.

- Mobile Money: - it is an account on customer's phone with mobile banking itself as the account number. This facility has offered by the bank in association with telecom network providers with the facilities of deposit funds, prepaid recharge, bill payments, transfer funds, withdraw cash, pay for merchant services etc.
- SMS Banking: - This feature facilitates to conduct banking services without the access of internet connections/ any activated data plans.

2. Cashless Banking/ Plastic Money

a. Debit Cards: - The debit/ATM card service of the bank enables the customer to conduct cashless shopping according to their convenience. It has provided with maximum security and higher rewards for better experience. Gemstone Debit Cards, Expressions Debit Cards, Personal Cards, Business Cards etc. are some of examples of debit card services of the bank.

b. Credit Cards: - ICICI offers varieties of credit cards to satisfy/cater the specific lifestyle needs and wants with different features and facilities. The different credit cards are mainly distinguished on the basis of purpose of using it and the range of benefits. Travel cards, Fuel cards, Cashback cards etc. are some of the main credit cards of the bank

c. Multi Wallet Prepaid Card: - It is the next type of cashless solution designed for the corporates to make payments and disbursement for the employees and staffs in the form of basic pay, allowances, etc. It can be categorized as dedicated wallets for different type of allowances like medical, fuel, telecom, travel etc. The card provides different benefits for the holder namely, (1) One card for multiple payments, (2) No minimum balance required, (3) Online Portal Access available for tracking and (4) SMS alerts of every transaction.

d. Unifare Metro Cards: - It is designed to use as Metro Smart Card with the advantages of Debit/ Credit Cards of ICICI. This card enables to make quick and hassle-free operations with different discounts and offers in Metro fare. The Bank offers Unifare Metro Debit Card and Unifare Metro Credit Card for withdrawal, shopping and travel using Metro along with lifestyle benefits.

e. **Forex Prepaid Cards: -** This card facilitates to make payments easily in a number of currencies for all the international purposes. This offers a smart and secure alternative system for foreign currencies and the holder can also avoid the effects of currency rate fluctuations. This card facility available for US Dollar, Britain Pound, Euro, Canadian Dollar, Australian Dollar, Singapore Dollar, UAE Dirham, Swiss France, Japanese Yen, Swedish Yen, SA Rand, Saudi Riyal, Thai Baht, New Zealand Dollar and Hong Kond Dollar.

Green/Digital Innovation

The bank continues to invest in advanced technologies for delivery of digital architecture for the future with the objective of reduction of paper consumption. Accordingly, this enables the customers to interact with the bank safely and securely with superior quality of products and services. Thereby, they can self-sufficient to conduct banking transaction without the help of bank's officials. Moreover, the banking experience is always connected with the personalized customer connect with cutting-edge-technology. Smart Vault, e-locker system, robotic technology, and multilayer security are some of the features for the integration of digital and physical connectivity of the bank.

1. **ICICI Stack: -** It is a digitalized solution for maintaining customer relationship over various stages of transactions through technology and innovation. The word explains that 'S' for Start relationship instantly, 'T' for Transact digitally, 'A' for Avail Insta Loans, 'C' for Care for self & business and 'K' for Keep growing. In all these stages the customer gets different solution for their accounts, payments, loans and other activities. As regards the individual customer, Insta Save, IMobile, Net Banking, Insta Loan, FDxtra, Insurance services etc. are the main Stack Services.

2. **E-locker facility: -** It is an online document storage facility of the bank for protecting the valuable documents of customer like, property papers, bank documents, identify proofs, passport, life insurance policy, certificates etc. at one central secure location. Main features of this facility are: - secure and accessible, anywhere and anytime access, safety and longevity, no charges for storage etc.

3. **Smart Vault: -** This is locker facility designed to safeguard the valuables of the customer with state-of-art-technology and high-end security. With the help of

robotic technology, the human intervention can be minimized and high degree of protection can be ensured. It is available just like a kiosk and customer can access the facility with the help of advanced Radio Frequency Identification. Moreover, it has equipped with high-end security features and customer can access the locker room by using Debit Card/ biometric authentication.

Green Policies and Procedures

1. Environmental, Social and Governance (ESG) Policy

The bank has developed ESG Policy with respect to their innovative ideas, market developments, social responsibility, and environmental sustainability to ensure long term business responsibility and sustainability frameworks for the future. The bank has the ESG philosophy towards the betterment of society and environment by adopted long-term sustainable initiatives and frameworks through responsible business activities. Moreover, they have clear cut governance format for the planning, execution and reporting of ESG implementation. Furthermore, Responsible financing, Environmental sensitivity in bank's operations, Customer & Employee relationship, Social Ethics, Corporate Governance and Stakeholder's engagements are the key areas identified by the bank under ESG Policy.

2. Corporate Social Responsibility (CSR) Policy

The CSR policy of the bank provides a framework to guide the bank's initiatives towards economic development, social responsibility and environmental protection. These are the set of rules and regulations that need to obeyed for the implementation of CSR strategies to achieve the responsible business objectives. The policy has formulated in the line with Section 135 of the Companies Act, 2013 and the regulations coming under this section. The bank has primarily focused in the key areas of Education, Health Care, Skill Development, Sustainable Livelihood, Environmental Projects, Financial Inclusion & Literacy, Employee Engagements etc.

3. Environmental and Social Management System Framework/ Policy

This policy has been formulated for the purpose of strengthening Sustainable/ Responsible Financing Practices of the bank. The main objectives of the policy are: - (1) Minimize/ mitigate the adverse impact of projects/investments on the environment and (2) Maximum the opportunities for environmental and social benefits. To

safeguard the environmental and social responsibility, the bank has screened the projects and investments under Prohibited Investment Activities List and ADB Safeguard Policy Statements.

Green Practices

The bank has significant contribution of responsible business practices towards Natural Capital for creating positive environmental impact through efficient use of natural resources. The impact of bank's activities reflects in the reduction of energy consumption and waste generation, the savings in paper and water consumption, and other sustainable practices for the environmental protection. The environmental protection measured can be analyzed from three perspective- in-house banking activities, out-house banking practices and stakeholder's engagements for the preservation of ecological balance. Key initiatives are explained below,

1. Sustainable/ Responsible Financing

This line of credit offers for the projects coming under environment friendly sectors. This includes renewable energy sectors like solar, wind, hydro power, waste processing etc. Over and above, the has also financed for the projects that reduce the density of pollution and also under recycling category like, waste heat recovery, fly ash recycling etc. Furthermore, they provide the credit facility for green/sustainable assets including wind, solar, biomass plants. Moreover, the bank has assessed the risk-return analysis of the environmentally friendly projects under the compliance of National Environmental Laws. The bank has also setup Internal Team to collect clearance from relevant agencies, evaluation at the time of sanction of loan and setting external consultants for measuring the complexity of the projects.

2. Water Conservation and Management

The bank has undertaken various initiatives to conserve the water resources namely, recycle and reuse of wastewater, fitting of water efficient plumbing fixtures, rainwater harvesting etc. Additionally, they have set up Watershed developments in different areas as a part of sustainable livelihood activities with the objectives of increasing water level, reducing soil erosion, enhancing crop production, irrigation facility etc. Further, ICICI Foundation undertakes different interventions to conserve water level namely, provision of rainwater harvesting in schools, deepening the water

resources to improve constant water shortage, solar water heater system, setting-up cold water inland etc.

3. Energy Management and Conservation

These initiatives are the commitments of the bank towards environmental protection through in-house energy management practices. The environmental conservation measures of the bank focused on the activities of improving efficiencies, investing design & technologies and adopting renewable energy. Regarding the improving efficiencies, they have identified the key areas of Capacity Optimization, Integrated Preventive Maintenance, Temperature Policy, Energy Auditing, Heat Load Calculations and Power Factor Corrections. With respect to Investing in design & technologies, they have implemented the activities like, Energy Efficient Equipment Usage, Master Switch Concept, Equipment based Monitoring & Control, Internet of Things (IoT) enabled Central Monitoring System (CMS) etc. Further, the installation of solar equipment, green building certification, power purchase agreements etc. are some of the examples of Renewable energy adoption.

Pillars of the Bank's energy conservation journey

a. **Process Control and Communication Initiatives: -** These are electronic means of communication followed by the bank to ensure energy efficiency in operations. It includes, video conferencing, i-studio system, e-mail interactions, Electronic Human Resource Development programs etc.

b. **Retrofit of various equipment to reduce power consumption: -** It includes energy efficient fixtures and fittings such as, LED lighting, water/air cooled AC chillers, energy-efficient water pumps, resource-efficient UPS, laptops, monitors, occupancy sensors, server virtualization.

c. **Investment in energy-efficient technologies: -** The bank has deployed new technologies such as, Variables Refringent Flow, Speed Drive Chillers, Electronic Commuted Blower, Demand-controlled& Equipment-based system for Heating, Ventilation and Air Conditioning etc.

d. **Use of Renewable Energy:** - These are installation of solar power and wind energy to minimize overall Green Gas Emission (GHG). Therefore, the has signed

Power Purchase Agreement (PPA) to maintain the contractual relationship with the vendors/suppliers of renewable energy.

4. Waste Management

The bank has constant effort for the minimization of waste generated by them with the line of philosophy of 'Reduce, Reuse and Recycle'. At the banking premises, majority of the waste generated as wet waste, dry waste from paper and e-waste arising from electronic & electrical devices. They make several initiatives to manage these wastes effectively and efficiently. The management techniques to wet, dry and e-waste are discussed below,

Wet waste: - To manage the organic waste generated by the bank, recycling technique is used through composting and then utilizing as fertilizer in gardens of the Corporate Offices and employees' quarters.

Dry waste: - The majority part of the dry waste derived by the use of paper materials. Hence, the bank has taken initiatives to reduce paper consumption and procuring environmentally friendly paper for printing and publishing. This paper is manufactured from wheat straw which is the residual part of agricultural activity.

E-waste: - The e-waste arises from the use of electrical and electronic devices used by the banks. There are different techniques are adopted to manage the quantity of e-waste namely, recycling through authorized vendors, donation of refurbished assets, usage of re-manufactured toners in printers, supporting the reuse of e-devices, etc.

5. Management of Paper Consumption

To adopt environmentally sustainable banking practices, the main concern for the promotion of paperless banking activities through digital innovation. Moreover, the bank has followed different activities to encourage the paperless/ green channel practices. Some of them are denoted below,

- Regular activities of the bank like, account opening, loan processing, fund transfer, payments etc. are shifted to digital platform.
- Reduction and elimination of paper-based application forms, ATM receipts, advice slips, account statements etc.

- Usage environmentally friendly/ recycled papers for printing and publishing.
- Report of the banks are prepared and published by using Cocoon Silk papers.

6. Green Building Initiatives

Infrastructural design & development is the integral part of environmentally friendly banking practices. Therefore, first priority has to be given for green workspace/ green building structure to reduce the amount of carbon footprint. The bank has Indian Green Building Council (IGBC) certified buildings in different offices in India. The rating based on the assessment of energy-efficiency measures, usage of renewable energy, water conservation, waste management, air-quality management and sustainable sourcing of material. Regarding these indicators, the bank has ensured that most of the branches, offices and premises followed the IGBC standards and specifications. These standards have maintained by following environment-friendly design and structures that suit for the weather conditions and vegetation of the area.

7. Carbon Footprint Calculation

The bank is conducting Carbon Footprint Calculation based on the amount of electricity usage, ground water consumption, water management, provision of electronic vehicle and carpooling. With respect to the reduction of electricity consumption, the emission level has controlled by installing of 'solar photo-voltaic panel', energy-rated appliances, wind power etc.

8. Other Initiatives

- The bank has partnered with local NGOs to provide Solar electrification, solar water heaters, solar pumps for communities.
- Conduct tree plantation drive under Afforestation programmes.
- Contributing the projects coming under the category of clean/green technology. The bank partnered with Indian Government, World Bank and UNAID to support SME projects in the green research.
- Partnered with TATA Power to provide awareness on energy conservation at school level.

- Employee Engagements in green compliance, go-green initiatives, celebration of green events and circulation of monthly go-green newsletter under the logo of 'Chlorophyll'.
- Participation in Green Governance of Indian Army Environmental Cell.

3.7.3 Environmentally Sustainable Banking Practices in the AXIS Bank

AXIS Bank Limited, formerly known as UTI Bank established in 1993, as one of the country's first New Generation Private Sector Banks as well as Banking & Financial Services oriented company headquartered at Mumbai in Maharashtra. The bank has provided varieties of services in the areas of Retail Banking, Corporate Credit, Treasury, Transaction Banking, SME Business, Investment Banking, International Banking etc. The bank believes that customer-centric attitude is the important dimension for strengthening the organization and its' development. Further, the robust infrastructure, contemporary technology advancement, superior service quality etc. are the important commitments towards the stakeholders of the bank. At the same time, the bank advancing in ahead-of-the-curve technology, establishing good governance and monitoring the framework for fostering future leadership. More specifically, the bank has formulated an open strategy to create a market value for the bank, to listen the customer needs and wants, to nurturing to establish the intellectual capital, to care and participative for the community empowerment etc.

Vision: - "To be the preferred financial services provider excelling in customer service delivery through insight, empowered employees and smart use of technology" (Axis Bank, 2019-2020).

Core Values: - "Customer Centricity, Ethics, Transparency, Teamwork, Ownership" (Axis Bank, 2019-2020).

To ensure a sustainable future, the bank has followed the United Nations Sustainable Development Goals, UNFCCC Conference of Parties (COP) 21 Climate Change Agreement, World Economic Forum's Global Risks etc. Regarding the Sustainability Reporting, the framework is aligned with the Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines and National Voluntary Guidelines of Responsible Business Conduct and the UN Sustainable Development Goals. Additionally, the bank continues to place a great importance on sustainable

development for maintain inclusive and equitable participation through stakeholder-centric approach. Furthermore, to ensure the involvement of all stakeholders in the banking sector, the bank has concentrated on reporting the participation of Financial, Manufacture, Intellectual, Human, Social & Relationship and Natural Capital of the sector. In this theoretical overview section, the policies, products & services and practices developed and followed by the bank is considered and presented.

Green Products/ Services

1. Paperless Banking/ Green Channel Banking

a. Internet Banking

The bank provides various Internet Banking services to simplify the banking transactions from anywhere at any time. During 2025-2016, the bank has launched one-page net banking platform to enable the customers to conduct most of the banking services without having navigation to other pages. Further, the bank introduced direct-to-customer-frictionless journeys for third-party products on Internet Banking Platform to capable the KYC documents. Some of the features and services are provided below: -

- Account Details: - In this feature, the bank has provided various services including view bank account details, account balance, download statements, view the details of demat, loan and credit cards etc.
- Fund Transfer: - The fund transfer facility (National Electronic Find Transfer, Real-time Gross Settlement, Immediate Payment Service, Instant Money Transfer, Online Merchant Payments, Electronic Clearing Service etc.) can be available to transfer funds to own account, other Axis Bank account and other Bank account effortlessly.
- Request Services: - This feature is available to request for Cheque Book, Demand Draft, Stop Cheque Payment, updating of PAN and permanent address etc.
- Investment Services: - The Internet Banking platform of the bank provides the complete portfolio with the bank; the customer can can apply for Initial Public Offer (IPO). Further, the facility available to make Mutual Fund installment payments, Online donation, Insurance Premium payments, Tax payments (Central Excise & Service Tax, Income Tax, Service Tax) etc.

- Value-Added Services: - Payment of utility bills including water, electricity, mobile recharge, DTH/toll recharge, gas bill, credit card, shopping, traveling, etc. are coming under the feature of Value-Added Services of Internet Banking.

b. Mobile Banking

The Mobile Banking platform is the highest rated Applications in the country to enhance customer proposition. The bank has focused to deliver digitalized transactions across mobile applications with the help of sophisticated technology and advanced opportunities. Some of the Mobile Banking services are presented below,

- **Axis Mobile: -** It is a widely used Mobile Application of Axis Bank with exciting features and facilities. The customer can enjoy 100+ services more than just banking needs. The characteristics of the App is mainly presented as pre-login features and post-login features. With respect to pre-login features, the bank provides recharge facility, property search, bill payment, scan & pay features etc. Moreover, post-login features including account statements, credit card-based services, fund transfer, UPI payments, details of FD/RD, demat account, loan application, details of savings/ current account, debit card-based services, etc.
- **BHIM Axis Pay UPI App: -** This facility enables the customer to link account with Unified Payment Interface ID to send or receive the payments. It is a one-stop solution for multiple bank accounts through Virtual Payment Address (VPA) without entering any bank account details. Axis Bank offers the UPI services for peer-to-peer payments and peer-to-merchant payments through different digital platforms provided by them. Additionally, the Bank has also partnered with Third Party App Providers to offer UPI services including, Amazon Pay, Google Pay, Bajaj FinServ Direct Ltd, Samsung Pay & PhonePe,
- **Axis OK: -** It is another type of Mobile Application which help the customer to do the banking transactions even without internet connection. This application available in 11 regional languages according to the convenience of the customer and second level authentication for all financial transactions. Further, there are different services are available such as, account details (balance, statement), generation of PIN & MMID, request for e-statement and cheques, credit and debit card services (outstanding limit, credit limit, payment due, blocking/ unblocking of cards), utility payment facility etc.

c. Tab Banking

It is a paperless banking initiative to open Savings Bank Account of customers at their doorstep. The staff of the bank visits customer's place and collect the KYC details, upload the same in the tablet and take steps to process the account immediately. During 2020, the bank has opened 71% of savings accounts through tab banking according to the customer preference.

d. Phone Banking

To recoup the busy life and dynamic needs of the customer, the bank has introduced Phone Banking system to ensure the branchless banking for small requirements like information of offered services, request for cheque book, regeneration of ATM PIN, blocking of lost cards, Aadhaar seeding, e-statement registration, blocking of IB User ID, SMS service, etc. in 24x7 basis.

2. Cashless Banking/ Plastic Money

a. **Debit Cards: -** Debit cards are the user-friendly cashless payment solution to withdraw cash from ATMs, making payments by swiping in point-of-sale terminals, online payments, etc. The bank has customized the cards according to individual needs namely, Priority card, Delight card, Online Reward card, Power Salute Card, Titanium Prime Card, Secure+ card, etc. with different exciting features and offers.

b. **Credit Cards: -** To explore the unique needs of the customer, the bank has designed varieties of credit cards with amazing discounts and cashback schemes. Premium cards, featured cards, co-branded cards etc. offers flexible transactions according to the credit independent of account balance of the customers. The customer can make repayment at the end of a pre-specified credit period availed by the bank for every card.

c. **Prepaid Cards: -** Axis Bank offers a range of Prepaid cards for different purposes namely, Meal Card, Gift Card, Rewards Card, Smart Pay Card, etc. Meal Card is issued by corporate organizations to spend tax free meal amount of the account holder. Gift card is the special card to purchase gifts for dear ones from any merchant outlets & online portals. Smart Pay Card is designed to spend the amount for paying salaries/incentives/bonus to employees.

Green/Digital Innovation

The bank has focused on the technology-driven transformation of banking services by investing in Artificial Intelligence and Machine Learning. Their innovation in the field of Digital Banking is called as Silent Revolution to build innovative capabilities and leadership in digital offerings. To capture the opportunities of digital innovation, the bank takes initiatives to make investments in IT automation, Cloud computing, IT security, data privacy etc. Main technology-driven solutions are undernoted: -

- ★ **Axis AHA: -** This is an Intelligent Virtual Banking Assistant of the bank to solve the queries of the customers. This system is powered by Machine Learning (ML) capability, Artificial Intelligence (AI) and Natural Language Processing System to facilitates instant support for digital activities. This service enabled One Touch Banking services and Information Repository facilities.

- ★ **Passbook Printing Machine: -** The bank has installed automated Passbook Printing Machine (PPM) to help the customer to print their passbooks with updated transactions. This is a self-service technology facilitates with the help of barcode system, voice instructions and visual recognition. The customer can use the screen instructions in their regional language with visual language elements such as the texture, 24x7 speed banking strip, blue-colour coded status arrows and unique colour texture progress bar.

- ★ **Cash Deposit Machine:** - Axis Bank enables the service of depositing cash through Cash Deposit Machine with different benefits and features namely, (1) self-service terminal, (2) Instant money deposit, (3) easy queue management for filling withdrawal form, (4) not necessary to segregate the denomination of cash, (5) available at ATM counters, etc.

- ★ **Cheque Deposit Kiosk: -** This is a technology enabled tailor-made solution that allows the customer to deposit a cheque without any manual assistance or supervision. Main features: - (1) PAN India pickup capability, (2) easy access from branch/centers, (3) same day credit to account, (4) self-service technology, (5) 24x7 available service, etc.

Green Policies and Procedures

1. Policy on Environmental Management

The Environmental Management Policy intends to communicate the commitment of the bank towards the environment, environmental impact of its operations and performance of sustainable banking practices. The **policy statement** is: -

- Application of Environmental Regulations to enhance performance level.
- Communicate relevant achievements of environmental performance to stakeholders.
- Take steps to conserve energy efficiency to reduce its carbon footprints.
- Explore the opportunities of environmental-friendly procurement practices.
- To promote resource efficiency, establishes the Reduce, Reuse and Recycle concept to eliminate the amount waste generated.
- Application of prescribed regulations and best practices for e-waste management.
- Investment in energy-efficient technologies to reduce the level of Greenhouse Gas emission.
- The bank tries to participate employee engagements and participation to promote environmental sustainability.

2. Environmental, Social and Governance (ESG) Policy

The ESG policy of the bank demonstrates the principles of sustainable financing. It is applicable to the projects like bride loan, overseas funding, refinance transactions, corporate loans, working capital term loan etc. This policy has formulated according to the Standards for Environment & Social Risk Assessment Lending Portfolio including, the IFC Performance Standards (PS1 to PS8) Framework 2012 for Environmental and Social Sustainability, the World Bank Group General Environment, Health & Safety (EHS) Guidelines & Sector Specific Guidelines, Relevant multilateral environmental, social, labor and biodiversity conventions ratified by India, National Voluntary Guidelines, Ministry of Corporate Affairs and G4 Sector Disclosure for Financial Services.

The **objectives of the ESG policy** are: -

- ★ To integrate the Environmental & Social risk in to Infernal Risk Management framework.
- ★ Provide tools and techniques for the assessment of Environmental & Social risk of project finance.
- ★ Deliver guidance on application on International Environmental and Social Standards.
- ★ Identify the areas that leads to negative Environmental & Social outcome.
- ★ Recognize the opportunities for Environmental Sustainability and Equitable Social Growth.

3. Sustainable Lending Policy and Procedures (SLPP)

In addition to ESG Policy, the bank has developed 'Sustainable Lending Policy and Procedures (SLPP)' towards responsible and sustainable financing options to strengthen the Environmental & Social risk assessment. The conducts pilot projects to measure the criteria of SLPP to institutionalize the lending applications. Accordingly, the bank has setup an exclusion list of projects coming under the category of producing Ozone Depleting Substance (ODS), radioactive materials, unbonded asbestos fibres, banned wildlife related products, polluting industries, etc. Subsequently, the bank actively supports the sustainable sectors such as renewable energy, waste to energy, waste management, sustainable urban infrastructure projects.

4. Corporate Social Responsibility (CSR) Policy

The bank has framed the CSR policy as per Section 135 of the Companies Act, 2013 and Rules enclosed thereunder. With respect to this policy, the bank supports the programs and activities including, Poverty Alleviation to reduce inequalities, Environmental Sustainability & Ecological balance through sustainable livelihood activities to promote natural resource conservation, Entrepreneurship Development Programmes, Education & Skill Development initiatives, Welfare Measures for the vulnerable groups, Women Empowerment programs, protection of victims of natural calamities & other health care centers etc.

Green Practices

To safeguard the long-term interest of the stakeholders, the bank committed to society and environment where they exist. Therefore, the bank has prepared Integrated Reporting to frame the sustainability performance as per Stakeholder Inclusiveness, Sustainability Context, Materiality and Disclosure Status. Hence, the reporting framework includes the performance of six capitals – Financial, Manufactured, Intellectual, Human, Social & relationship and Natural. In this context, Green Practices are the performance indicators of Natural Capital. These are:

1. **Energy-efficiency and Management and commitment to reduce Carbon Emission Level**

The bank has concentrated efforts to reduce the energy consumption level and undertaking various initiatives to conserve the energy-efficiency to reduce the intensity level. Some of the key energy management initiatives are:

- Installation of solar energy systems to reduce the carbon energy generation.
- Remote-based smart energy control system to monitor and control the office energy consumption on a real-time basis.
- Replacement of LED lighting instead of CFL lights to save the energy level.
- Efficient HAVC systems with Air Handling units to save the electricity level.
- IOT-based (Internet of Things) monitoring systems for reducing the power generation through solar installation.
- Centralized Energy Management System (CEMS) improved to check the level of energy consumption.
- Application of On Grid Inverter Solution to reduce diesel consumption.
- Installation of 5 star-rated inverter-based air conditioners with environmental-friendly R32 gas.
- Lithium-ion batteries for UPS systems to conserve the electricality usage.
- Usage of Electronic Vehicle as mass transportation system and provides EV charging stations in the corporate office.
- Implementation of Green IT Infrastructure as emission management tool.
- Maintenance of unity power factor and motion sensors to optimize use of power.

2. Sustainable Financing/ Green Bond Framework

The Sustainable Financing activities of the bank guided by the commitments under Paris Agreement to accomplish the UN Sustainability Development Goals. Axis Bank conducts lending/ financing activities to key projects including renewable energy generation, mass rapid transport, low carbon infrastructure, green buildings, hydro power projects, waste management sector etc. to ensure its climate commitments towards environmental sustainability. "The risk categorization of the credit proposals is applied from IFCs Sustainability Framework, and used to identify the key areas/themes to focus the scope of the Environmental and Social Due Diligence (ESDD)" (Axis Bank, Axis of Trust, 2019-2020). To identify the sustainable lending standards, the bank has set up an ESG working group to prepare the documentation of the projects coming under this category. At the time credit appraisal process, the officials checked the projects with exclusion list, identify the Environmental & Social risk of the concerned projects, then steps forward the sanction the credit amount. The Green Bond Framework also follows to the Green Bond Principles (GBP) and Climate Bond Standard (CBS) to identify the green projects, selection & evaluation, earmarking of funds, reporting and assurance.

3. Resource Efficiency Initiatives

a. Paper Consumption Management

As regards material resource efficiency, management of paper usage is very important and considered as the focus area of environmental-sustainable banking practices. It is because of paper consumption is considered as the indicator of Scope 3 GHG emissions. Hence, there is need to optimize the use of paper-based activities for reducing the carbon footprints from the operational as well as transactional activities of the bank. First of all, digitalization of products, services and processes is identified as the primary way to manage the consumption rate of paper-based activities. Further, the bank has initiated e-statement, e-welcome kit, e-copies of annual reports as a part of this initiative. Additionally, the bank has used wheat-straw based paper for office usage to reduce overall environmental impact.

b. Water Management

They tries to follow best practices to reduce the water consumption level by implementing various initiatives. These are: - (1) Daily recycling of waster through

Sewage Treatment Plant, (2) use of wash-basin sensors and bio-blocks to reduce water usage in washrooms, (3) rain water system, watershed developments, construction of groundwater recharge wells, water usage planning for local water bodies, etc. to conserve the water resources, (4) partnered with Jal Jeevan Mission of Govt. of India to provide drinking water for the areas facing water scarcity, etc.

c. Waste Management

Waste management is considered as the 12th Sustainable Development Goal under Responsible Consumption and Production. Subsequently, the bank has identified it as material efficiency issue, and includes in the Materiality Matrix from detailed Stakeholder Engagement & Materiality Analysis (SEMA). Main initiatives for waste management are: - (1) wet waste from food converted into compost through composting machine, (2) recycling of dry waste from papers & shredded documents, and converted it into notepads, notebooks etc., (3) eliminated the plastic waste by replacing it with glass jugs, (4) centralized management of e-waste through authorized vendors in compliance with government regulations and Central Pollution Control Board (CPCB) etc.

4. Awareness and Engagement of Employees and Customers

The programs conducted by the banks towards customer awareness and employee engagements is the key element of green agenda. At the time of World Environmental Day, specific messages are sent to customers about to engage in environmental-friendly activities. Moreover, circulation of energy-efficiency topics, environmental day quiz programs, preparation of paper-based handmade items, exhibitions, sapling plantation, etc. are conducted to ensure the participation of employees. Additionally, the bank follows Green Protocol at the time of conducting workshops, conferences, classes, training programs, meetings, general bodies, etc. Axis Bank Foundation (ABF) engages with farmers on sustainable agricultural practices also.

3.8 Conclusion

The present chapter has exhibited the theoretical overview of Environmentally Sustainable Banking Practices in the Public and Private Sector (Old and New Generation) Banks in Kerala. The chapter has arranged in the order of Sustainability Framework followed by the banks under the heads of Green Products/ Services, Green/ Digital Innovation, Green Policies & Procedures and Green Practices. The theoretical background of the study is an exclusive discussion on disclosure status of the sample banks according to their Annual, Business Responsibility, Sustainability and Corporate Social Responsibility Reports. According to the theoretical background of the research work, New Generation Banks are identified as the forerunner of Environmentally Sustainable Banking Practices. These banks have separate Integrated Framework for disclosing operational and transactional practices of Environmental, Social and Governance aspects for the sustainable and equitable development.

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Chapter 4

Level of Adoption, SWOC Analysis and Importance of SMART Green Goals - From the Perspective of Bankers

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4.1 Introduction

In the previous chapter, the role of Public and Private Sector (Old and New Generation) Banks on Environmentally Sustainable Banking Practices, Products and Processes is examined in detail. It has focused on secondary data from Annual Reports, CSR Reports, Sustainability Reports, Business Responsibility Reports and Integrated Reports of the selected banks. Now, it is quite relevant to investigate the adoption level of Environmentally Sustainable Banking Practices from the perspective of Bank Managers. Hence, an attempt is made to examine the adoption level of Green Processes, Practices and Products in the Public and Private Sector (Old and New Generation) Banks in Kerala. In order to fulfill this objective, there is a need to identify the guidelines followed, areas of green strategies adopted and reasons for going green from the perspective of sample banks.

For the purpose of discussion, the current chapter is divided into three different sections based on objectives of the study. Section 'A' discusses the adoption level of Environmentally Sustainable Banking Practices in the three sections, namely, Public, Old Generation and New Generation Banks. Section 'B' attempts to analyze, the relationship between SWOC analysis and SMART Green goals on adoption level. Section 'C' is concerned with the adoption level of Environmentally Sustainable Banking Practices of different sample banks namely, SBI, Canara, PNB, Federal, SIB, IDBI, ICICI, HDFC and AXIS Bank.

4.2 Objectives of the Chapter

1. To measure and compare the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices, Products, SWOC and SMART Green Goals) among Public, Old and New Generation Banks.
2. To examine the relationship of adoption level of Environmentally Sustainable Banking Practices on SWOC and importance of SMART Green Goals among Public, Old and New Generation Banks.
3. To analyze and compare the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices, Products, SWOC and SMART Green Goals) among different banks selected for the study.

4.3 Hypotheses Formulated and Tested

1. There is no significant difference among Public, Old and New Generation Banks with respect to the adoption level of Environmentally Sustainable Banking Practices with reference to Green Processes, Practices and Products.
2. There is no significant difference among Public, Old and New Generation Banks with respect to SWOC and the importance of SMART Green Goals.
3. There is no significant relationship between adoption of Environmentally Sustainable Banking Practices and SWOC analysis & SMART Green Goals.
4. There is no significant difference among selected banks with regard to the adoption level of Environmentally Sustainable Banking Practices with special reference to Green Processes, Practices and Products.
5. There is no significant difference among selected banks with respect to SWOC and Importance of SMART Green Goals.

4.4 Methodology and Database

In order to accomplish the objectives of this chapter, the primary data regarding the adoption level of Environmentally Sustainable Banking Practices, SWOC analysis and importance SMART Green goals is collected from the sample banks with the help of Pretested Structured Questionnaire. The banks are selected as per the available secondary records regarding Disclosure Status of National Voluntary Guidelines, ESG Integrated Reporting (BRSR) and Sustainable Development Criteria for Global Reporting Initiative (GRI). Hence, nine banks are selected from nine districts and the total sample banks are 81 which comprised as 27 from Pubic sector, 27 from Old Generation Private Banks and 27 from New Generation Private Banks. The comparative analysis is performed among three sectors as well as nine sample banks selected for the study. Accordingly, suitable mathematical and statistical techniques like, Percentage, Arithmetic Mean, Standard Deviation, Levene's test for Homogeneity of Variance, One-way Analysis of Variance, Tukey HSD Post-Hoc test for Multiple Comparison and Structural Equation Modelling are employed for the analysis of the primary data.

4.5 Variables used for the study

Green process	Supply Chain Management Enterprise Resource Management Customer Relationship Management Product life Management
Green Practices	Green Policies and Procedures Green Investment Green Partnership Inhouse Energy Management Practices Outhouse Energy Management Practices Employee Related Practices Green Financing
Green Products and Services	Digital Innovation Informative services of IB Communicative services of IB Transactional services of IB Mobile Banking Services
SWOT Analysis	Strength Weakness Opportunity and Threat/Challenges
SMART Green Goals	Sensitive Measurable Attainable Realistic Timely

Section A

4.6 Sector wise Comparison of adoption level of Environmentally Sustainable Banking Practices

This section deals with the sector wise comparison of adoption level of Environmentally Sustainable Banking Practices, Processes and Products. Before that, there is a need to understand general details about period of adoption, regulations followed by the sectors towards Environmental Sustainability, areas of green strategies adopted and reasons for Going Green. To formulate the results regarding this objective, mathematical and statistical tools like, Percentage, Arithmetic Mean, Standard Deviation, One-way Analysis of Variance, Levene's test for Homogeneity and Tukey HSD post hoc test are employed.

General Details

4.6.1 Period of adoption of Environmentally Sustainable Banking Practices

The period of adoption of Environmentally Sustainable Banking Practices by different sectors of banks is presented in table 4.1. According to the reports of banks, the period of adoption is classified into four, less than 1 year, 1 to 3 years, 3 to 5 years and more than 5 years. Here percentage analysis is used to draw the conclusion about the inferences.

Table 4.1

Period of adoption of Environmentally Sustainable Banking Practices

Period of Environmentally Sustainable Banking Practices adoption	Sector		
	Public Sector	**Old Generation**	**New Generation**
Less than 1 year	0	0	0
1-3 year	1 (3%)	1 (3%)	0
3-5 year	8 (30%)	5 (19%)	7 (20%)
More than 5 years	**18 (67%)**	**21 (78%)**	**20 (80%)**
Total	27	27	27

Source: Primary Data
Figures in parentheses represent percentage to total

The above table demonstrates the details about the period of adoption level of Environmentally Sustainable Banking practices by different sectors of banks. In the

case of Public Sector banks, 66.7% (18) have adopted the Sustainable Banking practices from more than 5 years and remaining 29.9% (8) of the banks have adopted these Practices from 3 to 5 years.

Similarly, the majority (77.7%) of the Old Generation Banks have executed the Environmentally Sustainable Banking practices for more than 5 years and residual part (18.5%) of banks have implemented these practices from 3 to 5 years.

Likewise, most of the (80%) banks coming under New Generation Banks have accomplished the Environmentally Sustainable Banking Practices from more than 5 years and the remining 20% of banks have implemented these practices from 3 to 5 years.

4.6.2 Guidelines followed by different sectors of banks regarding Environmental Sustainability

The table below indicates the guidelines followed by the selected banking sectors regarding Environmentally Sustainable Banking. As per the reports, Environmentally Sustainable banking practices is a voluntary practice followed by the banks according to RBI regulations, NVGSEE, Tripple Bottom Line Approach, Environmental Principles and Bank's own guidelines. Here, inferences are framed with the help of simple percentage analysis.

Table 4.2

Guidelines followed by different sectors of banks regarding Sustainable Banking

Guidelines	Sectors		
	Public Sector Banks	**Old Generation Banks**	**New Generation banks**
RBI Regulations	**13 (48%)**	5 (19%)	**12 (44%)**
National Voluntary Guidelines for Social, Environmental and Economic Aspects	6 (13%)	**11 (41%)**	7 (26%)
Principles of Sustainability/ Tripple Bottom Line Approach	3 (11%)	2 (7%)	6 (22%)
Environmental Principles	3 (11%)	0	1 (4%)
Bank's own guidelines	2 (7%)	9 (33%)	1 (4%)
Total	27	27	27

Source: Primary Data
Figures in parentheses represent percentage to total

Table 4.2 explains the guidelines followed by different sectors of banks regarding the adoption level of Environmentally Sustainable Banking Practices. Among them, 48% of public sector banks follows the RBI regulations, 13% adhere to NVGSEE aspects and 11% of them follows the Sustainability Approach and the Environmental Principles.

On the contrary, most of the Old Generation Banks (41%) perform in accordance with the NVGSEE aspects. At the same time, 33% of them stick on to bank's own guidelines for the adoption of Environmentally Sustainable Banking Practices.

In the case of public sector banks, most of the (44%) New Generation banks adheres to the RBI Regulations. At the same time, 26% of the new generation banks relies on NVGSEE and 22% on the Principles of Sustainability.

4.6.3 Ranking of the areas of Green Strategies/Practices adopted by sectors of bank

Table 4.3 reveals the areas where the Green Strategies/ Practices adopted by different Banking Sector. There are six areas listed out and ranked by order of preference among sectors. Here, Arithmetic Mean is employed to identify the ranking order and put 1st rank for those area which has lowest mean score.

Table 4.3

Ranking of the areas of green strategies adopted

Areas	Sectors		
	Public Sector Banks	**Old Generation Banks**	**New Generation banks**
Operational Activities	1.48* (1)	2.25 (2)	1.24 (1)
Technological Aspects	2.03 (2)	1.06 (1)	2.07 (2)
Financial Activities	4.51 (5)	4.82 (5)	4.81 (5)
Client Acceptance	3.46 (3)	3.40 (3)	4.03 (4)
Physical Infrastructure	3.77 (4)	3.54 (4)	3.14 (3)
Investment Avenues	5.57 (6)	5.70 (6)	5.81 (6)

Source: Primary Data
*Mean ranks are given
Figures in parentheses represent Ranks

The above table presents the ranking on areas of Green Strategies adopted by different sectors of banks. Apparently, the areas for Environmentally Sustainable Banking adoptions are, Operational activities, technological aspects, financial activities, client acceptance, physical infrastructure and investment avenues.

The Public Sector banks are given the ranks in the order of their preference in adoption of Green Practices from 1 to 6 for operational activities (1.48), technological aspects (2.03), client acceptance (3.46), physical infrastructure (3.77), financial activities (4.51) and investment avenues (5.57).

The Old Generation Banks are given the ranks in the order of 1 to 6 for technological aspects (1.06), operational activities (2.25), client acceptance (3.40), physical infrastructure (3.54), financial activities (4.82) &investment avenue (5.70)

The New Generation Banks are given the ranks in the order of 1 to 6 for operational activities (1.24), technological aspects (2.07), physical infrastructure (3.14), client acceptance (4.03), financial activities (4.81) & investment avenues (5.81).

Here, the Public Sector and New generation banks are given the same first rank for operational activities and second rank for technological aspects. But the Public and Old Generation banks are given third and fourth rank for client acceptance and physical infrastructure. These three sectors have given the same rank for financial activities (5^{th}) and investment avenues (6^{th}).

4.6.4 Ranking of reason behind 'go green'

Table 4.4 demonstrates the result of reasons for 'go green' and it has explained by using mean rank. There are 12 reasons identified and ranked according to their order of preference. Hence, Arithmetic Mean is employed to identify the ranking order and put 1^{st} rank for those reason which has lowest mean score.

Table 4.4

Ranking of reason behind 'go green'

Areas	Sectors		
	Public Sector	**Old Generation**	**New Generation**
Increasing energy consumption	3.37* (3)	2.33 (2)	1.36 (1)
Energy price hike	3.77 (4)	4.44 (4)	4.34 (4)
Optimum utilization of scarce resources	1.21 (1)	1.48 (1)	2.37 (2)
Growing consumer interest in Environmental-friendly goods & services	2.32 (2)	6.84 (7)	3.31 (3)
Strict regulations/Compliances	6.40 (6)	5.65 (5)	6.26 (6)
Higher expectations of the public on enterprises environmental responsibilities	5.00 (5)	3.07 (3)	7.80 (8)
Stakeholder's pressure	11.8 (12)	6.00 (6)	11.85 (12)
Improvement in brand equity	6.85 (7)	7.59 (8)	7.11 (7)
Value addition as a competitive advantage	8.42 (8)	8.91 (9)	5.48 (5)
Future of export market likely to experience stringent environmental rules	10.7 (11)	11.07 (11)	8.68 (9)
Demand for pollution control technologies in the line of IFC and ADBs	8.70 (9)	11.62 (12)	10.59 (11)
Big Investments require Environmental Impact Assessment	9.78 (10)	9.48 (10)	9.77 (10)

Source: Primary Data
*Mean ranks are given
Figures in parentheses represent Ranks

Table 4.4 explains the reasons behind 'go green' concepts ranked by different sectors of banks. The study elucidated that the major reasons for going green are energy consumption, optimum use of resources, consumer interest, compliance requirements etc. In the view of Public Sector Banks, optimum utilization of scarce resources (1.21), consumer interest for environmentally friendly goods (2.32) and increasing energy consumption (3.37) are the main reason for going green. At the same time, future of export market demand (10.70) and stakeholders' pressure (11.85) are the least ranked reasons.

In the case of Old Generation Banks, the major reasons for going green are; optimum utilization of scarce resources (1.48), increasing energy consumption (2.33) and higher expectation of the public in environmental responsibility (3.07). In

addition, they given least rank for future export market (11.07) and demand for pollution control technologies (11.67).

Correspondingly, New Generation Banks given highest rank for the reasons behind 'go-green' are; increasing energy consumption (1.36), optimum utilization of scarce resources (2.37) and growing consumer interest (3.31). Likewise, they provide least ranking for the demand for pollution control technologies (10.59) and stakeholders' pressure (11.85).

Hypotheses Testing

4.6.5 Sector wise comparison on adoption level of Green Processes

The below tables represent the result of hypothesis testing on comparison of Green Process adoption level among sectors of bank. For checking the assumption, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey HSD Post Hoc test for Multiple Comparison are used. The hypothesis formulated for the test is denoted below.

H0: There is no significant difference in the adoption level of Green Processes among Public, Old Generation and New Generation Banks

H1: There is significant difference in the adoption level of Green Processes among Public, Old Generation and New Generation Banks

Table 4.5

Test of Homogeneity of Variances

	Levene Statistic	**Sig. (p value)**
Supply Chain Management	.244	.723
Enterprise Resource Management	.490	.614
Customer Relation Management	.515	.546
Product Life Management	.730	.316

Source: Primary Data

The 'p' value of Levene's test of homogeneity of Variance is not significant at 5% level of significance. Hence, it is ensured that the population variance for each group is approximately equal. Consequently, the testing of hypothesis is meant for ANOVA test.

Table 4.6

Sector wise comparison on adoption level of Green Processes

Green Processes	Sector			F value	p value
	Public Sector	Old Generation	New Generation		
Supply Chain Management	3.41 (0.34)	3.01 (0.45)	4.49 (0.57)	12.01	0.000**
Enterprise Resource Management	4.51 (0.57)	4.55 (0.50)	4.35 (0.47)	1.16	0.318
Customer Relationship Management	4.57 (0.43)	4.57 (0.40)	4.62 (0.49)	0.14	0.870
Product Life Management	4.44 (0.44)	4.29 (0.79)	4.53 (0.41)	1.18	0.312

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Descriptive statistics with mean & standard deviation and ANOVA with test statistics & significance value are shown in table 4.6. Supply Chain Management, Enterprise Resource Management, Customer Relationship Management and Product Life Management are the dimensions that constructed for measuring the adoption level of Green Processes.

In respect of Supply Chain Management, the level of adoption is differed significantly among Public, Old and New Generation Banks. It is understood that the mean score (4.49) of Supply Chain Management is high in New Generation Banks with SD of 0.57. It indicates that the level of adoption of Supply Chain Management is comparatively high in New Generation Banks as compared with Public and Old Generation Banks. Here the 'p' value of 0.000 and 'f' value of 12.01 explains that the null hypothesis is rejected at 5% level of significance and there is significant difference among Public, Old and New Generation banks with regarding to the adoption level Supply Chain Management.

However, the level of adoption of Enterprise Resource Management, Customer Relationship Management and Product life Management is not shown significant difference among three sectors. From the table it is clearly seen that the 'p' value is higher than 0.05 in all three cases. Hence, the null hypothesis can't be rejected

at 5% level of significance and there is no significant difference among Public, Old and New Generation Banks regarding the adoption of ERP, CRM and PLM.

The result of ANOVA does not give a clear idea on which of the banks differ from each other with respect to the adoption level of SCM. Hence, a post hoc test is carried out and the result is given in table 4.7.

Table 4.7

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Supply Chain Management	Public	New Generation	-.57407*	.000
		Old Generation	-.07407	.830
	Old Generation	Public	.07407	.830
		New Generation	.50000*	.001
	New Generation	Public	.57407*	.000
		Old Generation	-.50000*	.001
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The result of the Tukey HSD post hoc test depicts that the mean scores of New Generation Banks significantly differed between Public Sector banks with significance value of 0.000. As the same case, there is significant difference in the adoption level of Supply Chain Management between Old Generation and New Generation Banks with significance value of 0.001. But there is no difference between Public and Old Generation banks in regard of adoption level.

4.6.6 Sector wise comparison on adoption level of Green Practices

The below tables denoted the result of hypothesis testing on comparison of Green Practices adoption level among sectors of bank. For examining the assumption, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey HSD Post Hoc test for Multiple Comparison are used. The hypothesis framed for the test is presented below.

H0: There is no significant difference in the adoption level of Green Practices among Public, Old Generation and New Generation Banks

H1: There is significant difference in the adoption level of Green Practices among Public, Old Generation and New Generation Banks

Table 4.8

Test of Homogeneity of Variances

	Levene Statistic	Sig.
Green Policies and Procedures	1.943	.142
Green Investment	2.666	.099
Green Partnership	1.900	.124
Inhouse Energy Management Practices	1.469	.236
Outhouse Energy Management Practices	1.980	.221
Employee Related Practices	1.556	.184
Green Financing	1.320	.341

Source: Primary Data

The Levene's statistic based on a comparison of means; it is not a significant result in the case of sub variables of Green Practices followed by the sectors. Hence, all the significance value are greater than 0.05, the requirement of homogeneity of variance has met and the ANOVA test can be considered to be robust.

Table 4.9

Sector wise comparison on adoption level of Green Practices

Green Practices	Sector			F value	p value
	Public Sector	Old Generation	New Generation		
Green Policies and Procedures	4.27 (0.36)	3.90 (0.41)	4.80 (0.61)	7.18	0.001**
Green Investment	3.99 (0.42)	3.73 (0.41)	4.52 (0.80)	4.33	0.010*
Green Partnership	3.51 (0.64)	3.11 (0.51)	4.49 (0.32)	4.76	0.002*
Inhouse Energy Management Practices	4.19 (0.30)	4.23 (0.36)	4.90 (0.22)	9.41	0.000**
Outhouse Energy Management Practices	3.95 (0.29)	3.87 (0.30)	3.87 (0.16)	0.88	0.416
Employee Related Practices	4.13 (0.35)	4.27 (0.31)	4.18 (0.41)	1.85	0.163
Green Financing	3.95 (0.40)	3.30 (0.52)	4.65 (0.19)	6.16	0.003**

Source: Primary Data
**significant at 1% level of significance
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

As per above table, the result of One-way ANOVA is used to examine the mean difference among Public, Old Generation and New Generation Banks with respect to the adoption level of Green Practices. Here, the comparison is made with the help of descriptive statistics. From the result, it can be seen that the adoption level of Green Policies & Procedures, Green Investment, Green Partnership, Inhouse Energy Management Practices and Green Financing is differed significantly among three sectors with 'p' value of 0.001, 0.010, 0.002, 0.000 and 0.003 respectively. Hence, the null hypothesis is rejected at 5% level of significance and it can be concluded that there is significant difference among Public, Old Generation and New Generation Banks with regard to the above dimensions.

But with respect to the adoption level of Outhouse Energy Management Practices and Employee Related Practices, there is no significant difference among all three sectors of bank with the 'p' value of 0.416 and 0.163. Hence, the 'p' value is greater than 0.05, it can be concluded that the null hypothesis cannot be rejected at 5% level of significance.

It can be noticed that the adoption level of Green Practices among New Generation Banks is potentially high as compared with Public Sector and Old Generation Private Banks. So, a further pairwise comparison is made to understand the exact difference between the sectors. For this purpose, Tukey HSD Post Hoc test is carried out and the result is presented in table 4.10.

Table 4.10

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Green Policies and Procedures	New Generation	Public Sector	.36467*	.017
		Old Generation	.46724*	.002
Green Investment	New Generation	Public Sector	.45926*	.013
		Old Generation	.46296*	.012
Green Partnership	New Generation	Public Sector	.40741*	.012
		Old Generation	.52099*	.000
Inhouse Energy Mgt Practices	New Generation	Public	-.28889*	.002
		Old Generation	-.33333*	.000
Green Financing	New Generation	Public	-.30741*	.016
		Old Generation	-.34815*	.005
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The above table enables to check the pairwise comparison of dimensions in Green Practices followed by the sectors. Moreover, Post Hoc test indicate that the mean scores of New Generation Private Banks differed significantly from the mean of Public Sector and Old Generation Private Banks with respect to Green Policies and Procedures, Green Investment, Green Partnership, In-house Energy Management Practices and Green Financing. The mean difference is significant at 5 % level of significance in all these dimensions. Therefore, the Tukey HSD Post-hoc test explains that there exists a significant difference among New Generation Banks compared with the Public and Old Generation Private Banks regarding the adoption level Green Practices.

4.6.7 Sector wise comparison on adoption level of Green Products and Services

The below tables evaluate the result of hypothesis testing of comparison on the adoption level of Green Products and Services among sectors of bank. For analyzing the assumption, Levene's test of Homogeneity of Variances, One-way analysis of Variance and Tukey HSD Post Hoc test for Multiple Comparison are used. The hypothesis framed for the test is given below.

H0: There is no significant difference in the adoption level of Green Products and Services among Public, Old Generation and New Generation Banks

H1: There is significant difference in the adoption level of Green Products and Services among Public, Old Generation and New Generation Banks

Table 4.11

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Digital Innovation	1.393	.216
Informational Practices Internet Banking	2.836	.145
Communicative Practices Internet Banking	1.374	.223
Transactional Practices Internet Banking	2.963	.162
Mobile Banking	1.433	.241

Source: Primary Data

The table 4.11 enables to check that the homogeneity assumption of One-way ANOVA. Levene's test suggests that there is insignificant difference ('p' vale is greater than 0.05 at 5% level of significance) between the group variances. Therefore,

homogeneity of variance is established for all the dimensions under Green Products & Services. Thus, One-way ANOVA is the most applicable test for checking the significant difference in the adoption level Green Products & Services among Sectors.

Table 4.12

Sector wise comparison on adoption level of Green Products and Services

Green Products and Services	Sector			F value	p value
	Public Sector	New Generation	New Generation		
Digital Innovation	4.67 (0.35)	4.02 (0.33)	4.17 (0.23)	3.14	0.048*
Informative services of IB	3.85 (0.26)	4.09 (0.03)	5.00 (0.00)	7.95	0.001**
Communicative services of IB	3.81 (0.29)	4.16 (0.13)	4.99 (0.03)	4.25	0.018*
Transactional services of IB	4.99 (0.03)	4.97 (0.09)	5.00 (0.00)	1.97	0.147
Mobile Banking Services	4.82 (0.26)	4.98 (0.07)	4.90 (0.13)	1.41	0.241

Source: Primary Data
**Significant at 1% level of significance
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Table 4.12 demonstrates the results of adoption level of Green Products and Services. Digital Innovation, Informational services of IB, Communicative services of IB, Transactional services of IB and Mobile Banking Services are considered as the dimensions for measuring the adoption level of Green Products and Services. As per descriptive statistics, the adoption level of Green Products/ Services is potentially high in New Generation Banks as compared with Public and Old Generation Banks. Hence, there is a need to check the significant difference among them.

From the table it is clear that the adoption level of Digital Innovation (p= 0.048), Informative services of IB (p= 0.001) and Communicative service of IB (p= 0.018) shows statistically significant result. Therefore, the null hypothesis is rejected at 5% level of significance and thus, there is significant difference among the banking sectors regarding the same.

But the adoption level of Transactional services of Internet Banking ('p'= 0.147 > 0.05) and Mobile Banking services ('p'= 0.241 > 0.05) are not been

statistically significant at 5% level of significance. That means, the null hypothesis cannot be rejected and there is no significant difference among Pubic, Old and New Generation Banks on the adoption level of transactional and mobile banking services.

Table 4.13

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Digital Innovation	Public	Old Generation	.15278*	.009
		New Generation	.20602*	.017
Informational Services of Internet Banking	New Generation	Old Generation	-.14074*	.003
		Public Sector	-.14815*	.002
Communicative Services of Internet Banking	New Generation	Old Generation	-.11111*	.011
		Public Sector	-.14074*	.019
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Table 4.13 explains the Tukey HSD post hoc test result between the sectors of banks on the adoption level of Green Products and Services. As per the mean difference, Public Sector banks are statistically different from Old (p= 0.009) and New Generation Banks (p= 0.17) in the case of adoption of Digital Innovation. Further, New Generation Banks are statistically significant different from Public Sector (p= 0.02, 0.119) and Old Generation Private Banks (p= 0.03, 0.011) regarding the adoption of informative and communicative services of Internet Banking.

4.6.8 Sector wise discussion and comparison of SWOT/SWOC of Environmental-Sustainable Banking Practices

The upcoming tables estimate the result of hypothesis testing of comparison on SWOT/SWOC of Environmentally Sustainable Banking Practices among sectors of bank. For estimating the assumption, Descriptive Statistics, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey HSD Post Hoc test for Multiple Comparison of variables are employed. The hypothesis framed for the test is given below.

H0: ***There is no significant difference in the SWOC of Environmentally Sustainable Banking Practices among Public, Old Generation and New Generation Banks***

H1: ***There is significant difference in the SWOC of Environmentally Sustainable Banking Practices among Public, Old Generation and New Generation Banks***

Table 4.14

Sector wise discussion of SWOC of Environmental-Sustainable Banking

		Public Sector Banks	**Old Generation Banks**	**New Generation banks**
Strengths	An innovative strategy for sustainable development	**4.55** (0.75)	4.48 (0.50)	**4.66** (0.48)
	Consideration of triple bottom line approach for sustainability	4.22 (0.80)	**4.62** (0.49)	**4.59** (0.50)
	Energy Savvy as well as Tech Savvy Technique	**4.55** (0.57)	4.51 (0.50)	4.37 (0.49)
	Assure low Carbon Emission through green financing	4.51 (0.64)	**4.62** (0.56)	4.07 (0.26)
	Participation from the bottom of earth as a motive	4.48 (0.57)	4.29 (0.46)	4.29 (0.46)
Weaknesses	Low awareness among people	2.77 (0.75)	2.77 (0.57)	1.92 (0.67)
	Infancy stage of development	3.33 (0.87)	**3.59** (0.63)	3.37 (0.49)
	Cost of installation of energy efficient materials and recycling	**3.96** (0.43)	3.51 (0.64)	**3.74** (0.47)
	Low customer care and technical issues in digital banking	2.07 (0.82)	1.77 (0.50)	1.48 (0.62)
	Less adoption of Environmental Accounting Practices	3.37 (0.49)	**3.55** (0.75)	3.74 (0.45)
	Absence of Environmental Audit Management	**3.48** (0.89)	3.51 (0.57)	**4.33** (0.55)
Opportunities	Set up Separate Cell for promote Sustainable Banking practices	**4.51** (0.50)	4.37 (0.49)	**4.25** (0.45)
	Implement environmental due diligence	**4.59** (0.50)	4.37 (0.49)	**4.29** (0.52)
	Improve Corporate Social responsibility standards	4.18 (0.73)	**4.66** (0.48)	4.22 (0.51)
	Participation in the wealth of nature as a competitive advantage	4.22 (0.75)	4.37 (0.49)	4.18 (0.48)
	Get rewards/ awards and recognition	4.40 (0.57)	**4.59** (0.50)	4.22 (0.43)

		Public Sector Banks	Old Generation Banks	New Generation banks
Threats/ Challenges	Credit risk due to any change in environmental regulations and new requirement of emission levels	3.25 (0.76)	**3.74** (0.59)	3.66 (0.55)
	Reputational risk due to high cost and less adoption of Environmental Management System (EMS)	3.48 (0.81)	3.55 (0.64)	**3.74** (0.53)
	Problems of Environmental Risk Management as Core Risk Management Process	3.59 (0.57)	**3.81** (0.73)	**3.71** (0.46)
	Difficult to get Going Coin Rating Certification	**3.62** (0.57)	3.41 (0.63)	3.70 (0.46)
	Financial Risk Due to creating separate fund for CSR activities	**3.88** (0.84)	3.55 (0.75)	3.48 (0.85)

Source: Primary Data
Figures in parentheses represent Standard Deviation

The above table discusses about the SWOT/SWOC of Environmentally Sustainable Banking Practices followed by Public, Old and New Generation Banks. As far as Public Sector Banks are concerned, Innovative Strategy for sustainable development (4.55) and energy savvy as well as tech savvy techniques (4.55) are considered as the important strengths of Environmentally Sustainable Banking. On the other hand, consideration of triple bottom line approach (4.62) and low carbon emission (4.62) are the important strengths of Old Generation Banks. But, in the case of New Generation Banks, innovative strategy for sustainable development (4.66) and consideration of triple bottom line approach (4.59) are denoted as the key strengths of Environmentally Sustainable Banking Practices.

The 'go-green' concepts are not free from its weaknesses. The Pubic and New Generation Banks have pointed that cost of installation of energy efficient materials (3.96, 3.74) and absence of Environmental Audit Management (3.48, 4.33) are the important weaknesses in the adoption of 'go-green' practices. But Old Generation Banks have shown that infancy stage of development (3.59) and less adoption of Environmental Accounting Practices (3.55) are the key deficiencies for the implementation of Environmentally Sustainable Banking.

Opportunities are the directions for the best practices in a systematic way. As far as Environmentally Sustainable Banking Practices, there are different opportunities identified by the banking sectors. Among them, set up a separate cell for

promotion (4.51, 4.25) and implement Environmental Due Diligence (4.59, 4.29) are the vital opportunities that have identified by the Public and New Generation Banks. Although, Old Generation Banks have reminded that, improve CSR Standards (4.66) and provide rewards and recognition for the best performance (4.59) for the successful implementation of 'go-green' concept.

Challenges are the rational experience for the better opportunity in future. The Public Sector Banks have opined that difficult to get Going Coin Rating Certification (3.62) and financial risk due to creating separate CSR fund (3.88) are the key challenges behind the acceptance of Green Practices. On the other hand, Old and New Generation Banks have suggested that the problem of Environmental Riks Management (3.81, 3.71) is the significant challenge. In addition, credit and reputational Risk due to environmental regulations and Environmental Management System (3.74) are identified as important threat faced by the Old Generation Banks for the implementation of Environmentally Sustainable Banking.

Table 4.15

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Strength	2.439	.115
Weakness	2.281	.109
Opportunity	2.513	.088
Threat	.019	.981

Source: Primary Data

Table 4.15 explains the result of Levene's test of Homogeneity of Variance for the dimensions of SWOC. From the table it is clear that all the significant values are greater than 0.05, hence, the null hypothesis cannot be rejected at 5 % level of significance. Therefore, the homogeneity assumption of One-way ANOVA is proved.

Table 4.16

Sector wise comparison of SWOC of Environmental-Sustainable Banking

Dimensions	**Sector**			**F value**	**p value**
	Public Sector	**Old Generation**	**New Generation**		
Strength	4.46 (0.45)	4.51 (0.31)	4.40 (0.32)	0.618	0.542
Weakness	3.16 (0.23)	3.12 (0.27)	3.19 (0.35)	0.371	0.692
Opportunity	4.38 (0.52)	4.47 (0.38)	4.22 (0.44)	2.091	0.130
Threats	3.57 (0.46)	3.61 (0.47)	3.65 (0.43)	0.254	0.776

Source: Primary Data
Figures in parentheses represent Standard Deviation

Table 4.16 demonstrates the comparison of Public, Old and New Generation Banks towards SWOT/SWOC on Environmentally Sustainable Banking. The descriptive statistics explains that the mean scores are almost same in the case of strength (0.542), weakness (0.692), opportunity (0.130) and threats (0.776) among the banking sectors. Hence, the significance values are greater than that of 0.05, the null hypothesis cannot be rejected at 5 % level of significance. So, there is no significance difference among Public, Old and New Generation Banks with respect to SWOT of Environmentally Sustainable Banking Practices followed.

4.6.9 Sector wise discussion on Importance of SMART Green Goals

In order to discuss and compare the SMART Green Goals followed by the banking sector, Descriptive Statistics, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey Post Hoc-test for Multiple Comparison are applied. The hypothesis framed for the test is outlined below.

H0: ***There is no significant difference in the Importance of SMART Green Goals among Public, Old Generation and New Generation Banks***

H1: ***There is significant difference in the Importance of SMART Green Goals among Public, Old Generation and New Generation Banks***

Table 4.17

Importance of SMART Green Goals in Sustainable Banking Practices

SMART Green Goals		Public Sector	Old Generation	New Generation
Specific Goals	Planning before going green	4.60 (0.57)	4.33 (0.55)	**4.62** (0.49)
	Set of guidelines and regulations to comply the procedures	4.59 (0.50)	4.44 (0.50)	4.25 (0.44)
	Objectives and motives to carry out the practices	4.33 (0.83)	4.44 (0.64)	4.00 (0.78)
	Coalition of Green Capital and its utilization	4.59 (0.57)	**4.55** (0.50)	4.59 (0.50)
	Specific CSR policies and procedure	**4.66 (0.62)**	4.25 (0.59)	4.29 (0.46)
Measurable Goals	Innovation in green technological products	4.51 (0.50)	**4.62** (0.49)	3.92 (0.72)
	Innovativeness in green practices	4.48 (0.57)	4.37 (0.68)	4.29 (0.46)
	Risks and Returns from every Sustainable Banking practice	**4.85** (0.36)	4.37 (0.49)	**4.51** (0.50)
	Direct and indirect cost of all activities	4.48 (0.57)	4.40 (0.57)	4.25 (0.45)
	Motivational rewards in the form of grants and subsidies	4.77 (0.57)	4.37 (0.49)	3.96 (0.75)

SMART Green Goals		Public Sector	Old Generation	New Generation
Attainable Goals	Security and Confidentiality in Digital sector	4.51 (0.57)	4.33 (0.62)	4.55 (0.50)
	Customer care and support for all their queries	4.66 (0.73)	**4.48** (0.51)	4.22 (0.42)
	Literacy and educative power from the bottom level	4.66 (0.55)	4.33 (0.48)	4.03 (0.80)
	Aim of environmentally and socially responsible CSR practices	**4.74** (0.44)	4.40 (0.57)	4.25 (0.45)
	Environmental standards in lending and making investments	4.51 (0.57)	4.41 (0.57)	**4.59** (0.46)
Realistic Goals	Introduction of concepts to reduce carbon foot prints	4.66 (0.48)	4.37 (0.56)	4.00 (0.78)
	Set of rules of thumb for energy efficient usage	4.62 (0.49)	4.37 (0.49)	4.29 (0.49)
	Policies for waste energy recycling process	4.63 (0.50)	**4.48** (0.38)	4.44 (0.45)
	Digital way to connect Agri Business	4.62 (0.49)	4.29 (0.54)	**4.62** (0.49)
	Setting Intelligence Assistance to Energy Consciousness	**4.81** (0.39)	4.33 (0.48)	4.33 (0.48)
Timely Goals	24*7 assistance for online banking customers	4.62 (0.49)	**4.42** (0.50)	4.33 (0.48)
	Disclosure of environmental and social performance in Sustainability report and CSR Report Simultaneously	**4.66** (0.49)	4.33 (0.48)	4.33 (0.48)
	Adoption for Principle of Caring for environment from NVG-SEE notified by the MCA, GOI	4.51 (0.64)	4.40 (0.50)	4.33 (0.48)
	Introduction of retail and corporate internet banking practices on need basis	4.33 (0.83)	4.40 (0.50)	**4.63** (0.49)
	Ascertainment of financial performance with regard to environmental and social performance	4.62 (0.49)	4.37 (0.56)	4.62 (0.49)

Source: Primary Data
Figures in parentheses represent Standard Deviation

Table 4.17 explains the importance of SMART Green Goals among the Banking Sectors. The SMART Green Goals are subtitled as Specific, Measurable, Attainable, Realistic and Timely dimensions. Here the Public Sector Banks identifies the 'specific CSR policies and procedure' (4.66) as the core activity for attaining the specific goals. The New Generation Banks opines that 'planning before going green' (4.62) is the key Specific Goal. On the other hand, as far as Old Generation Banks are concerned, Coalition of Green Capital and its utilization (4.55) is considered as the important specific goals.

With respect to Measurable Goals, Public (4.85) and New Generation Banks (4.51) give same importance for risk and return from every Environmentally Sustainable Banking Practices. However, in the opinion of Old Generation Banks, innovation in green technology products (4.62) is the main measurable goal.

The importance of Attainable Goals pointed by the Public Sector banks are: - aim of environmentally and socially responsible CSR practices (4.74) and literacy and educative power from the bottom level (4.66). Furthermore, in the view of Old Generation Banks, customer care and support for all their queries (4.48) is the main attainable goal. Besides that, Environmental Standards in lending and making investment (4.59) is the key attainable goal identified by the New Generation Banks.

Realistic Goals are important for the effective implementation of 'go green' activities. Here, 'setting Intelligence Assistance to Energy Consciousness' (4.81) is considered as the realistic goal of Public Sector Banks. In the case of Old Generation Banks, 'policy for waste and energy recycling process' has the highest mean score of 4.48 with regard to the Realistic Goal. Finally, New Generation Banks opines that the digital way to connect Agri business is the main Realistic Goal for going green.

With respect to Timely Goals, Public Sector banks gives importance for 'the disclosure of environmental and social performance in Sustainability report and CSR Report' simultaneously with highest mean score of 4.66. Similarly, Old Generation Banks given high mean score for the Timely Goal of 24*7 assistance for online banking customers (4.42). Likewise, 'introduction of retail and corporate IB practices' (4.63) is considered as the key Timely Goal of New Generation Banks.

4.6.10 Sector wise comparison of Importance of SMART Green Goals

Table 4.18

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Specific	2.359	.141
Measurable	2.175	.137
Attainable	2.107	.128
Realistic	2.073	.118
Timely	1.742	.223

Source: Primary Data

The result of Levene's test of homogeneity of variance explains that all the significance values are greater than 0.05 and the null hypothesis of homogeneity of variance assumed is accepted. Consequently, the test for the comparison of SMART Green goals among banking sectors is meant to One-way ANOVA.

Table 4.19

Sector wise comparison of Importance of SMART Green Goals

Dimensions	Sector			F value	p value
	Public	Old Generation	New Generation		
Specific	4.55 (0.53)	4.40 (0.33)	4.35 (0.41)	1.540	0.221
Measurable	4.62 (0.41)	4.42 (0.31)	4.19 (0.46)	7.739	0.001**
Attainable	4.62 (0.44)	4.39 (0.32)	4.33 (0.39)	4.091	0.020*
Realistic	4.65 (0.38)	4.35 (0.32)	4.31 (0.44)	6.218	0.003**
Timely	4.55 (0.50)	4.38 (0.30)	4.45 (0.07)	1.156	0.320

Source: Primary Data
**Significant at 1% level of significance
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

The above table explains that the mean score of Specific and Timely goals are almost same for Public, Old and New Generation Banks. Consequently, the significance value of 0.221 (f value =1.540) and 0.320 (f value =1.156) are greater than 0.05 and the null hypothesis cannot be rejected at 5 % level of significance. So, there is significant difference in Specific and Timely goals of different sectors of banks.

Furthermore, with respect to Measurable Green Goals the significance value of 0.001 and 'f' value of 7.739 explains that there is exist significant difference among different sectors of banks regarding the measurable green goals.

Similarly, the mean scores of Attainable Green Goals are different among sectors of the banks. Hence, the 'p' value of 0.020 and 'f' value of 4.091 demonstrates that there is significant difference among Public, Old and New Generation Banks on Attainable Green Goals at 5% level of significance.

Likewise, the significance value of 0.003 and 'f' value of 6.218 of Realistic Green Goal denotes that there exists significant difference among sectors of banks.

Table 4.20

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Measurable	Public	Old Generation	.19259	.190
		New Generation	.42963*	.001
Attainable	Public	Old Generation	.22963	.086
		New Generation	.28889*	.022
Realistic	Public	Old Generation	.29630*	.017
		New Generation	.34074*	.005
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Rejecting the H0 denotes that at least one significant difference exists between the means. Here, there exits significant difference in the mean score of Measurable, Attainable and Realistic Green goals among banking sectors. Hence, there is a need to perform post-hoc test to determine the significant difference within the groups. Here Tukey HSD Post-hoc test is employed to know the honestly significant difference.

From the above table it can be understood that the public sector banks significantly differed from New Generation Banks with respect to Measurable Green Goals (0.001) and Attainable Green Goals (0.022) but not from Old Generation Banks (0.190 & .086). And there is no significant difference in the mean score of these goals between Old and New Generation Banks.

Correspondingly, the post-hoc test indicates that the mean scores of Realistic Green Goals are significantly differed among Public & Old Generation Banks (0.017) and Public & New Generation Banks (0.005).

Consequently, the result is concluded that there is a significant difference between Public and New Generation Banks with respect to Measurable, Attainable and Realistic Green Goals. And the mean difference in Old Generation Banks is not as much as others have.

Section B

4.7 Relationship of the adoption level of Environmentally Sustainable Banking Practices on SWOC and SMART Green Goals – Sector wise Analysis

The purpose of this section is to identify the relationship of adoption level of Environmentally Sustainable Banking Practices (Green Processes, Green Practices and Green Products/ Services) on SWOC and importance of SMART Green Goals. To explain the cause-and-effect relationship between these variables, Structural Equation Modelling is used. The proposed Model, Structural Model Assessment with the help of Model Fit Indices and the Hypotheses results of Sector-wise analysis are provided below;

4.7.1 Proposed Model and Structural Model Assessment of relationship between ESBP and SWOC analysis

Figure 4.1 exhibits the proposed model for checking the relationship between ESBP and SWOC analysis. Here, Green Processes, Practices and Products are considered as the independent variables and Strength, Weakness, Opportunity and Threat are identified as the dependent variables.

Figure 4.1

Proposed Model for the relationship between ESBP and SWOC Analysis

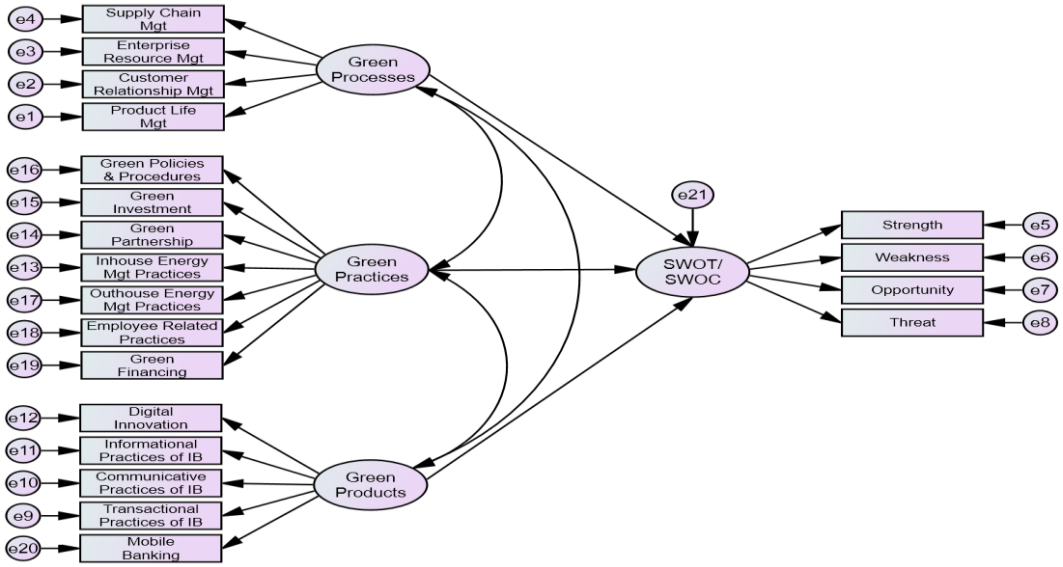


Table 4.21

Model Fit Indices for the Proposed Model of SWOC Analysis

	CMIN	CMIN/df	RMR	CFI	GFI	AGFI	IFI	TLI	NFI	RMSEA
Obtained	3.115	1.102	0.001	0.921	0.932	0.907	0.942	0.910	0.905	0.03
Recommended	>0.05	≤3	≤0.05	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≤0.08

The acceptability of the measurement model is based on the Model Fit Indices (structural model assessment) of the proposed model. Here, the values of model fit indices like Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-square (CMIN/df) have suggested that the model developed is valid and good fit.

4.7.2 Proposed Model and Structural Model Assessment of relationship between ESBP and SMART Green Goals

Figure 4.2 displays the proposed model used for checking the relationship between ESBP and SMART Green Goals. Here, the importance of Specific, Measurable, Attainable, Realistic and Timely Goals is measured under the purview of Environmentally Sustainable Banking Practices.

Figure 4.2

Proposed Model for the relationship between ESBP and SMART Green Goals

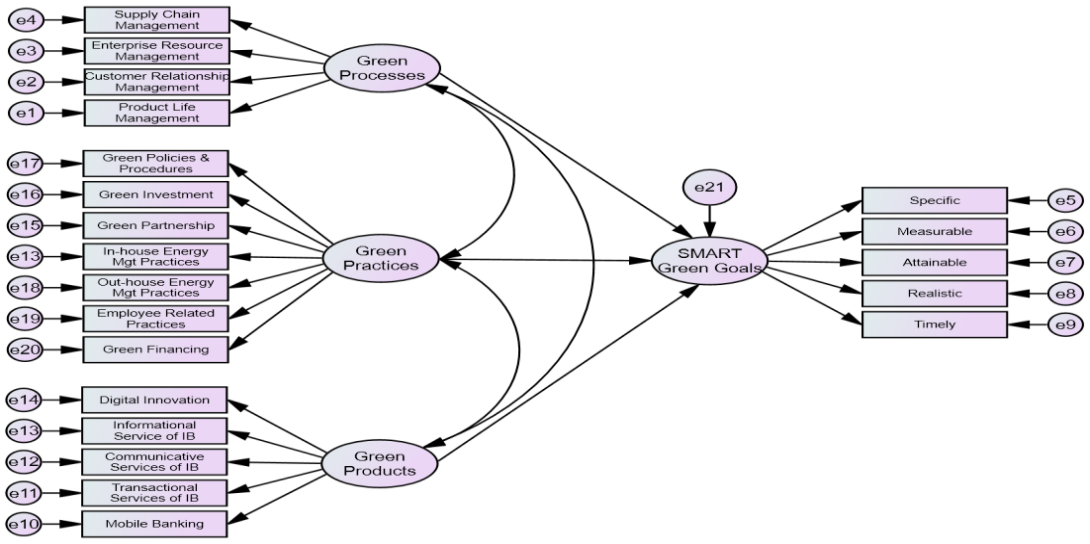


Table 4.22

Model Fit Indices for the Proposed Model of SMART Green Goals

	CMIN	CMIN/df	RMR	CFI	GFI	AGFI	IFI	TLI	NFI	RMSEA
Obtained	2.711	0.998	0.031	0.911	0.931	0.899	0.897	0.930	0.924	0.04
Recommended	>0.05	≤3	≤0.05	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≤0.08

The validity of the measurement model is based on the Model Fit Indices (structural model assessment) of the proposed model. Here, the values of model fit indices like Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-square (CMIN/df) have suggested that the model developed is valid and good fit.

4.7.3 Proposed Model and Structural Model Assessment of relationship between importance of SMART Green Goals and SWOC Analysis

Figure 4.3 shows the proposed model for checking the relationship between SMART Green Goals and SWOC Analysis of Environmentally Sustainable Banking Practices. Here, importance of SMART Green Goal is proposed as the important predecessor of SWOC Analysis. Hence, there is need to confirm the cause-and-effect relationship between them.

Figure 4.3

Proposed Model for the relationship between importance of SMART Green Goals and SWOC Analysis

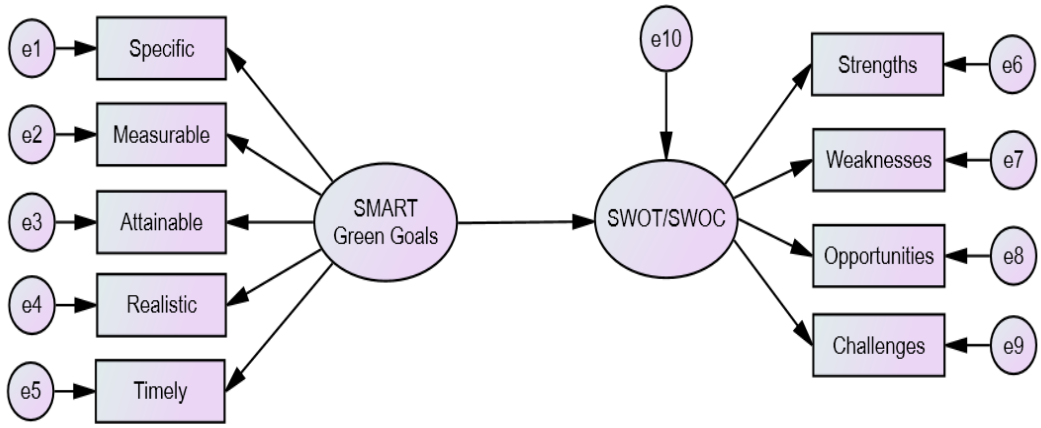


Table 4.23

Model Fit Indices for the Proposed Model of SWOC & SMART Green Goals

	CMIN	CMIN/df	RMR	CFI	GFI	AGFI	IFI	TLI	NFI	RMSEA
Obtained	4.302	1.987	0.013	0.941	0.960	0.898	0.951	0.911	0.908	0.038
Recommended	>0.05	≤3	≤0.05	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≥0.90	≤0.08

The Model Fit Indices (structural model assessment) like, Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-square (CMIN/df) are selected to measure the goodness of fit for the proposed model. In order to obtain an acceptable fit, the values should be within the recommended limit. Here, all the values are within the limit and it suggested that the model developed is valid and good fit to measure the interrelationship.

4.7.4 Relationship between adoption level of Environmentally Sustainable Banking Practices and SWOT/SWOC analysis (Public Sector Banks)

In order to measure the relationship between adoption level of Environmental-Sustainable Banking and SWOC analysis, a structured model is developed and tested with the help of Structural Equation Modeling. Here, four latent variables and twenty observed variables are taken for the analysis. Green Processes, Practices and Products are the independent latent variables and SWOC is the dependent latent variable. Following hypotheses are formulated and tested for the proposed model (Figure 4.4)

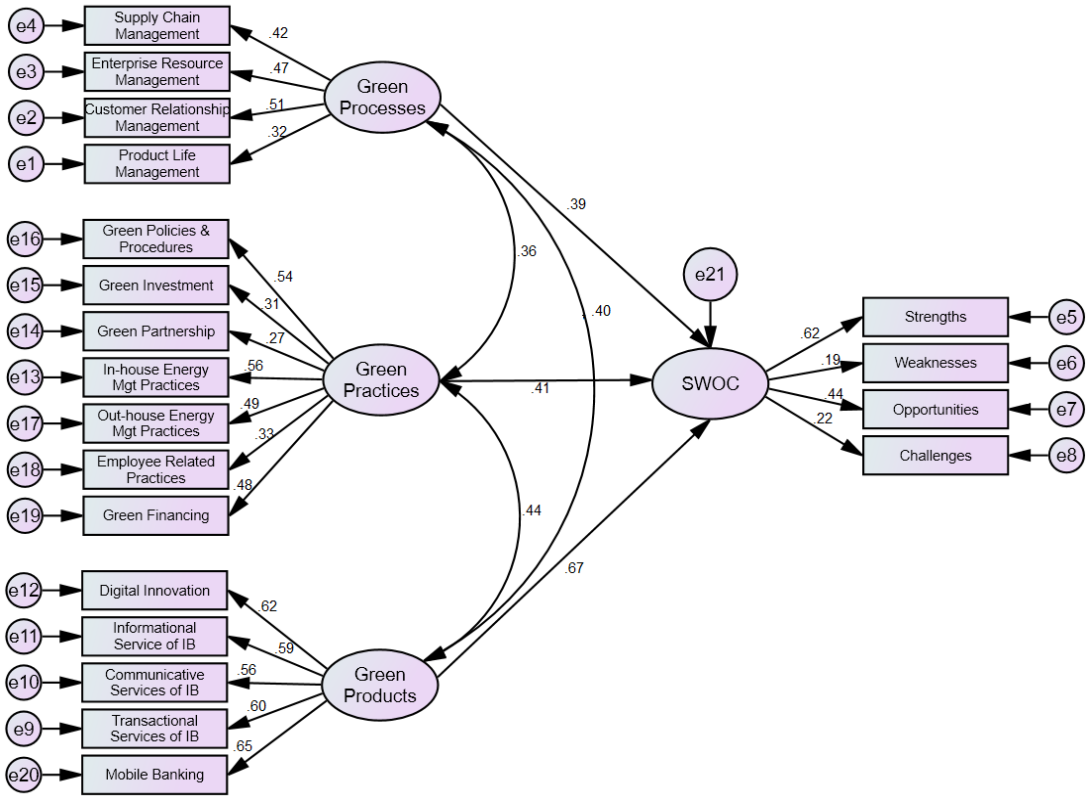
$H0_1$: There is no significant relationship between adoption level of Green Processes and SWOC (Public Sector Banks)

$H0_2$: There is no significant relationship between adoption level of Green Practices and SWOC (Public Sector Banks)

$H0_3$: There is no significant relationship between adoption level of Green Products/Services and SWOC (Public Sector Banks)

Figure 4.4

Measurement Model of SWOC Analysis (Public Sector Banks)



Result of hypotheses testing on SWOC Analysis (Public Sector Banks)

SEM is applied to check the multivariate relationship between each variable to latent constructs with the help of path co-efficient at 1% level of significance. Table 4.24 shows the hypothesis testing results and observations of each hypothesized significance path of the model.

Table 4.24

Result of hypotheses testing on SWOC Analysis (Public Sector Banks)

Hypotheses	Path	Path Co-efficient	P (Sig.) Value	Result
$H0_1$	Green Processes → SWOC	0.39	<0.001	Reject
$H0_2$	Green Practices → SWOC	0.41	<0.001	Reject
$H0_3$	Green Products → SWOC	0.67	<0.001	Reject

Source: Primary Data

Table 4.24 depicts the hypotheses testing results of the measurement model (Figure 4.4) to explain the relationship status of adoption level of Green Processes, Practices and Products on SWOC analysis. The beta coefficient standardized direct effect of 'Green Processes' on 'SWOC' is 0.39. It means, every one-point increase in the adoption level of Green Processes predicts 0.39 increase on SWOC analysis. Further, the standardized path co-efficient of 0.41 explains the significant cause-and-effect relationship between Green Practices and SWOC. Here, every one-point increase in the adoption level of Green Practices predicts 41 percent increases in the SWOC analysis. Additionally, the relationship between adoption level of Green Products and SWOC analysis is established with regression co-efficient of 0.67. It explains that one point increase in the former variable predicts 67 percent increase in the latter variable.

4.7.5 Relationship between adoption level of Environmentally Sustainable Banking Practices and SMART Green Goals (Public Sector Banks)

In order to measure the relationship between adoption level of Environmental-Sustainable Banking and SMART Green Goals, a hypothesized model is developed and tested with the help of Structural Equation Modeling. Here, four latent variables and twenty-one observed variables are taken for the analysis. Green Processes, Practices and Products are the independent latent variables and SMART Green Goals are the dependent latent variable. Following hypotheses are formulated and tested for the measurement model (Figure 4.5)

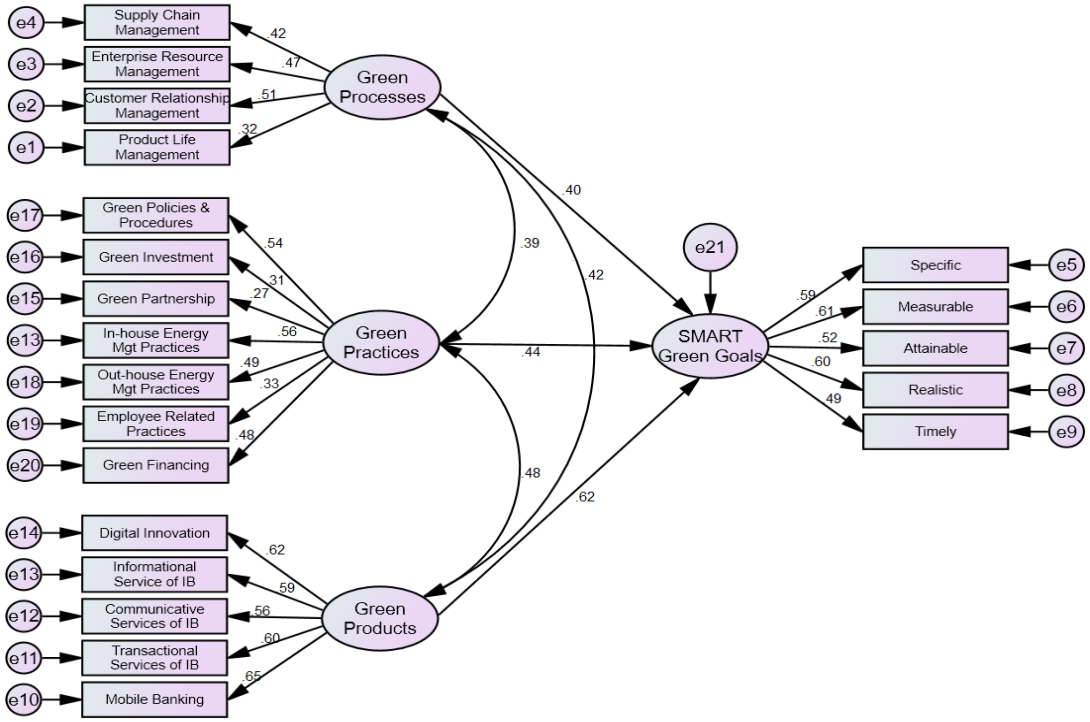
$H0_4$: There is no significant relationship between adoption level of Green Processes and SMART Green Goals (Public Sector Banks)

$H0_5$: There is no significant relationship between adoption level of Green Practices and SMART Green Goals (Public Sector Banks)

$H0_6$: There is no significant relationship between adoption level of Green Products/Services and SMART Green Goals (Public Sector Banks)

Figure 4.5

Measurement Model of SMART Green Goals (Public Sector Banks)



Result of hypotheses testing on SMART Green Goals (Public Sector Banks)

This section of analysis depicts the causal relationship between adoption level of ESBP and importance of SMART Green Goals. It explains the results with the help of path analysis and beta co-efficient at 1% level of significance. Table 4.25 shows the hypothesis testing and its path analysis results.

Table 4.25

Result of hypotheses testing on SMART Green Goal (Public Sector Banks)

Hypotheses	Path	β	P (Sig.) Value	Result
$H0_4$	Green Processes→ SMART Green Goals	0.40	<0.001	Reject
$H0_5$	Green Practices → SMART Green Goals	0.44	<0.001	Reject
$H0_6$	Green Products → SMART Green Goals	0.62	<0.001	Reject

Source: Primary Data

From the above table it is clear that the adoption level of Green Processes has significant positive influence on importance of SMART Green Goals with beta co-

efficient of 0.40. It means, one-point increase in the Green Processes predicts 40% increase in the SMART Green Goals. Similarly, the relationship between Green Practices and SMART Green Goals is established with path co-efficient of 0.44. It explains 44% predictive power of the independent variable to the dependent variable. Likewise, the SMART Green Goal also related with the adoption level of Green Products with beta co-efficient of 0.61.

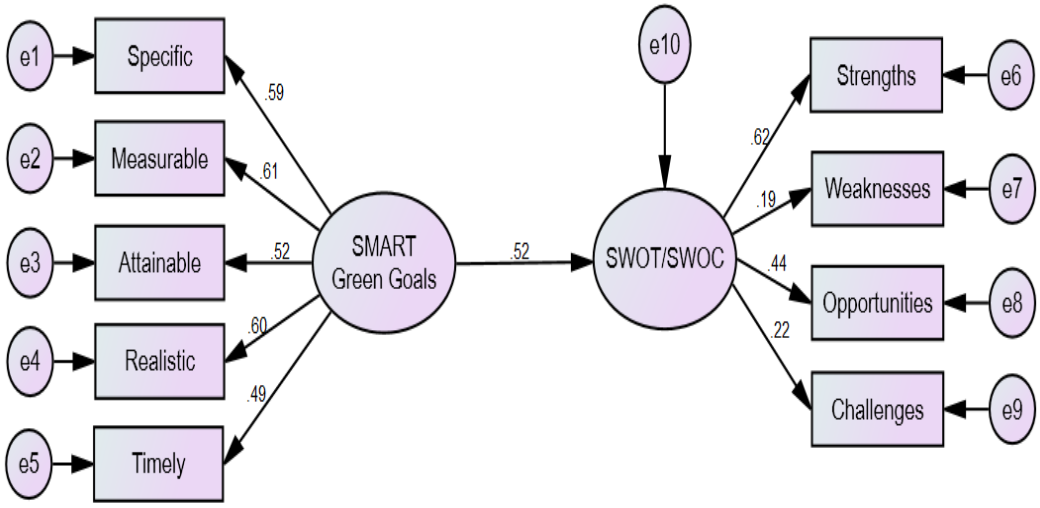
4.7.6 Relationship between SMART Green Goals and SWOT/SWOC (Public Sector Banks)

Importance of SMART Green Goals influences the strengths, weaknesses, opportunities and challenges of Environmentally Sustainable Banking Practices. To prove the relationship, the directional linkage between these variables has measured with the help of Structural Equation Modelling. The proposed hypothesis is;

$H0_7$: There is no significant relationship between importance of SMART Green Goals and SWOC (Public Sector Banks)

Figure 4.6

Measurement Model of SMART Green Goals & SWOC Analysis (Public Sector Banks)



Result of hypothesis testing on SMART Green Goals & SWOC Analysis (Public Sector Banks)

This section of analysis depicts the directional linkage between SMART Green Goals and SWOC of ESBP of Public Sector Banks. It explains the results with the

help of path analysis and beta co-efficient at 1% level of significance. Table 4.26 shows the hypothesis testing results of the proposed model used for the measurement.

Table 4.26

Result of hypothesis testing on SMART Green Goals & SWOC Analysis (Public Sector Banks)

Hypothesis	Path	β	P (Sig.) Value	Result
$H0_7$	SMART Green Goals → SWOC	0.52	<0.001	Reject

Source: Primary Data

From the above table it is clear that SMART Green Goals have significant positive impact on SWOC of Environmentally Sustainable Banking Practices with regression co-efficient of 0.52. It means one-point increase in the importance of SMART Green Goals predicts 52 percent increase in the SWOC Analysis. Since, the 'p' value is less than 0.01, the null hypothesis is rejected and the relationship between the variables has established.

4.7.7 Relationship between adoption level of Environmentally Sustainable Banking Practices and SWOT/SWOC (Old Generation Banks)

In order to identify the relationship between adoption level of Green Processes, Practices & Products and SWOC in the Old Generation Private Banks, Structural Equation Modelling is used. Moreover, the measurement model is tested and validated as per the above-mentioned proposed model (Figure 4.1) and Model Fit Indices (Table 4.21). Accordingly, following hypotheses formulated and tested for the measurement model to analyze the cause-and-effect relationship between independent and dependent variables.

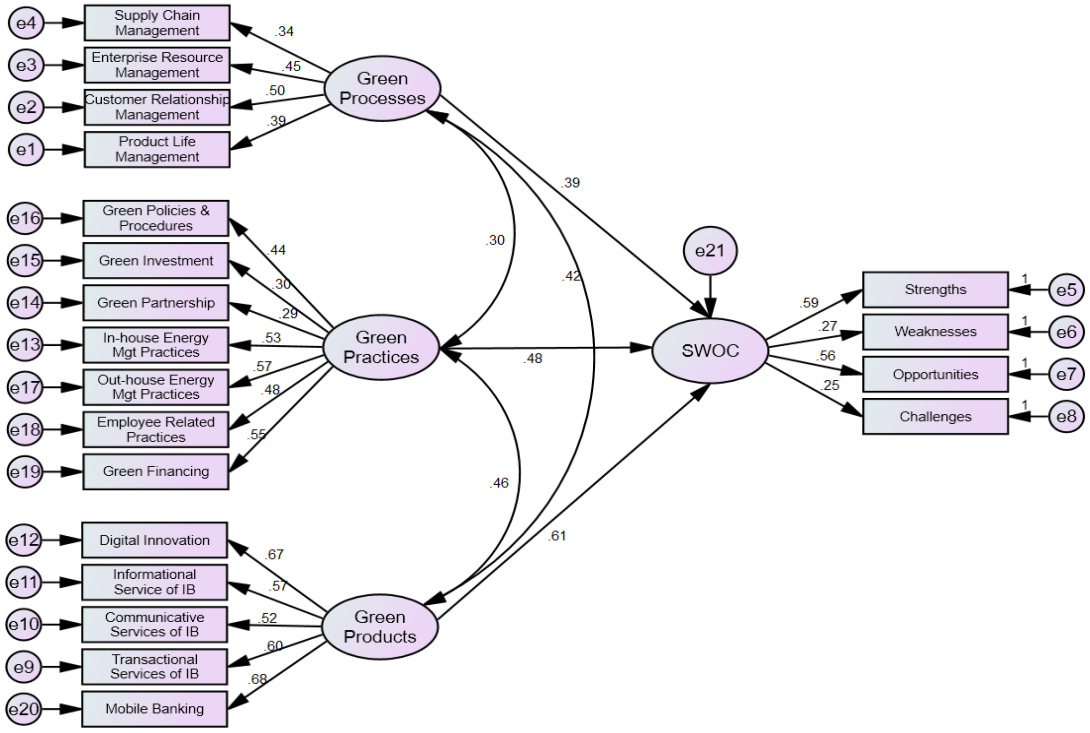
$H0_8$: There is no significant relationship between adoption level of Green Processes and SWOC (Old Generation Banks)

$H0_9$: There is no significant relationship between adoption level of Green Practices and SWOC (Old Generation Banks)

$H0_{10}$: There is no significant relationship between adoption level of Green Products/Services and SWOC (Old Generation Banks)

Figure 4.7

Measurement Model of SWOC Analysis (Old Generation Banks)



Result of hypotheses testing on SWOC Analysis (Old Generation Private Banks)

SEM is employed to fitting a model to the data for solving a set of equations. The interrelationship between the variables is measured to understand the dependency between them and the beta-coefficient is interpreted at 1% level of significance. Table 4.27 explains the hypotheses testing results and implications based on the relationship between adoption level of ESBP and SWOC in the Old Generation Banks.

Table 4.27

Result of hypotheses testing on SWOC Analysis (Old Generation Banks)

Hypotheses	Path	Path Co-efficient	P (Sig.) Value	Result
$H0_8$	Green Processes → SWOC	0.39	<0.001	Reject
$H0_9$	Green Practices → SWOC	0.48	<0.001	Reject
$H0_{10}$	Green Products → SWOC	0.61	<0.001	Reject

Source: Primary Data

This section is intended to examine the causal relationship among the constructs of the proposed model. Table 4.27 shows the hypotheses testing results and observations of each hypothesized significance path. Here, all the 'p' values are less than 0.01 and the null hypotheses are rejected at 1% level of significance. Correspondingly, the adoption level of Green Processes, Practices and Products are positively correlated with SWOC. Moreover, the one-point increase in the adoption of Green Processes, Practices and Products predicts 39%, 48% and 61% increase in the SWOC respectively in this order.

4.7.8 Relationship between adoption level of Environmentally Sustainable Banking Practices and SMART Green Goals (Old Generation Banks)

Here, the proposed model (Figure 4.2) is used to check the directional linkage between the variables of Environmental Sustainability and SMART Green Goals in the Old Generation Banks. Therefore, Structural Equation Modelling is identified as the most acceptable tool to design a measurement model to exhibits the relationship. Following are the hypotheses formulated and tested for the model.

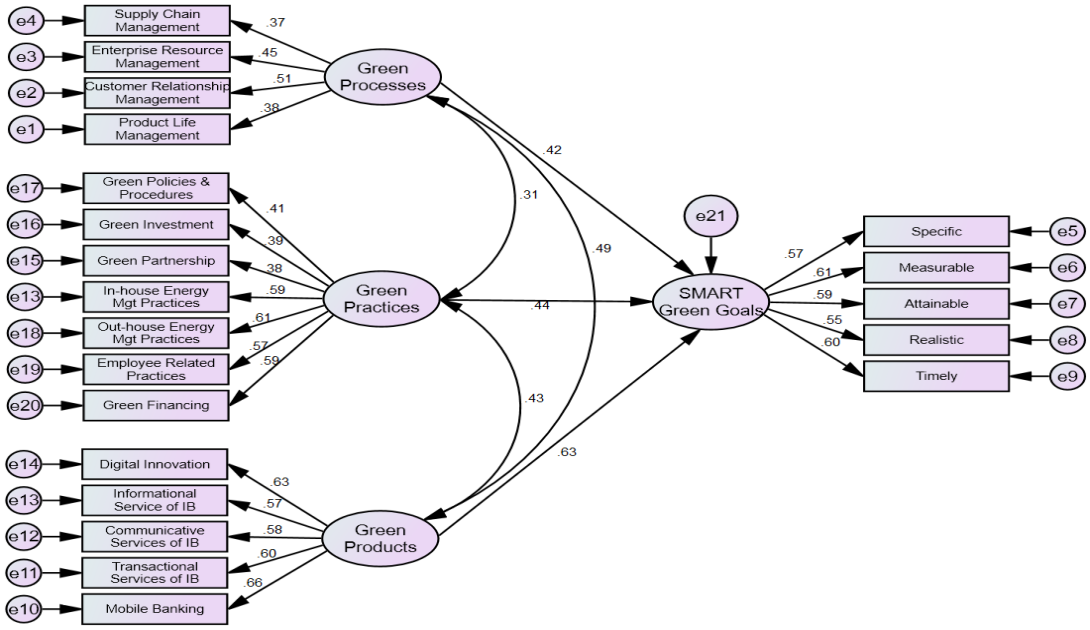
$H0_{11}$: There is no significant relationship between adoption level of Green Processes and SMART Green Goals (Old Generation Banks)

$H0_{12}$: There is no significant relationship between adoption level of Green Practices and SMART Green Goals (Old Generation Banks)

$H0_{13}$: There is no significant relationship between adoption level of Green Products/Services and SMART Green Goals (Old Generation Banks)

Figure 4.8

Measurement Model of SMART Green Goals (Old Generation Banks)



Result of hypotheses testing on SMART Green Goals (Old Generation Banks)

Here, the measurement model (Figure 4.8) is presented with hypothesized path analysis of relationship between adoption level of ESBP and SMART Green Goals in the Old Generation Private Banks. Table 4.28 is the explanation of this model with help of path co-efficient at 1% level of significance.

Table 4.28

Result of hypotheses testing on SMART Green Goal (Old Generation Bank)

Hypotheses	Path	β	P (Sig.) Value	Result
$H0_{11}$	Green Processes → SMART Green Goals	0.42	<0.001	Reject
$H0_{12}$	Green Practices → SMART Green Goals	0.44	<0.001	Reject
$H0_{13}$	Green Products → SMART Green Goals	0.63	<0.001	Reject

Source: Primary Data

According to the measurement model, the causal relationship between adoption level of ESBP and SMART Green Goals is established. Further, the values of regression co-efficient denotes the explanatory power of the independent variables on dependent variable. Accordingly, one-point increase in the adoption level of Green

Processes, Practices and Products forecasts 42%, 44% and 63% increase in the importance of SMART Green Goals respectively in this order.

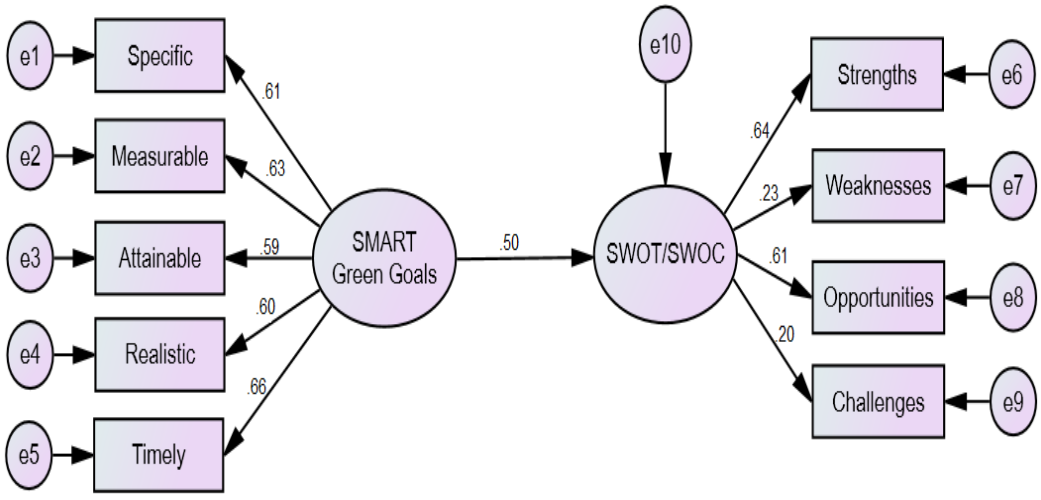
4.7.9 Relationship between Importance of SMART Green Goals and SWOT/ SWOC (Old Generation Private Banks)

Structural Equation Modelling is applied to exhibits the relationship between importance of SMART Green Goals and SWOC Analysis. As far as strength, weaknesses, opportunities and challenges are concerned, the importance of SMART Green Goals is considered as the important predictor variables. So, in order to ensure this relationship, regression co-efficient is used and the hypothesis is presented below:

$H0_{14}$: There is no significant relationship between Importance of SMART Green Goals and SWOC (Old Generation Banks)

Figure 4.9

Measurement Model of SMART Green Goals & SWOC Analysis (Old Generation Banks)



Result of hypothesis testing on SMART Green Goals & SWOC Analysis (Old Generation Banks)

Here, SEM is considered as a powerful technique that combines the path model with latent variables to measure the relationship between SMART Green Goals and SWOC of Old Generation Private Banks. Table 4.29 exhibits the hypothesis, path, path co-efficient, 'p' value and implication of the measurement model (Figure 4.9).

Table 4.29

Result of hypothesis testing on SMART Green Goals & SWOC Analysis (Old Generation Banks)

Hypothesis	Path	β	P (Sig.) Value	Result
$H0_{14}$	SMART Green Goals → SWOC	0.50	<0.001	Reject

Source: Primary Data

Table 4.29 is the explanation of the measurement model (Figure 4.9) with path co-efficient of 0.50. Since the 'p' value is less than 0.01, the null hypothesis is rejected and the relationship between importance of SMART Green Goals and SWOC has established. Accordingly, SMART Green Goals are considered as the positive predictor of SWOC of Environmental Sustainability and one-point increase in the former variable predicts 50 percent increase in the latter variables.

4.7.10 Relationship between adoption level of Environmentally Sustainable Banking Practices and SWOT/SWOC (New Generation Banks)

The model (Figure 4.10) has proposed to measure the cause-and-effect relationship between adoption level of ESBP and SWOC in the New Generation Banks. In order to validate the model, following hypotheses formulated for the inter comparison of Green Processes, Practices & Products and SWOC of ESBP.

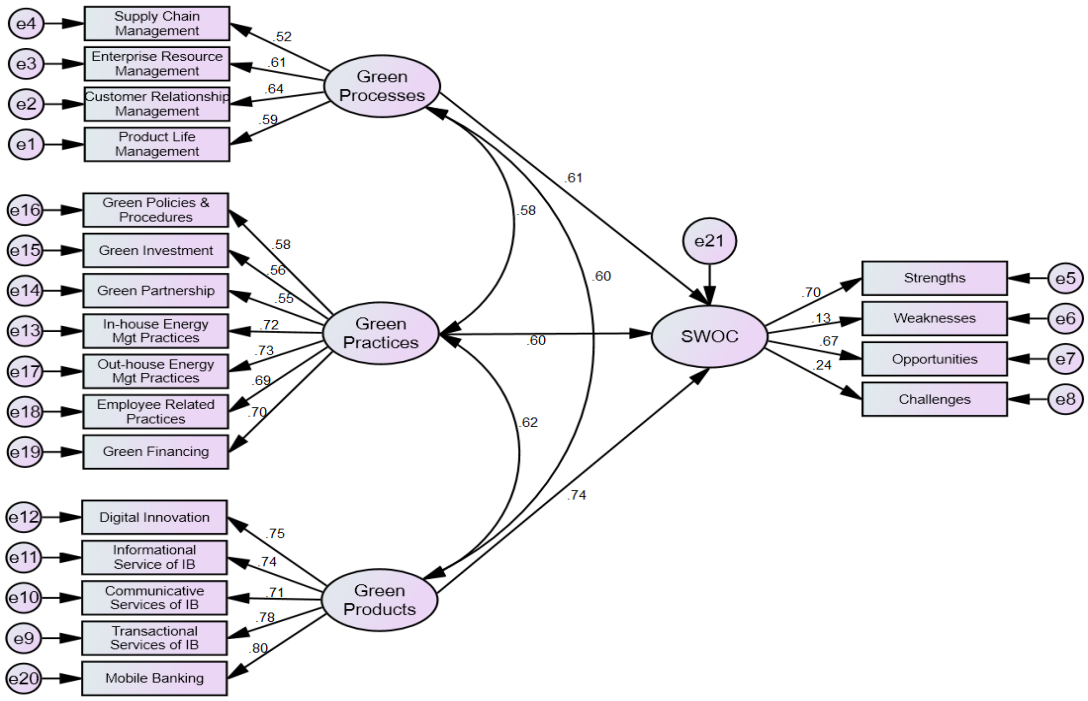
$H0_{15}$: There is no significant relationship between adoption level of Green Processes and SWOC (New Generation Banks)

$H0_{16}$: There is no significant relationship between adoption level of Green Practices and SWOC (New Generation Banks)

$H0_{17}$: There is no significant relationship between adoption level of Green Products/Services and SWOC (New Generation Banks)

Figure 4.10

Measurement Model of SWOC Analysis (New Generation Private Banks)



Result of hypotheses testing on SWOC Analysis (New Generation Private Banks)

Structural Equation Modelling is the widely accepted statistical analysis for measuring the explanatory power of the measurement model. Table 4.30 demonstrates the hypotheses testing results and observation for checking the inter relationship between Green Processes, Practices and Products on SWOC of ESBP.

Table 4.30

Result of hypotheses testing on SWOC Analysis (New Generation Banks)

Hypotheses	Path	Path Co-efficient	P (Sig.) Value	Result
$H0_{15}$	Green Processes → SWOC	0.61	<0.001	Reject
$H0_{16}$	Green Practices → SWOC	0.60	<0.001	Reject
$H0_{17}$	Green Products → SWOC	0.74	<0.001	Reject

Source: Primary Data

In this section of analysis, the relationship status of adoption level of Green Processes, Practices and Products of New Generation Banks is defined with SWOC of ESBP. Table 4.30 shows the hypotheses testing results and observations of each hypothesized significance path. Here, all the 'p' values are less than 0.01 and the null

hypotheses are rejected at 1% level of significance. Therefore, the adoption level of Green Processes, Practices and Products are positively correlated with SWOC. It means, one-point increase in the adoption of Green Processes, Practices and Products predicts 61%, 60% and 74% increase in the SWOC respectively in this order.

4.7.11 Relationship between adoption level of Environmentally Sustainable Banking Practices and SMART Green Goals (New Generation Banks)

Here, the proposed model (Figure 4.2) is designed to check the path analysis between the variables of Environmental Sustainability and SMART Green Goals in the New Generation Banks. Therefore, Structural Equation Modelling is used to frame a linear regression between the variables selected for the analysis. Hence, following are the hypotheses formulated and tested for the model.

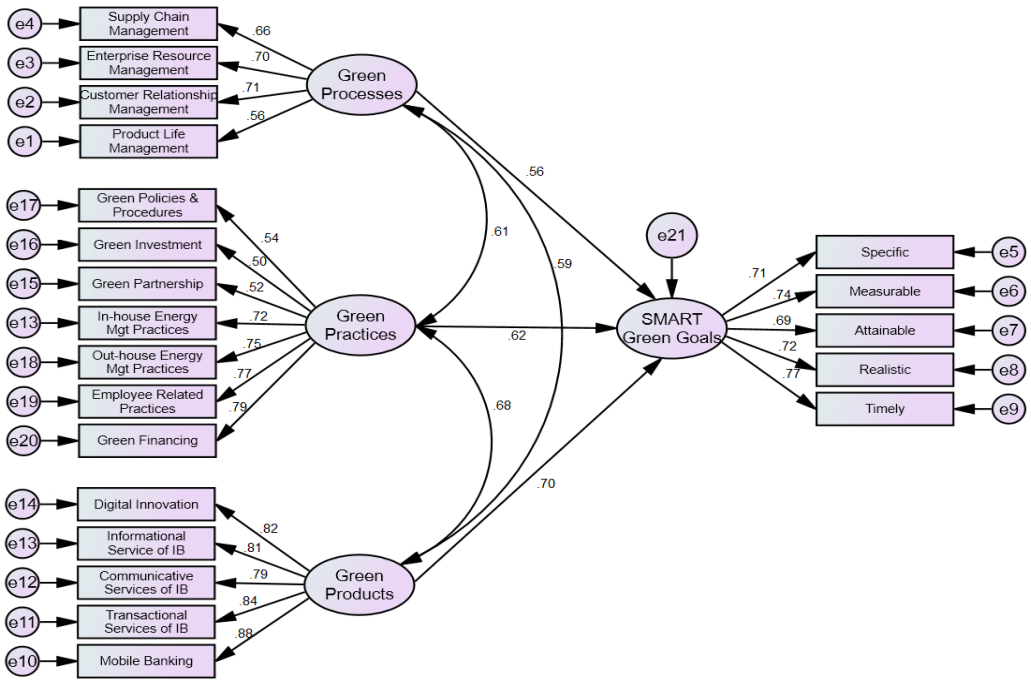
$H0_{18}$: There is no significant relationship between adoption level of Green Processes and SMART Green Goals (New Generation Banks)

$H0_{19}$: There is no significant relationship between adoption level of Green Practices and SMART Green Goals (New Generation Banks)

$H0_{20}$: There is no significant relationship between adoption level of Green Products/Services and SMART Green Goals (New Generation Banks)

Figure 4.11

Measurement Model of SMART Green Goals (New Generation Banks)



Result of hypotheses testing on SMART Green Goals (New Generation Banks)

Here, the model (Figure 4.11) is designed to measure the causal relationship between adoption level of ESBP and importance of SMART Green Goals of New Generation Banks. Further, table 4.31 is the detailed explanation of hypotheses testing results of the model. Here, the path co-efficient is used to verify the exact directional linkage between independent and dependent variables.

Table 4.31

Result of hypotheses testing on SMART Green Goal (New Generation Bank)

Hypotheses	Path	β	P (Sig.) Value	Result
$H0_{18}$	Green Processes → SMART Green Goals	0.56	<0.001	Reject
$H0_{19}$	Green Practices → SMART Green Goals	0.62	<0.001	Reject
$H0_{20}$	Green Products → SMART Green Goals	0.70	<0.001	Reject

Source: Primary Data

Table 4.31 is the detailed explanation of the pictorial representation of the path analysis. As stated in the model, the hypothesized relationship between adoption level of ESBP and SMART Green Goals is established at 1% level of significance. In addition, the adoption level of Green Processes, Practices and Products have significant positive influence in the importance of SMART Green Goals with regression co-efficient of 0.56, 0.62 and 0.70 respectively. Hence, the changes in the adoption level of ESBP predicts the simultaneous changes in the SMART Green Goals of New Generation Banks.

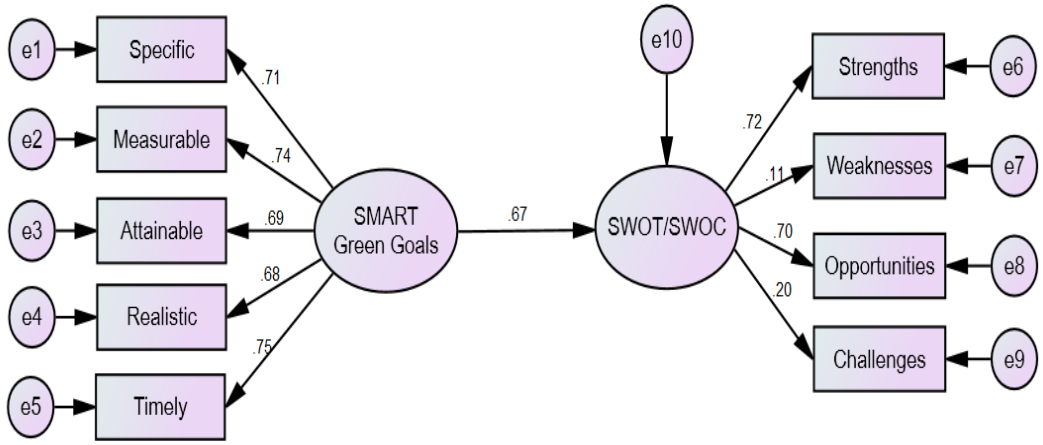
4.7.12 Relationship between SMART Green Goals and SWOT/SWOC (New Generation Banks)

In order to validates the influence of SMART Green Goals on SWOC of Environmental Sustainability of New Generation Banks, SEM is applied. Here, two latent variables and nine observed variables are taken for the analysis. Moreover, the relationship between latent variables is established with the help of Specific, Measurable, Attainable, Realistic and Timely Goals of go-green initiatives.

$H0_{21}$: There is no significant relationship between Importance of SMART Green Goals and SWOC (New Generation Banks)

Figure 4.12

Measurement Model of SMART Green Goals & SWOC Analysis (New Generation Banks)



Result of hypothesis testing on SMART Green Goals & SWOC (New Generation Banks)

Here, SEM is a powerful technique that combines the path model with latent variables to measure the relationship between SMART Green Goals and SWOC of New Generation Private Banks. Table 4.32 exhibits the hypothesis, path, path co-efficient, 'p' value and implication of the measurement model (Figure 4.12).

Table 4.32

Result of hypothesis testing on SMART Green Goals & SWOC Analysis (New Generation Banks)

Hypothesis	Path	Path co-efficient	P (Sig.) Value	Result
$H0_{21}$	SMART Green Goals → SWOC	0.67	<0.001	Reject

Source: Primary Data

Table 4.32 is the explanation of the measurement model (Figure 4.12) with path co-efficient of 0.67. Since the 'p' value is less than 0.01, the null hypothesis is rejected and the relationship between importance of SMART Green Goals and SWOC has established. Accordingly, SMART Green Goals have significant positive connection with SWOC of Environmental Sustainability and one-point increase in the SMART Green Goals predicts 67% increase in the SWOC of ESBP.

Section C

4.8 Bank wise Comparison of adoption level of Environmentally Sustainable Banking Practices

The previous section demonstrates the sector-wise comparison of adoption level of Environmental- sustainable Banking. Thereafter, Structural Equation Modelling is employed to identify the relationship between SWOC & SMART Green Goals on adoption level of ESBP. Here, Section C is planned to exhibits the result of adoption level of Environmentally Sustainable Banking activities among different banks namely, SBI, Canara, PNB, Federal, SIB, IDBI, ICICI, HDFC and AXIS Bank. The main objective of this section is to understand the level of adoption of Environmentally Sustainable Banking Practices among the sample banks. Before that, basic details like period of adoption, guidelines followed, areas of Green Strategies and reasons for going green are verified. To establish the significant association among the sample banks, some of the mathematical and statistical tools like, Frequency Distribution, Percentage, Arithmetic Mean, Standard Deviation, One-way Analysis of Variance, Levene's test for Homogeneity of Variance and Tukey HSD post hoc test for Multiple Comparisons are employed.

General Details

4.8.1 Period of adoption of Environmentally Sustainable Banking Practices

To know the level of adoption of Environmentally Sustainable Banking Practices, it is inevitable to identify the period of adoption. Thus, the below table is ready to conveys the result of period of adoption of ESBP of the sample banks. The categories of period of adoption are classified as, less than 1 year, 1-5 years and more than 5 years. There are nine sample banks are selected from nine districts in Kerala and the total number of sample banks are rounded to 81. To know the result, Simple Frequency Distribution is used.

Table 4.33

Period of adoption of Environmentally Sustainable Banking Practices

Banks	Period of Environmentally Sustainable Banking Practices adoption			
	Less than 1 year	**1-5 year**	**More than 5 years**	**Total**
SBI	0	1	**9**	9
Canara Bank	0	2	**7**	9
PNB	0	1	**7**	9
Federal Bank	0	1	**8**	9
South Indian Bank	0	0	**7**	9
IDBI	0	0	**7**	9
ICICI	0	1	**9**	9
HDFC	0	1	**9**	9
AXIS Bank	0	2	**9**	9

Source: Primary Data

The above table depicts that all the selected of SBI, ICICI, HDFC and AXIS bank have adopted the environmental sustainability concept from more than 5 years

Similarly, 78% of the selected Canara, PNB, South Indian Banks and IDBI Banks in Kerala have followed these activities from more than 5 years and the rest of them adopted these practices from 1 to 5 years.

But 89% of selected Federal Banks are on the way of going green from more than 5 years and rest of them have adopted these services from 1 to 5 years.

4.8.2 Guidelines followed by different banks regarding Environmental-Sustainability

The table provided below shows the result of guidelines followed by the sample banks for the accomplishment of Environmentally Sustainable Banking Practices. From the literatures review major guidelines followed by the banks are identified such as, RBI Regulations, NVGSEEA, Principles of Triple Bottom Line Approach, Environmental Principles and Bank's own guidelines. Here, Percentage analysis is used to identify the guidelines followed by the sample banks.

Table 4.34

Sustainable Banking Guidelines followed by different banks

Guidelines	Banks								
	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
RBI Regulations	**7 (78%)**	**5 (56%)**	1 (11%)	1 (11%)	2 (22%)	2 (22%)	2 (22%)	**9 (100%)**	1 (11%)
National Guidelines for Responsible Business Conduct	1 (11%)	0 (0)	**5 (56%)**	**5 (56%)**	**5 (56%)**	1 (11%)	**7 (78%)**	0 (0)	0 (0)
Principles of Sustainability/Tripple Bottom Line	1 (11%)	0 (0)	2 (22%)	1 (11%)	1 (11%)	0 (0)	0 (0)	0 (0)	**6 (67%)**
Environmental Principles	0 (0)	2 (22%)	1 (11%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (11%)
Bank's own guidelines	0 (0)	2 (22%)	0 (0)	2 (22%)	1 (11%)	**6 (67%)**	0 (0)	0 (0)	1 (0)
Total	9	9	9	9	9	9	9	9	9

Source: Primary Data
Figures in parentheses represent percentage to total

As per the above table 78% of SBI in Kerala follows the RBI Regulation of Sustainable Banking and the remaining 22% has obeys the rule of National Voluntary Guidelines for Social, Environmental and Economic Aspects and Principles of Sustainability/Triple Bottom Line Approach.

But, as far as Canara Bank is concerned, 56% of the sample banks follow RBI Regulations and the residual 44% are traced with Environmental Principles and Bank's own guidelines for the Going Green Concept.

According to the perspective of PNB, Federal and SIB, 56% follow the National Voluntary Guidelines for Social, Environmental and Economic Aspects. And the rest of them adopts the policies of RBI Regulations (22%) and Principles of Sustainability/Triple Bottom Line Approach (22%).

Moving to IDBI, 67% of them follow their own guidelines, 22% of them follow RBI regulations and 11% of them tracked with NVGSEE aspects for the adoption of Environmentally Sustainable Banking Practices.

With respect to ICICI bank, 78% are traced with the National Voluntary Guidelines and the remaining 22% are tracked with RBI Regulations.

But in accordance with HDFC Bank, all the (100%) selected banks follow RBI Regulations only.

Lastly, 67% of the AXIS Bank has followed the Principles of Sustainability/Triple Bottom Line Approach and the residual part of them tailed with RBI Regulations (11%) and Environmental Principles (11%).

4.8.3 Ranking of areas of Green Strategies/Practices adopted by Sample Banks

The below table shows the areas of Green Strategies adopted by the sample banks. In accordance with the literatures review, the areas are classified into six categories namely, Operational, Technological, Financial, Client Acceptance and Investment. Similarly, the ranks are given for the respective area of adoption from 1 to 6 according to the order of preference. Mean Ranking is used to identify the order of preferential areas of Green Strategies.

Table 4.35

Ranking of the areas of green strategies adopted

Areas	Banks								
	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Operational Activities	1.00* (1)	1.36 (1)	1.78 (2)	2.35 (2)	2.54 (3)	1.77 (2)	1.88 (2)	2.00 (2)	1.33 (1)
Technological Aspects	2.33 (2)	2.33 (2)	1.44 (1)	1.30 (1)	1.45 (1)	1.33 (1)	1.11 (1)	1.22 (1)	2.11 (2)
Financial Activities	4.5 (5)	4.00 (4)	5.00 (5)	4.22 (4)	4.54 (5)	4.00 (4)	3.88 (4)	4.11 (4)	4.55 (5)
Client Acceptance	3.8 (4)	4.49 (5)	2.89 (3)	4.88 (5)	2.00 (2)	4.53 (5)	4.88 (5)	3.00 (3)	3.22 (3)
Physical Infrastructure	3.4 (3)	2.77 (3)	4.34 (4)	2.77 (3)	4.00 (4)	3.35 (3)	3.35 (3)	5.34 (5)	3.77 (4)
Investment Avenues	5.5 (6)	6.00 (6)	5.51 (6)	5.55 (6)	5.55 (6)	6.00 (6)	5.66 (6)	6.00 (6)	6.00 (6)

Source: Primary Data
*Mean Ranks are given
Figures in parentheses represent Ranks

According to the above table, SBI (1.00), Canara (1.36) and AXIS Bank (1.33) have given first rank for the operational activities of the green strategies. On the other hand, PNB (1.44), Federal (1.30), SIB (1.45), IDBI (1.33), ICICI (1.11) and HDFC (1.22) are given their first rank for technological aspects of go-green activities. Similarly, these banks are given second rank for operational activities.

Most of the banks give third rank for client acceptance and physical infrastructure. Correspondingly, 90% of the selected banks (except IDBI and Federal) have assigned fifth rank for financial activities and 100% of the sample banks have allocated sixth rank for investment avenues of Environmental Sustainability.

4.8.4 Ranking of reason behind 'go green'

Table 4.36 presents the result of ranking of reasons behind the concept of 'Go-Green'. Here, there are 12 ranks given for marking the reasons behind the go-green activities of the banks. The ranking styles of the sample banks are identified with the help of Mean Ranks calculated from their responses.

Table 4.36

Ranking of reason behind 'Go Green'

Areas	Banks								
	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Increasing energy consumption	2.11* (2)	2.15 (2)	3.44 (3)	2.33 (2)	1.10 (1)	4.66 (5)	3.11 (3)	1.00 (1)	1.37 (1)
Energy price hike	1.08 (1)	3.22 (3)	5.22 (5)	6.22 (6)	3.25 (3)	5.55 (6)	2.11 (2)	3.44 (3)	3.44 (3)
Optimum utilization of scarce resources	3.88 (4)	1.11 (1)	2.44 (2)	1.16 (1)	2.10 (2)	3.22 (3)	1.22 (1)	2.00 (2)	1.88 (2)
Growing consumer interest in Environmental - friendly goods	3.33 (3)	3.72 (4)	1.22 (1)	3.23 (3)	4.22 (4)	1.22 (1)	4.00 (4)	4.22 (4)	3.55 (4)
Strict regulations/ Compliance requirements	6.77 (7)	8.66 (9)	4.16 (4)	7.82 (8)	7.07 (7)	3.55 (4)	4.88 (5)	7.00 (7)	9.00 (9)

Areas	Banks								
	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Expectations of the public on environmental responsibilities	5.66 (6)	5.33 (5)	7.00 (7)	4.35 (4)	4.05 (5)	6.77 (7)	5.77 (6)	9.22 (9)	7.54 (8)
Stakeholder's pressure	8.09 (8)	10.0 (10)	11.7 (12)	9.11 (9)	8.16 (8)	2.22 (2)	9.00 (9)	11.89 (12)	10.55 (11)
Improvement in brand equity	5.11 (5)	7.05 (7)	8.88 (9)	5.11 (5)	9.44 (9)	8.22 (8)	7.22 (7)	8.11 (8)	6.11 (6)
Value addition as a competitive advantage	9.55 (10)	6.16 (6)	8.00 (8)	7.00 (7)	9.53 (10)	8.78 (9)	8.33 (8)	6.00 (6)	7.11 (7)
Future of export market likely to experience tight environmental rules	10.5 (11)	7.77 (8)	10.9 (11)	10.11 (10)	10.8 (11)	10.11 (10)	11 (11)	10.00 (10)	10.22 (10)
Demand for pollution control technologies in the line of IFC and ADBs	11.7 (12)	10.6 (11)	6.00 (6)	10.66 (11)	6.33 (6)	11.11 (11)	9.66 (10)	5.01 (5)	5.33 (5)
Big Investments requires for Environmental Impact Assessment	9.00 (9)	11.9 (12)	9.71 (10)	11.52 (12)	11.6 (12)	12.00 (12)	11.66 (12)	11.00 (11)	11.66 (12)

Source: Primary Data
*Mean ranks are given
Figures in parentheses represent Ranks

Table 4.36 explains the reasons for 'go-green' in ranking order given by the sample banks. As far as SBI is concerned, energy price hike (1.08), increasing energy consumption (2.11), growing consumer interest on environmentally related products and services (3.33) are the top ranked reasons for selecting the concept of 'go green'. At the same time, value addition as competitive advantage (9.55), future of export market likely to experience tight environmental rules (10.5) and demand for pollution control technologies in the line of IFC and ADB$_S$ (11.7) are the least ranking reasons.

Canara, Federal and ICICI opine that optimum utilization of scarce resources (1) and increasing energy consumption (2) are the main reasons for the adoption of Environmental Sustainability. They give least ranking for the reason, demand for

pollution control technologies in the line of IFC and ADBs (11) and big investments require environmental impact assessment (12) simultaneously.

PNB and IDBI identify the 'growing consumer interest in environmental-friendly goods and services' (1) as the first reason for the implementation of green concept. They provide lowest ranks for the reason, 'future of export market likely to experience tight environmental rules' (11).

SIB, HDFC and AXIS Bank give same ranking for the reasons that increasing energy consumption (1), optimum utilization of scarce resources (2) and energy price hike (3) respectively. They also opine that future of export market likely to experience tight environmental rules (11) and big investments require Environmental Impact Assessment (12) are the least ranking reasons for 'go-green'.

Hypotheses Testing

4.8.5 Bank wise comparison on adoption level of Green Processes

The below tables represent the result of hypothesis testing on comparison of adoption level of Green Processes among different sample banks taken for the study. For the purpose of proving the assumption, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey HSD Post-Hoc test for Multiple Comparison are used. The hypothesis developed for the test is given below.

H0: There is no significant difference in the adoption level of Green Processes among Sample Banks

H1: There is significant difference in the adoption level of Green Processes among Sample Banks

Table 4.37

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Supply Chain Management	1.974	.142
Enterprise Resource Management	1.747	.092
Customer Relationship Management	1.750	.098
Product Life Management	2.644	.178

Source: Primary Data

According to Table 4.37, Levene's statistics based on the comparison of means, the result said to be in significant at 5 % level of significance. Hence, all the 'p' values are greater than 0.05, the requirement of homogeneity of variance has met and the One-way ANOVA is considered as the test statistics for the comparison of mean difference.

Table 4.38

Bank wise comparison on adoption level of Green Processes

Banks	Green Processes			
	SCM	**ERP**	**CRM**	**PLM**
SBI	4.05 (0.39)	4.72 (0.36)	5.00 (0.00)	5.00 (0.00)
Canara Bank	3.88 (0.22)	4.05 (0.63)	4.27 (0.44)	4.22 (0.26)
PNB	3.72 (0.36)	4.77 (0.44)	4.44 (0.30)	4.11 (0.22)
Federal Bank	4.00 (0.25)	4.16 (0.43)	4.33 (0.43)	4.38 (0.41)
South Indian Bank	4.72 (0.56)	4.72 (0.44)	4.88 (0.33)	4.83 (0.35)
IDBI	4.66 (0.55)	4.77 (0.44)	4.50 (0.25)	3.66 (1.00)
ICICI	4.11 (0.33)	4.05 (0.16)	4.00 (0.00)	4.11 (0.33)
HDFC	3.50 (0.00)	4.00 (0.00)	5.00 (0.00)	4.50 (0.00)
AXIS Bank	4.27 (0.44)	5.00 (0.00)	4.88 (0.33)	5.00 (0.00)
F Value	**9.86**	**9.52**	**14.11**	**10.93**
p (Sig) Value	**0.000****	**0.000****	**0.000****	**0.000****

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

The result of One- way ANOVA illustrates the significant difference among banks regarding the adoption level of Green Processes. Here, Supply Chain Management, Enterprise Resource Management, Customer Relationship Management and Product Life Management are the dimensions taken for measuring the adoption level of Green Processes.

From the descriptive statistics, it is understood that the mean score of Supply Chain Management of SIB (4.72), IDBI (4.66) and AXIS Bank (4.27) are higher than that of others. It means all the banks mentioned above have moderately adopted the Supply Chain Management Processes. Similarly, all other banks have somewhat adopted these processes simultaneously. If the mean scores are different, One-way ANOVA is to determine the significant comparison among banks. Consequently, the significance value of 0.000 with F value of 9.86 denotes that there is significant difference among sample banks regarding the adoption level of Supply Chain Management (Since the p value is less than 0.05, the null hypothesis is rejected at 5 % level of significance).

Likewise, there is an extreme level of adoption in Enterprise Resource Management among SBI (4.72), PNB (4.77), SIB (4.72), IDBI (4.77) and AXIS Bank (5.00) as compared with other banks namely, Canara (4.05), Federal (4.16), ICICI (4.05) and HDFC (4.00). Hence, there exists a difference in mean score, One-way ANOVA test is applied as a statistical test for proving the assumption. Since the 'p' value of 0.000 (f value – 9.52) is less than 0.05, the null hypothesis is rejected at 5% level of significance. And it can be found a significant difference among banks regarding the adoption level of ERP.

Similarly, the adoption level of Customer Relationship Management is said to be extreme in SBI (5.00), SIB (4.88), IDBI (4.50), HDFC (5.00) and AXIS Bank (4.88). On the other hand, Canara (4.27), PNB (4.44), Federal (4.33) and ICICI (4.00) have moderately adopted these Processes. The mean difference has verified with the help of 'F' statistics with 'p' value of 0.000 (f value- 14.11). So, the p value is less than 0.05, the null hypothesis is rejected at 5% level of significance. According to the test statistics, there is significant difference in the adoption level of CRM Process among the selected banks.

SBI (5.00), SIB (4.83), HDFC (4.50) and AXIS Bank (5.00) have moderately adopted the Product Life Management than other sample banks. Hence, there is mean difference in the adoption level, the test statistic is applied. Here the value of 'p' (0.000) is significant at 5% level of significance (f value-10.93) and the null hypothesis is rejected for the test.

Table 4.39

Multiple Comparisons

Tukey HSD				
Dependent Variables	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Supply Chain Management	South Indian Bank	SBI	-.66667*	.013
		Canara Bank	-.83333*	.001
		PNB	-1.00000*	.000
		Federal Bank	-.72222*	.005
		HDFC	1.22222*	.000
	IDBI	Canara Bank	-.77778*	.002
		PNB	-.94444*	.000
		Federal Bank	-.66667*	.013
		HDFC	1.16667*	.000
Enterprise Resource Management	Canara Bank	SBI	.66667*	.013
		PNB	-.72222*	.005
		South Indian Bank	-.66667*	.013
		IDBI	-.72222*	.005
		AXIS Bank	-.94444*	.000
	ICICI	PNB	.72222*	.005
		SBI	.66667*	.013
		South Indian Bank	.66667*	.013
		IBDI	.72222*	.005
		AXIS Bank	-.94444*	.000
	HDFC	SBI	.72222*	.005
		PNB	.77778*	.002
		South Indian Bank	.72222*	.005
		IDBI	.77778*	.002
		AXIS Bank	-1.00000*	.000
Customer Relationship Management	SBI	Canara Bank	.72222*	.000
		PNB	.55556*	.004
		Federal Bank	.66667*	.000
		IDBI	.50000*	.013
	PNB	South Indian Bank	-.44444*	.043
		ICICI	.44444*	.043
		HDFC	-.55556*	.004
		AXIS Bank	-.44444*	.043
	ICICI	South Indian Bank	-.88889*	.000
		IDBI	-.50000*	.013
		HDFC	-1.00000*	.000
		AXIS Bank	-.88889*	.000

Tukey HSD				
Dependent Variables	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Product Life Management	SBI	Canara Bank	.77778*	.004
		PNB	.88889*	.001
		Federal Bank	.61111	.057
		IDBI	1.33333*	.000
		ICICI	.88889*	.001
	South Indian Bank	Canara Bank	.61111	.057
		PNB	.72222*	.011
		IDBI	1.16667*	.000
		ICICI	.72222*	.011
	IDBI	Federal Bank	-.72222*	.011
		HDFC	-.83333*	.002
		AXIS Bank	-1.33333*	.000
	AXIS Bank	Canara Bank	.77778*	.004
		PNB	.88889*	.001
		Federal Bank	.61111	.057
		ICICI	.88889*	.001
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

As there is significant difference in the adoption level of Green Processes among the sample banks, a post-hoc test is carried out to identify the exact significant difference between the sample banks. Tukey HSD Post-hoc for multiple comparison is used for this purpose. The result of post hoc test shown in the table 4.39 clearly indicates that there is significant difference in the mean score of adoption level between the banks regarding the dimensions of Green Processes.

As seen in the above table, in the case of adoption level of Supply Chain Management, the SIB, IDBI and AXIS Bank are significantly differed from SBI, Canara, PNB, Federal, HDFC and ICICI banks simultaneously with 'p' value less than 0.05 at 5% level of significance.

Similarly, the result evaluates the pairwise difference among the group means of Enterprise Resource Management. Test revealed significant pairwise difference in the mean score of Canara, ICICI and HDFC between SBI, PNB, SIB, IDBI and AXIS Bank with a 'p' value less than 0.05.

As far as Customer Relationship Management is concerned, there is significant difference in the mean score of adoption level between SBI, PNB and ICICI with Canara, SIB, HDFC and AXIS Bank. Moreover, the mean scores of Product Life

Management also shows the same significant difference (at 5% level of significance) between the above prescribed banks.

4.8.6 Bank wise comparison on adoption level of Green Practices

Here the adoption level of Green Practices among selected banks are studied. For this purpose, Green Policies and Procedures, Investment, Partnership, In-house & Out-house Energy Management Practices, Green Financing etc. are considered as the dimensions of Green Practices followed by the banks. So, Descriptive Statistics is used to identify the level of adoption and One-way ANOVA is used to test the significant mean difference among banks. Furthermore, Levene's test of Homogeneity of Variances and Tukey HSD post hoc test for Multiple Comparison are also been used. To check the significant difference among the sample banks, following hypothesis is formulated.

H0: There is no significant difference in the adoption level of Green Practices among Sample Banks

H1: There is significant difference in the adoption level of Green Practices among Sample Banks

Table 4.40

Test of Homogeneity of Variances

	Levene Statistic	Sig.
Green Policies and Procedures	1.480	.180
Green Investment	1.808	.142
Green Partnership	2.352	.098
Inhouse Energy Management Practices	1.847	.132
Outhouse Energy Management Practices	2.212	.887
Employee Related Practices	1.754	.125
Green Financing	1.664	.174

Source: Primary Data

The similarity of the variances in each group is measured with the help of Levene's test of homogeneity of variance in order to understand the variability of within group samples. Here the 'p' values of all dimensions are less than 0.05, hence the null hypothesis is rejected at 5% level of significance. Thus, the sample groups are said to be homogenous and One-way ANOVA is the appropriate test for measuring the significant mean difference in adoption level of Green Practices among banks.

Table 4.41

Bank wise comparison on adoption level of Green Practices

Banks	Green Practices						
	Green Policies & Procedures	**Green Investment**	**Green Partnership**	**Energy Mgt-Inhouse practices**	**Energy Mgt-Outhouse practices**	**Employee Related Practices**	**Green Financing**
SBI	4.37 (0.36)	3.98 (0.35)	3.33 (0.83)	4.26 (0.29)	4.25 (0.24)	4.46 (0.26)	4.26 (0.35)
Canara Bank	4.35 (0.37)	4.13 (0.54)	3.51 (0.60)	4.03 (0.39)	3.90 (0.20)	3.88 (0.11)	3.90 (0.43)
PNB	4.09 (0.33)	3.84 (0.35)	3.70 (0.45)	4.27 (0.13)	3.72 (0.12)	4.05 (0.36)	3.71 (0.16)
Federal Bank	4.13 (0.36)	3.77 (0.40)	3.07 (0.64)	4.11 (0.46)	3.68 (0.26)	4.18 (0.43)	3.60 (0.45)
SIB	3.86 (0.37)	3.45 (0.42)	2.96 (0.11)	4.12 (0.25)	3.87 (0.28)	4.20 (0.13)	4.02 (0.58)
IDBI	3.72 (0.42)	3.95 (0.27)	3.29 (0.61)	4.47 (0.25)	4.06 (0.25)	4.44 (0.23)	4.07 (0.21)
ICICI	4.07 (0.23)	3.00 (0.00)	3.00 (0.00)	4.01 (0.03)	4.05 (0.13)	4.05 (0.16)	3.63 (0.10)
HDFC	4.70 (0.00)	4.90 (0.00)	4.81 (0.00)	4.72 (0.00)	4.66 (0.00)	4.69 (0.00)	4.50 (0.00)
AXIS Bank	4.34 (0.15)	4.58 (0.47)	3.59 (0.27)	4.00 (0.31)	3.77 (0.11)	4.57 (0.22)	3.82 (0.22)
F Value	**16.61**	**18.25**	**3.02**	**5.51**	**7.92**	**12.45**	**7.18**
p (Sig) Value	**0.000****	**0.000****	**0.006****	**0.000****	**0.000****	**0.000****	**0.000****

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 4.41 represents the F statistic is used to determine mean wise comparison of adoption level of Green Practices followed by the banks. In accordance with Mean and Standard Deviation, the level of adoption is measured in five-point Likert Scale namely, Fully, Moderately, Somewhat, Slightly and Not at all adopted.

According to the adoption level of Green Policies and Procedures, SBI, Canara, AXIS, Federal Bank have highest mean score (above 4) followed by PNB, SIB and IDBI. It means, the former banks have fully adopted the Green Policies than that of latter banks. So, the 'F' statistics has used to identify the exact significant difference. It shows the 'p' value of 0.000 with 'f' value of 16.61 and hence, the null

hypothesis is rejected at 5 % level of significance. It found that there is significant mean difference in the adoption level of Green Policies among the sample banks selected.

But, the level of adoption of Green Investment and Partnership practices are said to be low among ICICI and HDFC banks as compared with AXIS Bank and Canara Bank. All other banks have moderately adopted these practices so far. Therefore, ANOVA test is applied to check the statistical mean difference among them and the result said to significant with 'p' value of 0.000 (f value – 18.25 & 3.02). Hence, the null hypothesis is rejected and there is significant difference in the mean scores of adoption level of Green Investment and Partnership among banks.

With respect to the adoption level of Energy Management Practices, SBI, PNB, IDBI and SIB have fully adopted the Inhouse practices than other banks. Furthermore, the level of adoption of Outhouse Energy Management practices is high in SBI only. Thereupon, ANOVA test is used to check whether there is any significant difference among banks regarding Inhouse and Outhouse Energy Management Practices. With the 'p' value of 0.000 (f-value 7.92 & 12.45), the null hypothesis is rejected at 5% level of significance. Thus, there is statistical difference among banks with respect to the above practices.

Likewise, SBI, Federal, SIB, IDBI and AXIS Bank have fully adopted the Employee Related Practices than that of other banks. Hence the mean scores show the difference, the 'F' statistics is carried out to identify the mean comparison among banks. Here, significance value of 0.000 and 'F' value of 12.45 explains that there is significant difference among banks with regard to the adoption level of Employee Related Practices.

Lastly, Green Financing is another important Green Practice followed by the banks. From the table it can be seen that SBI and SIB are the two banks moderately adopted the Green Financing schemes and all other banks have somewhat or slightly adopted it. Therefore, the mean comparison is needed to identify the statistical difference. The value of 'f' statistic (7.18) and significance value (0.000) elucidates there is significant difference in the mean score of adoption level of Green Financing among the selected banks.

Here all the dimensions taken for the analysis shows significant difference among banks and the Green Practices followed by the banks are different from each other according to their environmental performance.

Table 4.42

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Green Policies & Procedures	HDFC	SBI	-1.37607*	.000
		Canara Bank	-1.35043*	.000
		PNB	-1.09402*	.000
		Federal Bank	-1.13675*	.000
		South Indian Bank	-.86325*	.000
		IDBI	-.72650*	.000
Green Investment	ICICI	SBI	-.98611*	.000
		Canara Bank	-1.13889*	.000
		PNB	-.84722*	.000
		Federal Bank	-.77778*	.001
		IDBI	-.95833*	.000
		AXIS Bank	-1.58333*	.000
	HDFC	SBI	-.98611*	.000
		Canara Bank	-1.13889*	.000
		PNB	-.84722*	.000
		Federal Bank	-.77778*	.001
		IDBI	-.95833*	.000
		AXIS Bank	-1.58333*	.000
	AXIS Bank	SBI	.59722*	.024
		PNB	.73611*	.002
		Federal Bank	.80556*	.000
		South Indian Bank	1.12500*	.000
		IDBI	.62500*	.015
Inhouse Energy Management Practices	IDBI	Canara Bank	.44444*	.031
		ICICI	.46667*	.019
		HDFC	.77778*	.000
		AXIS Bank	.47778*	.015
Outhouse Energy Management Practice	SBI	Canara Bank	.35556*	.009
		PNB	.53333*	.000
		Federal Bank	.56667*	.000
		South Indian Bank	.37778*	.004
		HDFC	.45556*	.000

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Employee Related Practices	SBI	Canara Bank	.57407*	.000
		PNB	.40741*	.023
		ICICI	.40741*	.023
		HDFC	.79630*	.000
	IDBI	Canara Bank	.55556*	.000
		PNB	.38889*	.036
		ICICI	.38889*	.036
		HDFC	.77778*	.000
	HDFC	PNB	-.38889*	.036
		Federal Bank	-.51852*	.001
		South Indian Bank	-.53704*	.001
		IDBI	-.77778*	.000
		ICICI	-.38889*	.036
		AXIS Bank	-.90741*	.000
	AXIS Bank	Canara Bank	.68519*	.000
		PNB	.51852*	.001
		Federal Bank	.38889*	.036
		South Indian Bank	.37037*	.045
		ICICI	.51852*	.001
		HDFC	.90741*	.000
Green Financing	SBI	PNB	.55556*	.020
		Federal Bank	.66667*	.002
		ICICI	.63333*	.004
		HDFC	.76667*	.000
	AXIS Bank	PNB	.61111*	.007
		Federal Bank	.72222*	.001
		ICICI	.68889*	.001
		HDFC	.82222*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The result of the Tukey HSD Post-hoc test depicts that the mean score of adoption level of Green Policies and Procedures by HDFC significantly differed from SBI, Canara, PNB, SIB, IDBI, ICICI and AXIS Bank. The mean differences between the pairs are almost same and the difference is statistically significant (p= <0.01).

The inter-group comparison of the adoption level of Green Investment shows significant mean difference in ICICI, HDFC and AXIS Bank from other banks namely,

SBI, Canara, PNB, Federal and IDBI. These mean differences are statistically significant at 1% level of significance with 'p' value of 0.000 respectively.

As regards the In-house Energy Management Practices, the mean difference of IDBI is statistically significant from Canara, ICICI, HDFC and AXIS Bank. Correspondingly, the mean difference in Out-house Energy Management Practices significantly differ from Canara, PNB, Federal. SIB, HDFC and AXIS Bank.

In the case of Employee Related Practices, the level of adoption has differed significantly among all the sample banks under the study. That means SBI, IDBI, HDFC and AXIS Bank shown a significant mean difference in the adoption level from all other banks.

The level of adoption of Green Financing Practices of SBI and SIB shows significant mean difference from PNB, Federal, ICICI and HDFC Bank. Here, the 'p' value of 0.000 is significant at 1% level of significance.

4.8.7 Bank wise comparison on adoption level of Green Products and Services

The below table presents the results of Levene's test of Homogeneity of Variances, Descriptive Statistics, One-way ANOVA and Tukey HSD Post hoc test for Multiple comparisons. It is computed to know about the statistical significance difference in the mean score of adoption level of Green Products and Services among sample banks. Thus, Digital Innovation, Communicative Practices of IB, Informational Practices of IB, Transactional Practices of IB and Mobile Banking are the dimensions considered for the analysis of adoption level of Green Products and Services. The hypothesis formulated for the respective test is given below.

H0: There is no significant difference in the adoption level of Green Products and Services among Sample Banks

H1: There is significant difference in the adoption level of Green Products and Services among Sample Banks

Table 4.43

Test of Homogeneity of Variances

	Levene Statistic	Sig.
Digital Innovation	1.573	.122
Informational Practices of Internet Banking	2.371	.098
Communicative Practices of Internet Banking	1.817	.113
Transactional Practices of Internet Banking	1.545	.124
Mobile Banking	2.494	.094

Source: Primary Data

Before going to test the significant difference among sample groups, there is a need to ensure the homogeneity of the group variance. Therefore, Levene's test of Homogeneity of Variance is applied. The Levene's test of Homogeneity of Variances enables to check the homogeneity assumption of One-way ANOVA. Here, the test suggests that there is in-significant difference between the group variances (All the 'p' values are greater than 0.05), therefore, homogeneity of variances can be accepted. Hence, One-way ANOVA is considered as the most suitable test to measure the significant difference in mean scores.

Table 4.44

Bank wise comparison on adoption level of Green Products and Services

Banks	Green Processes				
	Digital Innovation	Informative services of IB	Communicative services of IB	Transactional services of IB	Mobile Banking Services
SBI	4.97 (0.05)	4.91 (0.26)	5.00 (0.00)	4.49 (0.06)	5.00 (0.00)
Canara	4.08 (0.31)	4.94 (0.21)	4.90 (0.18)	5.00 (0.00)	4.83 (0.19)
PNB	4.07 (0.33)	4.64 (0.27)	4.60 (0.38)	5.00 (0.00)	4.14 (0.33)
Federal	4.11 (0.48)	4.97 (0.06)	4.93 (0.20)	4.95 (0.13)	4.95 (0.12)
SIB	4.00 (0.26)	5.00 (0.00)	5.00 (0.00)	4.97 (0.06)	5.00 (0.00)
IDBI	4.10 (0.21)	5.00 (0.00)	4.95 (0.13)	4.97 (0.06)	4.98 (0.03)
ICICI	4.22 (0.06)	5.00 (0.00)	5.00 (0.00)	5.00 (0.00)	5.00 (0.00)
HDFC	4.31 (0.00)	5.00 (0.00)	5.00 (0.00)	5.00 (0.00)	4.72 (0.00)
AXIS	4.21 (0.31)	5.00 (0.00)	4.97 (0.06)	5.00 (0.00)	5.00 (0.00)
F Value	**4.743**	**0.82**	**0.85**	**0.67**	**9.16**
p (Sig) Value	**0.000****	**0.621**	**0.634**	**0.709**	**0.000****

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 4.44 illustrates the result of One-way ANOVA used to determine the mean difference exist for two or more samples. SBI, Canara, PNB, Federal, SIB, IDBI, HDFC, ICICI and AXIS Banks are the sample banks selected for the study. Here, the adoption level of Green Products and Services is measured by using Digital Innovation, Internet Banking and Mobile Banking as the sub variables.

For the purpose of measuring the adoption level of Digital Innovation among banks, GCC, SWAYAM, ATM, CDM, Wallets, Queue Management System etc. are taken as the sub variables. SBI, PNB, Federal, IDBI and ICICI have fully adopted the Digital Innovation. Whereas Canara, SIB, HDFC and AXIS Bank have moderately applied the products and services. So, the exact mean difference is checked with the help of 'F' statistics, which denotes the 'p' value of 0.000 (F value-4.743). Consequently, the null hypothesis is rejected at 1% level of significance and there is significant difference in the adoption level of Digital Innovation among banks.

Informative, Communicative and Transactional Services of Internet Banking are measured with descriptive statistics namely, Mean and SD. From the mean values, it can be interpreted that all the selected banks have fully adopted this Services for the customers. Therefore, the null hypothesis cannot be rejected at 5% level of significance. Thus, there is no significant difference among banks regarding the adoption level of Internet Banking.

The Mobile banking services have fully adopted by the sample banks (except PNB) selected for the study. But, the mean score of PNB is different from other banks. Because, as far as Mobile Banking is concerned, PNB stands a step behind to other banks. Therefore, 'F' statistics is employed to identify the statistical difference among them. And the result shows significant difference between PNB and other banks with the significance value of 0.000 and 'f' value of 9.16.

Table 4.45

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Digital Innovation	SBI	Canara Bank	.58333*	.001
		PNB	.47821*	.000
		Federal Bank	.53471*	.002
		South Indian Bank	.51389*	.005
		IDBI	.47222*	.014
		ICICI	.61021*	.012
		HDFC	.53472*	.003
		AXIS Bank	.65972*	.000
Mobile Banking	PNB	SBI	-.35354*	.000
		Canara	-.27273*	.002
		Federal Bank	-.31313*	.000
		South Indian Bank	-.35354*	.000
		IDBI	-.34343*	.000
		ICICI	-.35354*	.000
		HDFC	-.27273*	.002
		AXIS Bank	-.35354*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

ANOVA is not an end result for the comparison of mean difference among the sample groups. The above table presents the result of significant difference in the mean score of Green Products and Services among sample banks, hence there is a need to make pair wise comparison between the samples. According to One-way ANOVA, the sample banks differed significantly with respect to the adoption level of Digital Innovation and Mobile Banking. Moreover, there is no significant difference in the adoption level of Internet Banking services among the banks. Therefore, Tukey HSD Post-hoc test is applied to know the pair wise comparison of banks with respect to Digital Innovation and Mobile Banking.

SBI is the prominent bank in the field of Digital Innovation. They have introduced many Green Channel Banking via paperless technology. From the table 4.45, it is clearly seen that there is mean difference in the adoption level of Digital Innovation of SBI compared with Canara, SIB, IDBI, HDFC and AXIS Bank. Here all the significance values are less than 0.05 at 5% level of significance.

Similarly, Mobile Banking is another contribution in the field of Green Channel Banking introduced by the banks. Here, the result of Tukey HSD post-hoc test reveals that there is significant mean difference in the adoption level of Mobile Banking of PNB and HDFC than other banks namely, SBI, Federal Bank, SIB, ICICI and AXIS Bank. Moreover, these banks are predominantly stepping towards paperless technology for the near future.

4.8.8 Bank wise discussion and comparison of SWOT/SWOC of Environmentally Sustainable Banking Practices

Identification of strength, weakness, opportunities and challenges is very important for the analysis of adoption level of ESBP. Here, the study prioritizes the opinion of banks towards SWOC of Environmentally Sustainable Banking Practices. Therefore, SWOC is discussed and compared among the sample banks selected for the study. Hence, Descriptive Statistics, Levene's test of Homogeneity of Variance, One-way ANOVA and Tukey HSD post-hoc test for multiple comparisons is applied to check the significant mean difference among them. The hypothesis composed for the analysis is denoted below.

H0: There is no significant difference in the SWOC of Environmentally Sustainable Banking Practices among Sample Banks

H1: There is significant difference in the SWOC of Environmentally Sustainable Banking Practices among Sample Banks

Table 4.46

Bank wise discussion of SWOC of Environmentally Sustainable Banking Practices

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Strength									
An innovative strategy for sustainable development	**5.00 (0.00)**	3.77 (0.83)	**4.88 (0.33)**	4.33 (0.50)	**4.88 (0.33)**	4.22 (0.44)	**5.00 (0.00)**	4.00 (0.00)	**5.00 (0.00)**
Consideration of triple bottom line approach for sustainability	4.77 (0.66)	4.22 (0.44)	3.66 (0.86)	4.22 (0.44)	4.77 (0.44)	**4.88 (0.33)**	4.88 (0.33)	**5.00 (0.00)**	4.88 (0.33)

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Energy Savvy as well as Tech Savvy Technique	4.77 (0.66)	4.11 (0.33)	4.77 (0.44)	**4.66 (0.50)**	4.66 (0.50)	4.22 (0.44)	4.88 (0.33)	4.00 (0.00)	4.22 (0.44)
Assure low Carbon Emission through green financing	4.77 (0.66)	4.11 (0.33)	4.77 (0.44)	**4.66 (0.50)**	4.66 (0.50)	4.22 (0.44)	4.88 (0.33)	4.00 (0.00)	4.22 (0.44)
Participation from the bottom of earth as a motive	4.77 (0.66)	**4.44 (0.52)**	4.22 (0.44)	4.22 (0.44)	4.66 (0.50)	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)	4.88 (0.33)
Weakness									
Low awareness among people	2.11 (0.33)	3.22 (0.83)	3.00 (0.50)	2.33 (0.70)	2.88 (0.33)	3.11 (0.33)	2.11 (0.33)	2.00 (0.00)	1.66 (1.11)
Infancy stage development	3.55 (0.72)	3.77 (0.66)	2.66 (0.86)	3.66 (0.71)	3.33 (0.50)	**3.77 (0.66)**	3.88 (0.33)	3.00 (0.00)	3.22 (0.44)
Cost of installation of energy-efficient items	**3.88 (0.33)**	**4.11 (0.60)**	3.88 (0.33)	**4.11 (0.60)**	3.33 (0.50)	3.11 (0.33)	**4.00 (0.00)**	4.00 (0.00)	3.22 (0.44)
Low customer care on technical issues in DB	1.55 (0.72)	2.00 (0.71)	2.66 (0.71)	1.33 (0.50)	2.00 (0.00)	2.00 (0.00)	2.00 (0.00)	2.00 (0.00)	1.44 (0.88)
Absence of Environmental Accounting Practices	3.22 (0.44)	3.66 (0.50)	3.22 (0.44)	4.33 (0.71)	3.22 (0.44)	3.11 (0.33)	**4.00 (0.00)**	4.00 (0.00)	3.22 (0.44)
Absence of Environmental Audit Management	**3.88 (0.33)**	2.77 (0.97)	**3.77 (0.83)**	3.88 (0.33)	**3.44 (0.72)**	3.22 (0.44)	**4.00 (0.00)**	**5.00 (0.00)**	**4.00 (0.00)**
Opportunities									
Set up Separate Cell to promote Sustainable Banking	4.77 (0.44)	4.55 (0.52)	**4.22 (0.44)**	4.33 (0.50)	4.55 (0.52)	4.22 (0.44)	4.00 (0.00)	4.00 (0.00)	**4.77 (0.44)**
Implement environmental due diligence	4.77 (0.44)	**4.77 (0.44)**	4.12 (0.34)	4.22 (0.44)	**4.86 (0.30)**	4.22 (0.44)	**5.00 (0.00)**	4.00 (0.00)	4.66 (0.51)

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Improve CSR standards	**4.87 (0.34)**	4.11 (0.33)	3.66 (0.86)	**4.44 (0.52)**	4.66 (0.50)	**4.88 (0.33)**	3.88 (0.33)	**4.50 (0.20)**	**4.77 (0.44)**
Participation in the wealth of nature as a competitive advantage	4.77 (0.44)	4.22 (0.44)	3.66 (0.86)	4.22 (0.44)	4.66 (0.50)	4.22 (0.44)	4.00 (0.00)	4.00 (0.00)	4.55 (0.72)
Get rewards/ awards and recognition	4.77 (0.44)	4.44 (0.52)	4.00 (0.00)	4.33 (0.50)	4.66 (0.50)	4.77 (0.44)	4.00 (0.00)	4.00 (0.00)	4.66 (0.50)
Threats/Challenges									
Credit risk due to changes in environmental regulations & requirement of emission level	3.55 (0.52)	2.77 (0.83)	3.44 (0.72)	4.00 (0.50)	3.78 (0.43)	3.33 (0.70)	**4.00 (0.00)**	3.00 (0.00)	**4.00 (0.00)**
Reputational risk due to high cost and less adoption of EMS	3.22 (0.97)	3.77 (0.66)	3.44 (0.72)	3.77 (0.83)	3.11 (0.33)	**3.77 (0.83)**	3.88 (0.33)	3.00 (0.00)	3.33 (0.71)
Problems of ERM as Core Risk mgt process	3.55 (0.52)	3.88 (0.33)	3.33 (0.71)	**4.44 (0.72)**	**3.88 (0.33)**	3.11 (0.33)	3.88 (0.33)	3.70 (0.00)	3.22 (0.44)
Difficult to get Going Coin Rating Certification	**3.77 (0.44)**	3.66 (0.71)	3.44 (0.52)	3.66 (0.71)	3.44 (0.72)	3.11 (0.33)	3.88 (0.33)	**4.00 (0.00)**	3.22 (0.44)
Financial Risk due to creating separate fund for CSR activities	3.22 (0.66)	**4.44 (0.66)**	**4.00 (0.50)**	4.22 (0.66)	3.33 (0.71)	3.11 (0.33)	3.98 (0.33)	2.80 (0.00)	2.55 (0.88)

Source: Primary Data
Figures in parentheses represent Standard Deviation

From the table it is clear that SBI, PNB, SIB, ICICI and AXIS Bank given highest mean score of greater than 4.5 for the strength i.e., 'an innovative strategy for sustainable development'. On the contrary, IDBI and HDFC Bank assign their highest mean score for the strength i.e., 'consideration of triple bottom line approach for sustainability'. But the Federal Bank gives equal importance for the strengths 'energy savvy as well as tech savvy technique' and 'assure low carbon emission through green

financing' with a mean value of 4.66. On the other hand, Canara Bank opines that participation from the bottom of earth as the motive of Sustainable Banking (4.44).

With regard of weaknesses of Environmentally Sustainable Banking, 'cost of installation of energy efficient materials and recycling and absence of Environmental Audit Management' are the two main reasons identified by the sample banks (SBI, Canara, PNB, IDBI, Federal, HDFC, ICICI and Axis Bank). But, in the opinion of SIB, 'infancy stage of development' is the main weakness of Environmentally Sustainable Banking Practices (3.77).

As stated by PNB (4.22) and AXIS Bank (4.77), 'set up a separate cell for promote Sustainable Banking practices' is the main opportunity for the development of 'go-green' practices. In the opinion of SBI (4.87), Federal Bank (4.44), IDBI (4.88), HDFC (4.50) and AXIS Bank (4.77), 'improve CSR standards' is the major opportunity for the betterment of greener future. At the same time, Canara, SIB and ICICI Bank suggest that implementation of Environmental Due Diligence is the key opportunity for the sustainable development.

In respect of challenges faced by the banks towards Environmentally Sustainable Banking, HDFC (4.00) and AXIS Bank (4.00) have given highest mean score for the challenge 'credit risk due to any change in environmental regulations and requirement of emission levels. But IDBI has points that 'reputational risk due to high cost and less adoption of Environmental Management System' (3.77) is the major threat behind the 'go-green' concept. According to Federal Bank (4.44) and IDBI (3.88), 'problems of Environmental Risk Management as Core Risk Management Process' is the important challenge faced by the banks. However, 'difficult to get Going Coin Rating Certification' is the threat identified by SBI and ICICI Bank for the implementation of ESBP. Besides the above-mentioned challenges/threats identified by the banks, 'financial risk due to creating separate fund for CSR activities' is the key challenge mentioned by Canara (4.44) and PNB (4.00).

Bank wise comparison of SWOT/SWOC analysis

Table 4.47

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Strength	2.143	.093
Weakness	1.786	.134
Opportunity	1.947	.125
Threat	2.136	.097

Source: Primary Data

The requirement for the ANOVA test is to measure the variances of the compared groups. Hence, testing this assumption by using Levene's test of Homogeneity of Variance. Whenever looking to the significance value of the dimensions, it is greater than 0.05. Therefore, homogeneity assumption is accepted at 5% level of significance and thereby, ANOVA is the most suitable test for mean comparison of variables. The result of One-way ANOVA is presented below.

Table 4.48

Bank wise comparison of SWOC of Environmentally Sustainable Banking Practices

Banks	**Dimensions**			
	Strengths	**Weaknesses**	**Opportunities**	**Challenges**
SBI	4.82 (0.53)	3.03 (0.27)	4.77 (0.44)	3.46 (0.47)
Canara Bank	4.22 (0.15)	3.25 (0.23)	4.42 (0.25)	3.71 (0.43)
PNB	4.35 (0.37)	3.20 (0.13)	3.95 (0.51)	3.53 (0.48)
Federal Bank	4.37 (0.23)	3.27 (0.31)	4.31 (0.38)	4.02 (0.39)
SIB	4.68 (0.40)	3.03 (0.27)	4.64 (0.28)	3.53 (0.36)
IDBI	4.46 (0.20)	3.05 (0.18)	4.46 (0.28)	3.28 (0.34)
ICICI	4.55 (0.13)	3.33 (0.00)	3.97 (0.06)	3.91 (0.26)
HDFC	4.00 (0.00)	3.16 (0.00)	4.00 (0.00)	3.80 (0.00)
AXIS Bank	4.64 (0.24)	2.79 (0.49)	4.68 (0.53)	3.26 (0.53)
F Value	**6.67**	**3.37**	**6.69**	**3.97**
p (Sig) Value	**0.000****	**0.001****	**0.000****	**0.001****

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 4.48 presents the Mean Score, SD and One-way ANOVA result on SWOC of Environmentally Sustainable Banking Practices. From the descriptive analysis of strengths, the Mean and SD are differed from each and every banks. It is because of their perception regarding strengths of environmental-sustainability is different. Hence, ANOVA test is applied to check whether the mean difference is significant or not. The calculated 'f' value of 6.67 and significance value of 0.000 (<0.05) explains the significant difference in the mean score of strength among banks.

Likewise, the perception on weaknesses regarding the adoption level of ESBP is different among banks. Subsequently, 'F' statistic is applied to verify the significant mean difference in the opinion of banks. The computed 'p' value of test is 0.000 with 'f' value of 3.37. Since the 'p' value is less than 0.01, null hypothesis is rejected at 1% level of significance with respect to the opinion of banks.

A comparative analysis of opportunities of ESBP of sample banks is done by using Mean and SD. It explains that the mean values are different from each other and their opinion regarding the opportunities of 'go-green' concept is not the same. Furthermore, One-way ANOVA is carried to know the significant mean difference among the group of banks. Since the computed 'p' value of 0.000 ('f' value- 6.69) is less than 0.01, null hypothesis is rejected at 1% level of significance. That means, opportunities identified by the banks are different from each other according to their perception on Sustainable Banking.

The threats/ challenges towards the adoption level of ESBP treated with a different view point by the sample banks. It is because of their opinion about the strength, weakness and opportunities of the Environmentally Sustainable banking practices are different from each other. Hence, the mean values are different, One-way ANOVA is employed to examine the exact significant difference. With the 'p' value of 0.000 ('f' value- 3.97) the result ensures that there is significant mean difference in the opinion of challenges faced by the sample banks.

Table 4.49

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Strength	SBI	Canara Bank	.60000*	.001
		PNB	.46667*	.031
		Federal Bank	.44444*	.040
	HDFC	SBI	-.82222*	.000
		South Indian Bank	-.68889*	.000
		ICICI	-.55556*	.004
		AXIS Bank	-.64444*	.000
Weakness	AXIS Bank	Canara Bank	-.46296*	.008
		PNB	-.40741*	.033
		Federal Bank	-.48148*	.005
		ICICI	-.53704*	.001
Opportunity	PNB	SBI	-.82222*	.000
		South Indian Bank	-.68889*	.006
		AXIS Bank	-.73333*	.002
	ICICI	SBI	-.80000*	.001
		South Indian Bank	-.66667*	.008
		AXIS Bank	-.71111*	.004
	HDFC	SBI	-.77778*	.001
		South Indian Bank	-.64444*	.012
		AXIS Bank	-.68889*	.006
Threat	IDBI	Federal Bank	-.73333*	.006
		ICICI	-.62222*	.037
	AXIS Bank	Federal Bank	-.75556*	.004
		ICICI	-.64444*	.026
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

A post-hoc test is conducted after a significant 'F' statistic, in order to identify where the significant difference exist among the sample banks. The result of Tukey HSD post-hoc test shown in the table 4.49 clearly indicates that the opinion regarding strengths, weaknesses, opportunities and challenges of the sample banks are differed.

Whenever the judgement about strengths of ESBP, the mean score of SBI is significantly differed from Canara (0.001), PNB (0.031) and Federal (0.04) at 5%

level of significance. These banks have different perception concerning to the strengths of ESBP. In the same way, mean score of HDFC bank has also shown a significant difference from SBI (0.000), SIB (0.000), IDBI (0.031), ICICI (0.004) and AXIS Bank (0.000). Moreover, these banks have different opinion about the strength of 'go-green' concept.

The AXIS Bank has different point of view about the weaknesses of ESBP while compared with other banks namely, Canara (0.008), PNB (0.033), Federal Bank (0.005) and ICICI (0.001). All other five sample banks have same frame of reference about weaknesses of Environmentally Sustainable Practices (ESBP).

In the same table, the pairwise comparison of banks with reference to the opportunities of 'go-green' is evaluated. The Tukey HSD post-hoc test reveals the significant pairwise difference between the mean scores of PNB and SBI (0.000), SIB (0.006) & AXIS Bank (0.002). Similarly, these three banks have significant mean difference between ICICI and HDFC with 'p' value of less than 0.05. Since the 'p' value is less than 0.05, null hypothesis is rejected and there is significant mean difference between the sample banks mentioned above.

The mean scores of challenges/threats faced by IDBI and AXIS Bank have significantly differed from Federal Bank and ICICI bank simultaneously. Thus, the significance value of less than 0.05 suggests that there is significant difference in the opinion of above-mentioned banks regarding the way they have met their challenges/threats.

However, the result of multiple comparison concludes that there is significant difference among the banks towards strength, weakness, opportunity and threat towards the adoption level of Environmentally Sustainable Banking Practices. From the table it is clearly seen the mean difference between the banks with significant 'p' value of less than 0.05.

4.8.9 Bank wise discussion & comparison of importance of SMART Green Goals

The table represents the results of discussion and comparison of Specific, Measurable, Attainable, Realistic and Timely Goals of sample banks. To know the importance of SMART Green Goals, Mean & SD is used. However, to examine the mean difference among sample banks, One-way ANOVA is applied. Moreover,

Levene's test of Homogeneity of Variance and Tukey HSD post-hoc test is used to figure out the homogeneity assumption and pair-wise comparison respectively. Hypothesis constructed for the test is given below.

H0: There is no significant difference in the importance of SMART Green Goals among Sample Banks

H1: There is significant difference in the importance of SMART Green Goals among Sample Banks

Table 4.50

Importance of SMART Green Goals of Environmental-sustainable Banking Practice

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Specific									
Planning before going green	4.88 (0.33)	4.77 (0.44)	4.11 (0.60)	**4.76 (0.52)**	4.11 (0.60)	4.22 (0.44)	**5.00 (0.00)**	4.00 (0.00)	**4.98 (0.43)**
Set of guidelines and regulations to comply procedures	4.88 (0.33)	4.77 (0.44)	4.11 (0.33)	4.22 (0.44)	4.22 (0.44)	**4.88 (0.33)**	4.00 (0.00)	4.00 (0.00)	4.77 (0.44)
Objectives and motives to carry out the practices	**4.98 (0.43)**	4.66 (0.50)	3.44 (0.72)	4.66 (0.50)	**4.76 (0.52)**	4.00 (0.00)	3.11 (0.33)	**5.00 (0.00)**	4.88 (0.33)
Coalition of Green Capital and its utilization	4.88 (0.33)	**4.88 (0.33)**	**4.44 (0.88)**	4.55 (0.00)	4.33 (0.50)	4.77 (0.44)	**5.00 (0.00)**	4.00 (0.00)	4.77 (0.44)
Specific CSR policies and procedure	4.88 (0.33)	4.66 (0.50)	4.00 (0.00)	4.00 (0.00)	4.66 (0.50)	4.11 (0.60)	4.00 (0.00)	4.00 (0.00)	4.88 (0.33)
Measurable									
Innovation in green technological products	**5.00 (0.00)**	4.55 (0.52)	4.00 (0.00)	**4.77 (0.44)**	4.22 (0.44)	**4.88 (0.33)**	3.11 (0.33)	**5.00 (0.00)**	4.66 (0.50)
Innovativeness in green practices	4.80 (0.40)	4.44 (0.88)	4.00 (0.00)	4.44 (0.88)	4.55 (0.88)	4.11 (0.33)	4.11 (0.33)	4.00 (0.00)	4.67 (0.44)
Risks and returns from green mgt practice	4.60 (0.50)	**4.88 (0.33)**	**4.66 (0.50)**	4.11 (0.60)	4.22 (0.44)	4.66 (0.50)	**4.88 (0.33)**	4.00 (0.00)	4.66 (0.50)

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Direct and indirect cost of all activities	4.50 (0.60)	4.44 (0.52)	4.00 (0.50)	4.11 (0.60)	**4.88 (0.33)**	4.22 (0.44)	4.00 (0.00)	4.00 (0.00)	**4.77 (0.44)**
Motivational rewards as grants and subsidies	4.70 (0.65)	4.77 (0.66)	4.55 (0.72)	4.22 (0.44)	4.22 (0.44)	4.66 (0.50)	3.22 (0.66)	4.00 (0.00)	4.66 (0.50)
Attainable									
Security and Confidentiality in Digital sector	**5.00 (0.00)**	4.33 (0.71)	4.22 (0.44)	4.11 (0.60)	4.66 (0.71)	4.22 (0.44)	**4.88 (0.33)**	4.00 (0.00)	4.77 (0.44)
Customer care and support for all their queries	4.95 (0.08)	4.33 (1.00)	**4.66 (0.71)**	**4.44 (0.52)**	4.22 (0.44)	4.77 (0.44)	4.00 (0.00)	**5.00 (0.00)**	4.66 (0.51)
Literacy and educative power from the bottom level	4.90 (0.10)	4.33 (0.71)	4.46 (0.47)	4.00 (0.00)	**4.88 (0.33)**	4.11 (0.33)	3.22 (0.66)	4.00 (0.00)	**4.98 (0.23)**
Aim of environmentally & socially responsible CSR practices	4.92 (0.09)	**4.76 (0.58)**	4.55 (0.52)	4.33 (0.50)	4.22 (0.44)	**4.88 (0.33)**	4.00 (0.00)	4.00 (0.00)	4.77 (0.44)
Environmental standards in lending and investments	4.88 (0.11)	4.66 (0.50)	3.88 (0.33)	4.33 (0.50)	4.22 (0.44)	4.66 (0.71)	4.11 (0.33)	4.00 (0.00)	4.88 (0.33)
Realistic									
Introduction of concepts to reduce carbon foot prints	4.90 (0.10)	4.44 (0.52)	4.11 (0.60)	**4.32 (0.67)**	4.11 (0.33)	**4.88 (0.33)**	4.11 (0.33)	4.00 (0.00)	4.77 (0.44)
Set of rules of thumb for energy efficient usage	**5.00 (0.00)**	**4.76 (0.48)**	4.33 (0.50)	4.00 (0.00)	**4.77 (0.44)**	4.33 (0.50)	3.11 (0.33)	4.00 (0.00)	4.88 (0.33)
Policies for waste energy recycling process	4.87 (0.21)	4.66 (0.50)	4.22 (0.44)	4.22 (0.44)	4.11 (0.33)	4.77 (0.44)	4.11 (0.33)	4.00 (0.00)	4.77 (0.44)
Digital way to connect Agri Business	4.91 (0.09)	4.55 (0.52)	4.33 (0.50)	4.11 (0.33)	4.55 (0.72)	4.22 (0.44)	**4.88 (0.33)**	**5.00 (0.00)**	**5.00 (0.00)**

	SBI	**Canara**	**PNB**	**Federal**	**SIB**	**IDBI**	**ICICI**	**HDFC**	**AXIS**
Setting Intelligence Assistance to Energy Consciousness	4.88 (0.23)	4.66 (0.50)	**4.77 (0.40)**	4.22 (0.44)	4.00 (0.00)	4.77 (0.44)	4.11 (0.33)	4.00 (0.00)	4.88 (0.33)
Timely									
24*7 assistance for online banking customers	4.89 (0.21)	4.66 (0.50)	4.22 (0.44)	4.22 (0.44)	4.66 (0.50)	4.33 (0.50)	4.00 (0.00)	4.00 (0.00)	4.90 (0.12)
Disclosure of EP and SP in SR & CSR Report	**5.00 (0.00)**	**4.87 (0.34)**	**4.32 (0.42)**	4.22 (0.44)	4.11 (0.33)	4.66 (0.50)	4.11 (0.33)	4.00 (0.00)	4.88 (0.33)
Adoption for Principle of Caring for environment	4.94 (0.10)	4.33 (0.88)	4.22 (0.44)	4.22 (0.44)	**4.76 (0.44)**	4.33 (0.50)	4.00 (0.00)	**5.00 (0.00)**	**5.00 (0.00)**
Introduction of retail and corporate IB on need basis	4.78 (0.24)	4.44 (0.52)	3.55 (0.88)	**4.33 (0.88)**	4.11 (0.33)	**4.77 (0.44)**	**5.00 (0.00)**	4.00 (0.00)	4.88 (0.33)
Ascertainment of FP with regard to EP and SP	4.77 (0.25)	4.77 (0.44)	4.11 (0.33)	4.22 (0.44)	4.55 (0.72)	4.33 (0.50)	4.88 (0.33)	4.00 (0.00)	4.88 (0.22)

Source: Primary Data
Figures in parentheses represent Standard Deviation

Table 4.50 demonstrates the discussion about the importance of SMART Green Goals of Environmentally Sustainable Banking Practices. SMART Green Goals are the Specific, Measurable, Attainable, Realistic and Timely goals established for the accomplishment of 'go-green' objectives. To know the importance of these goals, a five-point Likert Scale is developed in the order of Extremely Important, Very Important, Moderately Important, Less Important and Not at all Important. There are five statements formulated to examine each dimension of SMART Green Goals.

Regarding the Specific Green Goals, Federal Bank (4.76), ICICI (5.00) and AXIS Bank (4.98) have given extremely importance for the statement; 'planning before going green'. At the same time, IDBI bank opines that 'set of guidelines and regulations to comply procedures' (4.88) is the most important specific green goal. With respect to SBI (4.98), SIB (4.76) and HDFC (5.00) Bank, 'objectives and

motives to carry out the Sustainable Banking Practices' is the main specific objective for the attainment of SMART Green Goals. However, Canara, PNB and ICICI have suggested that 'coalition of green capital and its utilization' is the extremely important specific goals for sustainability.

The discussion of Measurable Green Goals reveals that 'innovation in green technological products' is the extremely important statement in the perspective of SBI (5.00), Federal (4.77), IDBI (4.88) and ICICI (5.00) bank. According to Canara, PNB and HDFC Bank, 'risks and returns from green banking practice' is the most important measurable green goals with mean scores of above 4.5. As stated by IDBI and AXIS Bank, 'direct and indirect cost of all activities' is the next important goal for sustainable growth.

The importance of Attainable Goal is pointed out by the SBI (5.00) and HDFC Bank (4.88) is: - security and confidentiality in digital sector. Furthermore, in the view of PNB (4.66), Federal (4.44) and ICICI Bank (5.00), customer care and support for all their queries is the main attainable goal. Besides that, literacy and educative power from the bottom level is the key attainable goal for SIB (4.88) and AXIS Bank (4.98). Additionally, the perspective of Canara and IDBI Bank, they both reveal that 'aim of environmentally & socially responsible CSR practices' is the extremely important goal of 'go-green' attainment.

As far as Realistic Goals are concerned, 'introduction of concepts to reduce carbon footprints' is considered as the prime goal by Federal (4.32) and IDBI (4.88) Banks. In the case of SBI (5.00), Canara (4.76) and SIB (4.77), 'set of rules of thumb for energy efficient usage' has denoted highest mean score of 4.45 and above. Finally, HDFC (4.88), ICICI (5.00) and AXIS (5.00) Banks have pointed that, 'digital Way to connect Agri Business' is the main realistic goal for going green.

In accordance with Timely Goals, SBI (5.00), Canara (4.87) and PNB (4.32) have pointed their importance on 'disclosure of environmental and social performance in sustainability report and CSR report simultaneously'. Similarly, SIB (4.76), ICICI (5.00) and AXIS Bank (5.00) have given high mean score for the timely goal of 'adoption for principle of caring for environment'. Likewise, introduction of retail and corporate internet banking practices on need basis is considered as the key timely goal by Federal (4.33), IDBI (4.77) and HDFC (5.00) banks.

Bank wise comparison on importance of SMART Green Goals

Table 4.51

Test of Homogeneity of Variances

	Levene Statistic	**Sig.**
Specific	2.052	.092
Measurable	1.258	.116
Attainable	1.782	.103
Realistic	2.289	.083
Timely	2.181	.086

Source: Primary Data

Table 4.51 elucidates the result of Levene's test for homogeneity assumption of One-way ANOVA. Since the 'p' values of all dimensions are greater than 0.05, the null hypothesis cannot be rejected at 5% level of significance. Hence, it tested the null hypothesis that the population variances are equal for all groups. Consequently, the mean comparison among the banks is tested with the help of One-way ANOVA.

Table 4.52

Bank wise comparison of importance of SMART Green Goals

Banks	**Dimensions**				
	Specific	**Measurable**	**Attainable**	**Realistic**	**Timely**
SBI	4.88 (0.33)	5.00 (0.00)	5.00 (0.00)	5.00 (0.00)	5.00 (0.00)
Canara Bank	4.75 (0.38)	4.62 (0.41)	4.46 (0.56)	4.60 (0.40)	4.60 (0.41)
PNB	4.02 (0.41)	4.24 (0.24)	4.40 (0.30)	4.35 (0.27)	4.06 (0.41)
Federal Bank	4.42 (0.33)	4.35 (0.32)	4.22 (0.33)	4.15 (0.40)	4.24 (0.31)
SIB	4.40 (0.17)	4.42 (0.39)	4.57 (0.32)	4.31 (0.17)	4.42 (0.39)
IDBI	4.40 (0.17)	4.51 (0.20)	4.37 (0.21)	4.60 (0.17)	4.48 (0.14)
ICICI	4.22 (0.06)	3.86 (0.20)	4.20 (0.00)	4.06 (0.20)	4.40 (0.00)
HDFC	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)	4.00 (0.00)
AXIS Bank	4.84 (0.34)	4.71 (2.24)	4.80 (0.34)	4.86 (0.26)	4.95 (0.13)
F Value	**9.73**	**12.88**	**9.78**	**12.29**	**15.65**
p Value	**0.000****	**0.000****	**0.000****	**0.000****	**0.000****

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

The table 4.52 explains the importance of SMART Green Goals among the sample banks. As stated in the table, the mean scores of importance of Specific,

Measurable, Attainable, Realistic and Timely goals of Environmentally Sustainable Practices of banks are not same. They have assigned their opinion in five-point Likert scale based on their perspective of Sustainable Banking. Since, the variances are found, there is a need to check the significant mean difference among them. So, One-way ANOVA is considered as the powerful tool.

With reference to Specific Green Goals, SBI (4.88), Canara (4.75) and AXIS Bank (4.84) have given extreme importance than that of other sample banks. Consequently, test statistics is verified the mean difference with 'p' value of 0.000 and 'f' value of 9.73. Since the 'p' is less than 0.05, the null hypothesis is rejected at 1% level of significance and there is significant difference in the mean score of specific green goals among banks.

With respect to the importance level of Measurable Green Goals, SBI (5.00), Canara (4.62), IDBI (4.51) and AXIS Bank (4.71) display the highest mean score than other banks. Therefore, comparison of mean difference has made with the help of One-way ANOVA and the calculated 'f' value of 12.88 is significant at 'p' value of 0.000. Meanwhile the 'p' value is less than 0.05, null hypothesis is rejected at 1% level of significance and thus there is significant difference in the mean score of measurable green goals among banks.

Regarding the Attainable Green Goals, SBI (5.00), Canara (4.60) and AXIS Bank (4.86) have marked extremely important than other banks have valued for the same. Subsequently, the mean differences among them are statistically proved by using 'F' Statistic. Hence, the identified 'p' value of 0.000 and 'F' value of 9.78 verifies that there is significant difference among banks with respect to attainable green goals.

Besides that, SBI (5.00), Canara (4.60), IDBI (4.60) and AXIS Bank (4.86) given extreme importance for Realistic and Timely Green Goals of ESBP. All other banks under study have specified the mean score of less than 4.5 (very important) for the same dimensions of SMART Green Goals. Then, One-way ANOVA is carried out to identify the mean difference among them and the resulted 'p' value is 0.000 with 'F' value of 12.29 & 15.65. Since the 'p' value of less than 0.01, the null hypothesis is rejected at 1% level of significance.

Table 4.53

Multiple Comparisons

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Specific	SBI	PNB	.86667*	.000
		South Indian Bank	.48889*	.044
		IDBI	.48889*	.044
		ICICI	.66667*	.001
		HDFC	.88889*	.000
	Canara Bank	PNB	.73333*	.000
		ICICI	.53333*	.019
		HDFC	.75556*	.000
	AXIS Bank	PNB	.82222*	.000
		ICICI	.62222*	.003
		HDFC	.84444*	.000
Measurable	SBI	PNB	.75556*	.000
		Federal Bank	.64444*	.000
		South Indian Bank	.57778*	.003
		IDBI	.48889*	.020
		ICICI	1.13333*	.000
		HDFC	1.00000*	.000
	ICICI	Canara Bank	-.75556*	.000
		Federal Bank	-.48889*	.020
		South Indian Bank	-.55556*	.004
		IDBI	-.64444*	.000
		AXIS Bank	-.84444*	.000
	HDFC	Canara Bank	-.62222*	.001
		IDBI	-.51111*	.012
		AXIS Bank	-.71111*	.000
Attainable	SBI	Canara Bank	.53333*	.008
		PNB	.60000*	.002
		Federal Bank	.77778*	.000
		South Indian Bank	.42222	.080
		IDBI	.62222*	.001
		ICICI	.80000*	.000
		HDFC	1.00000*	.000
	AXIS Bank	Federal Bank	.57778*	.003
		ICICI	.60000*	.002
		HDFC	.80000*	.000

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Realistic	SBI	Canara Bank	.40000*	.033
		PNB	.64444*	.000
		Federal Bank	.84444*	.000
		South Indian Bank	.68889*	.000
		IDBI	.40000*	.033
		ICICI	.93333*	.000
		HDFC	1.00000*	.000
	AXIS Bank	PNB	.51111*	.002
		Federal Bank	.71111*	.000
		South Indian Bank	.55556*	.000
		ICICI	.80000*	.000
		HDFC	.86667*	.000
Timely	SBI	PNB	.93333*	.000
		Federal Bank	.75556*	.000
		South Indian Bank	.57778*	.001
		IDBI	.51111*	.003
		ICICI	.60000*	.000
		HDFC	1.00000*	.000
	AXIS Bank	PNB	.88889*	.000
		Federal Bank	.71111*	.000
		South Indian Bank	.53333*	.002
		IDBI	.46667*	.010
		ICICI	.55556*	.001
		HDFC	.95556*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The above One-way ANOVA table describes the significant difference in the mean score of SMART Green Goals among selected banks. The obtained significant result of 'F' statistics directed towards further pair wise analysis of variables. Hence, Tukey's Honestly Significant Difference test for post-hoc test is applied for every possible comparison between the banks.

By looking to the result of Specific Green Goals it is clearly seen that SBI, Canara and AXIS Banks are having significant mean difference from PNB, SIB, IDBI, ICICI and HDFC bank with 'p' value of less than 0.05. Therefore, it can be concluded that there is difference among the above specified banks regarding their perception on importance of Specific Green Goals.

At the same time, with respect to Measurable Green Goals, SBI, ICICI and HDFC banks have significant mean differences than other banks namely, PNB,

Federal Bank, SIB, IDBI, Canara and AXIS Bank with 'p' value of less than 0.05. Accordingly, null hypothesis is rejected at 5% level of significance.

In accordance with Attainable Green Goals of Environmentally Sustainable Banking Practices, SBI and AXIS Bank are showing significant mean differences as compared with Canara, PNB, SIB, IDBI, ICICI and HDFC. Here all the 'p' values are less than 0.05, it can be said that the mean differences are statistically significant.

Similarly, SBI and AXIS bank also having different mean score in the opinion regarding the importance of Realistic and Timely Green Goals compared to other banks. The significance value of less than 0.05 has proved that the mean scores are statistically significant at 5% level of significance. It can be found that there is significant difference in the mean scores of Realistic and Timely Green Goals given by SIB and AXIS banks with all other banks under study.

4.9 Conclusion

The present chapter is the discussion and comparison of adoption level of Environmentally Sustainable Banking (Green Processes, Practices and Products), SWOC Analysis and SMART Green Goals among sectors and banks selected for the study. In order to exhibit the results different statistical and mathematical techniques are employed. In addition, Structural Equation Modelling is used to display the directional linkage between independent and dependent variables namely, ESBP, SWOC and SMART Green Goals. It is found that SBI, Federal, HDFC, ICICI and AXIS Banks are forerunners of Environmental-sustainable Banking. More Precisely, New Generation Banks have practical approach towards sustainability performance and its disclosure than that of Public and Old Generation Banks. Furthermore, there exist significant positive relationship between adoption level of ESBP, SWOC and SMART Green Goals of all sample banks. Therefore, it can be concluded that Environmental-sustainable Banking is the way to establish SMART Green Goals for the strong strengths and opportunities to eliminate weaknesses and challenges for a sustainable future.

The discussion of banker's perspective is not enough to draw an adequate conclusion about the topic. Therefore, an attempt has made to analyze the awareness, acceptance and satisfaction on ESBP from the perspective of customers. That is the subject matter of the ensuing chapter.

Chapter 5

Assessment of Awareness, Acceptance and Satisfaction – From the perspective of Customers

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5.1 Introduction

In the previous chapter, an attempt was made to examine the level of Adoption of Environmentally Sustainable Banking Practices between Public and Private Sector (Old and New Generation) Banks. However, in order to make the study more meaningful and fruitful, it is inevitable to examine the Awareness, Acceptance and Satisfaction level of Environmentally Sustainable Banking Practices from the perspective of the customers. This is because they are the most relevant beneficiaries of Environmental-friendly Banking Practices followed by the banks. Therefore, in this chapter, Profile of the respondents, Sector of the Bank and Sample Banks are considered as the factor variables to compare the level of Awareness, Acceptance and Satisfaction among the customers. Accordingly, this chapter is divided in to four sections. The first section (Section A) deals with the comparison of awareness level on Environmentally Sustainable Banking Practices among the sample respondents according to their Demographic Profiles. Furthermore, section 'B' explains the Acceptance and Satisfaction level of sample respondents on Digital Banking Practices. In addition to these two sections, two more sections (Section C and D) are there to examine & compare the Influencing Factors of Digital Banking, Frequency of use of Digital Initiatives and Perception on Digital Banking Acceptance among sectors and banks selected for the study.

5.2 Objectives of the Chapter

1. To examine and compare the Awareness, Acceptance and Satisfaction level of Environmentally Sustainable Banking Practices among Digital Banking users according to their Demographic Profiles and Digital Banking Details.
2. To identify and compare the Enabling & Disabling factors of Digital Banking, Frequency of use of Digital Initiatives and Perception level of Digital Banking Acceptance among Public, Old and New Generation Private Banks.
3. To evaluate and compare the Enabling & Disabling factors of Digital Banking, Frequency of use of Digital Initiatives and Perception level of Digital Banking Acceptance among the sample banks selected for the study.

5.3 Hypotheses Formulated and Tested

1. There is no significant difference in the Awareness, Acceptance and Satisfaction level of Environmentally Sustainable Banking Practices according to the Demographic Profile and Digital Banking Details of customers.
2. There is no significant difference in the Enabling & Disabling factors of Digital Banking, Frequency of use of Digital Initiatives and Perception on Digital Banking Acceptance among Public Sector, Old and New Generation Private Sector Banks.
3. There is no significant difference in the Enabling & Disabling factors of Digital Banking, Frequency of use of Digital Initiatives and Perception on Digital Banking Acceptance among sample banks selected for the study.

5.4 Methodology and Database

In order to achieve the objectives of this chapter, primary data are collected from Digital Banking users of the sample banks. For this purpose, SBI, Canara, PNB are selected as Public Sector Banks, Federal Bank, SIB, IDBI are identified from Old Generation Private Sector Banks and HDFC, ICICI, AXIS are selected from New Generation Private Sector Banks. A total of 405 sample customers are selected from nine banks of nine districts in Kerala. Purposive sampling is used to collect the data with the help of a structured questionnaire (The customers who have the idea about Paperless Banking and only those who use Digital Banking are purposefully selected for the study). To analyze and compare the Awareness, Acceptance, Satisfaction and Perception, Arithmetic Mean, Standard Deviation, Independent Sample 't' test, Levene's test of Homogeneity of Variance, One-way Analysis of Variance, Tukey HSD Post-hoc test for Multiple Comparison, Confirmatory Factor Analysis and Structural Equation Modelling are used as Statistical Techniques. The following are the section wise analysis results in the order of objectives and hypotheses formulated and tested.

Section A: - Profile of the Respondents

Section B: - Environmentally Sustainable Banking Practices– A comparative analysis of Awareness, Acceptance and Satisfaction according to Demographic Profile & Digital Banking Details.

Section C: - Sector wise comparison of Digital Banking Acceptance (enabling & disabling factors and frequency of usage are considered as input variables).

Section D: - Bank wise comparison of Digital Banking Acceptance (enabling & disabling factors and frequency of usage are considered as input variables).

5.5 Variables used for the study

Demographic Profile	Gender Age Educational Qualification Occupational Status Area of Residence
Digital Banking Details	Sector of the bank Name of the bank Mode of visit in banks Preference of Banking services Experience in the use of Digital Banking Sources (Downloads) of Banking Application Devices used for e-banking Access Sources of Information on Digital Banking Post-procedure of every transaction
Environmentally Sustainable Banking Practices	Green Policies Green Financing Green/Digital Innovation Internet Banking Mobile Banking
Enabling Factors of Digital Banking	Information and Communication Clear and Easiness Convenience and Flexible Trust and Confidence Self Esteem and Prestige
Disabling Factors of Digital Banking	Security and Privacy Risk and Threat Knowledge and Awareness Cost and Charge Complexity and Problems

Digital Banking Acceptance	Service Awareness Subjective Norms Self-Efficacy System Quality Schemes Availability Perceived Ease of Use Perceived Usefulness Perceived Risk Attitude towards Usage Behavioral Intention to Use Actual Use User Satisfaction

Section A

5.6 Profiles of the Customers

The profile of the Digital Banking users is shown in Table 5.1. Here, Demographic Profiles and Digital Banking Details are taken for the study. To check the status, percentage analysis is used. Gender, Age, Educational Qualification, Occupational Status, Area of Residence are taken as the sub variables of Demographic Profile. Similarly, Sector of bank, Type of bank, Mode of visit in banks, Preference of Banking services, Experience in the use of Digital Banking, Sources (Download) of Banking Application, Devices used for e-banking Access, Sources of information on Digital Banking, Post-Procedure of every transaction are considered as the factor variables of Digital Banking Details.

5.6.1 Demographic Profiles

Table 5.1

Frequency of Demographic Profiles

	Frequency	**Percent**
Gender		
Male	199	49
Female	206	51
Total	405	100

	Frequency	Percent
Age		
Below 25	68	16.8
25-40	172	42.5
41-55	117	28.9
Above 55	48	11.9
Total	405	100
Educational Qualification		
Elementary Education	0	0
Secondary Education	21	5.2
Technical Education	40	9.8
Graduate Level Education (Degree/PG)	138	34.0
Higher Level Education	206	50.9
Total	405	100
Occupational Status		
Student	111	27.4
Business	38	9.4
Govt. Employee	55	13.6
Pvt. Employee	119	29.4
Professionals	58	14.3
Farmer/ Self Employed	24	5.9
Total	405	100
Area of Residence		
Urban	142	35.1
Semi Urban	205	50.6
Rural	58	14.3
Total	405	100

Source: Primary Data

Table 5.1 explains the respondents' status on demographic profile. Out of the 405 respondents, 199 are male (49%) and 206 are female (51%). Similarly, 42.5 % of the respondents are coming under the age group of 25-40. And only 11.9% of the respondents are having the age above 55 years.

With respect to the Educational Qualification, majority (50.9%) of the respondents have possessed higher education. 34% of the them have acquired the graduate level (Degree/PG) education. Out of 405 Internet Banking users, 5.2% are qualified by only secondary education and 9.8% are skilled in technical education.

With reference to the Occupational Status of the sample respondents, 119 are Private employees (29.4%) and 111 are students (27.4%). Furthermore, 58 are Professionals (14.3%) and 55 are Govt. employees (13.6%). Only 5.9% of the Internet Banking users have experience in self-employment and 9.4 % them are running businesses. Regarding them Area of residence, 50.6% are residing in semi-urban area and 35.1% are in urban area. Of the 405 respondents, only 14.3% of them are located in rural area.

5.6.2 Digital Banking Details

Table 5.2

Frequency of Digital Banking Details

	Frequency	Percent
Banking Sector		
Public Sector	135	33.33
Old Generation Private Banks	135	33.33
New Generation Private Banks	135	33.33
Total	405	100
Banks		
SBI	45	11.11
Canara	45	11.11
PNB	45	11.11
Federal	45	11.11
SIB	45	11.11
IDBI	45	11.11
HDFC	45	11.11
ICICI	45	11.11
AXIS	45	11.11
Total	405	100
Mode of visit in banks		
Weekly	28	6.9
Monthly	74	18.3
Quarterly	124	30.6
Half yearly	97	24.0
Yearly	82	20.2
Total	405	100
Preferences of Banking services		
Digital Banking only	166	41.0
Digital as well as Branch Banking	239	59.0
Total	405	100

	Frequency	Percent
Experience in the use of Digital Banking		
Less than 1 year	98	24.2
1-3 years	175	43.2
More than 3 years	132	32.6
Total	405	100
Sources (Download) of Banking Application		
Bank's website	74	16.3
App store/ Play store	308	76.0
Directly from search engine	10	2.5
Sending through Apps/ Bluetooth/ Wi-Fi	13	3.2
Total	405	100
Devices used for e-banking Access		
Home PC	43	10.6
Office PC	11	2.7
Public Browsing Devices	9	2.2
Personal Devices	342	84.4
Total	405	100
Sources of information on Digital Banking		
Bank's site/ Brochures	139	34.4
Public/ social media	114	28.1
Colleagues/ Friends/ Family	152	37.5
Total	405	100
Post-Procedure of every transaction		
Taking Printouts	45	11.1
Save as documents	115	28.4
Keep screenshots	173	42.7
Nothing	72	17.8
Total	405	100

Source: Primary Data

Table 5.2 demonstrates the result of Digital Banking details of the customers. Among the 405 samples, an equal proportion (135 each) of the respondents are taken from Public, Old Generation and New Generation Private Banks. Similarly, three sub categories of banks are selected from each sector (SBI, Canara and PNB from Public Sector, Federal, SIB and IDBI from Old Generation Private Sector and HDFC, ICICI and AXIS from New Generation Banks) in the same proportion (45 each).

According to the Mode of visit in banks, 126 (30.6%) visit the bank quarterly, 97 (24%) spend their time with the bank only twice a year and 82 (20.2%) visit the bank once in a year. Of the total samples, only 6.9% and 18.3% of the respondents spend their time with the bank weekly & monthly respectively.

In accordance with the Preference of Banking Services, majority (59%) of the sample respondents prefer Digital as well as Branch Banking and the remaining 41% of them use only Digital Banking for their Banking transactions. The latter group of respondents have not as much of contact with the branches as compared with the former one. But the awareness level of the both these group of respondents is almost the same regarding the Technology-Based Banking Innovation.

With respect to Experience in the use of Digital Banking, 175 (43.2%) customers have been using these services from 1-3 years. Likewise, 132 respondents (32.6%) have been accessing the digital banking services more than 3 years. Only 24.2% of them have been utilizing these services less than 1 year. Consequently, the acceptance level of Digital Banking may/may not be different according to the experience of Online Banking. The respondents who have three or more years of experience in the field of Digital Banking, have more knowledge about the pros and cons of Technology-Based Banking.

There are different sources are available to access the Banking Applications. But the authenticity and reliability are questionable. Hence, it creates safety and security issues. With regard to the sample respondents, majority (76.0%) of them use App store/ Play store to download the Applications. The remaining 16.3% depends directly on Bank's website. Only 2.5% download the Applications directly from Search Engines (through links) and 3.2% depend on sharing via Apps/Bluetooth/Wi-Fi etc.

With respect to the devices used for e-banking access, 84.4% of the digital banking users use their personal devices for conducting the online transactions. Moreover, 10.6% use the Home PC as the device for e-banking access. The remining 2.7% and 2.2% use the Office PC and the Public Browsing devices respectively.

The source of information on Digital Banking is important to know their perception regarding service awareness, security matters, schemes availability etc. Hence, the discussion about the same is essential. Here, 37.5% of the respondents obtain information from their colleagues/ friends/ family about the Digital Banking products and services. Apart from this 34.4% of the respondents collect information from bank's website/ brochures and 28.1% access data from public/ social media.

After processing every transaction, there is a need to keep the documents for future reference. Hence, the discussion about the practices followed by the respondents after every transaction reveal that 42.7% (173) keep the documents as screenshots in their personal devices. The remaining 28.4% (115) and 11.1% (45) of the respondents save the documents as proper file and take print out for further reference respectively.

Section B

5.7 Environmentally Sustainable Banking Practices & Digital Banking Practices- A comparative analysis of Awareness, Acceptance and Satisfaction among the customers according to their Demographic Profile and Digital Banking Details

5.7.1 Awareness Level of Environmentally Sustainable Banking Practices

The below table is discussed about the customer's awareness towards Environmentally Sustainable Banking Practices followed by the banks. The sample respondents are digital banking users. Therefore, they need to know the concept of paper-less banking as the component of Environmental-Sustainable Practices. Consequently, the discussion is essential to know more about the awareness level of digital banking users towards ESBP. The analysis has made with the help of major components of ESBP namely: - **Green Policies, Green Financing, Green/Digital Innovation, Internet and Mobile Banking.** Statistical tools like Mean and Standard Deviation are used to discuss the awareness level about the same.

Table 5.3

Discussion about the level of awareness on Environmentally Sustainable Practices

Variables		Mean	SD
Green Policies	Banks follows National Voluntary guidelines for Social, Environmental and Economic Aspects	**3.00**	**1.05**
	Caring for environment is the basic principle of Corporate Social Responsibility of banks	2.70	1.09
	Social and Environmental System Plan by setting SMART Green Goals	2.79	1.04
Green Financing	Green Home loans for environment friendly residence rated by GRIHA	2.89	1.22
	Finance for fuel efficient vehicles by making waiver on processing fee	2.90	1.16
	Finance for green buildings certified by IGBC	2.61	1.15
	Agricultural financing	**4.32**	**0.81**
	Climate Risk Financing	2.65	1.16
	Finance for specialized sector like biogas plant, bio fertilization plant, waste disposal plant etc.	3.43	1.19
Green/Digital Innovation	SWAYAM/ Passbook Printing Kiosks	4.31	0.81
	Green Credit Cards/Green Remit Cards	2.94	1.13
	Green Channel Counter	4.18	0.79
	Remote Deposit	2.54	1.16
	Cash/Cheque Collector	4.20	0.83
	Solar ATM/CDM/Recycler	2.57	1.25
	Queue Management System	4.16	0.82
	Point of Sale terminals	**4.48**	**0.67**
Internet Banking	Immediate Payment Services (IMPS)	4.53	0.72
	Instant Fund/Money Transfer (IMT), RTGS/NEFT	4.50	0.66
	e-tax for online tax payment	4.50	0.66
	Online Account Generation and term deposits (e-TDR/e-STDR)	4.47	0.67
	e-passbook for checking transaction details	4.49	0.68
	Online request for - application for loan, closure of loan account, Issue of cheques and Demand Draft	4.45	0.66
	Utility bill payments	4.54	0.66
	Online share trading	2.42	0.92
	Online ticket booking and e-shopping	**4.63**	**0.67**

Variables		Mean	SD
Mobile Banking	M Commerce (Merchant and Insurance premium payment)	4.55	0.66
	Mobile applications	4.64	0.65
	Mobile wallets e.g.: - Paytm, google pay, phone pay etc.	**4.69**	**0.65**
	Tab Banking for account generation and filing KYC details	4.02	0.68
	Realtime GPS Navigator to locate ATM and Branch	4.43	0.66
	Mobile/DTH/Toll Recharge	4.56	0.66
	Authorize, modify, reschedule and cancel transactions	4.44	0.67
	Online Portfolio analysis	2.12	0.84

Source: Primary Data

Table 5.3 depicts that the awareness level on Green Policies, Green Financing and Green/Digital Innovation are comparatively low than that of awareness level on Internet and Mobile Banking.

Regarding the Green Policies, the respondents are somewhat aware about the policies and practices followed by the banks namely, National Voluntary guidelines for Social, Environmental and Economic Aspects ($\bar{X}$ = 3.00, s = 1.05), caring for environment is the basic principle of Corporate Social Responsibility of banks ($\bar{X}$ = 2.70, s = 1.09) and Social & Environmental System Plan by setting SMART Green Goals ($\bar{X}$ = 2.79, s = 1.04).

Likewise, the respondents are somewhat aware of the Green Financing schemes of the banks. But in the case of agricultural financing, there is moderate level ($\bar{X}$ = 4.32, s = 0.81) of awareness among the respondents. Furthermore, the level of awareness in green home loan, finance for green building, climate risk financing etc. are comparatively low than that of awareness level on finance for specialized sectors.

With respect to Green/ Digital Innovation, there is extreme level of awareness about the services of Point-of-Sale terminals with mean value of 4.48 (0.67). But there is only moderate level of awareness on SWAYAM ($\bar{X}$ = 4.31, s = 0.81), Green Channel Counter ($\bar{X}$ = 4.18, s = 0.79), Cash/Cheque Collector ($\bar{X}$ = 4.20, s = 0.83), Queue Management System ($\bar{X}$ = 4.16, s = 0.82) etc. Regarding the Green Credit/ Remit cards, Remote Deposits and Solar ATM/CDM/Recyclers, there is only somewhat level ($\bar{X}$ < 3.00) of awareness among the respondents.

Correspondingly, there is extreme level ($\bar{X}$ > 4.50) of awareness on Internet Banking services namely, Immediate Payment Services, NEFT, RTGS, online account

generation, verification of e-passbook, online ticket booking and utility bill payment for e-shopping. Bu the level of awareness regarding online share trading ($\bar{X}$ = 2.42, s = 0.92) is very low.

Similarly, the respondents are extremely aware ($\bar{X}$ > 4.50) about the Mobile Banking services like M Commerce (Merchant Payments and Insurance premium payment), mobile applications, mobile wallets e.g.: - Paytm, google pay, phone pay and Mobile/DTH/Toll Recharge. But there is only moderate level ($\bar{X}$ < 4.50) of awareness on Tab Banking, Realtime GPS navigator to locate ATM & branch and authorize, modify, reschedule and cancel transactions. And the awareness level on portfolio analysis through Mobile Banking is very low ($\bar{X}$ = 2.12, s = 0.84).

5.7.2 Comparison of Awareness level of Environmentally Sustainable Banking Practices according to Demographic Profile

After the discussion of level of awareness on Environmentally Sustainable Banking Practices, there is a need to compare it with the Demographic Profile and Digital Banking Details of the respondents. First of all, awareness level among the customers is studied according to the sub categories of Demographic Profile such as, Age group, Educational Qualification and Occupational status.

5.7.2.1 Age wise comparison of Awareness level of Environmentally Sustainable Banking Practices

The below tables present the result of hypothesis testing on comparison of awareness level according to different age group of the respondents. Here, the age group are categorized as, below 25, 25-40, 41-55 and Above 55. To check the hypothesis, Levene's test of Homogeneity of Variances, One-way Analysis of Variance and Tukey HSD Post-hoc test for Multiple Comparison is used. The formulated hypothesis is given below.

H0: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the age group of customers.

H1: There is significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the age group of customers.

Table 5.4

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	.671	.642
Green Financing	.725	.512
Green/Digital Innovation	.724	.538
Internet Banking	.838	.441
Mobile Banking	.971	.362

Source: Primary Data

Since the 'sig' value of Levene's test of Homogeneity of Variance is not significant at 5% level of significance, the population variance for each group is approximately equal. So, the test of hypothesis is intended to One-way ANOVA.

Table 5.5

Age wise comparison of Awareness level of Environmentally Sustainable Banking Practices

Dimensions	Age Groups				F value	Sig. value
	Below 25	25-40	41-55	Above 55		
Green Policies	2.80 (0.81)	2.96 (0.72)	2.90 (0.75)	2.24 (0.60)	12.46	0.000**
Green Financing	3.49 (0.81)	3.46 (0.84)	3.58 (0.92)	2.94 (0.60)	6.66	0.000**
Green/Digital Innovation	3.86 (0.40)	3.90 (0.42)	3.91 (0.35)	3.06 (0.49)	18.67	0.000**
Internet Banking	4.48 (0.23)	4.41 (0.28)	4.41 (0.24)	3.23 (0.55)	10.86	0.000**
Mobile Banking	4.40 (0.26)	4.34 (0.27)	4.38 (0.24)	3.25 (0.77)	9.51	0.000**

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

The result of One-way ANOVA for the comparison of awareness level according to age groups of the respondents is depicted in table 5.5. From the descriptive statistics (Mean and SD) it is clear that there is significant difference in the mean value of awareness level according to the age category of above 55 from other three groups. As far as the awareness level of Green Policies is concerned, the age category of above 55 (mean score = 2.24) has slightly aware about the policy than

that of others. Hence, the 'sig' value of 0.000 (f = 12.46) has verified the result of significant difference among them.

Similarly, the level of awareness on Green Financing shows the same significant mean difference in the age category of Above 55. All other groups are moderately aware ($\bar{X} > 3.50$) about the Green Financing schemes of the banks. But the respondents from the age category of above 55 years are somewhat aware about the schemes. Consequently, the 'p' value of 0.000 is statistically significant at 1% level of significance with 'f' value of 6.66.

The result of One-way ANOVA for the comparison of mean difference in the awareness level on Green /Digital Innovation according to age groups shows the statistically significant 'p' value of 0.000 and 'f' value of 18.67 at 1% level of significance. From the descriptive statistics, it can be seen that there is moderate level of awareness among different age groups other than above 55 and this category shows only somewhat level of awareness on Green/Digital Innovation.

Furthermore, the awareness level of Internet and Mobile Banking services provided by the banks shows significant mean difference among different age category. It means, the respondents from the age categories of below 25, 25-40 and 41-55 are extremely aware about the IB and MB services than that of the respondents who are coming under the age category of above 55. They are moderately aware about these services. Hence, there is mean difference, the 'p' value of 0.000 shows the statistically significant result with the 'f' values of 10.86 and 9.51 respectively for the awareness level on Internet and Mobile Banking.

The result of One-way ANOVA may depict only the significant difference among the respective category of independent variables towards dependent variables. It is important to check whether there is any pair-wise significant difference among the age categories of the sample respondents. Hence, Tukey HSD post hoc test is applied for the same.

Table 5.6

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Age groups**	**(J) Age groups**	**Mean Difference (I-J)**	**Sig.**
Green Policies	Above 55	Below 25	-.56087*	.000
		25-40	-.71818*	.000
		41-55	-.66293*	.000
Green Financing	Above 55	Below 25	-.54340*	.000
		25-40	-.51586*	.000
		41-55	-.63127*	.000
Green/Digital Innovation	Above 55	Below 25	-.80070*	.000
		25-40	-.84405*	.000
		41-55	-.84622*	.000
Internet Banking	Above 55	Below 25	-.92570*	.000
		25-40	-.81819*	.000
		41-55	-.75564*	.000
Mobile Banking	Above 55	Below 25	-.95548*	.000
		25-40	-.84367*	.000
		41-55	-.77864*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The result of the Tukey HSD post hoc test explains that there is significant difference exist among the respondents from the age category of above 55 and all other three groups. As far as all the dimensions of Environmental-sustainable Banking Practices are concerned (Green Polices, Green Financing, Green/Digital Innovation, Internet Banking and Mobile Banking), the significant mean difference exists in the age category of above 55. It is also verified with the 'sig' values of less than 0.01.

5.7.2.2 Education wise comparison of Awareness level of Environmentally Sustainable Banking Practices

The next demographic variable considered for the analysis is Educational Qualification of the respondents. The result of Levene's test of Homogeneity of Variance, One-way ANOVA and Tukey HSD post-hoc test is measured to check whether there is any significant difference in the awareness level of Environmentally Sustainable Banking Practices among respondents with respect to their Educational

Qualification. To compare the mean difference between dependent and factor variables, the following hypothesis is designed.

H0: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the Educational Qualification.

H1: There is significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the Educational Qualification.

Table 5.7

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	.081	.970
Green Financing	.516	.671
Green/Digital Innovation	2.307	.076
Internet Banking	1.838	.082
Mobile Banking	1.971	.091

Source: Primary Data

The Levene's statistic based on comparison of mean; there exist insignificant test values of all the dimensions. Hence, the One-way ANOVA is considered to be robust for the comparison of mean difference between dependent and factor variables.

Table 5.8

Education wise comparison of Awareness level of Environmentally Sustainable Banking Practices

Dimensions	Educational Qualification				F value	Sig. value
	Secondary	Technical	Graduate	Higher		
Green Policies	2.44 (0.72)	2.66 (0.78)	2.78 (0.74)	2.93 (0.76)	3.94	0.009**
Green Financing	3.29 (0.84)	3.43 (0.78)	3.41 (0.83)	3.41 (0.88)	1.82	0.142
Green/Digital Innovation	3.41 (0.63)	3.54 (0.48)	3.79 (0.44)	3.83 (0.49)	2.82	0.038*
Internet Banking	3.96 (0.71)	4.17 (0.53)	4.50 (0.49)	4.50 (0.49)	3.23	0.022*
Mobile Banking	3.94 (0.72)	4.22 (0.53)	4.58 (0.45)	4.53 (0.51)	2.75	0.021*

Source: Primary Data
**Significant at 1% level of significance
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Table 5.8 demonstrates the result of One-way ANOVA with descriptive statistics. From the table, it is clear that there is a mean difference in the awareness level of Green Policies, Green/Digital Innovation, Internet Banking and Mobile Banking according to different education categories of respondents.

The Technical, Graduate and Higher level educated respondents have somewhat level of awareness towards Green Policies and Procedures followed by the banks. But the respondents who possess secondary level of education have slightly aware about the same. Therefore, the mean difference is existing between the above specified category. The result is verified with the 'f' statistic of 3.94 and 'sig' value of 0.009 at 1% level of significance. Since the 'p' value is less than 0.01, there is significant difference in the mean score of awareness level on Green Policies according to educational qualification.

Furthermore, with respect to the awareness level on Green/ Digital Innovation, the descriptive statistics shows mean difference according to educational qualification of the respondents. Here, the respondents who have secondary level of education are significantly differ from other three categories. Hence, the One-way ANOVA is carried out the prove the mean difference among them. Since the 'p' value of 0.038 (f value= 2.82), the null hypothesis is rejected at 5% level of significance.

Similarly, the awareness level on Internet and Mobile Banking services shows significant mean difference among the respondents in respect of educational qualification. Moreover, the respondents have Technical, Graduate and Higher-level education possesses extreme level of awareness towards IB & MB services. But the respondents with secondary level of education have only moderate level of awareness towards the same. Hence, result of One-way ANOVA with 'p' value of 0.021 shows significant mean difference among the sample respondents towards awareness level at 5% level of significance.

Table 5.9

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Educational Qualification**	**(J) Educational Qualification**	**Mean Difference (I-J)**	**Sig.**
Green Policies	Secondary Level	Higher Level	.49245*	.025
Green/Digital Innovation	Secondary Level	Higher Level	.11171*	.023
Internet Banking	Secondary Level	Graduate Level	-.34461*	.016
		Higher Level	-.34448*	.013
Mobile Banking	Secondary Level	Graduate Level	-.34124*	.022
		Higher Level	-.29985*	.048
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

A post-hoc test has to be conducted after a significant 'F' test in order to identify where the significant difference lie among three/more treatments of educational qualification. Hence, the pairwise comparison of mean differences and significance values are shown in Table 5.9. It explains the Tukey HSD Post-hoc for multiple comparison of educational qualification towards the awareness level of Environmentally Sustainable Banking Practices. Asper the mean difference, Secondary level educated respondents are statistically significant from Graduate and Higher-level education categories under Green Policies (sig=0.025), Green/Digital Innovation (sig=0.023), Internet Banking services (sig=0.016 & 0.013) and Mobile Banking (sig=0.022 & 0.048). Therefore, it can be concluded that the respondents with higher level of education have better knowledge about Environmentally Sustainable Banking Practices introduced by the banks.

5.7.2.3 Occupation wise comparison of Awareness level of Environmentally Sustainable Banking Practices

Occupation status of the respondent is an important factor for their knowledge development. Accordingly, occupation wise analysis is needed for the comparison of awareness level of Environmentally Sustainable Banking Practices. For this purpose, the status of occupation is categorized as Student, Business, Govt. Employee, Pvt. Employee, Professionals and Farmers/Self-employed. To compare the mean values, Levene's test of Homogeneity of Variance, Descriptive Statistics, One-way ANOVA and Tukey HSD Post-hoc test for Multiple Comparison is employed. The hypothesis formulated for the analysis is given below.

H0: ***There is no significant difference in the level of awareness of Environmentally Sustainable Banking Practices according to the Occupational Status.***

H1: ***There is significant difference in the level of awareness of Environmentally Sustainable Banking Practices according to the Occupational Status.***

Table 5.10

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	.962	.441
Green Financing	1.516	.114
Green/Digital Innovation	1.805	.107
Internet Banking	1.997	.092
Mobile Banking	1.967	.088

Source: Primary Data

The table 5.10 enables to check the homogeneity assumption of One-way ANOVA. The Levene's test suggests that there is insignificant difference ('p' values at greater than 0.05 at 5% level of significance) between the group variances. Therefore, homogeneity assumption is proved for all the dimensions under study. Thus, one-way ANOVA is the most suitable statistical test for measuring mean difference among factor variables. The results of One-way ANOVA and its further tests are given below.

Table 5.11

Occupation wise comparison of Awareness level of ESBP

Dimensions	Occupation Status						F value	Sig. value
	Student	Business	Govt. Employee	Pvt. Employee	Professionals	Farmer/Self Employed		
Green Policies	2.83 (0.77)	2.87 (0.74)	2.86 (0.71)	2.74 (0.79)	3.02 (0.67)	2.66 (0.89)	1.34	0.245
Green Financing	3.39 (0.85)	3.61 (0.68)	3.43 (0.79)	3.36 (0.88)	3.65 (0.97)	3.27 (0.73)	1.47	0.196
Green/Digital Innovation	3.83 (0.46)	3.82 (0.43)	3.85 (0.41)	3.75 (0.51)	3.75 (0.42)	3.06 (0.67)	11.52	0.000**
Internet Banking	4.32 (0.47)	4.35 (0.39)	4.35 (0.38)	4.27 (0.53)	4.28 (0.43)	3.51 (0.72)	3.33	0.006**
Mobile Banking	4.24 (0.47)	4.30 (0.39)	4.32 (0.42)	4.22 (0.56)	4.50 (0.45)	3.48 (0.74)	2.36	0.040*

Source: Primary Data

**Significant at 1% level of significance

*Significant at 5% level of significance

Figures in parentheses represent Standard Deviation

Table 5.11 demonstrates the result of One-way ANOVA for the mean comparison of factor variables. As far as the awareness level of Green Polices and Green Financing are concerned, there is no significant mean difference exits among Occupation status. Here, the 'p' value of 0.245 and 0.196 explains insignificant 'f' value of 1.34 and 1.47 at 5% level of significance. Since, the 'p' values are greater than 0.05, the null hypothesis cannot be rejected and there is no significant difference in awareness level on Green Policies and Green Financing according to Occupation Status of the respondents.

On the contrary, there is significant mean difference in the awareness level of Green/Digital Innovation, Internet, and Mobile Banking services according to Occupational status. From the table it is clear that farmers/self-employed have low level of awareness than that of other categories. It has also verified by the significant 'p' values of 0.000, 0.006 and 0.040 respectively for Green/Digital Innovation, Internet and Mobile Banking services. Since the 'p' values are less than 0.05, the null hypothesis is rejected at 5% level of significance.

Table 5.12

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Occupation status**	**(J) Occupation status**	**Mean Difference (I-J)**	**Sig.**
Green/Digital Innovation	Farmers/ Self Employed	Student	-.76971*	.000
		Business	-.76645*	.000
		Govt. Employee	-.79205*	.000
		Pvt. Employee	-.69695*	.000
		Professionals	-.79095*	.000
Internet Banking	Farmers/ Self Employed	Student	-.41129*	.003
		Business	-.44176*	.008
		Govt. Employee	-.44756*	.003
		Pvt. Employee	-.36341*	.013
		Professionals	-.36957*	.024
Mobile Banking	Farmers/ Self Employed	Student	-.37362*	.045
		Business	-.38076*	.048
		Govt. Employee	-.40540*	.015
		Professionals	-.39271*	.044
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Rejection of Null Hypothesis denotes the significant pair wise difference of factor variables. Here, there is significant difference in the mean score of Green/Digital Innovation, Internet and Mobile Banking services according to Occupational status of the respondents. Hence, there is a need to perform post-hoc test to measure the significant difference within the group. Here Tukey HSD post-hoc test is applied for multiple comparison of variables.

From the above table it is clear that the farmers/ self-employed category of respondents are statistically significant from other groups with regard to the level of awareness on Green/Digital Innovation, Internet and Mobile Banking services. Here the specified mean differences are statistically significant at 5% level of significance.

5.7.3 Comparison of Awareness level of Environmentally Sustainable Banking Practices according to Digital Banking Details

In the previous part, the level of awareness among demographic profile of the respondents is measured. Furthermore, there is a need to compare the awareness level of the respondents with regard to their Digital Banking Details. Here, the Digital Banking Details are categorized as sectors of bank, name of banks, mode of visit in branch, preference of banking services and experience in the use of digital banking, sources (downloaded) of banking applications, source of information on digital banking, device used for e-banking access, post-procedure of every transaction etc. According to these variables, the forthcoming analysis is going to check whether the level of awareness level of Environmentally Sustainable Banking Practices is different or not.

To compare mean difference in the awareness level according to digital banking details, Descriptive Statistics, Levene's test of Homogeneity of Variance, One-way ANOVA and Tukey HSD post-hoc test for Multiple Comparison is used as the statistical techniques. The result of analysis is provided below.

5.7.3.1 Sector wise comparison of awareness level of Environmentally Sustainable Banking Practices

Regarding Environmentally Sustainable Banking Practices, banking sectors have different scales of adoption level. Hence, there is a need to measure the awareness level of the banking customers towards the same. Consequently, a comparative analysis has to made for checking the mean differences of awareness

level among sectors of bank. Here, Public, Old Generation and New Generation Private Sector sectors are taken for the study. The proposed hypothesis is given below.

H0: ***There is no significant difference in the level of awareness of Environmentally Sustainable Practices according to the Banking Sector.***

H1: ***There is significant difference in the level of awareness of Environmentally Sustainable Practices according to the Banking Sector.***

Table 5.13

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	2.370	.095
Green Financing	.724	.486
Green/Digital Innovation	2.083	.153
Internet Banking	2.205	.112
Mobile Banking	2.544	.081

Source: Primary Data

Table 5.13 explains the test result of Levene's test of Homogeneity of Variance for the dimensions of Environmentally Sustainable Banking Practices. It represents that the Levene's statistics are statistically insignificant at 5% level of significance. Thus, the homogeneity assumption is proved and One-way ANOVA is considered as the applicable statistical test.

Table 5.14

Sector wise comparison of awareness level of ESBP

Dimensions	Sectors			F value	Sig. value
	Public	Old Generation	New Generation		
Green Policies	2.78 (0.73)	2.88 (0.83)	2.83 (0.72)	0.56	0.571
Green Financing	3.01 (0.82)	3.11 (0.89)	3.09 (0.84)	2.57	0.077
Green/Digital Innovation	3.61 (0.86)	2.68 (0.25)	2.74 (0.27)	52.77	0.000**
Internet Banking	4.22 (0.53)	4.27 (0.53)	4.36 (0.42)	2.68	0.070
Mobile Banking	4.19 (0.54)	4.20 (0.51)	4.31 (0.46)	2.12	0.121

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

The above table reveals the comparison of Public, Old Generation and New Generation Private Banks towards the awareness level of Environmentally Sustainable Banking Practices. The figures of descriptive statistics explains that the mean score of Green Policies, Green Financing, Internet and Mobile Banking is almost the same among banking sectors. It means, there is no statistically significant difference in the mean score of above specified variables with 'p' values of greater than 0.05.

On the other hand, with respect to the awareness level on Green/Digital Innovation, the mean score of Public, Old Generation and New Generation banks are different from each other. It is because of the difference in adoption level of Green/Digital Innovation. Here, the respondents from Public Sector banks have moderate level (Mean= 3.61 and SD=0.86) of awareness than that of respondents from Old Generation and New Generation Private Banks. It shows the 'p' value of 0.000 with 'f' value of 52.77 at 1% level of significance. Since the 'p' value is less than 0.05, the null hypothesis is rejected and there is significant difference in the awareness level of Green/Digital Innovation among banking sectors.

Table 5.15

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Green/Digital Innovation	Public Sector	Old Generation	.61296*	.000
		New Generation	.55648*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

As there is significant mean difference in the awareness level of Green/Digital Innovation among banking sectors, a post-hoc test is carried out to know the pair-wise mean difference among groups. From the above table it can be seen that there is mean difference between Public & Old Generation Banks (.61296) and Public & New Generation Banks (.55648) with significance value of 0.000 at 1% level of significance. It means, the awareness level of Green/Digital Innovation is different in customers from Public Sector banks compared with Old and New Generation Banks. It is because of the difference in adoption level of Green/Digital Innovation among the selected banks.

5.7.3.2 Bank wise comparison of Awareness level of Environmentally Sustainable Banking Practices

After sector wise discussion and comparison, it is important to compare the level of awareness among selected sample banks of the respondents. The respondents from different banks are marked their awareness level of Environmentally Sustainable Banking Practices in five-point Lickert scale. Descriptive statistics is used to measure their level of awareness from high to low. Subsequently, One-way ANOVA and Tukey HSD Post-hoc test for Multiple Comparisons is used to compare the mean score. Hypothesis designed for the analysis is give below:

H0: ***There is no significant difference in the level of awareness on Environmentally Sustainable Banking Practices according to sample banks.***

H1: ***There is significant difference in the level of awareness on Environmentally Sustainable Banking Practices according to sample banks.***

Table 5.16

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	1.005	.431
Green Financing	1.243	.272
Green/Digital Innovation	0.375	.934
Internet Banking	1.438	.244
Mobile Banking	1.131	.271

Source: Primary Data

Levene's test of Homogeneity of Variance is used to measure the variability of group samples. Here, the selected dimensions of the dependent variables have significant values of greater than 0.05 at 5% level of significance. Accordingly, the selected sample groups are claimed to be homogeneous and One-way ANOVA is the most suitable test for mean comparison. The below table has presented the result of mean comparison between dependent and factor variables.

Table 5.17

Bank wise comparison of awareness level of Environmental- Sustainable Practices

Banks	Dimensions				
	Green Policies	**Green Financing**	**Green/Digital Innovation**	**Internet Banking**	**Mobile Banking**
SBI	2.89 (0.68)	3.46 (0.92)	4.54 (0.27)	4.29 (0.49)	4.33 (0.46)
Canara	2.53 (0.72)	3.07 (0.73)	2.66 (0.28)	4.17 (0.62)	4.11 (0.63)
PNB	2.92 (0.73)	3.02 (0.65)	2.78 (0.27)	4.20 (0.47)	4.14 (0.51)
Federal	2.86 (0.86)	3.11 (0.62)	2.63 (0.25)	4.21 (0.53)	4.11 (0.52)
SIB	3.03 (0.84)	2.98 (0.75)	2.67 (0.22)	4.27 (0.47)	4.23 (0.48)
IDBI	2.74 (0.77)	2.89 (0.64)	2.73 (0.27)	4.32 (0.55)	4.26 (0.53)
HDFC	2.77 (0.69)	3.12 (0.53)	2.82 (0.26)	4.37 (0.37)	4.32 (0.37)
ICICI	2.72 (0.76)	3.20 (0.48)	2.68 (0.24)	4.27 (0.52)	4.24 (0.62)
AXIS	3.00 (0.70)	3.17 (0.52)	2.70 (0.27)	4.43 (0.33)	4.36 (0.33)
F value	1.91	1.56	15.5	1.29	1.60
Sig. value	0.057	0.134	0.000**	0.241	0.123

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 5.17 represents the result of One-way ANOVA for the comparison of mean scores of awareness level of Environmentally Sustainable Banking Practices among sample banks. It is measured in five-point Likert Scale namely, extremely, moderately, somewhat, slightly and not at all aware about the practices.

According to the awareness level on Green Policies, Green Financing, Internet and Mobile Banking, there is no difference in the mean score of selected banks. Consequently, the result 'p' values are greater than 0.05 at 5% level of significance. Since the result said to be insignificant, there is no evidence to reject the proposed null hypothesis.

Moreover, in the opinion of sample respondents, they have different level of awareness on Green/Digital Innovation introduced by the selected banks. The customers from SBI have extreme level (4.54) of awareness on Green/Digital Innovation, which are fully adopted by the bank. On the contrary, all other respondents from various banks have somewhat or slightly aware about the digital practices. Therefore, the 'F' statistic is statistically significant at 1% level of significance with 'p' value of 0.000. Since the mean difference is significant, the null hypothesis is rejected.

Table 5.18

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Green/Digital Innovation	SBI	Canara	1.7805*	.000
		PNB	1.6611*	.000
		Federal	1.8055*	.000
		SIB	1.7666*	.000
		IDBI	1.7083*	.000
		HDFC	1.6194*	.000
		ICICI	1.7555*	.000
		AXIS	1.7361*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

In order to make pair-wise comparison of factor variables, Tukey HSD Post-hoc test is applied. Here sample banks are the factor variables taken for the measurement of awareness level of Environmentally Sustainable Banking Practices. Table 5.18 explains that the awareness level of respondents from SBI are significantly differ from the respondents of other banks. The mean differences are significant at 1% level of significance level with 'p' values of 0.000.

5.7.3.3 Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to Mode of visit in banks

The mode of visit in the branch of the banks is taken as another factor variable of Banking Profile. This factor is considered as important one for the measurement of awareness level. Moreover, Most of the Green Innovation Techniques are placed in the branches of banks. Consequently, the frequent visitors of the bank may have good knowledge about the same. In order to compare the awareness level on mode of visit in banks, Levene's test of Homogeneity of Variance, Descriptive Statistics, One-way ANOVA and Tukey HSD post hoc-test for Multiple Comparison are used. The hypothesis formulated and tested for the analysis is,

H0: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices with regard to Mode of visit in banks.

H1: There is significant difference in the awareness level of Environmentally Sustainable Banking Practices with regard to Mode of visit in banks.

Table 5.19

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	2.307	.065
Green Financing	1.648	.161
Green/Digital Innovation	1.622	.168
Internet Banking	0.657	.622
Mobile Banking	1.102	.355

Source: Primary Data

The similarity of the variances of each group of variables is computed with the help of Levene's test of Homogeneity of Variance. Here the values of Levene's statistics are insignificant at 5% level of significance. Accordingly, the sample groups are said to be homogeneous and One-way ANOVA is fit for the comparison of mean.

Table 5.20

Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to the Mode of visit in banks

Dimensions	Mode of visit in banks					F value	Sig. value
	Weekly	Monthly	Quarterly	Half year	Yearly		
Green Policies	2.82 (0.90)	2.81 (0.79)	2.88 (0.71)	2.90 (0.71)	2.70 (0.82)	0.93	0.442
Green Financing	3.73 (0.83)	3.41 (0.78)	3.42 (0.85)	3.46 (0.89)	3.35 (0.88)	1.06	0.374
Green/Digital Innovation	3.85 (0.53)	3.66 (0.61)	3.01 (0.59)	2.82 (0.55)	2.77 (0.50)	6.74	0.002**
Internet Banking	4.40 (0.39)	4.31 (0.52)	4.24 (0.49)	4.35 (0.45)	4.19 (0.53)	1.80	0.127
Mobile Banking	4.31 (0.38)	4.28 (0.52)	4.21 (0.52)	4.32 (0.47)	4.10 (0.53)	2.33	0.055

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 5.20 elucidates the result of mean comparison on awareness level of Environmentally Sustainable Banking Practices with respect to Mode of visit in banks. The values of descriptive statistics explains that there is no difference in the

mean score of awareness level on Green Policies, Green Financing, Internet and Mobile Banking. There is same level of awareness among banking customers who are visit the bank weekly/monthly/quarterly/half yearly/yearly. It means, the details of Green Policies and Green Financing is not provided by the branch for their customers. Regarding the Digital Banking, the customers will have the access of all the services from their digital display from anywhere at any time. The similarity of mean score has checked with the help of 'f' statistics and the 'p' values are greater than 0.05. Since, the 'p' values are greater than 0.05, the null hypothesis cannot be rejected at 5% level of significance.

As far as Green/Digital Innovation is concerned, there is significant difference in the mean score of awareness level with respect to Mode of visit in banks. The respondents who visited the bank weekly/monthly have moderate level of awareness than that of others. Moreover, the value of 'f' statistics explains that there is significant difference in the mean score of awareness level on Green/Digital Innovation among the customers who differs according to the mode of visit in banks.

Table 5.21

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Mode of bank visit**	**(J) Mode of bank visit**	**Mean Difference (I-J)**	**Sig.**
Green/Digital Innovation	Weekly	Quarterly	-.14056*	.000
		Half yearly	-.16143*	.000
		Yearly	-.17042*	.000
	Monthly	Quarterly	-.14056*	.000
		Half yearly	-.18422*	.000
		Yearly	-.11012*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

If there is significant difference, the pair-wise comparison of categorical variables is necessary. Hence, Tukey HSD post-hoc test is applied to identify the multiple comparison of mean score. According to the mean difference shown in the table, weekly and monthly visit banking customers are more aware about Green/ Digital Innovation followed by the banks. Other three groups are somewhat or slightly

aware about the same. Here the extracted mean differences are statistically significant at 1% level of significance with 'p' values of less 0.01.

5.7.3.4 Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to the Preference of banking services

Digital Banking is the mile stone step taken by the banks for the ease of access of products and services. Here the sample respondents are categorized according to their preference of using Digital Banking and Branch Banking. Most of the respondents prefer Digital Banking access for their banking transactions. But some of them have preferred to use Digital Banking as well as Branch Banking. Consequently, there is a need to check the level of awareness among customers towards Preference of Banking services. Independent Sample 't' test is employed to check the mean difference between variables. Following is the hypothesis designed for the study.

H0: ***There is no significant difference in the level of awareness on Environmentally Sustainable Practices with regard to Preference of Banking services.***

H1: ***There is significant difference in the level of awareness on Environmentally Sustainable Practices with regard to Preference of Banking services.***

Table 5.22

Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to the Preference of banking services

Dimensions	Preference of banking services		t value	Sig. value
	Digital Banking Only	Digital Banking & Branch Banking		
Green Policies	2.80 (0.78)	2.85 (0.75)	0.58	0.562
Green Financing	3.43 (0.86)	3.44 (0.86)	0.05	0.960
Green/Digital Innovation	2.95 (0.67)	2.87 (0.55)	1.34	0.164
Internet Banking	4.30 (0.51)	4.27 (0.48)	0.63	0.547
Mobile Banking	4.27 (0.56)	4.21 (0.46)	1.13	0.258

Source: Primary Data
Figures in parentheses represent Standard Deviation

From the above table it is clear that the banking customers who use Digital Banking and Branch Banking have same level of awareness on all the dimensions of Environmentally Sustainable Banking Practices. The result of Independent Sample 't' test shows the insignificant 't' values with the 'p' values of greater than 0.05 at 5% level of significance. Since the 'p' values are insignificant, the null hypothesis cannot be rejected and there is no significant difference in the mean score of level of awareness on Environmentally Sustainable Banking Practices.

5.7.3.5 Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to Experience in use of Digital Banking

The level of awareness on Environmentally Sustainable Banking Practices will be different among experienced and unexperienced Digital Banking users. Hence, the comparison of them according to the respective variable is necessary. Here, Levene's test of Homogeneity of Variance, One-way ANOVA, Tukey HSD post-test for Multiple Comparison is used to identify the mean difference in awareness level between experienced and unexperienced users. The hypothesis formulated for the test is presented below,

H0: There is no significant difference in the level of awareness level on Environmentally Sustainable Banking Practices with regard to Experience in use of Digital Banking.

H1: There is significant difference in the level of awareness level on Environmentally Sustainable Banking Practices with regard to Experience in use of Digital Banking.

Table 5.23

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Green Policies	2.464	.067
Green Financing	1.850	.159
Green/Digital Innovation	1.905	.150
Internet Banking	2.169	.116
Mobile Banking	2.494	.084

Source: Primary Data

A requirement for the ANOVA test is that the variances of each comparison groups are equal. It is tested by using Levene's statistics and based on comparison of means, the insignificant test values display that there is homogeneity of variances among sample groups. Consequently, the resulted test is ANOVA.

Table 5.24

Comparison of awareness level of Environmentally Sustainable Banking Practices with regard to Experience in the use of Digital Banking

Dimensions	Experience of Digital Banking usage			F value	Sig. value
	Less than 1 year	1-3 years	More than 3 years		
Green Policies	2.67 (0.81)	2.89 (0.69)	2.87 (0.80)	3.00	0.056
Green Financing	3.58 (0.81)	3.44 (0.83)	3.33 (0.91)	2.23	0.108
Green/Digital Innovation	2.85 (0.57)	2.94 (0.65)	2.89 (0.56)	0.71	0.490
Internet Banking	4.18 (0.44)	4.24 (0.53)	4.47 (0.44)	11.95	0.000**
Mobile Banking	4.09 (0.45)	4.23 (0.56)	4.37 (0.43)	8.68	0.000**

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 5.24 demonstrates the result of One-way ANOVA for testing mean comparison of awareness level of Environmentally Sustainable Banking Practices according to Experience in the use of Digital Banking. The customers who have used Digital Banking Products and services from more than three years are considered as experienced users and others are classified as inexperienced users. The descriptive statistics of level of awareness on Green Policies, Green Financing and Green/Digital Innovation reveals almost the same mean values. Hence, there is no significant difference ('p' values of greater than 0.05) in the awareness level of banking customers towards the above specified dimensions.

Besides the above-mentioned dimensions, the level of awareness on Internet and Mobile Banking services between experienced and inexperienced users is different. The experienced users are extremely aware about Internet & Mobile Banking services than that of inexperienced users. So, the 'f' values of 11.95 and 8.68

are statistically significant with 'p' value of 0.000 at 1% level of significance. Since the 'p' value is less than 0.01, the null hypothesis is rejected and there is significant difference in the awareness level on Internet and Banking products & services.

Table 5.25

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Experience of DB usage**	**(J) Experience of DB usage**	**Mean Difference (I-J)**	**Sig.**
Internet Banking	More than 3 years	Less than 1 year	.28796*	.000
		1-3 year	.22565*	.000
Mobile Banking	More than 3 years	Less than 1 year	.27773*	.000
		1-3 year	.13666*	.048
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

A post hoc test is conducted after significant 'f' test in order to identify where the significant difference lies among the treatments. However, post-hoc test indicates that in the case of awareness level on Internet and Mobile Banking, the means of Less than 1 year and 1–3-year groups (inexperienced users) didn't differ significantly ('p' value > 0.05) but both differed significantly ('p' value < 0.01) from the mean of the More than 3 years group (experienced users). This suggests that the experienced users have extreme level of awareness about Digital Banking transactions.

The above table exhibits the result of mean, standard deviation, 'f' values and 'p' values of One-way ANOVA test. The descriptive statistics itself explains that there is no mean difference in the level of awareness level according to the Sources of Information on Digital Banking. Additionally, the 'f' statistic represents the statistical explanation for the insignificant mean difference of variables. Since the 'p' values are greater than 0.05, the null hypothesis cannot be rejected and there is no significant difference in the level of awareness on Green/Digital Innovation, Internet and Mobile Banking services.

5.7.4 Acceptance and Satisfaction Level of Digital Banking Practices

Table 5.26

Discussion on level of Acceptance and Satisfaction of Digital Banking

Variables	Mean	SD
Perceived Ease of Use		
Learning before operating transaction is easy for me	4.52	0.52
Using digital banking doesn't require lot of mental effort	4.02	0.69
Communication with internet banking site and help desk is clear and understandable	4.37	0.51
My PC proficiency is helpful for conducting transactions	4.37	0.52
It is simple to change user id and password when security issues	4.42	0.53
Perceived Usefulness		
Electronic banking enables greater management and control over my finance	4.46	0.51
Using a system saves time, money & effort and it would increase the efficiency of my daily task	4.45	0.51
Online banking increases the choice of selecting alternative opportunities of banking facilities	4.45	0.49
It improves my capability of convey ideas to peer groups about digital banking options and offers	4.44	0.51
The digitization allows me effective language skill probably needed for the confirmation of transactions	4.45	0.50
Perceived Risk		
I am worried about poor maintenance and low internet connection of website	2.28	1.00
I am afraid to seek help from bank's officials when there is any fault or failure in running transactions	2.27	1.05
I am suspicious about reliability and authenticity of online applications (app)	2.30	1.00
I am not sure about interruption of third parties hacking	3.60	0.94
When a transaction error occurs, I feel anxiety regarding whether to get compensated or not	3.76	0.87
Attitude towards usage		
I feel digital banking is a feasible way of managing my banking activities	4.43	0.54
It is an enlightened idea about transforming traditional way of banking to modern	4.43	0.53
I have pleasant experience and comfortable feeling while using electronic banking	4.42	0.50
I feel self-sustain in transaction-based decision making of banking	4.44	0.51
I will expand my channel of activities of banking through digitalization	4.41	0.52

Variables	Mean	SD
Behavioral Intention to Use		
I presently intend to use digitalized technology for my regular task	4.54	0.49
I believe electronic banking is worthwhile for me conducting banking needs	4.35	0.48
I plan to use SMART banking activities very often in future	4.42	0.49
I have no reluctance while accepting technological transformation	4.42	0.49
I will strongly recommend others to practice electronic banking facilities	4.46	0.49
Actual Use		
Period of use of e-banking enhances me greater productivity over banking activities	4.42	0.52
The usage of new technology can accomplish my banking needs without visiting branches	4.42	0.51
I found that various functions of e-banking are well integrated on website	4.45	0.52
User-friendliness of website attracts me to improve my access and usage	4.34	0.51
I would imagine that diversification and popularization of e-banking will drive out branch banking	4.42	0.53
User Satisfaction		
Up to date information on bank's website	4.41	0.53
Performance of promised quality services	4.38	0.50
Skill and knowledge of help desk for customer care	4.38	0.57
Detailed guidelines for precautions to convey trust and security	4.36	0.59
Maintenance of error-free transaction records	3.54	0.66
Vigilant about the errors they made and provides compensation for it	3.46	0.69
Quick confirmation of the transactions	4.41	0.53
Paperless features of sustainable banking practice	4.51	0.52

Source: Primary Data

Table 5.26 discusses about the Acceptance and Satisfaction of Digital banking practices. Here the Innovated Technology Acceptance Model (TAM) is used to measure the acceptance of Digital Innovation. Consequently, Service Awareness (SA), Subjective Norms (SN), Self-efficacy (SE), System Quality (SQ), Schemes Availability (SAv), Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Perceived Risk (PR) are taken as input variables. On the other hand, Attitude towards Usage (ATU), Behavioral Intention to use (BI), Actual use (AU) and User Satisfaction (US) are considered as the output variables. Here, PEOU, PU, PR, ATU, BI, AU and

US are the variables used for the comparative analysis of Acceptance and Satisfaction among Demographic, Banking and Digital Profile.

According to Perceived Ease of Use (PEOU) digital banking users are opined that 'Learning before operating transaction is easy' (4.42) and 'simple to change user ID and password when security issues' (4.42) are the main variables contributed for the construct. With respect to Perceived Usefulness (PU), digital banking users have good opinion on all the variables taken for the measurement. In detail, 'e-banking enables to manage and control their finance' (4.46) is considered as the important statement of usefulness. As regards the Perceived Risk (PR), 'when a transaction error occurs, I feel anxiety regarding whether to get compensated or not' (3.76) and 'I am not sure about interruption of third parties hacking' (3.60) are the two main risks identified by the digital banking users. But 'worry about poor maintenance and low internet connection of website' (2.28) is considered as the least ranking risk.

As stated in the Attitude towards usage, the users have good perception on digital banking as the way of management and control of transaction (4.43), modern look for the consumers (4.43), pleasant and comfortable experience (4.42), self-sustain activity (4.44) and channel of digitalization (4.41). In the case of Behavioral Intention to Use, the digital banking consumers perceived that technology acceptance for their regular task (4.54) and strong recommendation for the next targeted groups (4.46) are the strongly recommended intentions. The descriptive statistics of Actual Use disclosed that well integrated e-banking website (4.45), usage of new technology (4.42), greater productive usage (4.42), diversification and popularization of technology (4.42) are the strongly marked indicators of actual use. Finally, the digital banking users are highly satisfied on paperless sustainable banking practices (4.51), up to date information of bank's website (4.41) and quick confirmation of the transactions (4.41).

5.7.4.1 Comparison of Acceptance and Satisfaction level of Digital Banking according to Demographic Profile

After the discussion of Digital Banking Acceptance and Satisfaction, this section deals with the comparative analysis of these dimensions among Demographic Profile. For this purpose, Gender, Age, Educational Qualification and Occupational Status are taken as the factor variables. Furthermore, Independent Sample 't' test,

Levene's test of homogeneity of Variance, One-way ANOVA and Tukey HSD post-hoc test for Multiple Comparison is considered as the important statistical techniques for the comparative analysis.

5.7.4.1.1 Gender wise comparison of Level of Acceptance on Digital Banking

First of all, gender wise analysis is made with the help of Independent Sample 't' test. Hence, Perceived Ease of Use, Perceived Usefulness, Perceived Risk, Attitude towards usage, Behavioral Intention to use, Actual use and User satisfaction are taken as dependent variables. Following is the hypothesis composed for the analysis;

H0: ***There is no significant difference in the awareness level of Digital Banking Acceptance according to the gender of customers.***

H1: ***There is significant difference in the awareness level of Digital Banking Acceptance according to the gender of customers.***

Table 5.27

Gender wise comparison of Level of Acceptance on Digital Banking

Dimensions	Gender		t value	Sig. value
	Male	Female		
Perceived Ease of Use	4.36 (0.33)	4.28 (0.30)	2.48	0.013*
Perceived Usefulness	4.45 (0.33)	4.45 (0.30)	0.04	0.997
Perceived Risk	2.84 (0.52)	2.84 (0.52)	.082	0.935
Attitude towards Usage	4.44 (0.31)	4.41 (0.29)	1.13	0.256
Behavioral Intention to use	4.45 (0.32)	4.34 (0.28)	0.56	0.574
Actual use	4.34 (0.33)	4.39 (0.27)	1.30	0.194
User Satisfaction	4.16 (0.31)	4.19 (0.26)	1.01	0.312

Source: Primary Data
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Table 5.27 explains the result of Independent Sample 't' test for the comparison of mean score of Digital Banking Acceptance between gender of the respondents. As regards the Perceived Ease of Use, there is significant difference in the mean score of Acceptance level between male and female. In detail, the 't' value of 2.48 is significant at 5% level of significance with 'p' value of 0.013. Since, the 'p' value is less than 0.05, the null hypothesis is rejected and there is significant difference in the level of perceived ease of use between male and female.

On the contrary, the Digital Banking Acceptance on Perceived Usefulness (PU), Perceived Risk (PR), Attitude towards usage (ATU), Behavioral Intention to use (BI), Actual use (AU) and User satisfaction (US) have almost the same mean score for male and female. Moreover, the 't' values are insignificant at 5% level of significance with 'p' values of greater than 0.05. Since the 'p' values are greater than 0.05, the null hypothesis cannot be rejected and there is no significant difference in the mean score of above-mentioned variables between male and female respondents.

5.7.4.1.2 Age wise comparison of Level of Acceptance on Digital Banking

The next category of demographic profile is age of the respondents. The comparative analysis of Digital Banking Acceptance among age groups is made with the help of Levene's test of Homogeneity of Variance, Descriptive Statistics, One-way ANOVA and Tukey HSD post-hoc test for Multiple Comparison. The hypothesis framed for the test of presented below,

H0: There is no significant difference in the awareness level on Digital Banking Acceptance according to the age group of customers.

H1: There is significant difference in the awareness level on Digital Banking Acceptance according to the age group of customers.

Table 5.28

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	.299	.826
Perceived Usefulness	1.033	.378
Perceived Risk	1.441	.230
Attitude towards usage	1.043	.373
Behavioral Intention to use	.610	.609
Actual Use	1.257	.289
User Satisfaction	.402	.751

Source: Primary Data

The Levene's statistic is based on the comparison of Arithmetic Mean for the requirement of homogeneity of variance among sample groups. The null hypothesis is assumed for the test statistic is, the population variances are equal/ homogeneity of

variance. Since, the 'p' values of Levene's statistic are greater than 0.05, the null hypothesis is accepted at 5% level of significance and the assumption of homogeneity of variance is proved. Hence, the requirement has met, One-way ANOVA is considered as the suitable statistical test for the comparison of mean score.

Table 5.29

Age wise comparison of Level of Acceptance on Digital Banking

Dimensions	Age Groups				F value	Sig. value
	Below 25	25-40	41-55	Above 55		
Perceived Ease of Use	4.40 (0.31)	4.56 (0.27)	4.35 (0.31)	4.28 (0.32)	2.96	0.032*
Perceived Usefulness	4.50 (0.31)	4.44 (0.32)	4.47 (0.29)	4.37 (0.33)	1.69	0.167
Perceived Risk	2.85 (0.46)	2.87 (0.50)	2.80 (0.57)	2.83 (0.58)	0.42	0.738
Attitude towards usage	4.44 (0.28)	4.41 (0.30)	4.45 (0.30)	4.39 (0.34)	0.68	0.561
Behavioral Intention to use	4.46 (0.29)	4.44 (0.31)	4.46 (0.30)	4.35 (0.31)	1.71	0.164
Actual use	4.42 (0.27)	4.78 (0.21)	4.47 (0.29)	4.35 (0.31)	3.00	0.030*
User Satisfaction	4.25 (0.28)	4.16 (0.29)	4.18 (0.29)	4.16 (0.27)	1.83	0.140

Source: Primary Data
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Asper the above table, the result of One-way ANOVA is used to examine the mean differences according to age groups of the sample respondents with respect to the level of Digital Banking Acceptance. Here, the comparison is done with the help of descriptive statistics. In detail, the Perceived Ease of Use and Actual Use shows significant mean difference in the age group of 25-40 (4.56 and 4.78 respectively) from other three categories. Consequently, the 'f' values of 2.96 and 3.00 are significant at 5% level of significance with 'p' values of 0.032 and 0.030. Since the significance values are less than 0.05, the null hypothesis is rejected and there is significant mean difference among age groups with regard to the Perceived Ease of Use and Actual Use.

But with respect to the perception of Usefulness, Risk, Attitude, Behavioral Intention and Satisfaction, the mean scores are almost similar in accordance with the age groups selected. Accordingly, the result of One-way ANOVA exhibits that the 'f' values are insignificant at 5% level of significance with 'p' values are greater than 0.05. So, there is no significant difference in the mean score of above specified variables according to age group of the respondents.

Table 5.30

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Age groups**	**(J) Age groups**	**Mean Difference (I-J)**	**Sig.**
Perceived Ease of Use	Above 55	25-40	-.22061*	.031
Actual Use	Above 55	25-40	-.36123*	.012
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Table 5.30 illustrates the pair-wise comparison of age groups to measure the Perception on Ease of Use and Actual Use. From the table it is clear that the mean difference of Perceived Ease of Use is statistically significant at 5% level of significance ('sig' value=0.031). Moreover, the respondents from the age category of Above 55 have different opinion on ease of use than others have. Similarly, the mean score given by this group of respondents has significantly ('p'=0.012) differ from other categories with respect to perception on actual use of DB practices.

5.7.4.1.3 Education wise comparison of Level of Acceptance on Digital Banking

The acceptance level of Digital banking practices may/may not be different according to their educational status. Subsequently, there is a need to check the perception regarding easiness, usefulness, risk, attitude, intention, usage and satisfaction among respondents who have different educational status. Hence, to discuss and compare the mean difference between dependent and factor variables, Descriptive Statistics, One-way ANOVA and Tukey HSD Post-hoc test is employed. The proposed hypothesis for the test is presented below,

H0: There is no significant difference in the awareness level of Digital Banking Acceptance according to the educational qualification of customers.

H1: There is significant difference in the awareness level of Digital Banking Acceptance according to the educational qualification of customers.

Table 5.31

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	1.905	.128
Perceived Usefulness	0.705	.550
Perceived Risk	0.411	.745
Attitude towards usage	1.572	.196
Behavioral Intention to use	0.486	.692
Actual Use	0.013	.998
User Satisfaction	2.174	.091

Source: Primary Data

Table 5.31 enables to check the homogeneity assumption of test statistic. The Levene's statistic explains that the significance values are greater than 0.05 and the variances are not significantly different, so equal variances are assumed. Since, the assumption of One-way ANOVA is proved and it can be used to compare the mean differences.

Table 5.32

Education wise comparison of Level of Acceptance on Digital Banking

Dimensions	Educational Qualification				F value	Sig. value
	Secondary	Technical	Graduate	Higher		
Perceived Ease of Use	4.22 (0.35)	4.46 (0.36)	4.31 (0.33)	4.31 (0.29)	3.09	0.027*
Perceived Usefulness	4.51 (0.31)	4.54 (0.33)	4.40 (0.32)	4.46 (0.30)	2.45	0.063
Perceived Risk	2.92 (0.46)	2.81 (0.55)	2.86 (0.52)	2.82 (0.53)	0.35	0.784
Attitude towards usage	4.29 (0.28)	4.54 (0.27)	4.50 (0.36)	4.42 (0.31)	2.89	0.035*
Behavioral Intention to use	4.49 (0.33)	4.44 (0.34)	4.43 (0.30)	4.44 (0.30)	0.22	0.879
Actual use	4.47 (0.29)	4.50 (0.28)	4.38 (0.29)	4.41 (0.30)	2.07	0.103
User Satisfaction	4.15 (0.29)	4.39 (0.22)	4.25 (0.26)	4.28 (0.29)	2.89	0.035*

Source: Primary Data
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Table 5.32 elucidates that with respect to Perceived Ease of use ('f'= 3.09, 'p'= 0.027), Attitude towards usage ('f'= 2.89, 'p'= 0.035) and User Satisfaction ('f'= 2.89, 'p'= 0.035), the mean scores are different according to Educational Status of the respondents. In detail, technical, graduate and higher-level qualified respondents are given high mean score for the variables namely, PEOU, ATU and US. But the respondents who have only secondary level qualification have given low mean score for the same variables specified above. Hence, the difference in their opinion is checked with the help of significant 'F' statistic.

However, the descriptive statistics of Perceived Usefulness ('f'= 2.45, 'p'= 0.063), Perceived Risk ('f'= 0.35, 'p'= 0.784), Behavioral Intention to use ('f'= 0.22, 'p'= 0.879) and Actual Use ('f'= 2.07, 'p'= 0.103) exhibits that there is no significant difference in the mean score of level of Digital Banking Acceptance according to educational qualification of respondents. Since the mean scores are almost similar, the test statistics are insignificant at 5% level of significance. And it can be concluded that there is no significant difference in the level of digital banking acceptance among internet and mobile banking users with respect to their education status.

Table 5.33

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Educational Qualification**	**(J) Educational Qualification**	**Mean Difference (I-J)**	**Sig.**
Perceived Ease of Use	Secondary Level	Technical Level	-.23143*	.038
Attitude towards Usage	Secondary Level	Technical Level	-.16892*	.036
User Satisfaction	Secondary Level	Technical Level	-.14780*	.032
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Rejecting the H0 indicates that at least one significant difference exists between the mean score of factor variables. Here with respect to Perceived Ease of Use (0.038), Attitude towards Usage (0.036) and User Satisfaction (0.032), the opinion of the secondary level educated respondents are significantly differ from technically qualified respondents. It means, these two groups have significant mean differences for the same continuous variables.

5.7.4.1.4 Occupation wise comparison of Level of Acceptance of Digital Banking

The next category of demographic profile taken for the analysis is occupational status of the digital banking users. It is categorized as, Student, Govt. Employee, Pvt. Employee, Business, Professionals and Farmers/ Self-employed. Furthermore, Ease of Use, Usefulness, Risk, Attitude, Intention, Usage and Satisfaction are the dependent variables taken to estimate the Digital Banking Acceptance. In addition, Descriptive statistics, One-way ANOVA and Tukey HSD post-hoc test is used to compare the mean scores derived from the analysis. The hypothesis applied for the analysis is given below,

H0: There is no significant difference in the awareness level of Digital Banking Acceptance according to the occupational status of customers.

H1: There is significant difference in the awareness level of Digital Banking Acceptance according to the occupational status of customers.

Table 5.34

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	1.617	.123
Perceived Usefulness	1.398	.224
Perceived Risk	.664	.651
Attitude towards usage	1.346	.216
Behavioral Intention to use	1.886	.089
Actual Use	1.570	.167
User Satisfaction	1.283	.112

Source: Primary Data

Equality of Variances is the important assumption of One-way Analysis of Variance. To prove the assumption, Levene's statistic of Homogeneity of Variance is considered as the powerful statistical test. The null hypothesis for Levene's test is that the compared groups have equal population variances. Since the 'p' values are greater than 0.05, the null hypothesis cannot be rejected at 5% level of significance and hence there is homogeneity of variance among samples groups are selected. Since the result

is insignificant, One-way ANOVA can be used to measure the variations of different levels of factor variables.

Table 5.35

Occupation wise comparison of Level of Acceptance on Digital Banking

Dimensions	Occupation Status						F value	Sig. value
	Student	Business	Govt. Employee	Pvt. Employee	Professionals	Farmer/Self Employed		
Perceived Ease of Use	4.30 (0.28)	4.36 (0.33)	4.32 (0.30)	4.31 (0.33)	4.34 (0.31)	4.35 (0.47)	0.29	0.919
Perceived Usefulness	4.44 (0.33)	4.40 (0.28)	4.45 (0.30)	4.46 (0.31)	4.45 (0.30)	4.54 (0.37)	0.59	0.705
Perceived Risk	2.85 (0.55)	2.81 (0.52)	2.83 (0.45)	2.86 (0.53)	2.78 (0.53)	2.97 (0.52)	0.51	0.764
Attitude towards usage	4.44 (0.30)	4.42 (0.29)	4.43 (0.28)	4.48 (0.41)	4.47 (0.28)	4.37 (0.31)	1.19	0.310
Behavioral Intention	4.43 (0.29)	4.43 (0.25)	4.94 (0.31)	4.40 (0.31)	4.44 (0.25)	4.34 (0.35)	1.12	0.345
Actual use	4.43 (0.28)	4.41 (0.25)	4.44 (0.32)	4.35 (0.31)	4.55 (0.35)	4.41 (0.27)	2.00	0.077
User Satisfaction	4.17 (0.29)	4.22 (0.25)	4.24 (0.22)	4.18 (0.29)	4.14 (0.28)	4.13 (0.38)	0.97	0.432

Source: Primary Data
Figures in parentheses represent Standard Deviation

Table 5.35 reveals the result of One-way ANOVA used for the comparison of level of digital banking acceptance and occupational status of the respondents. From the descriptive statistics, it is clearly seen that the mean scores of all dependent variables are almost same for different level of occupational status. It means, the insignificant test statistic of One-way ANOVA for Ease of Use ('f'= 0.29, 'p'= 0.919), Usefulness ('f'= 0.59, 'p'= 0.705), Risk ('f'= 0.51, 'p'= 0.764), Attitude ('f'= 1.19, 'p'= 0.310), Intention ('f'=1.12, 'p'= 0.345), Usage ('f'= 2.00, 'p'= 0.077) and Satisfaction ('f'= 0.97, 'p'= 0.432) discloses that there is no significant difference in the Digital Banking Acceptance level among Internet and Mobile Banking users with respect to their occupation status. It can be concluded that the occupation status is not considered as the factor variable of Digital Banking Acceptance of sample respondents.

5.7.4.2 Comparison of Acceptance and Satisfaction level according to Digital Banking Details

In the previous section, the discussion and comparison about the level of Digital Banking Acceptance according to demographic profile of the respondents is made. In addition, there is a need to compare the level of Acceptance and Satisfaction with respect to Digital Banking details of the respondents. Thus, sectors of the bank, type of bank, mode of visit in branch, preference of banking services, experience in the use of digital banking sources (download) of banking application, devices used for e-banking access, sources of information on digital banking and post-procedure of every transaction are the variables taken for the analysis of banking profile. Similarly, Mathematical and Statistical tools like Mean, SD, Levene's test, One-way ANOVA and Tukey HSD post-hoc test is applied to exhibit the results.

5.7.4.2.1 Sector wise comparison of Level of Acceptance on Digital Banking

The level of adoption of digital banking practices is almost same for every banking sector considered for the study. Hence, there is a need to check the parameter-wise comparison of digital banking acceptance of the banking sector. Thus, Ease of Use, Usefulness, Risk, Attitude, Intention, Usage and Satisfaction are the parameters considered for the analysis. The hypothesis proposed for the analysis is,

H0: There is no significant difference in the level of Perception on Digital Banking Acceptance according to the banking sector.

H1: There is significant difference in the level of Perception on Digital Banking Acceptance according to the banking sector.

Table 5.36

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	1.533	.217
Perceived Usefulness	1.868	.157
Perceived Risk	.846	.561
Attitude towards usage	1.632	.143
Behavioral Intention to use	1.808	.165
Actual Use	2.478	.085
User Satisfaction	.711	.492

Source: Primary Data

Table 5.36 displays the test result of Levene's test of Homogeneity of Variance for the dimensions of digital banking acceptance. The result implies that the 'p' values are greater than 0.05 and null hypothesis is rejected at 5% level of significance. Hence, the homogeneity assumption of One-way ANOVA has proved and the analysis has presented below.

Table 5.37

Sector wise comparison of Level of Acceptance on Digital Banking

Dimensions	Sectors			F value	Sig. value
	Public	Old Generation	New Generation		
Perceived Ease of Use	4.32 (0.31)	4.32 (0.34)	4.32 (0.30)	0.01	0.982
Perceived Usefulness	4.44 (0.30)	4.48 (0.34)	4.34 (0.29)	0.76	0.466
Perceived Risk	2.96 (0.54)	2.41 (0.31)	2.40 (0.32)	6.51	0.002**
Attitude towards usage	4.42 (0.28)	4.42 (0.34)	4.43 (0.29)	0.04	0.956
Behavioral Intention to use	4.44 (0.29)	4.41 (0.33)	4.46 (0.29)	0.72	0.485
Actual use	4.42 (0.29)	4.43 (0.32)	4.39 (0.28)	0.58	0.556
User Satisfaction	4.20 (0.31)	4.17 (0.26)	4.17 (0.29)	0.38	0.683

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

From the above table it can be seen that the mean score of Perceived Risk varies according to different sectors of the bank. The mean score of Public, Old Generation and New Generation Banks are 2.96, 2.41 and 2.40 respectively. It means, the respondents of Public Sector banks are facing more risk and difficulties than that of other Digital Banking users. Test statistic of 6.51 ('p' value = 0.002) explains the significant mean difference in the perception of risk and difficulties.

On the other hand, the perception level of all other dimensions of digital banking acceptance has the same level of mean score and standard deviation. Hence, the test statistics of all the dimensions are insignificant at 5% level of significance with 'p' values of greater than 0.05. Since the 'p' values are insignificant, the null hypothesis cannot be rejected and there is no significance difference in the acceptance level of digital banking practices (except perceived risk) among sectors of the sample banks.

Table 5.38

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Sector**	**(J) Sector**	**Mean Difference (I-J)**	**Sig.**
Perceived Risk	Public Sector	Old Generation	-.22815*	.001
		New Generation	-.23724*	.001
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

As there is significant mean difference in the level of digital banking acceptance among banking sectors, a post-hoc test has to be carried out to check whether there is any pair-wise difference between them. However, Tukey HSD post-hoc test for Multiple Comparison is used to compare all possible pairs of means and it is based on as standardized range distribution. Here, in the case of Perceived Risk of Digital banking, public sector banks are significantly differed from Old Generation (0.001) and New Generation Banks (0.001)

5.7.4.2.2 Bank wise comparison of Level of Acceptance on Digital Banking

This part of analysis is carried out to compare the level of digital banking acceptance among sample banks selected for the study. To know the acceptance level, Innovated Technology Acceptance Model is used with scale type statements in five-point Lickert Scale. Mean and Standard deviations are used to describe the level of Digital Banking Acceptance. Moreover, Levene's test of Homogeneity of Variance, One-way ANOVA and Tukey HSD Post-hoc test is used to compare the mean score of variables. The hypothesis designed for the respective analysis has given.

H0: There is no significant difference in the level of perception on Digital Banking Acceptance according to sample banks.

H1: There is significant difference in the level of perception on Digital Banking Acceptance according to sample banks.

Analysis with respect to the above hypothesis is presented below. Table 5.39 and 5.40 deals with the homogeneity assumption and test result of One-way ANOVA. Additionally, pair-wise comparison of selected groups are explained in Table 5.41.

Table 5.39

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	1.533	.217
Perceived Usefulness	1.868	.157
Perceived Risk	.846	.561
Attitude towards usage	1.632	.143
Behavioral Intention to use	1.808	.165
Actual Use	2.478	.085
User Satisfaction	.711	.492

Source: Primary Data

Levene's test of Homogeneity of Variance is used to measure the changeability of group samples. Equality among group means is the basic assumption of One-way ANOVA; therefore, it has to be proved before running the analysis. Thus, the above table is prepared to carry out the test result of homogeneity assumption. Since the 'sig' values of all the dimensions are greater than 0.05, the Levene's statistics are insignificant at 5% level of significance. So, it can be found that the basic assumption of Homogeneity of Variance has proved and One-way ANOVA is selected as the best statistical test for the comparison of mean score. The result has presented below.

Table 5.40

Bank wise comparison of Acceptance level of Digital Banking

Banks	Dimensions						
	PEOU	PU	PR	ATU	BIU	AU	US
SBI	4.26 (0.32)	4.36 (0.28)	3.51 (0.49)	4.31 (0.26)	4.40 (0.28)	4.40 (0.30)	4.22 (0.28)
Canara	4.38 (0.32)	4.50 (0.31)	2.95 (0.44)	4.52 (0.25)	4.46 (0.32)	4.46 (0.27)	4.19 (0.29)
PNB	4.33 (0.28)	4.46 (0.31)	2.91 (0.63)	4.44 (0.28)	4.47 (0.29)	4.40 (0.31)	4.18 (0.35)
Federal	4.33 (0.36)	4.56 (0.31)	2.72 (0.37)	4.36 (0.36)	4.44 (0.33)	4.47 (0.34)	4.20 (0.25)
SIB	4.29 (0.35)	4.46 (0.36)	2.74 (0.51)	3.44 (0.35)	4.38 (0.36)	4.39 (0.30)	4.10 (0.25)
IDBI	4.33 (0.32)	4.41 (0.33)	2.82 (0.58)	4.47 (0.31)	4.43 (0.30)	4.42 (0.29)	4.21 (0.28)
HDFC	4.31 (0.28)	4.45 (0.29)	2.86 (0.52)	4.44 (0.27)	4.51 (0.29)	4.39 (0.30)	4.18 (0.31)

Banks	Dimensions						
	PEOU	**PU**	**PR**	**ATU**	**BIU**	**AU**	**US**
ICICI	4.29 (0.32)	4.44 (0.31)	2.84 (0.48)	4.40 (0.32)	4.43 (0.33)	4.42 (0.29)	4.14 (0.28)
AXIS	4.36 (0.31)	4.40 (0.29)	2.73 (0.52)	4.46 (0.26)	4.44 (0.24)	4.36 (0.24)	4.19 (0.28)
F value	0.58	1.48	**2.55**	1.80	0.66	0.59	0.70
Sig. value	0.788	0.160	**0.010***	0.075	0.720	0.781	0.687

Source: Primary Data
*Significant at 5% level of significance
Figures in parentheses represent Standard Deviation

Bank wise comparison of digital banking acceptance represents that Perceived Risk is the only variating dimension in Technology Acceptance Model. Moreover, the exact difference in perceived risk has occurred in the case of State Bank of India. All other sample banks have almost same mean scores of below 3.00. This difference in the mean score is explained with the help of One-way ANOVA and the test statistic is 2.55 with significance value of 0.010. Since the 'sig' value is less than 0.05, null hypothesis is rejected at 5% level of significance. It can be concluded that there is significance difference in the mean score of perceived risk valued by the digital banking users of sample banks.

Moving to other dimensions of the dependent variable, the mean score derived from the analysis are almost similar for all the sample banks. That means, the Digital Banking users of SBI, Canara, PNB, Federal, SIB, IDBI, HDFC, ICICI and AXIS have same opinion on Easiness, Usefulness, Attitude, Intention, Usage and Satisfaction of Internet and Mobile Banking services. Moreover, result of One-way ANOVA with the insignificant 'f' values, denotes the statistical explanation of the descriptive analysis. Since the 'p' values are greater than 0.05, null hypothesis cannot be rejected at 5% level of significance and thus there is no significance difference in the acceptance level of digital banking practices (except perceived risk) among selected sample banks.

Table 5.41

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Bank**	**(J) Bank**	**Mean Difference (I-J)**	**Sig.**
Perceived Risk	SBI	Federal	-.31111*	.011
		SIB	-.21333*	.023
		IDBI	-.17343*	.042
		HDFC	-.32444*	.009
		ICICI	-.22667*	.020
		AXIS	-.18667*	.036
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Tukey HSD post-hoc test is applied to compare the means of every treatment with the means of all other treatment for the detailed explanation of significant One-way ANOVA result. It means, it applies simultaneously to the set of all pair-wise comparisons and identifies where the difference occurs between two means. From the above table it can be found that the perceived risk is the only dependent variable having mean difference between sample banks. With respect to the opinion of the digital banking users of SBI, they feel more risk and difficulties than that of other respondents from remaining banks.

5.7.4.2.3 Comparison of Acceptance level of Digital Banking with regard to the Mode of visit in banks

After sector and bank wise comparative analysis of digital banking acceptance, the Mode of visit in branch is selected as the next category of banking profile. The sample respondents are classified on the basis of mode of visit in branch as weekly, monthly, quarterly, half yearly and yearly visitors. Then, there is a need to identify whether there is any significant difference in the level of acceptance of digital banking among sample respondents based on their visiting time in branches. Descriptive statistics, Levene's test of Homogeneity of Variance, One-way ANOVA and Tukey HSD post-hoc test have applied for the comparative analysis of dependent and factor variables. The hypothesis set up for the analysis is give below.

H0: There is no significant difference in the level of perception on Digital Banking Acceptance according to mode of visit in banks.

H1: There is significant difference in the level of perception on Digital Banking Acceptance according to mode of visit in banks.

Table 5.42

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	1.522	.195
Perceived Usefulness	1.384	.239
Perceived Risk	1.618	.169
Attitude towards usage	1.984	096
Behavioral Intention to use	1.255	.367
Actual Use	.879	.543
User Satisfaction	.943	.439

Source: Primary Data

Table 5.42 exhibits the result of homogeneity assumption of One-way ANOVA. It tests the null hypothesis of equal variances across the samples and Levene's test can be used to verify the assumption. The insignificant Levene's statistics implies that the null hypothesis is accepted at 5% level of significance. Thus, the homogeneity assumption of One-way ANOVA has proved and it can be used for the comparative analysis of mean score.

Table 5.43

Comparison of Acceptance level of Digital Banking with regard to the Mode of visit

Dimensions	Mode of visit in banks					F value	Sig. value
	Weekly	Monthly	Quarterly	Half yearly	Yearly		
Perceived Ease of Use	4.32 (0.32)	4.36 (0.30)	4.32 (0.31)	4.31 (0.35)	4.29 (0.32)	0.50	0.734
Perceived Usefulness	4.55 (0.33)	4.46 (0.33)	4.46 (0.28)	4.45 (0.31)	4.39 (0.33)	1.62	0.168
Perceived Risk	2.86 (0.48)	2.84 (0.52)	2.86 (0.48)	2.92 (0.53)	2.92 (0.53)	0.74	0.563
Attitude towards use	4.54 (0.30)	4.46 (0.32)	4.42 (0.28)	4.43 (0.32)	4.36 (0.28)	1.95	0.101
Behavioral Intention	4.42 (0.26)	4.48 (0.30)	4.43 (0.25)	4.44 (0.34)	4.46 (0.40)	0.48	0.876
Actual use	4.37 (0.25)	4.37 (0.32)	4.52 (0.32)	4.55 (0.36)	4.62 (0.29)	4.61	0.001**
User Satisfaction	4.18 (0.32)	4.26 (0.30)	4.16 (0.28)	4.17 (0.28)	4.25 (0.28)	1.65	0.161

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

The above table discloses the result of One-way ANOVA used for the comparison of mean scores of digital banking acceptance with regard to Mode of visit in branches. According to the perception of actual use of digital banking, the respondents who have visit the branches in yearly basis have different opinion than weekly and monthly visit customers. That means, the customer who regularly uses digital banking techniques is the irregular customer at the branch. Subsequently, the test statistic of 4.61 and significance value of 0.001 explains the significant mean difference in the Actual Use of Digital Banking.

In accordance with the perception of Ease of Use, Usefulness, Risk, Attitude, Intention and User Satisfaction, there is no difference in the mean scores of weekly/monthly/quarterly/half-yearly/yearly visiting customers of the sample banks. It is also verified by the insignificant test statistics and significance value of more than 0.05. Since the 'sig' values are greater than 0.05, null hypothesis cannot be rejected at 5% level of significance.

Table 5.44

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Mode of visit**	**(J) Mode of visit**	**Mean Difference (I-J)**	**Sig.**
Actual Use	Yearly	Weekly	-.24929*	.001
		Monthly	-.25110*	.001
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

Tukey HSD Post-hoc test verifies the exact significant difference in the mean value of perception on actual use of digital banking. There is significant mean difference in the perception level of yearly visiting customers and weekly/ monthly visiting customers ('p'<0.001).

5.7.4.2.4 Comparison of Acceptance level of Digital Banking with regard to the Preference of banking services

The digital banking users can be classified as, fully dependent and partly dependent on digital banking. The fully dependents are the customers who have utilized e-banking services for their financial and non-financial activities. On the other

hand, partial customers are partly dependent on branch banking for their banking needs. The basic objective of digitalization in banking sector is to reduce the branch banking concept. Here, how far the difference in perception of digital banking acceptance has occurred among these categories of respondents are studied. Therefore, Independent Sample 't' test has applied for the mean comparison between two samples. The proposed hypothesis of the analysis is presented below.

H0: ***There is no significant difference in the level of perception on Digital Banking Acceptance according to preference of banking services.***

H1: ***There is significant difference in the level of perception on Digital Banking Acceptance according to preference of banking services.***

Table 5.45

Comparison of Acceptance level of Digital Banking with regard to the Preference of banking services

Dimensions	Preference of banking services		t value	Sig. value
	Digital Banking Only	Digital Banking & Branch Banking		
Perceived Ease of Use	4.33 (0.30)	4.31 (0.33)	0.49	0.622
Perceived Usefulness	4.47 (0.31)	4.44 (0.31)	0.76	0.347
Perceived Risk	2.83 (0.49)	2.85 (0.54)	0.16	0.716
Attitude towards usage	4.42 (0.27)	4.43 (0.32)	0.16	0.870
Behavioral Intention to use	4.46 (0.29)	4.42 (0.31)	1.17	0.246
Actual use	4.41 (0.29)	4.41 (0.30)	0.23	0.814
User Satisfaction	4.54 (0.32)	4.15 (0.29)	2.54	0.006**

Source: Primary Data
**Significant at 1% level of significance
Figures in parentheses represent Standard Deviation

Table 5.45 displays the result of Independent Sample 't' test used for the comparison of mean scores extracted from the analysis. Here the preference of banking service (digital banking only and digital banking as well as branch banking)

is considered as the factor variable. From the result, it is clearly visible the exact mean difference in satisfaction level of the respondents. The mean value of 4.54 (Sd=0.32) is defined as the digital banking users have extreme level of satisfaction on digital banking acceptance. Furthermore, 't' value of 2.54 and 'p' value of 0.006 explains the significant mean difference between two categories of respondents (digital banking and branch banking users). Since the 'p' is significant, null hypothesis is rejected and there is significant difference in the satisfaction level of digital banking and branch banking users.

On the contrary, the perception on Ease of Use, Usefulness, Risk, Attitude, Intention and Usage is not significantly variated between the users of Digital Banking and Branch Banking. The descriptive statistics of the test verifies the result with insignificant 't' values and 'p' values (greater than 0.05). Since the 'p' values are greater than 0.05, null hypothesis cannot be rejected at 5% level of significance and thus there is no significant difference (except user satisfaction) in the perception level of acceptance between digital banking and branch banking users.

5.7.4.2.5 Comparison of Acceptance level of Digital Banking with regard to the Experience of Digital Banking usage

Experience in the use of digital banking may/may not determine the level of experience in that field. Hence, their perception will be different according to the experience level. In this section, the perception on digital banking acceptance is studied by considering period of Usage as factor variable. For this purpose, the respondents are categorized on the basis of their experience in using digital banking products and services. Moreover, Descriptive statistics, Levene's test of Homogeneity of Variance, One-way ANOVA, Tukey HSD post-hoc test for Multiple Comparisons are employed as statistical tools and techniques. The hypothesis formulated for the analysis is given below.

H0: ***There is no significant difference in the level of perception on Digital Banking Acceptance according to experience in the use of digital banking.***

H1: ***There is significant difference in the level of perception on Digital Banking Acceptance according to experience in the use of digital banking.***

Table 5.46

Levene's test of Homogeneity of Variance

Dimensions	Levene Statistic	Sig.
Perceived Ease of Use	.467	.627
Perceived Usefulness	1.227	.289
Perceived Risk	1.315	.270
Attitude towards usage	.939	.392
Behavioral Intention to use	.862	.423
Actual Use	.329	.720
User Satisfaction	.216	.805

Source: Primary Data

Levene's test is an inferential statistic used to compute the equality of variances of dependent variables among two or more sample groups. ANOVA test procedures assumes the variances of the populations from different sample groups are equal. Consequently, before doing the ANOVA, there is a need to check the assumption has proved or not. Thus, Levene's test is used and the insignificant test statistics are revealed the result of homogeneity assumption. It means, the homoscedasticity is assumed for the variables selected and One-way ANOVA is the applicable test for the comparison of mean scores among them.

Table 5.47

Comparison of Acceptance level of Digital Banking with regard to the Experience of Digital Banking usage

Dimensions	Experience of Digital Banking usage			F value	Sig. value
	Less than 1 year	1-3 year	More than 3 years		
PEOU	4.30 (0.30)	4.32 (0.32)	4.51 (0.36)	4.49	0.012*
PU	4.32 (0.31)	4.37 (0.32)	4.52 (0.34)	4.86	0.010*
PR	2.88 (0.56)	2.83 (0.53)	2.83 (0.49)	0.43	0.646
ATU	4.29 (0.28)	4.33 (0.31)	4.49 (0.34)	4.44	0.023*
BIU	4.42 (0.30)	4.40 (0.30)	4.56 (0.35)	3.78	0.035*
AU	4.40 (0.29)	4.42 (0.31)	4.72 (0.34)	6.18	0.002**
US	4.24 (0.31)	4.26 (0.34)	4.62 (0.37)	7.79	0.000**

Source: Primary Data

**Significant at 1% level of significance

Figures in parentheses represent Standard Deviation

Table 5.47 demonstrates that the perception on Ease of Use ('f'= 4.49, 'p'= 0.012), Usefulness ('f'= 4.86, 'p'= 0.010), Attitude ('f'= 4.44, 'p'= 0.023), Intention ('f'= 3.78, 'p'= 0.035), Usage ('f'= 6.18, 'p'=0.002) and User Satisfaction ('f'= 7.79, 'p'= 0.000) are significantly differed between experienced and inexperienced Digital Banking users. All these cases, the respondents who have more than 3 years of experience in digital banking are given high mean scores for the variables Easiness (4.51), Usefulness (4.52), Attitude (4.49), Intention (4.56), Usage (4.72) and satisfaction (4.62). Since the 'p' values are significant at 5% level of significance, the null hypothesis has rejected and thus there is significant difference in the perception of digital banking acceptance between experienced and inexperienced users.

Moreover, the perception on risk and difficulties faced while using digital banking is almost same for experienced and inexperienced users. Here, the external barriers are considered as risk factor of e-banking, that's why all the users have same opinion regarding the same. All the sample respondents have faced moderate level of risk and mean values are arounds to 3. Here, the 'f' statistic of 0.43 and 'p' value of 0.646 explains the statistical significance for the descriptive analysis.

Table 5.48

Multiple Comparison

Tukey HSD				
Dependent Variable	**(I) Experience of DB usage**	**(J) Experience of DB usage**	**Mean Difference (I-J)**	**Sig.**
Perceived Ease of use	More than 3 years	Less than 1 year	.11562*	.022
		1-3 year	.09398*	.034
Perceived Usefulness	More than 3 years	Less than 1 year	.12117*	.011
		1-3 year	.15495*	.010
Attitude towards Usage	More than 3 years	Less than 1 year	.17045*	.009
		1-3 year	.17571*	.008
Behavioral Intention to use	More than 3 years	Less than 1 year	.09454*	.032
		1-3 year	.09632*	.029
Actual Use	More than 3 years	Less than 1 year	.12066*	.003
		1-3 year	.12089*	.002
User Satisfaction	More than 3 years	Less than 1 year	.13777*	.000
		1-3 year	.13969*	.000
*. The mean difference is significant at the 0.05 level.				

Source: Primary Data

The above table of multiple comparison explains that the perception on Ease of Use, Usefulness, Attitude, Intention, Usage and Satisfaction shows mean difference between experienced and inexperienced Digital Banking users. It means, the respondents who have more than 3 years of experience in digital banking acceptance is significantly differ from other two categories (Less than 1 year and 1-3 years). Similarly, the perception level of 1–3-years experienced users are not statistically differing from the users who have only below 1 year experience in e-banking practices. It can be concluded that the experienced digital banking users have high perceived value than that of inexperienced users

5.7.4.2.6 Comparison of risk perception of customers according to Sources (Download) of Banking Application, Devices used for e-banking Access, Sources of information and post-Procedure of transactions

The risk and difficulties faced by the respondents may/may not be different according to the way of digital banking usage. For this purpose, sources (download) of banking application, devices used for e-banking access, sources of information on digital banking and post-procedure of every transaction are the considered as the factor variables. To analyze and compare the variables, the One-way ANOVA and the Tukey HSD Post-hoc test are applied. The hypothesis framed for the analysis has presented below.

H0: There is no significant difference in the level of perception on digital banking acceptance according to sources (download) of banking application, devices used for e-banking access, sources of information and post-procedure of transaction.

H1: There is significant difference in the level of perception on digital banking acceptance according to sources (download) of banking application, devices used for e-banking access, sources of information and post-procedure of transaction.

Table 5.49

Comparison of risk perception of digital banking users according to sources (download) of banking application, devices used for e-banking access, sources of information and post-procedure of every transaction

Digital Profile	Perceived Risk			
	Mean	SD	F value	Sig. value
Sources (Download) of Banking Application				
Bank's Website	2.88	0.60	6.45	0.002**
App Store/ Play store	2.85	0.51		
Directly from Search Engine	3.88	0.72		
Sending via App/Bluetooth/Wi-Fi	3.92	0.83		
Devices used for e-banking Access				
Home PC	2.84	0.58	5.67	0.005**
Office PC	2.93	0.73		
Public Browsing Centre	3.99	0.98		
Personal Devices	2.78	0.44		
Sources of information on Digital Banking				
Bank's Site/ Brochure	2.73	0.47	6.11	0.003**
Public/ social media	3.87	0.76		
Colleagues/ Friends/ Family	2.89	0.52		
Post-Procedure of every transaction				
Taking printout	2.84	0.43	4.11	0.008**
Save as documents	2.88	0.52		
Keep Screenshots	2.79	0.55		
Nothing	3.51	0.64		

Source: Primary Data
**Significant at 1% level of significance

Table 5.49 exhibits the result of One-way ANOVA for the comparison of risk perception among digital profile of the respondents. As regards the Sources of Banking Application, the risk and difficulties are comparatively high for the respondents those who use App/Bluetooth/Wi-Fi (Mean = 3.92) and direct search engines (Mean = 3.88) for sending/downloading the APPs. The risk perception of this respondents is significantly differed ('f'= 6.45, 'p'= 0.002) from other category of respondents those who use bank's website (Mean = 2.88) or Appstore/Play store (2.85) for downloading the Bank's Applications.

In the case of Devices used for e-banking Access, the respondents who use public browsing center (Mean = 3.99) faces lots of risk and difficulties than others. The respondents who use personal devices for e-banking Access (Mean = 2.78) face low level of risk and hazards. The result of comparative analysis discloses that there

is significant difference ('f'= 5.67, 'p'= 0.005) in the risk perception of digital banking users with respect to devices used for e-banking access.

Similarly, the risk perception of digital banking users is varying according to the sources of information about the same. public/ social media (Mean = 3.87) is the high risk denoted sources of information. That means, the fake news, fraudulent messages, hacking skills etc. are common in the platform of social media. Therefore, the person who access the information from authorized sources will be responsible for the errors and mistakes occurred. Hence, there is a need to check the authenticity and reliability of information about banking details. Since, the difference has appeared, the test statistic (6.11) and 'p' value (0.003) also signify the result.

Likewise, the risk perception of the digital banking users may/may not be different in respect of the post-procedure of every transaction. From the table it is understood that the respondents who take printout/ save documents/keep screenshots for future reference have less degree of risk as compared with the respondents who do nothing. Therefore, 'F' statistic is computed to verify the exact difference among them. Thus, the significant 'f' value of 4.11 and 'p' values of 0.008 defines the significant mean difference among the respondents who care about the post-procedure of every transaction.

Table 5.50

Multiple Comparison

	Dependent Variable (Perceived Risk)		
(I) Sources (Download) of Banking Application	**(J) Sources (Download) of Banking Application**	**Mean Difference (I-J)**	**Sig.**
Bank's Website	Directly from search engine	-.56688*	.002
	Sending through Apps/ Bluetooth/ Wi-Fi	-.60142*	.000
App store/ Play store	Directly from search engine	-.57756*	.001
	Sending through Apps/ Bluetooth/ Wi-Fi	-.61623*	.000
(I) Device used for e-banking access	**(J) Device used for e-banking access**	**Mean Difference (I-J)**	**Sig.**
Public Browsing Centre	Home PC	-.34251*	0.09
	Office PC	-.33178*	0.19
	Personal Devices	-.35324*	0.000

(I) Sources of information on Digital Banking	(J) Sources of information on Digital Banking	Mean Difference (I-J)	Sig.
Public/ social media	Bank' site/ Brochures	-.19804*	0.004
	Colleagues/ Friends/ Family	-.23424*	0.000
(I) Post-Procedure of every transaction	**(J) Post-Procedure of every transaction**	**Mean Difference (I-J)**	**Sig.**
Nothing	Taking printout	-.51644*	0.005
	Save as documents	-.59561*	0.004
	Keep Screenshots	-.67432*	0.002

Source: Primary Data

The above table explains the Post Hoc Analysis of One-way ANOVA test. In respect of downloaded sources of Banking Application, the risk perception is high in the case of Applications directly from search engine or Sending through Apps/ Bluetooth/ Wi-Fi. Further, the level of risk perception is high in the case of customers who used Public/ social media as the source of information.

Similarly, the customers who use public browsing center for conducing banking transaction faces more risk and threats than that of other customers. Likewise, as regards the post-procedure of every transaction, the customers who are not taking printouts/ save as documents/ keep as screenshots, faces more risk and threats.

Section C

Sector wise Discussion on Enabling & Disabling Factors of Digital Banking, Frequency of use of Digital Initiatives and Perception level of Technology Acceptance

5.8 Enabling and Disabling Factors of Digital Banking – Sector wise Analysis

To measure the level of perception on Technology Acceptance, there is a need to identify the enabling and disabling factors of digital banking. Hence, the proposed analysis is carried out for the same. The respondents asked to mark their opinion about these factors in five-point Lickert Scale ranging from Strongly Agree to Strongly Disagree. Confirmatory Factor Analysis is used for asecertaining the most significant/insignificant factors of digital banking. The reason may be different among Public, Old Generation and New Generation Banks, so multi-group analysis is done with these three groups. The researcher identified five important enabling and disabling factors. These are listed below:

Enabling Factors

1. Information and Communication
2. Clear and Easiness
3. Convenience and Flexibility
4. Trust and Confidence
5. Self Esteem and Prestige

Disabling Factors

1. Security and Privacy
2. Risk and Threat
3. Knowledge and Awareness
4. Cost and Charge
5. Complexity and Problems

5.8.1 Confirmatory Factor Analysis

To identify the enabling and disabling factors of digital banking acceptance, Confirmatory Factor Analysis is used. It is used to verify the factor structure of a set of variables. In order to do the analysis, the researcher has formulated the hypothesis that there is relationshp between observed variables and their underlying latent constructs. The main objective of CFA is to test whether the sample data fit for a hypothesized measurement model. Regarding the factors of digital banking, the result of analysis shows that there is adequate fit for the model. It illustrates in table 5.51 and 5.52.

Table 5.51

Model Fit Indices- Enabling Factors of Digital Banking

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	5.199	>0.05
Normed chi-square (CMIN/df)	1.040	≤3
Root Mean Square Residuals (RMR)	0.004	≤0.05
Comparative Fit Index (CFI)	0.999	≥0.90
Goodness of Fit Index (GFI)	0.985	≥0.90
Adjusted GFI (AGFI)	0.955	≥0.90
Incremental Fit Index (IFI)	0.999	≥0.90
Tucker Fit Index (TLI)	0.997	≥0.90
Mormed Fit Index (NFI)	0.967	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.017	≤0.08

Source: Primary Data

Table 5.51 represents the model fit indices of Confirmatory Factor Analysis. The fitness of the measurement model is tested and confirmed by using AMOS 20. The Confirmatory Factor Analysis is good fit with Goodness of Fit Index (GFI) 0.985; Tucker Fit Index (TLI) 0.997; Comparative Fit Index (CFI) 0.999; Root Mean Square Error of Approximation (RMSEA) 0.017; Adjusted GFI (AGFI) 0.955; Incremental Fit Index (IFI) 0.999; Mormed Fit Index (NFI) 0.967 and Normed chi-square (CMIN/df) 1.040. Since all the fit indices are satisfactory and appropriate for the scale, the result confirms the measurement scale and structure of the model. Consequently, the measurement model of Public, Old Generation and New Generation Private Banks is shown in Figure 5.1, 5.2 and 5.3.

Table 5.52

Model Fit Indices- Disabling Factors of Digital Banking

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	5.199	>0.05
Normed chi-square (CMIN/df)	0.431	≤3
Root Mean Square Residuals (RMR)	0.006	≤0.05
Comparative Fit Index (CFI)	1.000	≥0.90
Goodness of Fit Index (GFI)	0.994	≥0.90
Adjusted GFI (AGFI)	0.981	≥0.90
Incremental Fit Index (IFI)	1.000	≥0.90
Tucker Fit Index (TLI)	1.002	≥0.90
Mormed Fit Index (NFI)	0.930	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.001	≤0.08

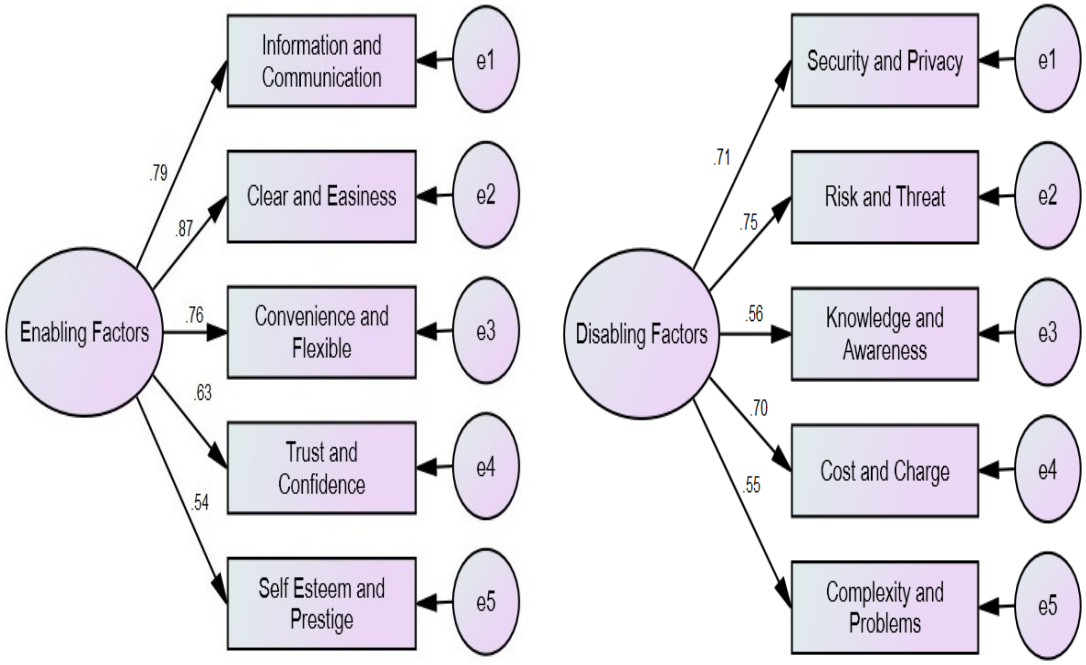
Source: Primary Data

Table 5.52 represents the model fit indices of Confirmatory Factor Analysis. The fitness of the measurement model is tested and confirmed by using AMOS 20. The Confirmatory Factor Analysis is good fit with Goodness of Fit Index (GFI) 0.994; Tucker Fit Index (TLI) 1.002; Comparative Fit Index (CFI) 1.000; Root Mean Square Error of Approximation (RMSEA) 0.001; Adjusted GFI (AGFI) 0.981; Incremental Fit Index (IFI) 1.000; Mormed Fit Index (NFI) 0.930 and Normed chi-square (CMIN/df) 0.431. Since all the fit indices are satisfactory and appropriate for the scale, the result confirms the measurement scale and structure of the model. Consequently, the measurement model of Public, Old Generation and New Generation Private Banks is shown in Figure 5.1, 5.2 and 5.3.

a) Public Sector Banks

Figure 5.1

Enabling and Disabling Factors of Digital Banking (Public Sector)



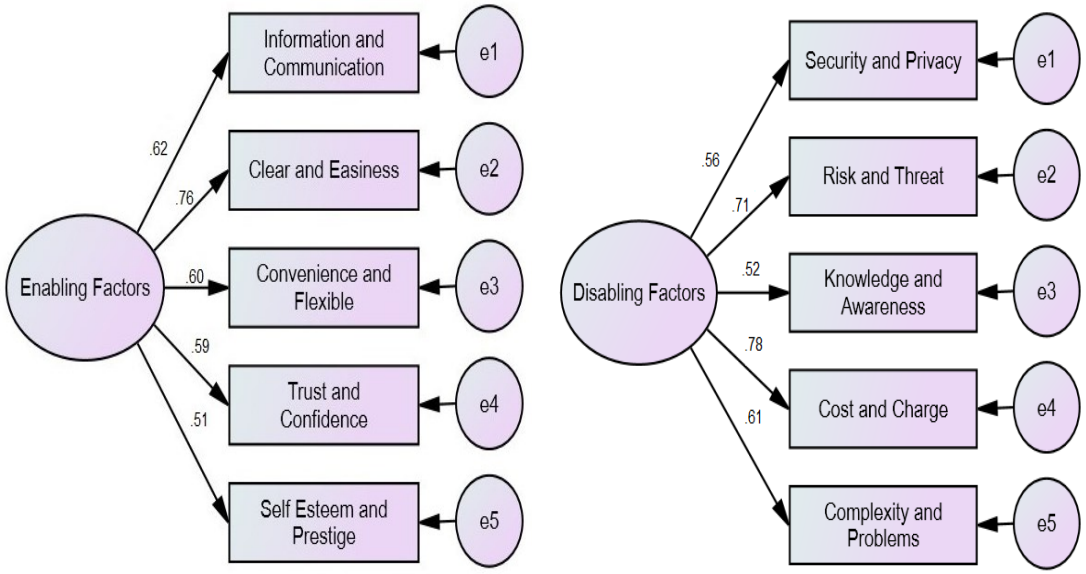
The regression co-efficient **(β)** is used to identify the enabling and disabling factors of digital banking practices of Public Sector Banks. From the above figure it is clear that clear & easiness **(β=0.87),** information & communication **(β=0.79)** and convenience & flexibility **(β=0.76)** are the major enabling factors of digital banking. trust & confidence **(β=0.63)** and self-esteem & prestige **(β=0.54)** are considered as the least affecting factors of technology acceptance.

On the other hand, risk & threat **(β=0.75)**, security & privacy **(β=0.71)** and cost & charge **(β=0.70)** are considered as the main disabling factors for the acceptance of digital banking initiatives. It is because of the fraudulent practices of unethical hackers; the banking customers have unnecessary anxiety while doing the online transactions. But these respondents are opined that knowledge & awareness **(β=0.56)** and complexity & problems **(β=0.55)** are not as much as considered as the main disabling factors of digital banking.

b) Old Generation Private Banks

Figure 5.2

Enabling and Disabling Factors of Digital Banking (Old Generation)



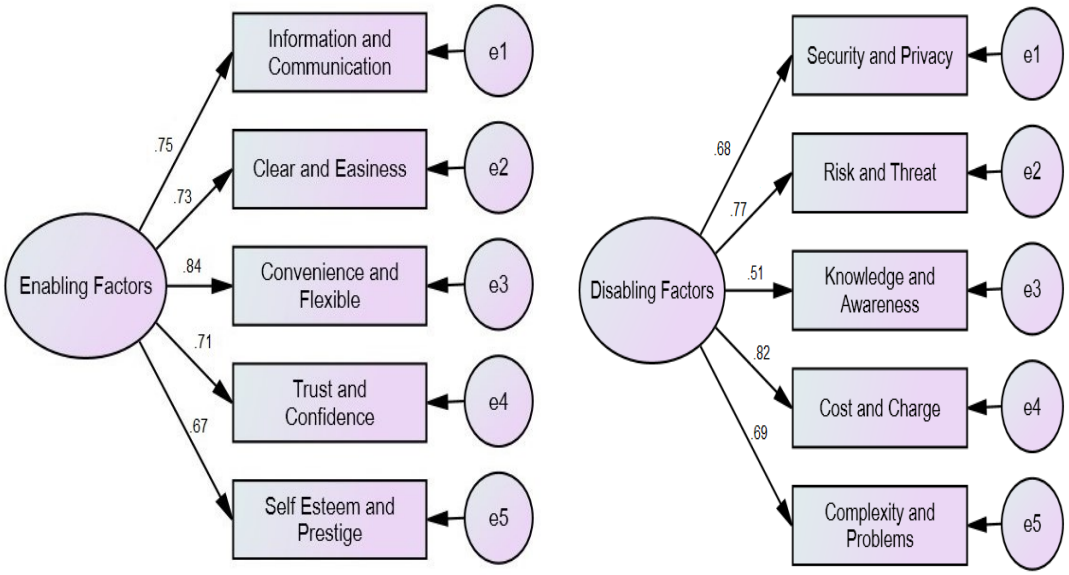
Regarding the enabling factors, clear and easiness (**β=0.76)** is the main reason for choosing digital banking as the medium of branch less banking. Thereafter, information and communication (**β=0.62),** convenience and flexibility (**β=0.60),** and trust and confidence (**β=0.59)** are the other factors succeeded by clear and easiness. At the same time, self-esteem and prestige (**β=0.51)** is considered as least contributing factor of digital banking. It can be found that the Old Generation Banks have clear cut idea about the objectives of digital banking to achieve extreme satisfaction of their respondents.

Here, in the case of Old Generation Private Banks, 'cost & charge' is the main disabling factor for the use of digital banking with '**β'** value of 0.78. Further, risk & threat (**β=0.71)** and complexity & problems (**β=0.61)** are the next important pull factors of digital banking. Moreover, the respondents are opined that security & privacy (**β=0.56)** and knowledge & awareness (**β=0.52)** are not considered as the main disabling factors for the acceptance of digital initiatives for their banking transactions. So far, with respect to Old Generation Private Banks, the anxiety about security concern is minimum than that of Public Sector Banks.

c) New Generation Private Banks

Figure 5.3

Enabling and Disabling Factors of Digital Banking (New Generation)



As far as New Generation Banks are concerned, the digital banking users are commented that 'convenience & flexibility' **(β=0.84)** is the most important push factor for the acceptance of online banking services. At the same time, 'information & communication' **(β=0.75)**, 'clear & easiness' **(β=0.73)** and 'trust & confidence' are considered as the next best enabling factors of digital banking. On the other hand, 'self-esteem & prestige' **(β=0.67)** is the least contributing factor for the same.

Moving to the discussion of disabling factors of digital banking, the respondents are suggested that 'cost & charge' **(β=0.82)** is the main pull factor for the acceptance of e-banking services. It has followed by 'risk & threat' **(β=0.77),** 'complexity & problems' **(β=0.69)** and 'security & privacy' **(β=0.68)** concerns. But the respondents are opined that 'knowledge & awareness' **(β=0.51)** is the least considered pull factor for the acceptance of e-banking services. It means, the digital banking users of New Generation Banks have good knowledge and awareness about the usage of online transactions.

5.9 Frequency of use of Green/Digital Initiatives – Sector wise Analysis

The below table discusses the frequency of use of Green/Digital Initiatives followed by the sectors of banks. The frequency is measured in Five-point Lickert scale in the order of 5 for Always used, 4 for Often used, 3 for Sometimes used, 2 for Rarely used and 1 for Never used. Most of the Green/ Digital Initiatives listed below are followed by the Public Sector Banks. But Old and New Generation Banks are not followed Green Channel Counter and Green Remit Cards services. Here, the comparative analysis is carried out by using Descriptive Statistics namely, Mean and Standard Deviation. The result is presented below;

Table 5.53

Frequency of use of Green/ Digital Initiatives

Green/Digital Initiatives	Public Sector Banks		Old Generation Banks		New Generation Banks	
	Mean	SD	Mean	SD	Mean	SD
ATM/CDM	4.68	0.46	4.65	0.47	4.67	0.48
POS Terminals using Debit Card/Credit Cards	4.61	0.48	4.77	0.43	4.61	0.48
Net Banking	4.56	0.49	4.60	0.53	4.60	0.49
Mobile Applications	4.73	0.44	4.74	0.46	4.75	0.47
Mobile wallets e.g.: - Paytm, google/phone pay	4.65	0.47	4.68	0.46	4.88	0.40
Tele Banking	2.18	1.03	1.91	0.90	2.11	1.04
Green Channel Counter	3.25	0.76	1.00	1.04	1.00	1.04
Pass book printing Kiosks	3.40	0.62	3.11	0.72	3.45	0.64
Green Remit Cards	2.77	0.90	1.00	1.44	1.00	1.32
Queue management system	3.63	0.59	3.42	0.65	3.11	0.67
Remote Deposits	2.26	0.88	2.00	0.98	2.10	0.99
Cheque Deposit Machine/Kiosk	4.54	0.53	4.41	0.56	4.40	0.56

Source: Primary Data

In the case of Public Sector Banks, the respondents are always using the Digital Initiatives like; ATM/CDM ($\bar{X}$ = 4.68, s = 0.46), POS terminals ($\bar{X}$ = 4.61, s = 0.48), Net Banking ($\bar{X}$ = 4.56, s = 0.49), Mobile Application ($\bar{X}$ = 4.73, s = 0.44), Mobile wallets ($\bar{X}$ = 4.65, s = 0.47) and Cheque Deposit Machines ($\bar{X}$ = 4.54, s = 0.53). Similarly, they are often using Queue Management System ($\bar{X}$ = 4.68, s = 0.46)

to save their time and energy used for standing in the long queue. But the respondents are using the Green Initiatives like, Green Channel Counter ($\bar{X}$ = 3.25, s = 0.76), Pass book Printing Kiosk ($\bar{X}$ = 3.40, s = 0.62) and Green Remit Cards ($\bar{X}$ = 2.77, s = 0.90) sometimes only. Likewise, they are rarely using the Tele Banking System ($\bar{X}$ = 2.18, s = 1.03) and Remote Deposits ($\bar{X}$ = 2.26, s = 0.88).

Regarding the Old Generation Private Banks, the respondents are always using the Digital Initiatives like; ATM/CDM ($\bar{X}$ = 4.65, s = 0.47), POS terminals ($\bar{X}$ = 4.77, s = 0.43), Net Banking ($\bar{X}$ = 4.60, s = 0.53), Mobile Application ($\bar{X}$ = 4.74, s = 0.46) and Mobile wallets ($\bar{X}$ = 4.68, s = 0.46). But they are often using the Cheque Deposit Kiosk ($\bar{X}$ = 4.41, s = 0.56) for depositing their cheques of another banks. But the usage of Passbook Printing Kiosks ($\bar{X}$ = 3.11, s = 0.72) and Queue Management System ($\bar{X}$ = 3.42, s = 0.65) is comparatively low as in the case of Public Sector Banks. Likewise, the respondents are rarely using the Tele Banking System ($\bar{X}$ = 1.91, s = 0.90) and Remote Deposits ($\bar{X}$ = 2.00, s = 0.98). Moreover, the Green Initiatives like Green Channel Counter and Green Remit Cards are never used by the respondents of Old Generation Private Banks. It is because of these two Digital Initiatives are not introduced by these banks.

With respect to New Generation Banks, the sample respondents are always used the ATM/CDM ($\bar{X}$ = 4.67, s = 0.48), POS terminals ($\bar{X}$ = 4.61, s = 0.48), Net Banking ($\bar{X}$ = 4.60, s = 0.49), Mobile Application ($\bar{X}$ = 4.75, s = 0.47) and Mobile wallets ($\bar{X}$ = 4.88, s = 0.40). But they are often using the Cheque Deposit Kiosk ($\bar{X}$ = 4.40, s = 0.56) for depositing their cheques of another banks. But the usage of Passbook Printing Kiosks ($\bar{X}$ = 3.45, s = 0.64) and Queue Management System ($\bar{X}$ = 3.11, s = 0.67) is comparatively low as in the case of Public Sector Banks. Similarly, the respondents are rarely using the Tele Banking System ($\bar{X}$ = 2.11, s = 1.04) and Remote Deposits ($\bar{X}$ = 2.10, s = 0.99). Moreover, as regards the Old Generation Private Banks, the Green Initiatives like Green Channel Counter and Green Remit Cards are never used by the respondents of New Generation Banks. It is because of these two Digital Initiatives are not introduced by this sector.

5.10 Perception level of Digital Banking Acceptance – Sector wise Analysis

This section analyses how and what extent the Innovated Technology Acceptance Model helps to understand the acceptability of digital banking. To know the perception level of digital banking users, Service Awareness, Subjective Norms, Self-Efficacy, System Quality and Schemes Availability are taken as external stimulus; Perceived Ease of Use, Perceived Usefulness and Perceived Risk are considered as Cognitive Responses and Attitude towards use, Behavioral Intention to use, Actual use & User Satisfaction are examined as Affective Responses, Intention and Behavioral Responses respectively. To explain the relationship between these dimensions, Structural Equation Modelling is used. Before find out the relationship between these variables, there is a need to propose a model for analysis. The proposed model has to be checked with the help of Model Fit Indices. Accordingly, Goodness of Fit Index (GFI), Tucker Fit Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Adjusted GFI (AGFI), Incremental Fit Index (IFI), Normed Fit Index (NFI) and Normed chi-square (CMIN/df) are used to check the goodness of fit of the model. Thereafter, Structural Equation Modelling is employed to identify the cause and effect relationship between these variables. The results are presented with the help of Innovated Technology Acceptance Model developed for this study. The proposed Model, Formulated Hypotheses, Structural Model Assessment and Hypotheses results are given below;

Figure: 5.4

Proposed TAM model for Digital Banking Acceptance

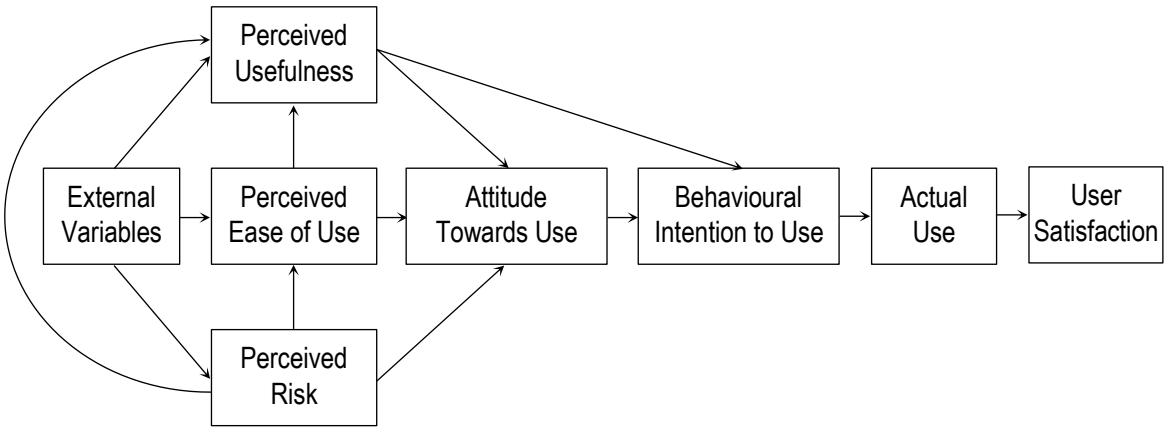


Table 5.54

The hypotheses formulated for the TAM Model

S.l No.	Null Hypotheses	Alternate Hypotheses
	Is there any significant relationship between External Stimulus and Perceived Usefulness?	
1	H0: Service Awareness has no significant positive impact on Perceived Usefulness of DB	H1: Service Awareness has significant positive impact on Perceived Usefulness of DB
2	H0: Subjective Norm has no significant positive impact on Perceived Usefulness of DB	H1: Subjective Norm has significant positive impact on Perceived Usefulness of DB
3	H0: Self Efficacy has no significant positive impact on Perceived Usefulness of DB	H1: Self Efficacy has significant positive impact on Perceived Usefulness of DB
4	H0: System Quality has no significant positive impact on Perceived Usefulness of DB	H1: System Quality has significant positive impact on Perceived Usefulness of DB
5	H0: Schemes Availability has no significant positive impact on Perceived Usefulness of DB	H1: Schemes Availability has significant positive impact on Perceived Usefulness of DB
	Is there any significant relationship between External Stimulus and Perceived Ease of Use?	
6	H0: Service Awareness has no significant positive impact on Perceived Ease of Use of DB	H1: Service Awareness has significant positive impact on Perceived Ease of Use of DB
7	H0: Subjective Norm has no significant positive impact on Perceived Ease of Use of DB	H1: Subjective Norm has significant positive impact on Perceived Ease of Use of DB
8	H0: Self Efficacy has no significant positive impact on Perceived Ease of Use of DB	H1: Self Efficacy has significant positive impact on Perceived Ease of Use of DB
9	H0: System Quality has no significant positive impact on Perceived Ease of Use of DB	H1: System Quality has significant positive impact on Perceived Ease of Use of DB
10	H0: Schemes Availability has no significant positive impact on Perceived Ease of Use of DB	H1: Schemes Availability has significant positive impact on Perceived Ease of Use of DB
	Is there any significant relationship between External Stimulus and Perceived Risk?	
11	H0: Service Awareness has no significant positive impact on Perceived Risk of DB	H1: Service Awareness has significant positive impact on Perceived Risk of DB
12	H0: Subjective Norm has no significant positive impact on Perceived Risk of DB	H1: Subjective Norm has significant positive impact on Perceived Risk of DB
13	H0: Self Efficacy has no significant positive impact on Perceived Risk of DB	H1: Self Efficacy has significant positive impact on Perceived Risk of DB

14	H0: System Quality has no significant positive impact on Perceived Risk of DB	H1: System Quality has significant positive impact on Perceived Risk of DB
15	H0: Schemes Availability has no significant positive impact on Perceived Risk of DB	H1: Schemes Availability has significant positive impact on Perceived Risk of DB
	Is there any significant relationship between Cognitive Responses of Digital Banking	
16	H0: Perceived Ease of Use has no significant positive impact on Perceived Usefulness of DB	H1: Perceived Ease of Use has significant positive impact on Perceived Usefulness of DB
17	H0: Perceived Risk has no significant positive impact on Perceived Ease of Use of DB	H1: Perceived Risk has significant positive impact on Perceived Ease of Use of DB
18	H0: Perceived Risk has no significant positive impact on Perceived Usefulness of DB	H1: Perceived Risk has significant positive impact on Perceived Usefulness of DB
	Is there any significant relationship between Cognitive Responses and Affective Responses	
19	H0: Perceived Usefulness has no significant positive impact on Attitude towards the use of DB	H1: Perceived Usefulness has significant positive impact on Attitude towards the use of DB
20	H0: Perceived Ease of Use has no significant positive impact on Attitude towards the use of DB	H1: Perceived Ease of use has significant positive impact on Attitude towards the use of DB
21	H0: Perceived Risk has no significant positive impact on Attitude towards the use of DB	H1: Perceived Risk has significant positive impact on Attitude towards the use of DB
	Is there any significant relationship between Cognitive Responses and Intention	
22	H0: Perceives Usefulness has no significant positive impact on Behavioral Intention to DB use	H1: Perceives Usefulness has significant positive impact on Behavioral Intention to DB
	Is there any significant relationship between Affective Response and Intention	
23	H0: Attitude towards DB use has no significant positive impact on Behavioral Intention to use	H1: Attitude towards DB use has significant positive impact on Behavioral Intention to use
	Is there any significant relationship between Intention and Behavioral Response	
24	H0: Behavioral Intention to use has no significant positive impact on Actual Use of DB	H1: Behavioral Intention to use has significant positive impact on Actual Use of DB
	Is there any significant relationship between Behavioral Responses of Digital Banking	
25	H0: Actual use of Digital Banking has no significant positive impact on User Satisfaction	H1: Actual use of Digital Banking has significant positive impact on User Satisfaction

Table 5.55

Model Fit Indices- Perception level of Digital Banking Acceptance

Indices	Value Obtained	Recommended Value of Good Fit
Chi-square p value (CMIN)	4.201	>0.05
Normed chi-square (CMIN/df)	1.210	≤3
Root Mean Square Residuals (RMR)	0.002	≤0.05
Comparative Fit Index (CFI)	0.981	≥0.90
Goodness of Fit Index (GFI)	0.990	≥0.90
Adjusted GFI (AGFI)	0.962	≥0.90
Incremental Fit Index (IFI)	0.972	≥0.90
Tucker Fit Index (TLI)	0.980	≥0.90
Mormed Fit Index (NFI)	0.973	≥0.90
Root Mean Square Error of Approximation (RMSEA)	0.023	≤0.08

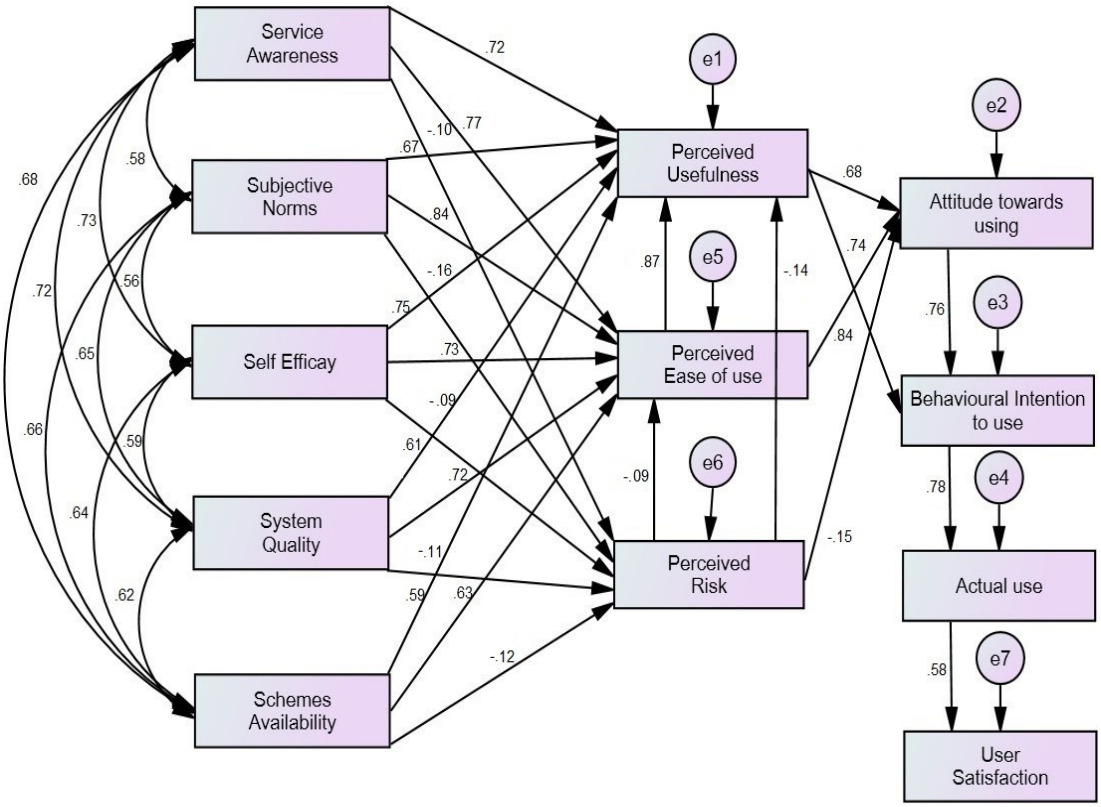
Source: Primary Data

The acceptability of the measurement model is based on the Model Fit Indices of the proposed model. Table 5.55 explains the result of model test, whether it meets the criteria of goodness of fit of the structural model. From the above table it is clear that the Comparative Fit Index for the model is 0.981, which is greater than 0.95 and said to be good fit. The RMSEA (Root Mean Square Error of Approximation) of 0.023 indicate that it is less than 0.08 at the recommended value of good fit. The Tucker Fit Index for the model is 0.980, which is greater than the guideline for the good fit. And all other Indices like, Root Mean Square Residuals (0.002), Comparative Fit Index (0.981), Goodness of Fit Index (0.990), Adjusted GFI (0.962), Incremental Fit Index (0.972), Mormed Fit Index (0.973) are said to be good fit with the CMIN value of 4.201. Based on the above indices, the proposed model is a good fit to the data and it is accepted to construct the measurement model. On the basis of this explanation, hypothesis testing is done by looking at whether there is significant influence of exogenous variables on endogenous variables. Here, the relationship between External Stimulas, Cognitive Responses, Affective Responses and Intention on Behavioural Response are studied with the help of Structural Equation Modelling. The measurement model of Digital Banking Acceptance among Public, Old and New Generation Banks are given below.

a) Public Sector Banks

Figure 5.5

Measurement Model on Perception level of Digital Banking Acceptance of Public Sector Banks



Result of Hypotheses testing (Public Sector Banks)

The SEM is applied to modelling the multivariate relationship between each variable to the latent constructs. Accordingly, the examination of direct and indirect relationship among the constructs of the proposed model is measured with the help of Path Co-efficient at 1% level of significance. Table 5.56 shows the hypothesis testing results and observations of each hypothesized significance path of the model. It explains the fitness of hypothesized structural model with the data obtained from the respondents. The below table is presented the relationship between External Stimulus, Cognitive Response, Affective Responses, Intention on Behavioral Responses towards the adoption intention of digital banking users of Public Sector Banks.

Table 5.56

Result of hypotheses testing (Public Sector Banks)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported /Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.72	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.67	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.75	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.61	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.59	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.77	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.84	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.73	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.72	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.63	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.10	0.432	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.16	0.352	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.09	0.211	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.11	0.443	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.12	0.291	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.87	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.09	0.374	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.14	0.465	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATT	Perceived Usefulness ⟶ Attitude towards use	0.68	<0.001	Supported
PEOU has significant positive impact on ATT	Perceived Ease of Use ⟶ Attitude towards use	0.84	<0.001	Supported
PR has significant positive impact on ATT	Perceived Risk ⟶ Attitude towards use	-0.15	0.521	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.74	<0.001	Supported
Relationship between Affective Response and Intention				
ATT has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.76	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.78	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.58	<0.001	Supported

Source: Primary Data

The main objective of the present analysis is to investigate the adoption intention (acceptance) of digital banking among the respondents of Public Sector Banks. The hypothesized structural model is used to identify the cause-and-effect relationship among multiple variables of adoption intention. The measurement model (Figure 5.5) is capable to define the changes in the Attitude (ATU), Behavioral Intention (BI), Actual Use (AU) and User Satisfaction (US) on Digital Banking. Table 5.60 explains the results of the hypotheses testing to support the proposed model regarding directional linkage among the model variables. Therefore, the SEM is used to identify the determinants of digital banking acceptance among the respondents.

To check the relationship between External Stimulus and Perceived Usefulness of Digital banking acceptance, Service Awareness (SA), Subjective Norms (SN), Self-Efficacy (SE), System Quality (SQ) and Schemes Availability (SAv) are taken as external variables/ determinants of Perceived Usefulness. The result indicates that amongst all the external stimulus, self-efficacy exerts the maximum positive impact on perceived usefulness ($\beta=0.75$, $p<0.001$) followed by service awareness ($\beta=0.72$, $p<0.001$), subjective norms ($\beta=0.67$, $p<0.001$), system quality ($\beta=0.61$, $p<0.001$) and schemes availability ($\beta=0.75$, $p<0.001$). Since the 'p' values are less than 0.01, the null hypothesis is rejected at 1% level of significance and the relationship between external stimulus and perceived usefulness is established.

Based on the result of relationship between external stimulus and perceived ease of use (PEOU) of digital banking practices, subjective norm ($\beta=0.84$, $p<0.001$) is considered to be the critical and highly significant factor for the contribution of perceived ease of use. Every 1-point increase in the value of subjective norms explains 0.94 increase in the perceived ease of use. Furthermore, service awareness ($\beta=0.77$, $p<0.001$), self-efficacy ($\beta=0.73$, $p<0.001$), system quality ($\beta=0.72$, $p<0.001$) and schemes availability ($\beta=0.63$, $p<0.001$) are considered to be the next best determinant of perceived ease of use (PEOU) of the digital banking practices.

Regarding the analysis of relationship between external stimulus and perceived risk, there is no significant positive relationship between them. It means, whenever there is any increase in the service awareness ($\beta= -0.10$, $p=0.432$),

subjective norms (β= -0.16, p=0.352), self-efficacy (β= -0.09, p=0.211), system quality (β= -0.11, p=0.443) and schemes availability (β = 0.12, p=0.291); the risk perception will be decreased according to their experience in digital banking. Since all the 'p' values are greater than 0.01, the null hypothesis cannot be rejected at 1% level of significance and the positive impact has not established among the variables.

The analysis of the variables selected as cognitive response of digital banking users of Public Sector Banks exhibits that the perceived usefulness is the dependent variable of perceived ease of use and perceived risk. While interpreting the relationship between perceived ease of use (PEOU) and perceived usefulness (PU); the beta co-efficient of 0.87 ($p<0.001$) explains the strong significant positive influence of independent variable on dependent variable. It means, 1-point of increase in the PEOU explains 87% increase in the PU of digital banking. On the other hand, the significant positive relationship between perceived risk (PR) & perceived ease of use (PEOU) (p=0.374) and PR & PU (p=0.465) cannot be established. It indicates that the ease and comfort usage of digital banking will eliminate the anxiety of risk perception.

Perceived ease of use (β=0.84, $p<0.001$) and perceived usefulness (β=0.68, $p<0.001$) are reported as important predictors of attitude towards the use (ATU) of digital banking. It predicts the value of ATU with significant positive path co-efficient and hence the hypotheses are supported at 1% level of significance. On the contrary, the positive relationship between perceived risk (PR) and attitude towards the use (ATU) of digital banking has not been established with the 'p' value of 0.521. Therefore, the attitude of the respondents is negatively influenced by their risk perception about digital banking.

This analysis also observes the cause-and-effect relationship between cognitive response and behavioral intention of technology acceptance. It reveals that perceived usefulness (PU) is considered as the most influencing cognitive response of behavioral intention (BI) for the use of digital banking. The significant path co-efficient of 0.74 ($p=<0.001$) explains the direct positive impact of perceived usefulness (PU) on behavioral intention. Since the 'p' value is significant at 1% level

of significance, the null hypothesis is rejected and perceived usefulness (PU) is considered as the important predictor of behavioral intention to use (BI).

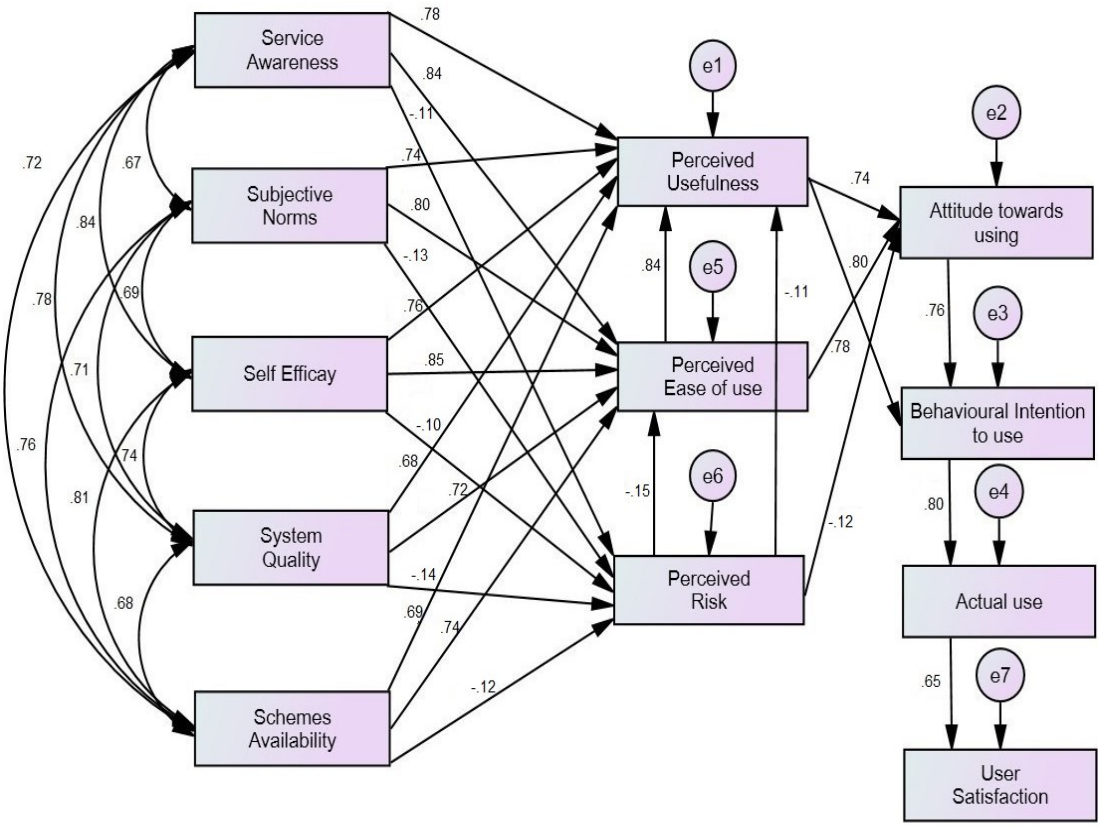
Similarly, the model explicitly specifies the role of affective response on behavioral intention (BI) of the digital banking users. Here, attitude towards the use (ATU) of digital banking explains the significant path co-efficient of 0.76 with 'p' value of less than 0.01. The result indicates that the strongest path of influence in behavioral intention (BI) is the attitude of the respondents towards the digital banking initiatives. Moreover, the significant 'p' value of less than 0.01 established the proposed hypothesis is that there exists significant positive impact of affective response on behavioral intention (BI).

Finally, the result of adoption intention about digital banking acceptance verifies the significant positive relationship of behavioral intention on behavioral response. Here the actual use (AU) and user satisfaction (US) are considered as the behavioral responses of the digital banking users. If the customers have the intention to use digital banking practices, they will actually use the same for their banking transactions. The result provides strongest support for the inference formulated with path co-efficient of 0.78. Hence, behavioral intention (BI) is considered as a positive predictor of actual use (AU) of digital banking. Here, the significant value of less than 0.01 validates the proposed hypothesis that BI has significant positive impact on AU. In addition, the directional linkage of actual use (AU) and user satisfaction (US) among digital banking users is measured with the help of significant positive beta co-efficient of 0.58. It explains that 1-point increase in the actual use will predict 58 percent increase in the user satisfaction. The 'p' value of less than 0.01 validates the proposed hypothesis that actual use (AU) has significant positive impact on user satisfaction (US).

b) Old Generation Private Banks

Figure 5.6

Measurement Model on Perception level of Digital Banking Acceptance of Old Generation Banks



Result of Hypotheses testing (Old Generation Private Banks)

The SEM is applied to modelling the multivariate relationship between each variable to the latent constructs. Accordingly, the examination of direct and indirect relationship among the constructs of the proposed model is measured with the help of Path Co-efficient at 1% level of significance. Table 5.57 shows the hypothesis testing results and observations of each hypothesized significance path of the model. It explains the fitness of hypothesized structural model with the data obtained from the respondents. The below table is presented the relationship between External Stimulus, Cognitive Response, Affective Responses, Intention on Behavioral Responses towards the Adoption Intention of Digital Banking users of Old Generation Private Banks.

Table 5.57

Result of hypotheses testing (Old Generation Private Banks)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported /Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.78	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.74	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.76	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.68	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.69	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.84	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.80	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.85	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.72	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.74	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.11	0.378	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.13	0.465	Not Supported
SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.10	0.511	Not Supported

SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.14	0.574	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.12	0.422	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.84	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.15	0.483	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.11	0.590	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.74	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.80	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.12	0.497	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.78	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.76	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.80	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.65	<0.001	Supported

Source: Primary Data

Table 5.57 estimates the interrelationship between multiple variables used to check the adoption intention (acceptance) of digital banking users of Old Generation Banks. Here Extended Technology Acceptance Model is used to identify the critical determinants of digital banking acceptance. Accordingly, the proposed model is measured with the help of cause-and-effect relationship of External Stimulus, Cognitive Response, Affective Response and Intention on Behavioral Response. To identify the impact of Cognitive Response on Behavioral Response; Service Awareness (SA), Subjective Norms (SN), Self-Efficacy (SN), System Quality (SQ) and Schemes Availability (SAv) are taken as external variables.

The hypotheses testing results of relationship between external stimulus and perceived usefulness (PU) observes that service awareness ($\beta=0.78$, $p<0.001$) is found to be the most significant determinant of perceived usefulness (PU) of digital banking. The path co-efficient is significant ($p<0.001$) at 1% level of significance and the proposed hypothesis is supported. The result also verifies that perceived usefulness (PU) also can be anticipated through self-efficacy ($\beta=0.76$, $p<0.001$), subjective norms ($\beta=0.74$, $p<0.001$), system quality ($\beta=0.68$, $p<0.001$) and schemes availability ($\beta=0.69$, $p<0.001$) respectively. Accordingly, the hypotheses are supported and it found that external stimulus have significant positive impact on perceived usefulness (PU) of digital banking.

The interrelationship between external stimulus and perceived ease of use (PEOU) reflects that self-efficacy has a strong effect ($\beta=0.85$, $p<0.001$) and appears to be the main positive indicator of perceived ease of use (PEOU) of digital banking among respondents of Old Generation Banks. It has followed by service awareness ($\beta=0.84$, $p<0.001$), subjective norms ($\beta=0.80$, $p<0.001$), schemes availability ($\beta=0.74$, $p<0.001$) and system quality ($\beta=0.72$, $p<0.001$) in the order of influential characteristics. Moreover, the path co-efficient is significant at 1% level of significance and hence the proposed hypotheses are supported and validated.

This section of analysis examines the causal relationship between external stimulus and perceived risk faced by the digital banking users of Old Generation Banks. The external stimulus like; service awareness ($\beta= -0.11$, $p=0.378$), subjective

norms (β= -0.13, p=0.465), self-efficacy (β= -0.10, p=0.511), system quality (β= -0.14, p=0.574) and schemes availability (β= -0.12, p=0.422) exert negative influence on risk perception. Similarly, the effect of external stimulus on Technology Acceptance has reduced the amount of risk perception. Higher the user's awareness, usage and experience concern for the digital banking; lower the user's risk concern in using the same. Since all the 'p' values are greater than 0.01, the null hypotheses cannot be rejected and the proposed hypotheses are not supported. It means, external stimulus has no significant positive impact (it has negative impact) on perceived risk.

The model also specifies the interrelationship among cognitive response of technology acceptance. It can be explained that perceived ease of use (β=0.84, p<0.001) is more influential in shaping the perceived usefulness (PU) towards the use of digital banking practices. The proposed hypothesis has supported with significant positive path co-efficient. On the other hand, the relationship of perceived risk (pr) on perceived ease of use (β= -0.15, p=0.483) and perceived usefulness (β= -0.11, p=0.590) tends to be negative with insignificant negative path co-efficient. It means, if there any increase in the easiness and usefulness of digital banking practices; the amount of risk perception will reduce for some extent.

The result of relationship between cognitive response and affective response exposes that attitude towards the use (ATU) of digital banking is primarily and positively affected by perceived ease of use (β=0.80, p<0.001). This implies that PEOU is the most important predictor of the attitude towards the use (ATU) of digital banking. Perceived usefulness (β=0.74, p<0.001) also has a significant positive impact and appears to be the second determinant of the consumer's attitude (ATU). Moreover, these two cognitive responses of the consumers are positively related with the ATU. On the contrary, perceived risk (β= -0.12, p=0.497) has an indirect influence on attitude towards the use (ATU) of digital banking. It exhibits that whenever there is any risk factor in the use of online banking; the attitude may/may not affect reversely. It means, these are negatively correlated constructs of Technology Acceptance Model.

The next hypothesis is proposed that perceived usefulness (PU) would have significant positive impact on behavioral intention to the use (BI) of online banking.

The path co-efficient for this hypothesis (β=0.78, p<0.001) is significant at 1% level of significance. It reports that behavioral intention (BI) can be anticipated through perceived usefulness (PU) and these are positively related construct of the model. It means, PU has strong effect on BI and appears to be the main positive determinant of the same.

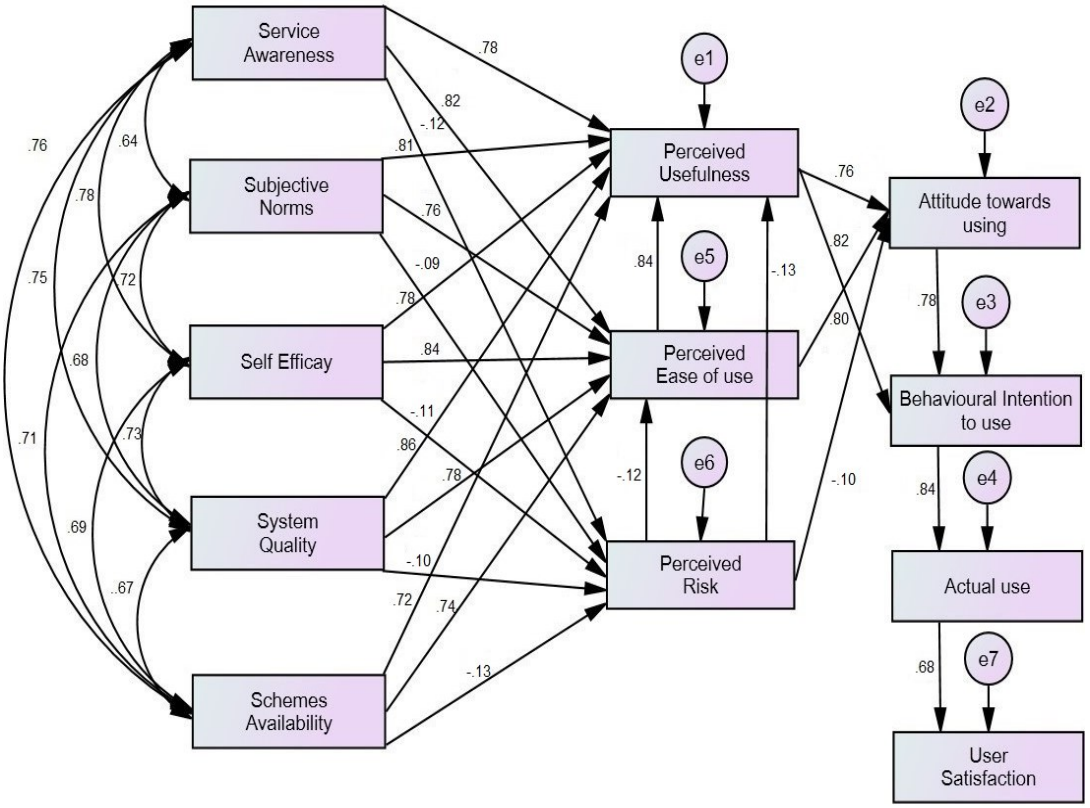
The inference formulated to check the causal relationship between affective response and intention reveals that attitude towards the use (ATU) of online banking has a remarkable effect on behavioral intention to use (BI). The path has significant positive effect with beta co-efficient of 0.76 with 'p' value of less than 0.01. It explains that when customer's attitude towards the use (ATU) of digital banking goes up by 1, the behavioral intention to use (BI) also goes up by 0.76. It means attitude (ATU) is an essential antecedent of behavioral intention (BI).

Lastly, it can be observed that the behavioral intention (BI) to the use of digital banking is positively related with the actual use (AU) of same banking practices. The proposed hypothesis that BI has significant positive impact (β=0.80, p<0.001) on actual use (AU) is validated and supported. Likewise, the outcome has explained that the constructs of behavioral response are correlated mutually. The Extended TAM considers two constructs as behavioral response, mainly actual use (AU) and user satisfaction (US). AU is not an end result, there is a need to check whether the users are satisfied or not. Accordingly, the result leads to the conclusion that actual use has significant positive impact (β=0.65, p<0.001) on user satisfaction and proposed hypothesis is supported at 1% level of significance. It means, when actual use goes up by 1, user satisfaction also goes up by 0.65.

c) New Generation Private Banks

Figure 5.7

Measurement Model on Perception level of Digital Banking Acceptance of New Generation Banks



Result of Hypotheses testing (New Generation Banks)

The SEM is applied to modelling the multivariate relationship between each variable to the latent constructs. Accordingly, the examination of positive and negative relationship among the constructs of the proposed model is measured with the help of Path Co-efficient at 1% level of significance. Table 5.58 shows the hypotheses testing results and observations of each hypothesized significance path of the model. It explains the fitness of hypothesized structural model with the data obtained from the respondents. The below table is presented the relationship among External Stimulus, Cognitive Response, Affective Responses and Intention on Behavioral Responses towards the Adoption intention of Digital Banking users of New Generation Banks.

Table 5.58

Result of hypotheses testing (New Generation Banks)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported /Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.78	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.81	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.78	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.86	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.72	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.82	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.76	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.84	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.78	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.74	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.12	0.377	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.09	0.489	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.11	0.295	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.10	0.274	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.13	0.251	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.84	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.12	0.563	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.13	0.411	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.76	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.80	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.10	0.493	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.82	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.78	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.84	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.68	<0.001	Supported

Source: Primary Data

Table 5.58 explains the result of hypotheses testing and its inference on adoption intention of digital banking users of New Generation Banks. Structural Equation Modelling is used to solving a set of equations formed between the constructs of the model. This modelling is widely used for the estimation of multi-variate cause and effect relationship between dependent and independent variables. The linearity of the latent constructs of Extended Technology Acceptance Model is tested by computing the value of R^2 and it indicates the explanatory power of independent variables in explaining the changes in dependent variables. To identify the Adoption intention of Digital Banking; External Stimulus, Cognitive Responses, Affective Response, Intention and Behavioral Response are considered as Independent and Dependent variables.

The result of the proposed model reflects that external stimulus has significant positive impact on perceived usefulness (PU) of digital banking. Here, system quality (β=0.86, $p<0.001$) is considered as the most significant construct and appears to be the main positive predictor of perceived usefulness. Likewise, subjective norms (β=0.81, $p<0.001$), service awareness (β=0.78, $p<0.001$), self-efficacy (β=0.78, $p<0.001$) and schemes availability (β=0.72, $p<0.001$) are considered as the next best positive indicators of perceived usefulness (PU). It means, amongst all the external variables, system quality exerts the maximum impact on perceived usefulness than other variables.

Similarly, the relationship between external stimulus and perceived ease of use (PEOU) is measured. According to TAM, the result indicates that self-efficacy (β=0.84, $p<0.001$) has a strong influence on perceived ease of use and it is considered as the significant positive predictor of PEOU with 'p' value of less than 0.01. The figure 5.6 also present the combined hypotheses result of changes in the perceived ease of use according to the change in service awareness (β=0.82, $p<0.001$), system quality (β=0.78, $p<0.001$), subjective norms (β=0.76, $p<0.001$) and schemes availability (β=0.74, $p<0.001$). The proposed hypotheses are supported and validated for the study.

The directional linkage between external stimulus and perceived risk (PR) is identified with the help of beta co-efficient. Result shows that external stimulus like, service awareness (β= -0.12, p=0.377), subjective norms (β= -0.09, p=0.489), self-efficacy (β= -0.11, p=0.295), system quality (β= -0.10, p=0.274) and schemes availability (β= -0.13, p=0.251) have negative and insignificant effect on perceived risk (PR). It means, the digital banking users have good level of awareness, efficacy, quality and availability of digital banking practices; lower the risk concern about online errors and frauds. Therefore, the consumers will be affected by a sense of concern about security and privacy features of online transactions. That means, application of knowledge will weaken the risk perception of the users.

Analysis of association among cognitive responses shows that perceived ease of use (PEOU) has positive and significant impact (β=0.84, p<0.001) on perceived usefulness (PU). It means, when PEOU goes up by 1, PU also goes up 0.84. Moreover, if higher the user's perception on ease-of-use of digital banking practices; higher the perception on usefulness of these practices. The proposed hypothesis of PEOU has significant positive impact on PU is accepted and validated for this result. At the same time, perceived risk has negative and insignificant relationship with PEOU (β= -0.12 p=0.563) and PU (β= -0.13, p=0.411). It denotes that there is an inverse relationship among these variables. Whenever, perceived ease of use (PEOU) and perceived usefulness (PU) goes up by 1, perceived risk (PR) goes down by 0.12 and 0.13 respectively. It is concluded that the relationship among cognitive responses explains positive association of easiness & usefulness and negative association of risk on easiness & usefulness.

The association between cognitive response and affective response exhibits that perceived ease of use (β=0.76, p<0.001) and perceived usefulness (β=0.80, p<0.001) influenced customer's attitude towards using (ATU) digital banking. These factors have significant positive path co-efficient and ATU explains the variations because of positive indicators of cognitive response of adoption intention. As a result, the proposed hypotheses are supported and validated at 1% level of significance. But the perceived risk (PR) has no significant positive impact on attitude towards the use (ATU) of online banking. It has insignificant negative path co-efficient of -0.10

(p=0.493). The result of hypothesis testing indicates an inverse relationship between PR and ATU. It means, if there are any changes in the amount of risk perception that adversely affect the attitude of the banking customers towards efficient use of DB.

The values of path co-efficient indicates how well the model is performing to interpret the result of relationship between cognitive response and behavioral intention (BI). The result reveals that the behavioral intention to use digital banking practices is positively influenced by the perceived usefulness (PU) of technology acceptance. The strongest path of influence is verified with significant path co-efficient of 0.82 ($p<0.001$). Since the 'p' value is significant; the proposed hypothesis is supported and validated that ATU has significant positive impact on PU. Similarly, the directional linkage between attitude towards use and behavioral intention to use (BI) shows significant positive remarkable effect among them. It found that ATU is considered as an essential predecessor of BI and it has a positive impact on the same. The significant path co-efficient of 0.78 ($p<0.001$) is explained a positive direction from attitude to behavioral intention.

Finally, the path analysis of proposed hypothesis is that behavioral intention (BI) to use has significant positive impact on actual use (AU) of digital banking. The significant positive path co-efficient of 0.84 ($p<0.001$) reveals that behavioral intention is the strong determinant of Actual Use (AU). Since the 'p' is significant, the proposed hypothesis is accepted and there exists a significant positive affection between behavioral intention (BI) and actual use (AU). Actual use is not an end result of adoption intention, there is a need to understand the level of user satisfaction about the digital banking practices that they are followed. Moreover, the directional linkage between actual use (AU) and user satisfaction (US) is to be measured with the help of structural model. In order to verify the assumption, beta co-efficient is used and the value of 0.68 ($p<0.001$) explains that actual use goes up by 1, User Satisfaction also goes up by 0.68. It is concluded that repeated use of digital banking creates high level of satisfaction among users.

Section D

Banks wise Discussion on Enabling & Disabling Factors of Digital Banking, Frequency of use of Digital Initiatives and Perception level of Technology Acceptance (Adoption Intention)

5.11 Enabling and Disabling Factors of Digital Banking – Bank wise Analysis

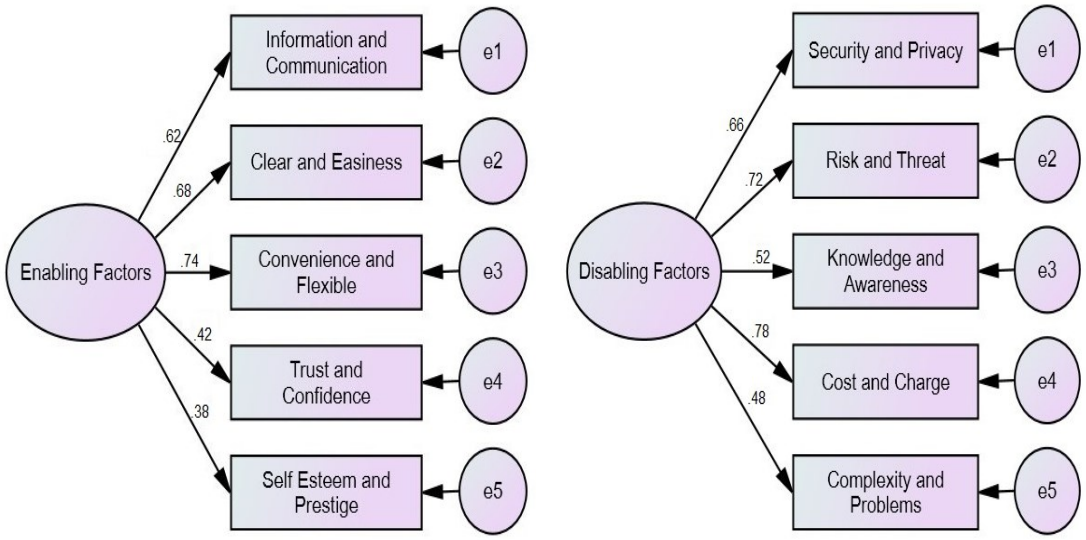
In the previous section, the sector wise analysis is carried out. Furthermore, the bank-wise discussion is needed to clarify the intra-group comparison among them. As we know, SBI, Canara and PNB are selected as Public Sector Banks; Federal, SIB and IDBI are considered as Old Generation Private Banks and finally, HDFC, ICICI and AXIS are taken as New Generation Banks. All these selected banks have their own sophisticated technology for the development of Internet & Mobile Banking. Consequently, the customer's attitude may change according to their experience in Online Banking. Moreover, the study is more specific about bank-wise discussion and comparison of digital banking practices. Accordingly, this section is ready to analyze the Enabling and Disabling Factors of Online Banking as said by the respondents of sample banks.

Regarding the sector-wise comparison, the same variables are taken for the intra-group comparison of sample banks. To be more precise, Information & Communication, Clear & Easiness, Convenience & Flexibility, Trust & Confidence and Self Esteem & Prestige are taken as the major Enabling Factors of Digital Banking. Similarly, Security & Privacy, Risk & Threat, Knowledge & Awareness, Cost & Charge and Complexity & problems are considered as the main Disabling Factors. Consequently, the result of Confirmatory Factor Analysis, Estimation and Model fitness are same as previously explained in the preceding tables (Table 5.51 explained the model fit indices of Enabling Factors and Table 5.52 explained the model fit indices for Disabling Factors). To avoid the duplication of same results, repeated analysis has not been provided here. So, only the result of Confirmatory Factor Analysis about bank-wise discussion on Enabling and Disabling Factors of Digital Banking are presented here. Structural Equation Modelling is used to identify the factors affecting Adoption intention of Digital banking practices. The value of Beta Co-efficient explains the influence of latent constructs to the main variables. Accordingly, the values are explaining the attitude of Digital Banking users of the sample banks. Thus, the forthcoming figures are the explanations of the analysis.

1) SBI

Figure 5.8

Enabling and Disabling Factors of Digital Banking (SBI)



The regression co-efficient (β) is used to identify the enabling and disabling factors of digital banking practices of SBI. The above figure (Figure 5.8) demonstrates that convenience & flexibility (β=0.74) is the major enabling factor followed by clear & easiness (β=0.68) and information & communication (β=0.62). At the same time, trust & confidence (β=0.42) and self-esteem & prestige (β=0.38) are considered as the least contributing factors of digital banking.

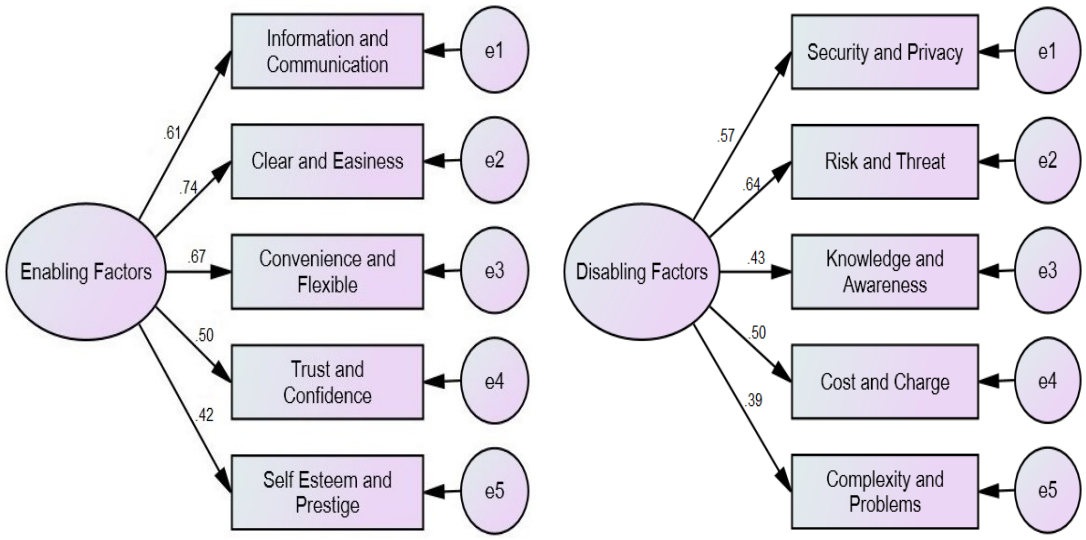
On the other hand, the digital banking users of SBI opine that cost & charges (β=0.78), risk & threat (β=0.72) and security & privacy (β=0.66) are the main disabling factors faced by them for the adoption intention of digital banking. At the same time, knowledge & awareness (β=0.52) and complexity & problems (β=0.48) are the least considered disabling factors of digital banking.

It can be concluded that the digital banking users of SBI are satisfied with the easiness, communication and flexibility of online banking services provided by the bank. But the beta co-efficient of trust & confidence is very low, that may or may not be affect the security & privacy concern about the banking platform. Therefore, the bank must ensure their digital platform is in the right direction to protect from risk & threat faced by the users.

2) Canara Bank

Figure 5.9

Enabling and Disabling Factors of Digital Banking (Canara)



As far as Canara Bank has concerned, the digital banking users are opined that clear & easiness (β=0.74), convenience & flexibility (β=0.67) and information & communication (β=0.61) are the important indicators of online banking acceptance. However, they have identified that trust & confidence (β=0.50) and self-esteem & prestige (β=0.42) are the least considered enabling factors of digital banking practices.

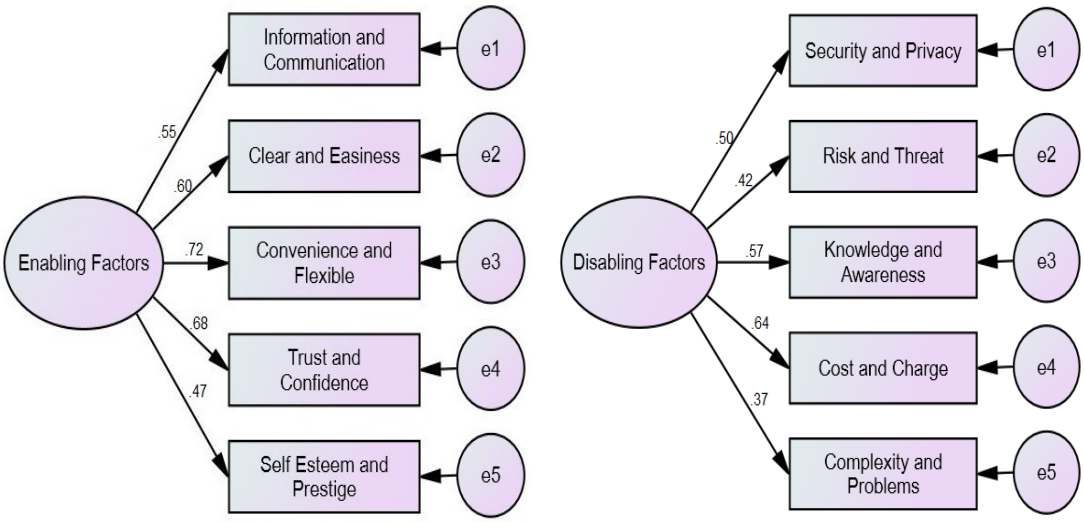
To identify the disabling factors of digital banking acceptance among Canara Bank users, the beta co-efficient is used. Figure 5.9 reports that risk & threat (β=0.64) is the main disabling factor of digital banking followed by security & privacy (β=0.57) and cost & charges (β=0.50). But they don't have much issues regarding knowledge & awareness (β=0.43) about the use of online transactions and complexity & problems (β=0.39) on digital platform provided by the bank

The result found that the respondents of Canara Bank have the adoption intention on digital banking by considering its easiness, flexibility and informative characteristics. Similarly, they have given low values for trust and self-esteem generated by the use of digital technology. These variables may or may not be the determinants of security and risk issues faced by them.

3) PNB

Figure 5.10

Enabling and Disabling Factors of Digital Banking (PNB)



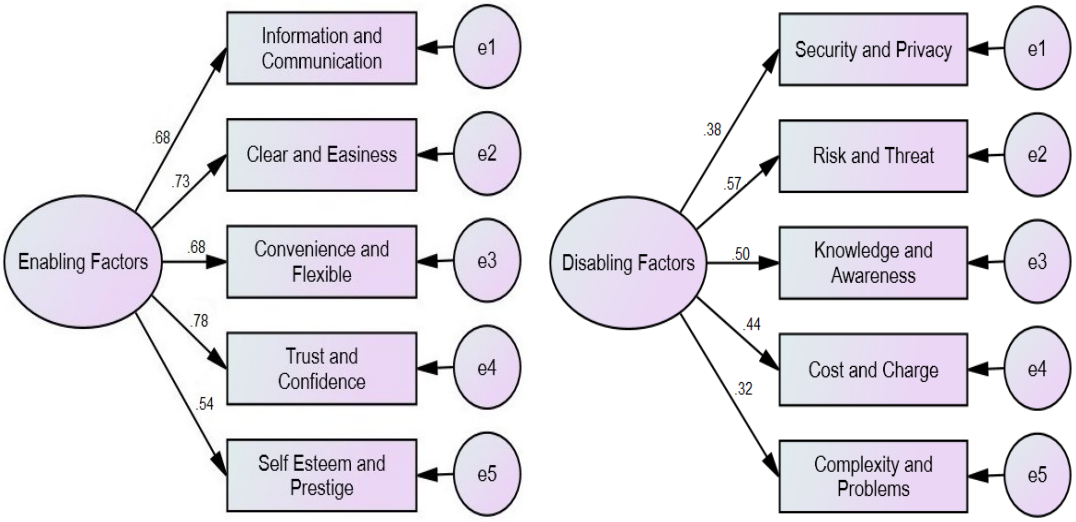
Here the enabling and disabling factors of digital banking acceptance among PNB customers is measured with the help of beta co-efficient. Whenever the enablers of digital banking have analyzed, convenience & flexibility (β=0.72) and trust & confidence (β=0.68) are identified as the main factors. Moreover, clear & easiness (β=0.60) and information & communication (β=0.55) are identified as the next best indicators of digital banking. But self-esteem & prestige (β=0.47) is not much considered as the enabling factor for the adoption intention.

The identification of disabling factors of adoption intention reveals that cost & charge (β=0.64) is the main pull factor followed by knowledge & awareness (β=0.57) and security & privacy (β=0.50). Even if the customers have trust and confidence on PNB digital platform, they have concern about the security issues about the same. But they opine that risk & threat (β=0.42) is not as much as considered as a disabler of digital banking acceptance. Moreover, the complexity & problems faced while using the digital platform is comparatively low with beta co-efficient of 0.37. It can be found that digital banking users have trust on their online banking services, but there is a need to ensure the proper security from the bank's side.

4) Federal Bank

Figure 5.11

Enabling and Disabling Factors of Digital Banking (Federal Bank)



The discussion about Federal Bank discloses that trust & confidence (β=0.78) and clear & easiness (β=0.73) are the main enabling factors of digital banking acceptance. Furthermore, information & communication and convenience & flexibility have same level of importance in the adoption intention with the beta co-efficient of 0.68. The customers also opine that self-esteem & prestige is not as much as considered as the important factor of digital banking.

With respect to disabling factors of digital banking, the customers are identified that risk & threat (β=0.57) and knowledge & awareness (β=0.50) are the most significant disabling factors of adoption intention. Likewise, cost & charge (β=0.44), security & privacy (β=0.38) and complexity & problems (β=0.32) are considered as the least significant pull factors of digital banking acceptance.

From the analysis it is clear that Federal Bank customers have a higher level of trust and confidence on bank's digital platform than that of Public Sector Banks. Consequently, they are not bothered about security & privacy concern and complexity & problems about their online transactions with the bank.

5) SIB

Figure 5.12

Enabling and Disabling Factors of Digital Banking (SIB)

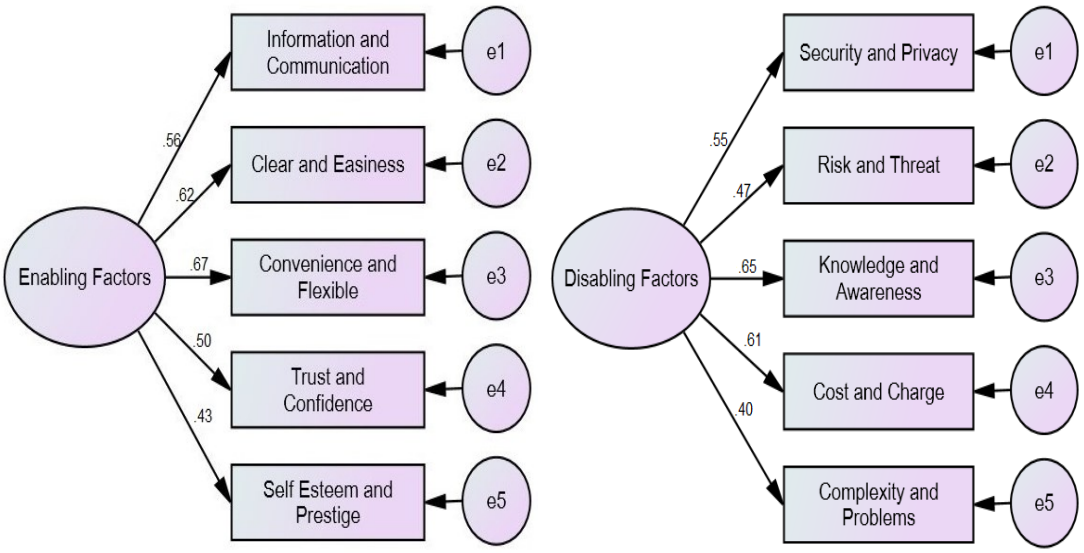


Figure 5.12 depicts the Confirmatory Factor analysis result of enabling and disabling factors of digital banking practices among South Indian Bank customers. It indicates that convenience & flexibility (β=0.67) and clear & easiness (β=0.62) are considered as the most important pointers of digital banking. On the other hand, information & communication (β=0.56), trust & confidence (β=0.50) and self-esteem & prestige (β=0.43) are considered as the least influencing factors as compared with the previous dimensions.

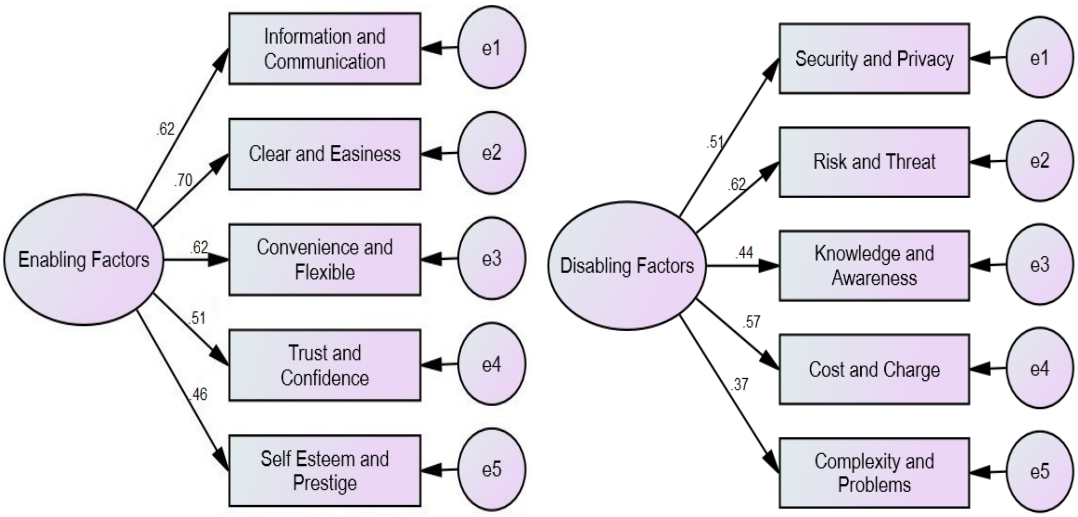
The customers have their own opinion regarding the disablers of adoption intention of digital banking. The figure 5.12 reflects that knowledge & awareness (β=0.65), cost & charge (β=0.61) are the main disabling factors. Furthermore, security & privacy (β=0.55), risk & threat (β=0.47) and complexity & problems (β=0.40) are the next category of disabling factors with low values of beta co-efficient.

From the above result it is clear that easiness and flexibility are the highly contributing factors of digital banking. But the SIB customers have only moderate level of knowledge and awareness about the products and services of online banking.

6) IDBI

Figure 5.13

Enabling and Disabling Factors of Digital Banking (IDBI)



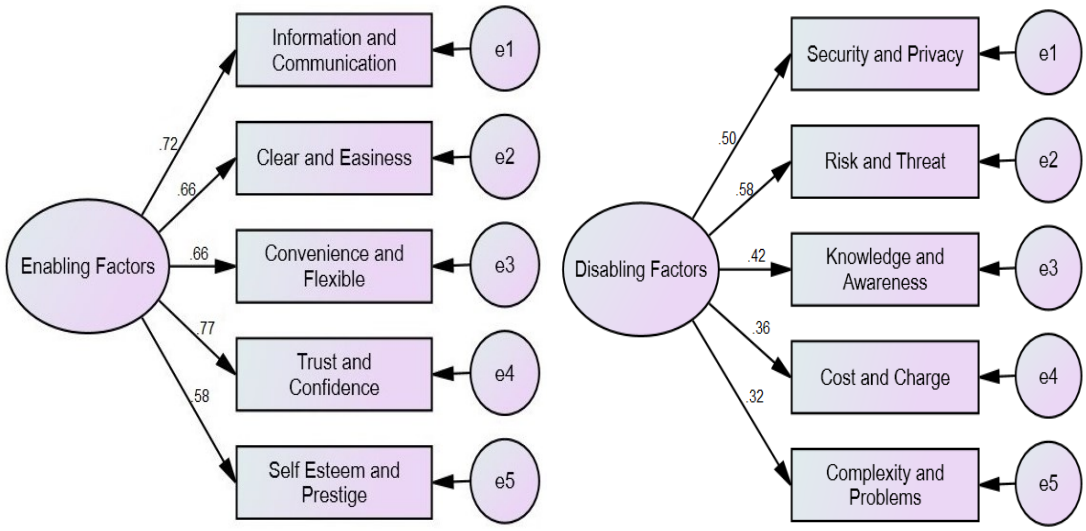
The discussion on factors affecting digital banking acceptance discloses that clear & easiness (β=0.70) is the main enabling factor of paperless banking followed by information & communication (β=0.62) and convenience & flexibility (β=0.62). The IDBI customers also reveal that trust & confidence (β=0.51) and self-esteem & prestige (β=0.46) have secondary effect on digital banking acceptance. Therefore, they pointed that the digital banking will be fruitful according to the characteristics of its easiness, informative and flexibility.

Likewise, the IDBI customers identified the pull factors of their digital banking adoption intention. The beta co-efficient reveals that risk & threat (β=0.62) is the main disabling factor tailed by cost & charges (β=0.57) and security & privacy (β=0.51). They also pointed out that knowledge & awareness (β=0.44) and complexity & problems (β=0.37) are not as much as considered as the main pull factors of digital banking acceptance. From the above analysis it is clear that IDBI bank's customers have considered trust and confidence as an inferior push factor of digital banking. That means, their security and privacy concern about the bank's digital platform is not up to the extreme level of satisfaction. They also feel that risk and threat is the main pull factor of adoption intention.

7) HDFC

Figure 5.14

Enabling and Disabling Factors of Digital Banking (HDFC)



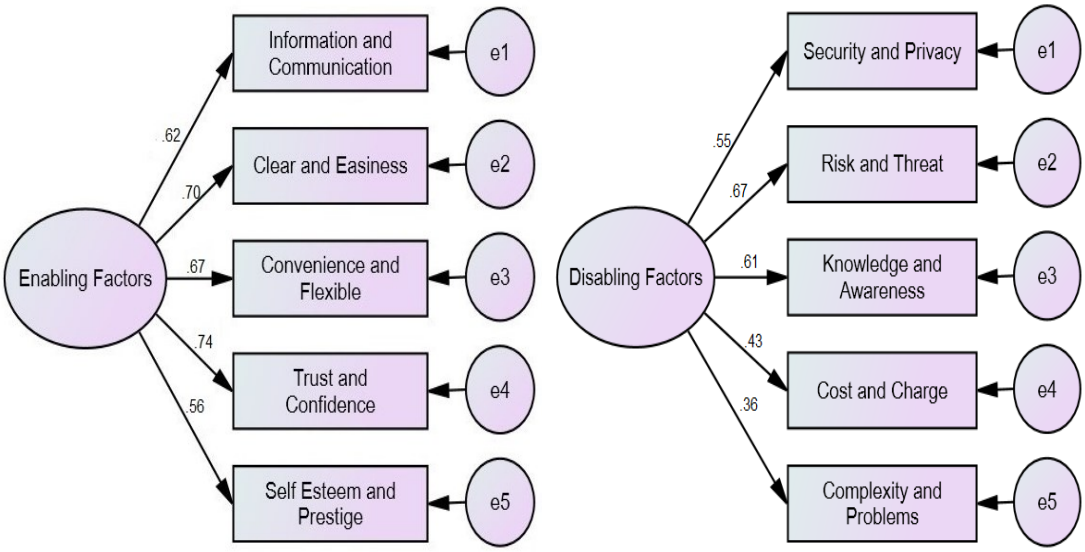
Here the intra bank comparison of New Generation Banks is done with the help of Confirmatory Factor Analysis. First of all, the opinion of digital banking users of HDFC is considered for the discussion. They have marked their opinion on factors affecting digital banking acceptance as its push and pull characteristics. As regards the push factors, trust & confidence (β=0.77) and information & communication (β=0.72) are the main variables which have followed by clear & easiness (β=0.66) and convenience & flexibility (β=0.66). On the contrary, self-esteem & prestige (β=0.58) is not considered as the basic push factor for the adoption intention.

The discussion about the pull factors of digital banking exhibits that risk and threat (β=0.58) and security & privacy (β=0.50) are the main factors which have followed by knowledge and awareness (β=0.42). On the other hand, cost & charges (β=0.36) and complexity & problems (β=0.32) are not considered as the main pull factors of adoption intention. The result discloses that cost & charges levied by the New Generation Banks are comparatively low than that of Public Sector Banks. Moreover, the digital banking users of HDFC bank have high level of trust and confidence on bank's digital platform to conduct their online transactions.

8) ICICI

Figure 5.15

Enabling and Disabling Factors of Digital Banking (ICICI)



To identify the enabling and disabling factors of digital banking acceptance among ICICI Bank customers, Confirmatory Factor Analysis is used. The result of the analysis depicts that trust & confidence (β=0.74) and clear & easiness (β=0.70) are the critical determinants of online banking practices. Further, convenience & flexibility (β=0.67) and information & communication (β=0.62) are considered as the next best push factors of the same banking practices. But self-esteem & prestige (β=0.56) is not as much as identified as the important push factor so far.

Figure 5.15 also depicts the result of disabling factors of adoption intention. From the figure it is clear that risk & threat (β=0.67) and knowledge & awareness (β=0.61) are the main pull factors which disable the use of online banking. Similarly, security & privacy (β=0.55), cost & charges (β=0.43) are the next pull factors that back out the use of digital technology in banking transactions. However, complexity & problems (β=0.36) considered as the main issue to quit the online transactions. The results can be concluded that ICICI bank's customers have good faith on their banking digital platform to conduct online transactions. But they bothered about unauthorized access of third party in the same platform.

9) AXIS BANK

Figure 5.16

Enabling and Disabling Factors of Digital Banking (AXIS)

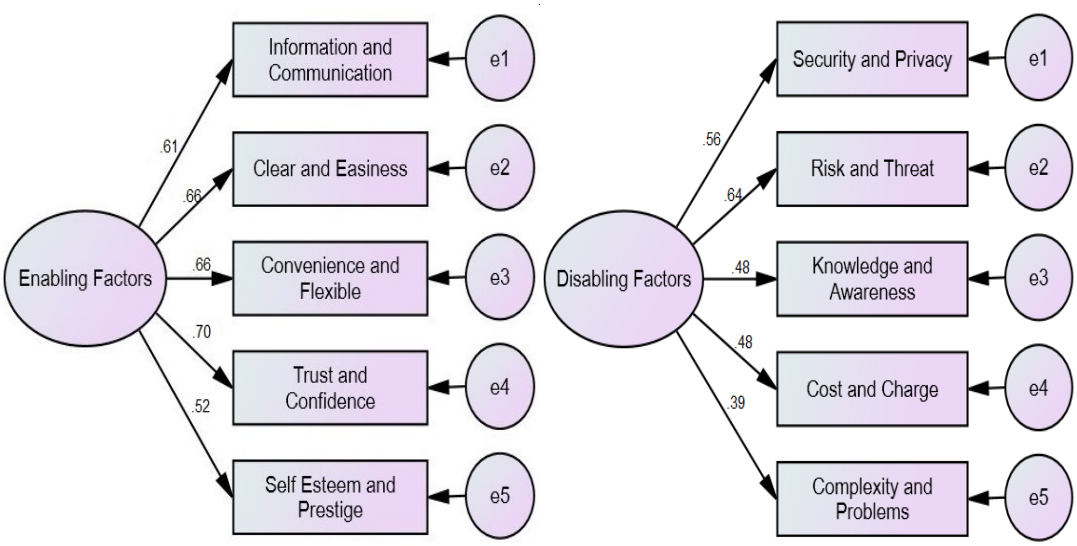


Figure 5.16 exhibits the result of Confirmatory Factor Analysis used to identify the enabling and disabling factors of digital banking adoption intention. The AXIS bank customers have opined that trust & confidence (β=0.70) is the main push factor for enabling the use of digital banking. Furthermore, clear and easiness (β=0.66) and convenience & flexibility (β=0.66) with same beta co-efficient explains the equal level of influence in the adoption intention. Additionally, information & communication (β=0.61) is the next best push factor for the use of online banking. But self-esteem & prestige (β=0.52) is not considered as the main enabler of the same banking practices.

Finally, the discussion about disabling factors of digital banking discloses that risk & threat (β=0.64) and security & privacy (β=0.56) are the main pull factors in the use of digitalized banking transactions. Besides that, knowledge & awareness (β=0.48) and cost & charges (β=0.48) have same beta co-efficient to explain their disabling characteristics. Moreover, the complexity & problems (β=0.39) is not as much as identified as the main disabling factor of DB. The result concludes that AXIS bank customers have good faith in their bank's technology adoption as the same as other New Generation banks considered for the study.

5.12 Frequency of use of Green/Digital Initiatives – Bank wise Analysis

The below table reflects the result of frequency of use of Green/Digital Initiatives followed by the sample banks selected for the study. The Frequency of use is measured in Five-point Lickert Scale in the order of 5 for Always used, 4 for Often used, 3 for Sometimes used, 2 for Rarely used and 1 for Never used. Here most of the Green/Digital Initiatives denoted below are followed only by State Bank of India. Green Channel Counter and Green Remit Cards are not tailed by other sample banks of the study. Accordingly, the comparative analysis is conducted to identify the pattern of usage of Digital Initiatives by using Descriptive Statistics namely, Mean and Standard Deviation. The results are presented below;

Table 5.59

Frequency of use of Green/Digital Initiatives

Green/Digital Initiatives	SBI	Canara	PNB	Federal	SIB	IDBI	HDFC	ICICI	AXIS
ATM/CDM	4.82 (0.48)	4.77 (0.42)	4.75 (0.43)	4.88 (0.50)	4.78 (0.46)	4.82 (0.38)	4.78 (0.46)	4.98 (0.51)	4.74 (0.48)
POS Terminals using Debit /Credit Cards	4.73 (0.50)	4.65 (0.50)	4.63 (0.50)	4.86 (0.34)	4.68 (0.51)	4.75 (0.43)	4.60 (0.49)	4.68 (0.46)	4.55 (0.50)
Net Banking	4.67 (0.49)	4.80 (0.40)	4.55 (0.50)	4.51 (0.50)	4.71 (0.45)	4.60 (0.61)	4.55 (0.50)	4.66 (0.47)	4.60 (0.49)
Mobile Applications	4.74 (0.48)	4.75 (0.43)	4.75 (0.43)	4.71 (0.45)	4.73 (0.44)	4.75 (0.48)	4.71 (0.45)	4.71 (0.45)	4.71 (0.50)
Mobile wallets e.g.: - Paytm	4.73 (0.50)	4.59 (0.74)	4.68 (0.68)	4.60 (0.53)	4.66 (0.47)	4.80 (0.40)	4.71 (0.45)	4.65 (0.50)	4.77 (0.42)
Tele Banking	2.07 (1.05)	1.55 (0.72)	2.02 (0.62)	1.66 (0.60)	1.68 (0.70)	2.17 (1.13)	2.14 (1.20)	1.91 (0.79)	2.22 (1.06)
Green Channel Counter	4.33 (0.50)	1.00 (1.04)	1.00 (1.05)	1.00 (1.02)	1.00 (1.07)	1.00 (1.05)	1.00 (1.06)	1.00 (1.09)	1.00 (1.04)
Passbook printing kiosks	4.53 (0.44)	3.43 (0.88)	3.40 (0.49)	3.37 (0.49)	3.41 (0.45)	3.48 (0.75)	3.44 (0.48)	3.27 (0.49)	3.26 (0.68)
Green Remit Cards	4.02 (0.72)	1.00 (1.09)	1.00 (1.07)	1.00 (1.05)	1.00 (1.04)	1.00 (1.02)	1.00 (1.04)	1.00 (1.08)	1.00 (1.06)
Queue Management System	4.64 (0.48)	3.20 (0.81)	2.60 (0.49)	2.51 (0.50)	2.58 (0.50)	2.56 (0.66)	2.55 (0.65)	2.62 (0.58)	2.67 (0.83)
Remote Deposits	2.37 (1.13)	2.31 (0.75)	2.22 (0.63)	2.11 (0.71)	2.02 (0.50)	2.18 (0.94)	2.33 (0.65)	2.11 (0.64)	2.26 (0.83)
Cheque Deposit Machine/Kiosk	3.46 (0.52)	3.00 (0.78)	2.74 (0.71)	2.90 (0.72)	3.16 (0.55)	2.98 (0.81)	3.26 (0.57)	3.44 (0.56)	3.11 (0.61)

Source: Primary Data

In the case of SBI, the respondents are always using the Digital Initiatives like; ATM/CDM ($\bar{X}$ = 4.82, s = 0.48), POS terminals ($\bar{X}$ = 4.73, s = 0.50), Net Banking ($\bar{X}$ = 4.67, s = 0.49), Mobile Applications ($\bar{X}$ = 4.74, s = 0.48), Mobile Wallets ($\bar{X}$ = 4.73, s = 0.50), Passbook printing Kiosk ($\bar{X}$ = 4.53, s = 0.44) and Queue Management System ($\bar{X}$ = 4.64, s = 0.48). Similarly, they are often using Green Channel Counter ($\bar{X}$ = 4.33, s = 0.50) and Green Remit Cards ($\bar{X}$ = 4.02, s = 0.72). GCC and GRC are the new ventures in the field of paperless banking introduced by SBI. Furthermore, the respondents are sometimes used the Cheque Deposit Machine/Kiosk ($\bar{X}$ = 3.46, s = 0.52) for depositing their cheques of another bank branches. Likewise, they are rarely using the Tele Banking System ($\bar{X}$ = 2.07, s = 1.05) and Remote Deposits ($\bar{X}$ = 2.37, s = 1.13).

With regard to Canara Bank, the respondents are always using the paperless initiatives namely; ATM/CDM ($\bar{X}$ = 4.77, s = 0.42), POS terminals ($\bar{X}$ = 4.65, s = 0.50), Net Banking ($\bar{X}$ = 4.80, s = 0.40), Mobile Applications ($\bar{X}$ = 4.75, s = 0.43) and Mobile Wallets ($\bar{X}$ = 4.59, s = 0.74) for conducting their daily banking transactions. On the other hand, they are sometimes using the Passbook Printing Kiosk ($\bar{X}$ = 3.43, s = 0.88), Queue Management System ($\bar{X}$ = 3.20, s = 0.81) and Cheques Deposit Machine/Kiosk ($\bar{X}$ = 3.00, s = 0.78) which are situated in the banking premises. Likewise, the respondents are rarely using the Tele Banking System ($\bar{X}$ = 1.55, s = 0.72) and Remote Deposit ($\bar{X}$ = 2.31, s = 0.75). But the Green Channel Counter and Green Remit Cards are never used by the customers; because these facilities are not introduced by the bank.

With reference to Punjab National Bank, the Digital Banking users are always using the Green Initiatives such as; ATM/CDM ($\bar{X}$ = 4.75, s = 0.43), POS terminals ($\bar{X}$ = 4.63, s = 0.50), Net Banking ($\bar{X}$ = 4.55, s = 0.50), Mobile Applications ($\bar{X}$ = 4.75, s = 0.43) and Mobile Wallets ($\bar{X}$ = 4.68, s = 0.68) to access their banking services. These customers are sometimes used other initiatives like; Passbook Printing Kiosk ($\bar{X}$ = 3.40, s = 0.49), Queue Management System ($\bar{X}$ = 2.60, s = 0.49) and Cheques Deposit Machine/Kiosk ($\bar{X}$ = 2.74, s = 0.71). Furthermore, they rarely and never used

the Tele Banking ($\bar{X}$ = 2.02, s = 0.62) & Remote Deposit ($\bar{X}$ = 2.21, s = 0.63) and Green Channel Counter ($\bar{X}$ = 1.00, s = 1.05) & Green Remit Cards ($\bar{X}$ = 1.00, s = 1.07) respectively.

Regarding the Federal Bank, the customers are always using the Digital Initiatives like; ATM/CDM ($\bar{X}$ = 4.88, s = 0.50), POS terminals ($\bar{X}$ = 4.86, s = 0.34), Net Banking ($\bar{X}$ = 4.51, s = 0.50), Mobile Applications ($\bar{X}$ = 4.71, s = 0.45) and Mobile Wallets ($\bar{X}$ = 4.60, s = 0.53) for managing and controlling their banking activities. But the usage of Passbook Printing Kiosk ($\bar{X}$ = 3.37, s = 0.49), Queue Management System ($\bar{X}$ = 2.51, s = 0.50) and Cheque Deposit Machine/Kiosk ($\bar{X}$ = 2.90, s = 0.72) are comparatively low as compared with State Bank of India. Likewise, the banking customers are rarely using the Tele Banking System ($\bar{X}$ = 1.66, s = 0.71) and Remote Deposits ($\bar{X}$ = 2.11, s = 0.71) of the bank. Moreover, they never used the Green Channel Counter and Green Remit Cards as their Digital banking practices.

In the case of South Indian Bank, the customers are always using the Green Initiatives such as ATM/CDM ($\bar{X}$ = 4.78, s = 0.46), POS terminals ($\bar{X}$ = 4.68, s = 0.51), Net Banking ($\bar{X}$ = 4.71, s = 0.45), Mobile Application ($\bar{X}$ = 4.73, s = 0.44) and Mobile wallets ($\bar{X}$ = 4.66, s = 0.47) for their daily banking activities. The respondents are sometimes using other paperless initiatives like, Passbook Printing Kiosk ($\bar{X}$ = 3.41, s = 0.45), Queue Management System ($\bar{X}$ = 2.58, s = 0.50) and Cheque Deposit Machine/Kiosk ($\bar{X}$ = 3.16, s = 0.55). Additionally, the usage of Tele Banking System ($\bar{X}$ = 1.68, s = 0.70) and Remote Deposits ($\bar{X}$ = 2.02, s = 0.50) are very low and they are rarely used the same. The other two initiatives (GCC and GRC) have not yet introduced by the bank.

With respect to IDBI bank, the digital banking users opine that they are always using the Digital Initiatives like, ATM/CDM ($\bar{X}$ = 4.82, s = 0.38), POS terminals ($\bar{X}$ = 4.75, s = 0.43), Net Banking ($\bar{X}$ = 4.60, s = 0.61), Mobile Application ($\bar{X}$ = 4.75, s = 0.48) and Mobile wallets ($\bar{X}$ = 4.80, s = 0.40) to access the banking services. Besides that, they are sometimes used the Passbook Printing Kiosk ($\bar{X}$ = 3.48, s = 0.75), Queue

Management System ($\bar{X}$ = 2.56, s = 0.66) and Cheque Deposit Machine/Kiosk ($\bar{X}$ = 2.96, s = 0.81) as and when enter into the bank branches. Moreover, the usage of Remote Deposit ($\bar{X}$ = 2.71, s = 1.13) and Tele Banking System ($\bar{X}$ = 2.18, s = 0.94) is very low as in the case of other Old Generation Banks.

With respect to HDFC Bank, the customers are always using the Green Initiatives namely, ATM/CDM ($\bar{X}$ = 4.78, s = 0.46), POS terminals ($\bar{X}$ = 4.60, s = 0.49), Net Banking ($\bar{X}$ = 4.55, s = 0.50), Mobile Application ($\bar{X}$ = 4.71, s = 0.45) and Mobile wallets ($\bar{X}$ = 4.71, s = 0.45) to conduct their daily banking transaction. However, the usage of Passbook Printing Kiosk ($\bar{X}$ = 3.44, s = 0.48), Queue Management System ($\bar{X}$ = 2.55, s = 0.65) and Cheque Deposit Machine/Kiosk ($\bar{X}$ = 3.26, s = 0.47) are comparatively low as compared with SBI. Similarly, they are rarely using the Tele Banking System ($\bar{X}$ = 2.14, s = 1.20) and Remote Deposit ($\bar{X}$ = 2.33, s = 0.65) as the Digitalized technology introduced by the bank. Similarly, they have never used the Green Channel Counter and Green Remit Card yet.

According to ICICI Bank, the Digital Banking users are always using the paperless initiatives like; ATM/CDM ($\bar{X}$ = 4.98, s = 0.51), POS terminals ($\bar{X}$ = 4.68, s = 0.46), Net Banking ($\bar{X}$ = 4.66, s = 0.47), Mobile Application ($\bar{X}$ = 4.71, s = 0.45) and Mobile wallets ($\bar{X}$ = 4.65, s = 0.50) to conduct their banking activities. However, the usage of Passbook Printing Kiosk ($\bar{X}$ = 3.27, s = 0.49), Queue Management System ($\bar{X}$ = 2.62, s = 0.58) and Cheque Deposit Machine/Kiosk ($\bar{X}$ = 3.44, s = 0.56) is comparatively low. Similarly, they are rarely using the Tele Banking ($\bar{X}$ = 1.91, s = 0.79) and Remote Deposit System ($\bar{X}$ = 2.11, s = 0.64) of the bank.

As stated by the customers of AXIS Bank, they are always using the Digital Initiatives such as; ATM/CDM ($\bar{X}$ = 4.74, s = 0.48), POS terminals ($\bar{X}$ = 4.55, s = 0.50), Net Banking ($\bar{X}$ = 4.60, s = 0.49), Mobile Application ($\bar{X}$ = 4.71, s = 0.50) and Mobile wallets ($\bar{X}$ = 4.77, s = 0.42) for conducting their banking activities. But they are only sometimes using the Passbook Printing Kiosk ($\bar{X}$ = 3.26, s = 0.68), Queue Management System ($\bar{X}$ = 2.67, s = 0.83) and Cheque Deposit Machine/Kiosk ($\bar{X}$ =

3.11, s = 0.61) situated in the branch of the bank. Likewise, the usage of Tele Banking ($\overline{X}$ = 2.22, s = 1.06) and Remote Deposit System ($\overline{X}$ = 2.26, s = 0.83) is very low with mean values of less than 3.

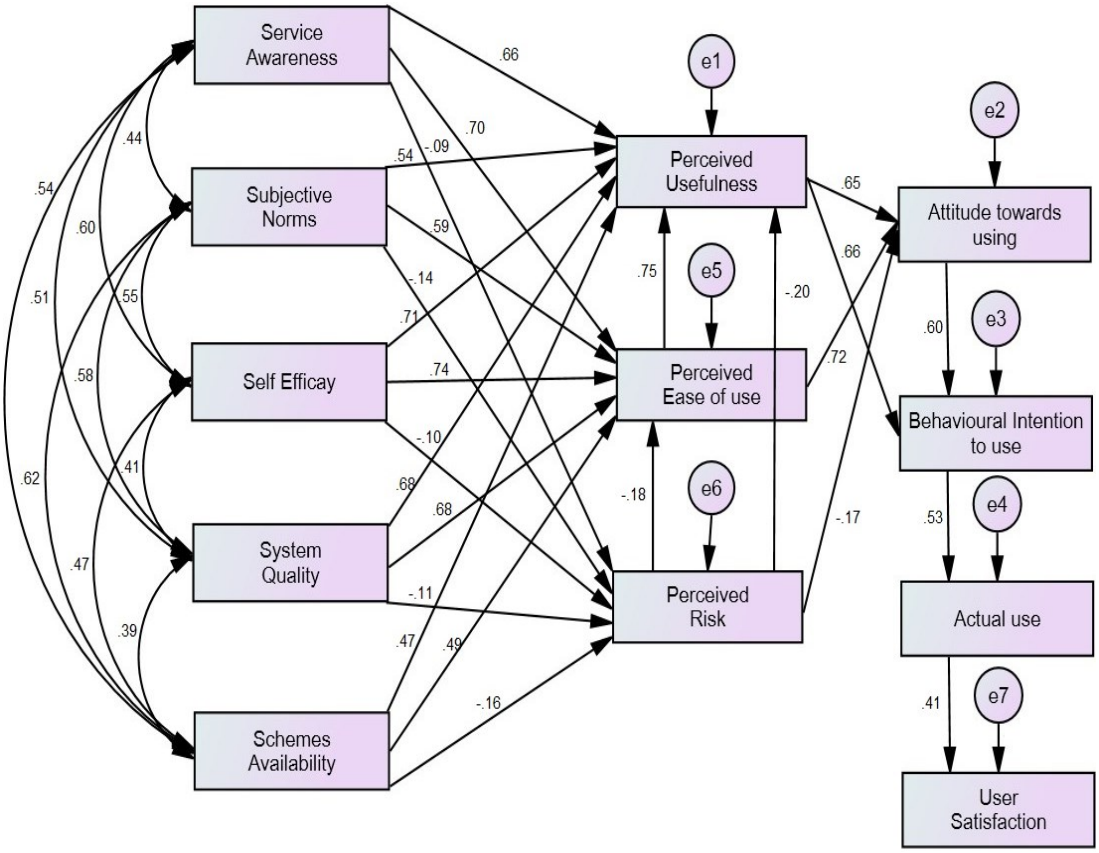
5.13 Perception level of Digital Banking Acceptance – Bank wise Analysis

This section deals with the perception level of digital banking acceptance. To know the adoption intention, Extended Technology Acceptance Model is used. Moreover, Service Awareness, Subjective Norms, Self-Efficacy, System Quality and Schemes Availability are taken as external stimulus; Perceived Ease of Use, Perceived Usefulness and Perceived Risk are considered as Cognitive Responses and Attitude towards use, Behavioral Intention to use, Actual use & User Satisfaction are examined as Affective Responses, Intention and Behavioral Responses respectively. To measure the cause-and-effect relationship between these variables, Structural Equation Modelling is used. Before finding out the cause-and-effect relationship, a proposed model **(see figure 5.4)** is prepared and checked the fitness of this model with the help of Confirmatory Factor Analysis (**see table 5.55).** Since the model fit Indices are within the recommended value of good fit, the proposed model said to be good fit to the date, and it is accepted to construct the measurement model. According to the model fitness, the hypotheses **(see table 5.54)** are formulated to test the measurement models. Consequently, this section of analysis is going to check the test the Digital banking acceptance among customers of Sample Banks.

1. SBI

Figure 5.17

Measurement Model on Perception level of Digital Banking Acceptance of SBI



Result of Hypotheses testing (SBI)

The SEM is used to identify the multivariate relationship between each variable to the latent constructs. Consequently, the positive and negative relationship among the constructs of the proposed model is measured with the help of Path Co-efficient at 1% level of significance. Table 5.60 shows the hypotheses testing results and observations of each hypothesized significance path of the model. It explains the fitness of hypothesized structural model with the data obtained from the respondents. The below table has explained the cause-and-effect relationship between External Stimulus, Cognitive Response, Affective Responses, Intention on Behavioral Responses towards the adoption intention of digital banking users of SBI.

Table 5.60

Result of hypotheses testing (SBI)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported /Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.66	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.54	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.71	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.68	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.47	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.70	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.59	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.74	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.68	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.49	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.09	0.291	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.14	0.313	Not Supported
SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.10	0.402	Not Supported

SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.11	0.501	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.16	0.274	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.75	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.18	0.265	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.20	0.152	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.65	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.72	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.17	0.207	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.66	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.60	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.53	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.41	<0.001	Supported

Source: Primary Data

The above table presents the result of Structural Equation Modelling used to identify the adoption intention of digital banking among customers of SBI. The measurement model (figure 5.17) explains the path co-efficient of External Stimulus to Cognitive Response, Affective Response, Behavioral Intention and Behavioral Response of Technology Acceptance Scale. Moreover, the measurement model has verified the directional linkage among the model constructs. Here the Beta Co-efficient is tested at 1% level of significance. Accordingly, the impact of independent variables on dependent variables is tested and exhibited in this analysis. So, the determinants of digital banking adoption intention are measured with the help of path co-efficient.

The relationship between External Stimulus (ES) and Perceived Usefulness (PU) is measured by taking Service Awareness (SA), Subjective Norms (SN), Self-Efficacy (SE), System Quality (SQ) and Schemes Availability (SAv) as external variables. The Beta Co-efficient indicates that amongst all the variables, self-efficacy shows maximum positive impact on perceived usefulness ($\beta=0.71$, $p<0.001$) followed by system quality ($\beta=0.68$, $p<0.001$), service awareness ($\beta=0.66$, $p<0.001$), subjective norms ($\beta=0.54$, $p<0.001$) and schemes availability ($\beta=0.47$, $p<0.001$). Since the 'p' values are less than 0.01, the null hypothesis is rejected at 1% level of significance. Subsequently, the proposed hypothesis that external stimulus has significant positive impact on perceived usefulness is accepted.

The result of dependence between external stimulus (ES) and perceived ease of use (PEOU) of technology acceptance reveals that self-efficacy ($\beta=0.74$, $p<0.001$) is considered as the main determinant of perceived ease of use (PEOU). It means, when self-efficacy increases by 1, perceived ease of use also increases by 0.74. Furthermore, service awareness ($\beta=0.70$, $p<0.001$), system quality ($\beta=0.68$, $p<0.001$), subjective norms ($\beta=0.59$, $p<0.001$) and schemes availability ($\beta=0.49$, $p<0.001$) are considered as the second determinant of PEOU. Since the 'p' values are less than 0.01, the null hypothesis is rejected at 1% level of significance. It means, the proposed

hypothesis is accepted, and external stimulus have significant positive impact on perceived ease of use (PEOU).

With reference to the association of external stimulus and perceived risk (PR), the significant positive relationship cannot be seen. It means, all the external variables are negatively related with perceived risk. Moreover, the beta co-efficient and significance values are explaining the same in the case of service awareness (β= -0.09, p=0.291), subjective norms (β= -0.14, p=0.313), self-efficacy (β= -0.10, p=0.402), system quality (β= -0.11, p=0.501) and schemes availability (β= -0.16, p=0.274). It can be found that the null hypothesis cannot be rejected and external stimulus has no significant positive impact on perceived risk (PR). It can be concluded that if there is any positive change in the external stimulus of TAM, that may adversely affect the risk perception of the digital banking users.

The interrelationship among cognitive responses is measured to know the perception level of ease of use, usefulness and risk. The result of the analysis reached in a conclusion that perceived ease of use (β=0.75, p<0.001) is an important predictor of perceived usefulness (PU). It explains the strong significant positive correlation between them. It means, when PEOU goes up by 1; there is simultaneous increase in the PU by 0.75. However, the impact of perceived risk (PR) on perceived ease of use (β= -0.18, p=0.265) and perceived usefulness (β= -0.20, p=0.152) tends to be negative and formulated hypothesis is insignificant and not supported. It explains that if there is any increase in the risk perception, that may adversely affect the easiness and usefulness of DB.

The directional linkage between cognitive response and affective responses exhibits the result that PEOU (β=0.72, p<0.001) and PU (β=0.65, p<0.001) are the two essential antecedents of attitude towards the use of digital banking. It has the strongest path of influence with affective response and the proposed hypothesis is significantly and positively established. But there is only a negative relationship exists between perceived risk (PR) and attitude towards the use (ATU) of online banking. It

has an insignificant negative path co-efficient of -0.17 (p=0.207) and thus, the changes in perceived risk (PR) adversely affect the changes in attitude of usage (ATU).

The dependence of cognitive response on behavioral intention demonstrates that perceived usefulness (PU) observed as the most critical determinant of behavioral intention. The significant path co-efficient of 0.66 (p=<0.001) explains the direct positive impact of perceived usefulness (PU) on behavioral intention (BI). To be more precise, perceived usefulness goes up by 1; behavioral intention also goes up by 0.66. Since the result is significant the proposed hypothesis is accepted and a positive relationship between perceived usefulness and behavioral intention is established.

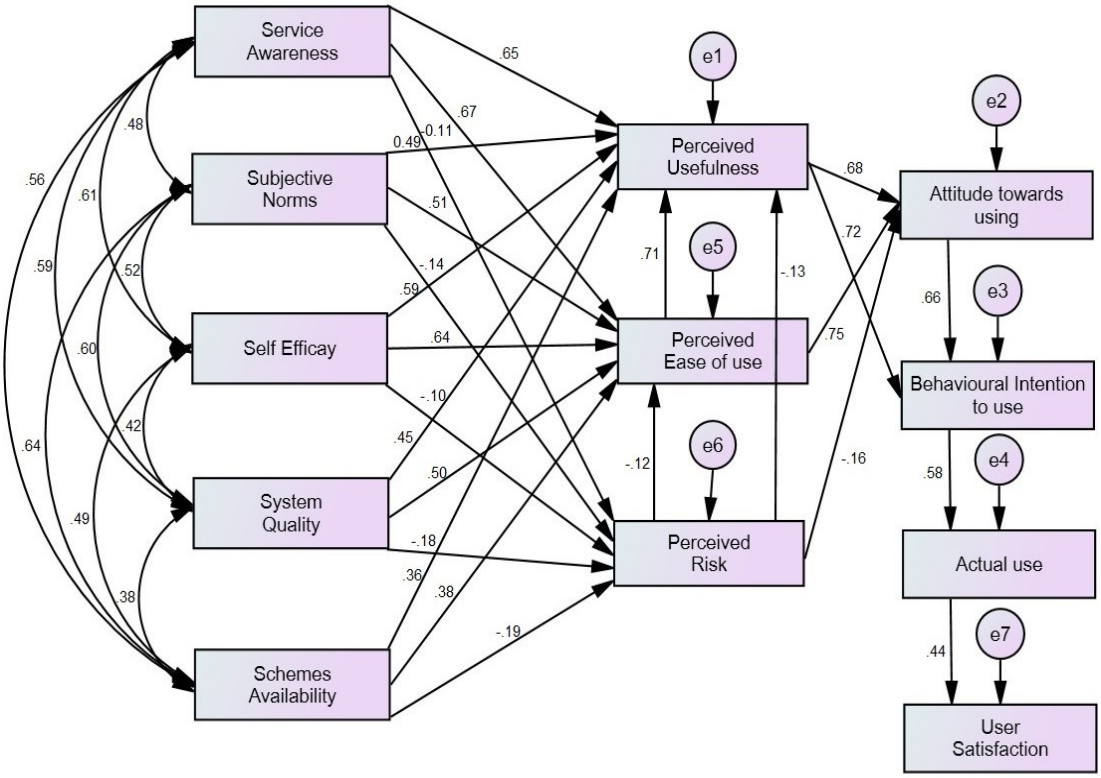
According to TAM, the cause-and-effect relationship of affective response & behavioral intention (BI) indicates that behavioral intention (BI) to the use of digital banking is primarily and positively affected by attitude towards the use (β=0.60, p<0.001). These constructs have direct influence and which in turn leads to the acceptance of proposed hypothesis is that there exists significant positive impact of affective response on behavioral intention (BI). It is found that if there is any positive change in the attitude of digital banking users; that will definitely establish the same positive changes on their behavioral intention (BI).

Finally, the outcome of the analysis reveals that there exists a significant positive relationship between behavioral intention (BI) and behavioral responses of TAM. According to actual use of digital banking practices, behavioral intention is the positive predictor with beta co-efficient of 0.53 (p<0.001). Thus, the positive changes in behavioral intention will directly affect the actual use of digital initiatives of SBI. Furthermore, the end result of user satisfaction is measured with its antecedent of TAM, that is actual use. The result shows a significant positive correlation with beta co-efficient of 0.41. It explains that the actual use goes up 1; user satisfaction also goes up by 0.41. The result concludes that the actual use has a significant positive impact on satisfaction of digital banking users of SBI.

2. Canara Bank

Figure 5.18

Measurement Model on Perception level of Digital Banking Acceptance of Canara Bank



Result of Hypotheses testing (Canara Bank)

Structural Equation Modelling is used to fit a model to the data for solving a set of equations. Here, the proposed model with its parameters and equality constructs are examined. The structural model consists of five variables namely, External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Responses. The interrelationship between these variables is measured to understand the dependency among them. Hence, the values of Beta-coefficient are tested and interpreted at 1% level of significance. Table 5.61 explains the hypotheses formulated to identify the cause-and-effect relationship between selected variables. Moreover, the use of the Technology Acceptance Model is meant for ascertaining the adoption intention of Digital banking practices among customers of Canara Bank.

Table 5.61

Result of hypotheses testing (Canara Bank)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported/ Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.65	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.49	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.59	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.45	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.36	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.67	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.51	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.64	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.50	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.38	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.11	0.498	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.14	0.287	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.10	0.461	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.18	0.218	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.19	0.196	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.71	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.12	0.377	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.13	0.293	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.68	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.75	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.16	0.275	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.72	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.66	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.58	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.44	<0.001	Supported

Source: Primary Data

This section of analysis is intended simultaneously to examine the direct and indirect relationship among the constructs of the proposed model. SEM has the ability to do this analysis. Moreover, SEM is popular in modelling the multivariate relationship of Technology Acceptance Model. In this section, the identification of perception level on adoption intention is made with the help of path analysis between External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Responses on Digital banking practices among the customers of Canara Bank. The result is presented below.

Table 5.61 shows the hypothesis testing results and observations of each hypothesized significance path. The relationship between external stimulus (ES) and perceived usefulness (PU) indicates that the perceived usefulness can be estimated and interpreted through service awareness (β=0.65, $p<0.001$), self-efficacy (β=0.59, $p<0.001$), subjective norms (β=0.49, $p<0.001$), system quality (β=0.45, $p<0.001$) and schemes availability (β=0.36, $p<0.001$). These constructs have a significant positive impact on PU and service awareness is considered as the primary determinant of PU. It also explains positive variance in the perception level of digital banking usefulness. Since the result is significant, it is proved that the proposed hypothesis is accepted and supported for the model.

To measure the influence of external stimulus (ES) and perceived ease of use (PEOU), path co-efficient is used and interpreted at 1% level of significance. Since the values are analysed, service awareness (β=0.67, $p<0.001$) is found to be the positive predictor of perceived ease of use. Furthermore, self-efficacy (β=0.64, $p<0.001$), subjective norms (β=0.51, $p<0.001$), system quality (β=0.50, $p<0.001$) and schemes availability (β=0.38, $p<0.001$) have significant positive influence on PEOU and considered as the next best predictors of this dimension. Since all the 'p' values are less than 0.01, the null hypothesis is rejected and proposed hypothesis validates for the model.

This analysis also proposed to assess the effects of external stimulus (ES) on perceived risk (PR) of Technology Acceptance Model. service awareness (β= -0.11, $p=0.498$), subjective norms (β= -0.14, $p=0.287$), self-efficacy (β= -0.10, $p=0.461$), system quality (β= -0.18, $p=0.21$) and schemes availability (β= -0.19, $p=0.196$) exerts

negative influence on perceived risk (PR) on digital banking. It means, if there is any increase in the level of awareness, efficacy, quality and availability on digital initiatives, that will decrease the risk perception towards the same. Since the 'p' values are greater than 0.05, the null hypothesis cannot be rejected and external stimulus is found to be the negative predictors of risk perception.

Moving to the next part of analysis i.e., intra relationship among the dimensions of cognitive responses. According to TAM, perceived ease of use, perceived usefulness and perceived risk are the main dimensions of cognitive responses. From the figure it is clear that perceived ease of use and usefulness are the directly related responses and PEOU (β=0.68, $p<0.001$) is the significant positive predictor of PU. On the other hand, PR is indirectly related with PEOU (β= -0.12, p=0.377) & PU (β= -0.13, p=0.293) and it has insignificant negative correlation with them.

The association between cognitive responses and affective responses is found that perceived usefulness (β=0.68, $p<0.001$) and perceived ease of use (β=0.75, $p<0.001$) are the two most important determinants of attitude towards the use (ATU) of digital banking. Overall, these variables of the study are capable of defining the changes in the attitude towards the use (ATU) of Technology Acceptance. Although, Perceived Risk (β= -0.16, p=0.275) exerts a negative influence on ATU and if there is any change in PR, that will adversely affect the attitude of the customers. Accordingly, the existence of ATU is positively influenced by PU and PEOU and negatively impacted by PR.

According to TAM, there is cause-and-effect relationship exists between cognitive response and behavioral intention. It means, perceived usefulness (β=0.72, $p<0.001$) has strong positive influence on behavioral intention to the use of digital banking. Correspondingly, when perceived usefulness goes up 1; behavioral intention also goes up by 0.72. Therefore, it can be explained that PU is more influential in shaping the intention of consumers towards technology acceptance.

The formulated hypotheses also exhibit the path analysis between affective responses and behavioral intention (BI). The path for the hypothesis is significant with

beta co-efficient of 0.66 and 'p' value of less than 0.01. Thus, the interrelationship between attitude towards the use (ATU) of digital banking and its behavioral intention (bi) is established. Therefore, attitude towards the use (ATU) is considered as an essential antecedent of behavioral intention and it would be the significant positive predictor to explain the direct impact on the same. It can be concluded that if there is any positive/negative change in the attitude (ATU) of digital banking users, that will directly affect their behavioral intention (BI) towards the use of online banking.

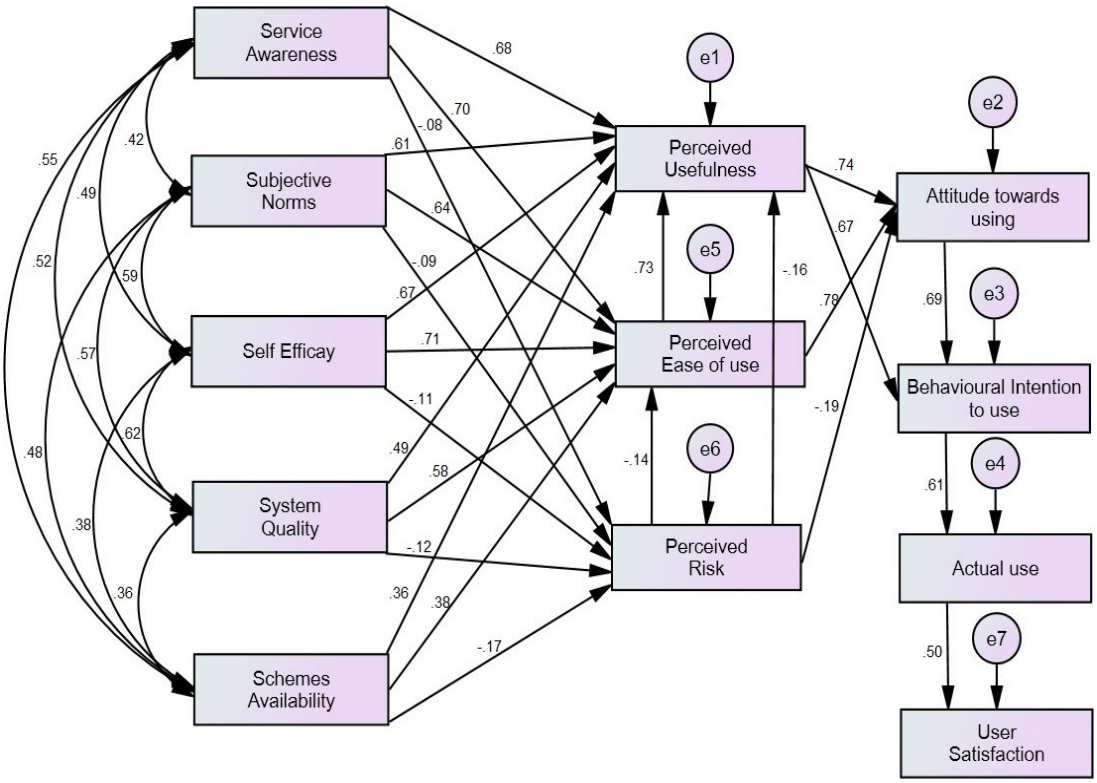
The final result of Technology Acceptance Model is to understand the actual use of digital banking users of Canara Bank. Furthermore, there is a hypothesis proposed to test the impact of behavioral intention (BI) on actual use. The outcome of the study provides support for the research hypothesis and the directional linkage between these variables are identified. It shows that actual use of digital banking is primarily and positively affected by behavioral intention ($\beta=0.58$, $p<0.001$). This implies that perceived behavioral intention is the important predictor of the actual use with significant path co-efficient. Thus, the formulated hypothesis of behavioral intention has a significant positive impact on actual use of digital banking is accepted.

Similarly, the directional linkage between actual use (AU) and user satisfaction (US) is important to measure. The analysis reached the conclusion that repeated use of digital initiatives for conducting daily banking transaction; the satisfaction level will be increased to some extent. The finding is verified with the help of significant path co-efficient of 0.44 ($p<0.001$). It means, actual use has increased by 1, there would be simultaneous increase in user satisfaction by 0.44.

3. Punjab National Bank

Figure 5.19

Measurement Model on Perception level of Digital Banking Acceptance of PNB



Result of Hypotheses testing (PNB)

This part of analysis and interpretation deals with the identification of perception level on digital banking acceptance among customers of Punjab National Bank. Here, SEM is a powerful technique that can combine complex path model with the latent variables. In this analysis, External Stimulus, Cognitive Responses, Affective Responses, Behavioral Intention and Behavioral Responses are taken as theoretical constructs of TAM. The relationship between these theoretical constructs is represented by regression or path co-efficient to ensure the inter dependence. Moreover, the model is constructed to identify the multivariate relationship of factors influencing adoption intention. Hence, the Extended Technology Acceptance Model is followed, and the hypotheses are proposed according to the criteria of this study.

Table 5.62

Result of hypotheses testing (PNB)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported /Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.68	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.61	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.67	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.49	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.36	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.70	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.64	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.71	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.58	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.38	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.08	0.513	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.09	0.499	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.11	0.445	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.12	0.407	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.17	0.234	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.73	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.14	0.368	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.16	0.270	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.74	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.78	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.19	0.102	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.67	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.69	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.61	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.50	<0.001	Supported

Source: Primary Data

Figure 5.19 exhibits the path analysis of Extended Technology Acceptance Model. It can be seen that the model implies structure for the covariance between the observed variables. in the analysis External Stimulus (ES) are taken as observed variables. Furthermore, the multivariate relationship among the latent constructs is measured with the help of regression co-efficient at 1% level of significance. Moreover, the Extended TAM defines the perception level of digital banking acceptance through structural path analysis.

First of all, the inter dependence between external stimulus and perceived usefulness (PU) is measured with the help of regression co-efficient. Therefore, five different hypotheses set up by considering major external variables. From the values of regression co-efficient, it can be seen that service awareness ($\beta=0.68$, $p<0.001$) and self-efficacy ($\beta=0.67$, $p<0.001$) are the two critical determinant of perceived usefulness. Besides that, subjective norms ($\beta=0.61$, $p<0.001$) is considered as the second determinant of PU. Similarly, system quality ($\beta=0.49$, $p<0.001$) and schemes availability ($\beta=0.36$, $p<0.001$) are other positively affected variables of ES. Since the path co-efficient is significant, the proposed hypotheses are validated and established to the model.

Likewise, the directional linkage between external stimulus and perceived ease of use (PEOU) is measured to check whether the proposed assumptions are right or wrong. Subsequently, the values of regression co-efficient exhibit that self-efficacy ($\beta=0.71$, $p<0.001$) and service awareness ($\beta=0.70$, $p<0.001$) are the most influencing factors of perceived ease of use (PEOU). Similarly, subjective norms ($\beta=0.64$, $p<0.001$), system quality ($\beta=0.58$, $p<0.001$) and schemes availability ($\beta=0.38$, $p<0.001$) are considered as the next best affecting factors of PEOU according to the importance in digital banking. Thus, the path co-efficient is significant and the proposed hypotheses are accepted at 1% level of significance. So, the external stimulus has significant positive impact on PEOU and changes in the observed variables will directly affect the changes in the latent variables.

Regarding the relationship between external stimulus and perceived risk (PR), there exists an indirect interdependence among them. To be clear, external stimulus

like service awareness (β= -0.08, p=0.513), subjective norms (β= -0.09, p=0.499), self-efficacy (β= -0.11, p=0.445), system quality (β= -0.12, p=0.407) and schemes availability (β= -0.17, p=0.234) are negatively related with the risk perception. Hence, the experienced digital banking users will have only low level of risk perception than that of inexperienced customers. It is because of the inverse relationship among them i.e., increase in the perception level of external variables leads to decrease in the attitude of risk and threats. Since all the 'p' values are greater than 0.05, the null hypothesis cannot be rejected and there exists only insignificant negative relationship of variables.

With respect to the intra-relationship among cognitive responses of digital banking, perceived ease of use (PEOU) is considered as the basic requirement of perceived usefulness (PU). The beta co-efficient of 0.73 ($p<0.001$) explains that PEOU is a significant antecedent of PU and these are directly related. It means, PEOU goes up 1; PU also goes up by 0.73. But, perceived risk (PR) is indirectly related with PEOU (β= -0.14, p=0.368) as well as PU (β= -0.16, p=0.270). Since the path co-efficient is insignificant, the attitude towards easiness and usefulness will adversely affect the risk perception. It can be concluded that as far as cognitive response are considered, PEOU & PU are identified as positively related variables and PR has only negative relationship on them.

This analysis s also conducted to identify the determinants of attitude towards the use (ATU) of digital banking. attitude is and affective response of the Technology Acceptance Model and it has influenced by the presence of cognitive responses in the model. Hence, the proposed analysis demonstrates that perceived ease of use (β=0.74, $p<0.001$) and perceived usefulness (β=0.78, $p<0.001$) have significant positive impact on attitude of the digital banking users. These dimensions are considered as the important predictors with good explanatory power for estimating the values of dependent variables. On the contrary, perceived risk (PR) is termed as a negative indicator of ATU with insignificant beta co-efficient of -0.19 (p=0.102). Since the result is insignificant, the proposed hypothesis is rejected and there is no significant

positive relationship exists between perceived risk and attitude towards the use of digital banking.

According to TAM, there is a casual relationship exists among perceived usefulness (PU), attitude towards the use (ATU) and behavioral intention (BI). This part analyses how and to what extent the path co-efficient explains the effect of perceived usefulness (PU) and attitude (ATU) on behavioral intention (BI). It reflects that behavioral intention is primarily and positively affected by PU (β=0.67, $p<0.001$) and ATU (β=0.69, $p<0.001$). These two dimensions are the essential antecedents to measure the changes in behavioral intention (BI).

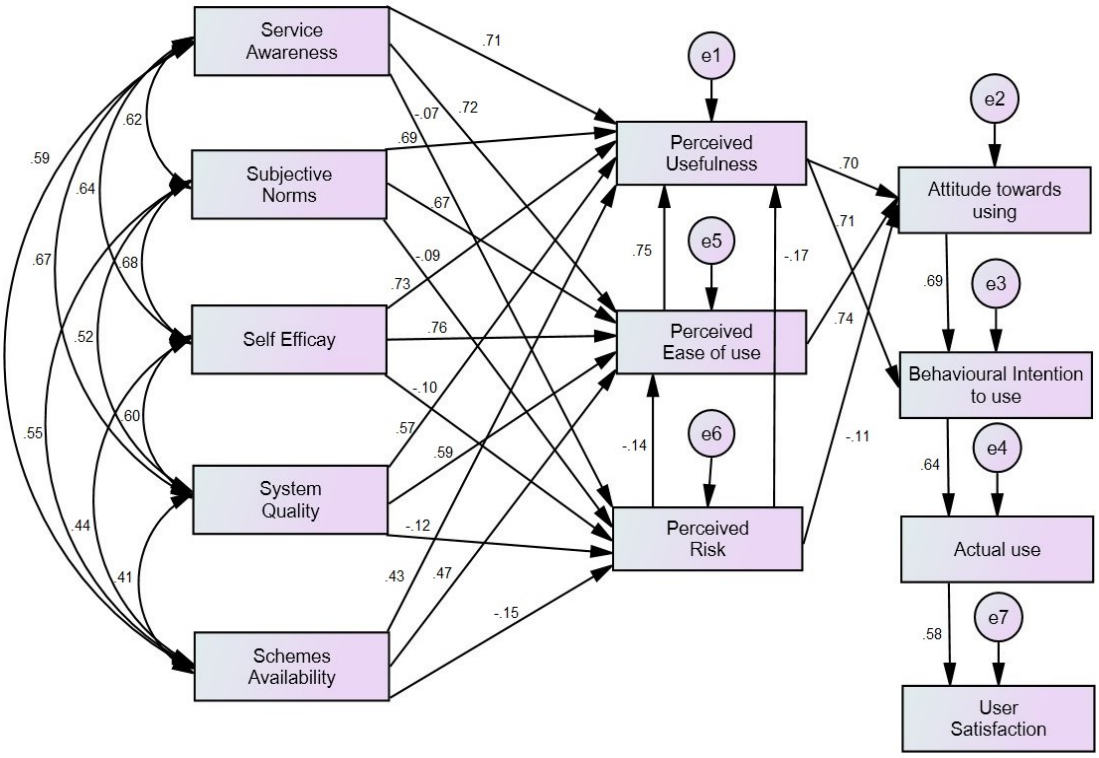
The aim of the proposed measurement model is to understand the level of actual use of digital banking and the inter relationship between behavioral intention and behavioral response of TAM. It is observed that behavioral intention has a statistically important positive effect over actual use (AU) of online banking with regression co-efficient of 0.61 ($p<0.001$). It means, 61% of changes in the actual use can be determined on the basis of behavioral intention to use. Therefore, it has exercised a considerable favorable impact on usage of digital initiatives. This result also establishes with the significant path co-efficient and hence the proposed hypothesis is validated and supported for the result.

Lastly, the level of perception on user satisfaction (US) has measured. To know the adoption intention of digital banking acceptance, satisfaction level is an important dimension to be considered. Hence, the proposed model is identified its end result as the causal relationship between actual use (AU) and user satisfaction (US). Here, the path co-efficient of 0.50 ($p<0.001$) defines that actual use is considered as an instrumental factor for user satisfaction and it creates positive impact on it. Therefore, the analysis can be concluded that frequent use of digital banking products and services will create mental satisfaction, happiness and pleasant among the users of Punjab National Bank.

4. Federal Bank

Figure 5.20

Measurement Model on Perception level of Digital Banking Acceptance of Federal Bank



Result of Hypotheses testing (Federal Bank)

This section of analysis deals with the adoption intention of digital banking acceptance among customers of Federal Bank. It has done with the help of Extended Technology Acceptance Model. The path analysis is interpreted on the basis of Structural Equation Modelling. Moreover, the causal relationship between independent and dependent variables are analysed and interpreted on the basis of regression co-efficient. Here, the Structural Equation Models are often visualized by the graphical path diagram presented in figure 5.20. In this measurement model, the dimensions of Technology Acceptance Theory have used to understand the Adoption level of Digital banking practices. Furthermore, the proposed hypotheses are formulated and tested in 1% level of significance. Table 5.63 explains the hypotheses and its path analysis results.

Table 5.63

Result of hypotheses testing (Federal Bank)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported / Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.71	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.69	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.73	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.57	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.43	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.72	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.67	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.76	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.59	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.47	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.07	0.548	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.09	0.510	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.10	0.423	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.12	0.397	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.15	0.312	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.75	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.14	0.355	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.17	0.264	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.70	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.74	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.11	0.402	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.71	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.69	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.64	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.58	<0.001	Supported

Source: Primary Data

Table 5.63 explains the hypotheses formulated for testing the interdependence of the constructs, path of the model for representing the dependent & independent variables, path co-efficient for explaining the power of observed variables in determining the latent variables, significance value of test result and the result of the hypotheses testing. Generally, the table is the explanation of the proposed measurement model drawn as figure 5.20. In this section, each and all variables are measured simultaneously. Therefore, it can understand the role of independent variables in shaping the changes of dependent variables.

First of all, the relationship between external stimulus (ES) and perceived usefulness (PU) is measured. The result reflects that self-efficacy (β=0.73, $p<0.001$) and service awareness (β=0.71, $p<0.001$) are the prominent factors influencing the usefulness of digital banking. In addition to this, subjective norms (β=0.69, $p<0.001$), system quality (β=0.57, $p<0.001$) and schemes availability (β=0.43, $p<0.001$) have statistically important positive effect over perceived usefulness (PU) of adoption intention in this order respectively. Since the 'p' values are significant at 1% level of significance; the proposed hypotheses are accepted and all the constructs of external stimulus have direct positive relationship with perceived usefulness.

Likewise, the causal relationship between external stimulus and perceived ease of use (PEOU) is identified. The result exhibits that self-efficacy (β=0.76, $p<0.001$) and service awareness (β=0.72, $p<0.001$) are considered as the important predictors of perceived ease of use. Besides this, subjective norms (β=0.67, $p<0.001$), system quality (β=0.59, $p<0.001$) and schemes availability (β=0.47, $p<0.001$) have considerable significant impact on easiness of digital banking practices in this order respectively. Since the result said to be significant, direct positive effect of external stimulus on perceived ease of use is established.

Furthermore, the analysis of directional linkage between external stimulus and perceived risk (PR) reveals that service awareness (β= -0.07, p=0.548), subjective norms (β= -0.09, p=0.510), self-efficacy (β= -0.10, p=0.423), system quality (β= -0.12, p=0.397) and schemes availability (β= -0.15, p=0.312) have negative effect on perceived risk (PR). The higher the user's awareness, efficacy, quality and availability

of the digital banking practices; lower the user's risk concern about the same. In other words, the positive changes in external stimulus will negatively affect the risk perception of digital banking users.

In addition, the intra relationship among the constructs of cognitive response is analysed with the help of regression co-efficient. The effect of perceived ease of use (PEOU) on perceived usefulness (PU) is examined collectively and the result tends to positive with beta co-efficient of 0.75 and 'p' value of less than 0.01. PEOU is reported as an important factor in explaining the perceived usefulness and it leads to the conclusion that users espouse a new technology when they find it relatively ease of use. On the Contrary PEOU (β= -0.14, p=0.355) and PU (β= -0.17, p=0.264) are negatively correlated with perceived risk of Technology Acceptance Model. If the digital banking practice is relatively easy and useful for conducting the daily banking transactions; the risk perception will reduce by establishing the trust and faith on it.

Then, the association between cognitive response and affective response indicates that perceived usefulness (β=0.70, p<0.001) and perceived ease of use (β=0.74, p<0.001) are reported as instrumental factors in defining the attitude and it creates positive impact on ATU. It means, the digital banking users have positive attitude towards technology adoption which they perceived as easy and useful. On the other hand, ATU is negatively influenced by the presence of risk perception with insignificant path co-efficient of -0.11 (p=0.402). To be clear, the loss of trust and faith in the novel technology adopted may negatively affect the attitude towards the usage.

The model explicitly specifies the critical factor affecting the behavioral intention of digital banking acceptance. Here, perceived usefulness (PU) and attitude towards the use (ATU) are taken as cognitive response and affective response respectively. The result reveals that perceived usefulness (β=0.71, p<0.001) and attitude (β=0.69, p<0.001) are proved to be the strongest predictors of behavioral intention (BI). Increased usefulness encourages attitude towards the use of digital banking and thereby creating adoption intention towards the same. Since the test result is significant, proposed hypotheses are accepted and cognitive response and affective response are positively related with behavioral intention (BI).

The cause-and-effect relationship between behavioral intention and behavioral response is measured by taking actual use (AU) as the latent construct. The result explicit that there is a strongest significant path of influence between behavioral intention (BI) and actual use (AU) with regression co-efficient of 0.64 ($p<0.001$). The perception on actual use of digital banking is affected significantly by the positive changes of behavioral intention. It means, behavioral intention (BI) goes up by 1; actual use (AU) also goes up by 0.64. Therefore, the path co-efficient indicates how well the model is performing to interpret the perception on actual use of digital banking. Moreover, the model is proposed specifically for measuring the adoption intention.

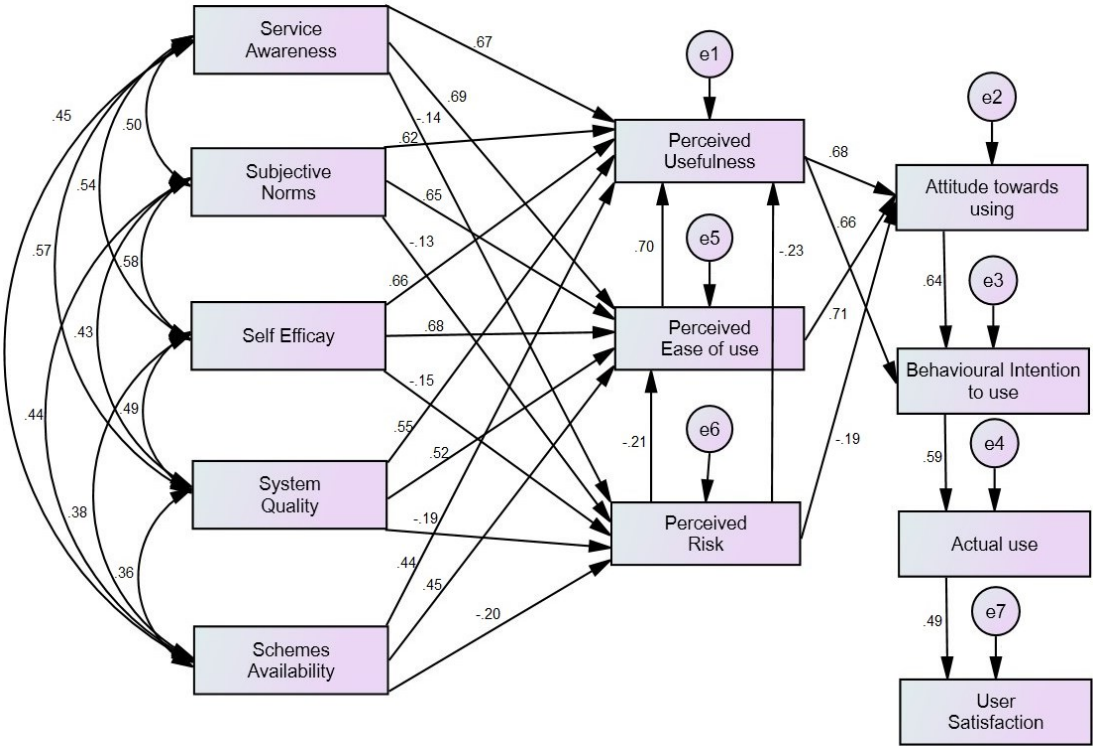
Finally, Technology Acceptance Model is not completed until the satisfaction level is measured. Subsequently, the experienced digital banking users will have strong level of satisfaction on digital banking practices. Hence, the proposed hypothesis is formulated to test the impact of actual use (AU) on user satisfaction (US). Since the regression co-efficient of 0.56 and p values of less than 0.01 is significant at 1% level of significance, the proposed hypothesis is accepted. It is found that actual use has significant positive impact on user satisfaction and every change in the level of usage will directly affect the level of satisfaction.

As far as digital banking users of Federal Bank has concerned, they have high level of experience and expectation towards digital initiatives followed by the bank. Hence, their perception towards adoption intention is good than that of Canara and Punjab National Bank. It is because of the anytime & anywhere services rendered by the bank with low processing and transaction cost. The customers perceived high level of trust and faith in the technology adoption status of the bank.

5. South Indian Bank

Figure 5.21

Measurement Model on Perception level of Digital Banking Acceptance of SIB



Result of Hypotheses testing (SIB)

This part of analysis shows the result of adoption intention of digital banking practices among the customers of South Indian Bank. Here, Extended version of Technology Acceptance Model (TAM) is used to understand the Attitude, Intention, Usage and Satisfaction towards Digital Initiatives of the bank. Furthermore, External Stimulus and Cognitive Response are considered as the main observed variables of the model and its impact on latent variables is analyzed and interpreted. Accordingly, Structural Equation Modeling (SEM) is used and it is considered as a powerful technique that combines the path model with latent variables. It is employed to assess the cause-and-effect relationship among selected variables. The regression co-efficient is checked at 1% level of significance and the hypotheses testing results are presented below.

Table 5.64

Result of hypotheses testing (SIB)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported/ Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.67	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.62	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.66	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.55	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.44	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.69	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.65	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.68	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.52	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.45	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.14	0.341	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.13	0.387	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.15	0.316	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.19	0.252	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.20	0.230	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.70	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.21	0.214	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.23	0.197	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.68	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.71	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.19	0.246	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.66	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.64	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.59	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.49	<0.001	Supported

Source: Primary Data

Table 5.64 explains the result of proposed measurement model of Technology Acceptance. The model is analyzed and interpreted with certain assumptions regarding the multivariate relationship between dependent and independent variables. Subsequently, the proposed hypotheses are reported according to the directional linkage of External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Response. Moreover, the results analyzed under the purview of path co-efficient between observed and latent variables. SEM has simultaneously examined the direct and indirect relationship among the constructs of the proposed model.

SEM is employed to fit a hypothesized relationship between external stimulus and perceived usefulness (PU). Table shows the hypothesis testing results of five external stimulus used for the analysis. It indicates that service awareness (β=0.67, $p<0.001$), self-efficacy (β=0.66, $p<0.001$) and subjective norms (β=0.62, $p<0.001$) are appear to be the main positive determinants of perceived usefulness of digital banking. Besides that, system quality (β=0.55, $p<0.001$) and schemes availability (β=0.44, $p<0.001$) are considered as the next best factors of PU. According to TAM, external stimulus has direct positive impact on perceived usefulness.

The directional relationship between external stimulus (ES) and perceived ease of use (PEOU) is measured with the help of path analysis. The result demonstrates that the service awareness (β=0.69, $p<0.001$), self-efficacy (β=0.68, $p<0.001$) and subjective norms (β=0.65, $p<0.001$) are observed as the positive enabling factors of perceived ease of use (PEOU). In addition, system quality (β=0.52, $p<0.001$) and schemes availability (β=0.45, $p<0.001$) are the other positive predictors of PEOU. The analysis shows that the constructs of external stimulus (es) have good explanatory power to define the perception of easiness. Therefore, the proposed hypotheses are validated and established with significant 'p' values at 99% confidence level.

This part of analysis also conducts the association of external stimulus on perceived risk (PR). It exhibits that all constructs of external stimulus have negative and insignificant effect on perceived risk. To be clear, service awareness (β= -0.14,

p=0.341), subjective norms (β= -0.13, p=0.387), self-efficacy (β= -0.15, p=0.376), system quality (β= -0.19, p=0.252) and schemes availability (β= -0.20, p=0.230) are indirectly related with the risk perception of digital banking users. It means, higher the user's awareness, efficacy, quality and availability of digital banking products & services; lower the risk concern about the same. Moreover, experienced users have good level of trust and confidence in online platform than that of inexperienced users. Since the 'p' values are greater than 0.05, the hull hypotheses cannot be rejected and hence, the significant positive impact is not established among the variables.

The intra relationship among cognitive responses has examined with the help of Structural Equation Modeling (SEM). The model observes that Perceived Ease of use (PEOU) is the important predecessor of perceived usefulness (PU) with path co-efficient of 0.70 ($p<0.001$). It means, higher the user's perception on easiness and usefulness; always higher the user's perception on usefulness of digital banking practices. On the other hand, perceived risk (PR) exerts a negative influence on PEOU (β= -0.21, p=0.214) and PU (β= -0.23, p=0.197). If the digital banking users experience the easiness and usefulness features of online platform for conducting their banking transactions, trust and confidence will be increased and there by fear of risk can be reduced to some extent.

Similarly, the effect of cognitive response on affective response is examined and interpreted with the help of path analysis. Here, perceived ease of use (PEOU), perceived usefulness (PU) and perceived risk (PR) are taken as cognitive response of the Extended Technology Acceptance Model. Moreover, PEOU (β=0.71, $p<0.001$) and PU (β=0.68, $p<0.001$) are the internal elements of the TAM which are confirmed as critical and highly significant factors to encourage the customers on Attitude towards the use (ATU) of online banking practices. Since the path co-efficient is significant, the proposed hypotheses are accepted and hence, PEOU & PU have significant positive impact on ATU. On the contrary, perceived risk (PR) (β= -0.19, p=0.246) is negatively related with the attitude (ATU) of customers towards the use of digital platform for banking. It means, perceived risk goes up 1; Attitude towards

the use will go down by 0.20. Since the 'p' value is insignificant, the null hypothesis cannot be rejected at 1% level of significance.

The research model is explained the causal relationship of perceived usefulness (PU) and attitude (ATU) towards behavioral intention (BI) to the use of digital banking practices. perceived usefulness (β=0.66, $p<0.001$) and attitude towards the use (β=0.64, $p<0.001$) have a positive & significant impact on the behavioral intention (BI) to use. Thus, the usefulness features and attitude characteristics will definitely create direct impact on user's interest in using online platform to conduct banking operations. Therefore, the proposed model is accepted the hypothesized relationship of cognitive & affective response on behavioral intention (BI).

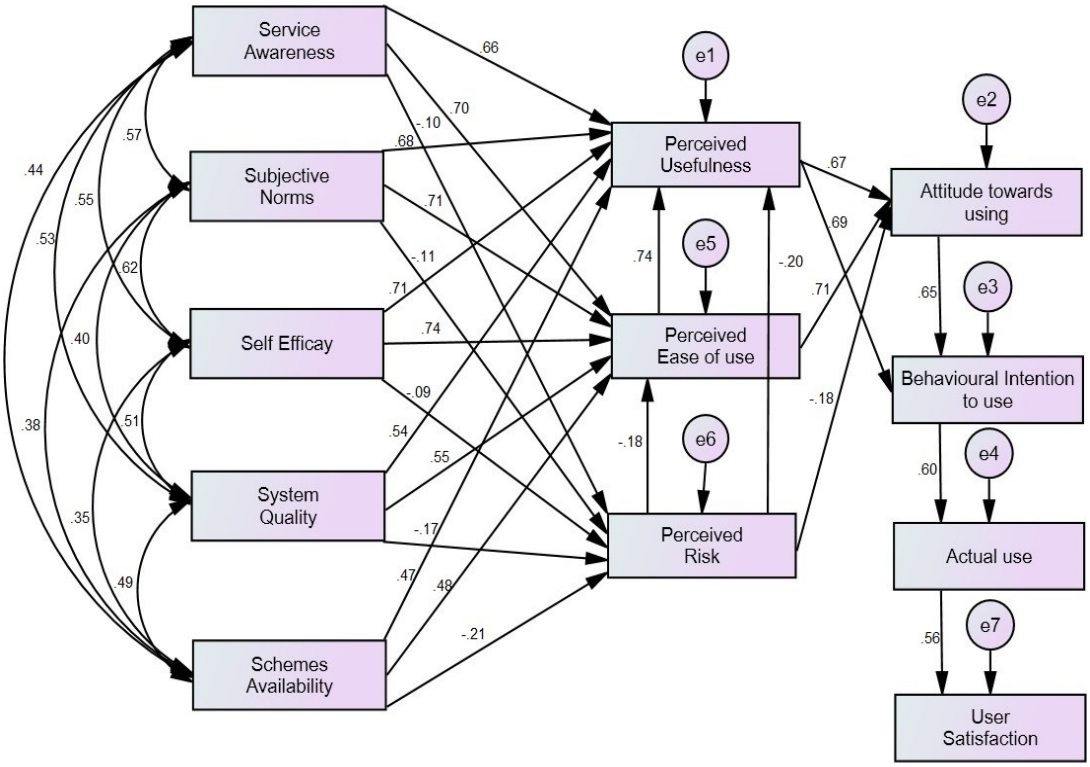
Finally, the result of Technology Acceptance Model is used to ensure the actual use of digital banking practices under the purview of behavioral intention (BI). It is because of behavioral intention (β=0.59, $p<0.001$) is considered as the important predecessor of actual use. In other words, if the online platform is more beneficial to conduct banking operations, then the customer's interest will increased simultaneously. Therefore, frequency of use is the main factor affecting the Perceived benefits of using online banking. Since the path co-efficient is significant at 1% level of significance, the proposed hypothesis is validated and established.

Last but not the least, the role of Technology Acceptance Model for measuring the customer satisfaction towards adoption intention has interpreted. In this model, user satisfaction (US) is the most prominent dependent variable of actual use (AU). Correspondingly, the affection of independent variable is measured with path co-efficient of 0.49 ($p<0.001$). Since the path co-efficient is positive and significant at 1% level of significance, the causal relationship is established between actual use (AU) and user satisfaction (US). Moreover, if the actual use has increased by 1; there will be simultaneous increase in the user satisfaction by 0.49. Finally, the analysis concludes that there is good level of digital banking acceptance among the customers of South Indian Bank.

6. IDBI

Figure 5.22

Measurement Model on Perception level of Digital Banking Acceptance of IDBI



Result of Hypotheses testing (IDBI)

The main aim of the present analysis is to investigate the factors that affect consumer's Attitude, Perception, Intention and Satisfaction towards digital banking initiatives followed by IDBI. For this purpose, Extended Technology Acceptance Model is used and the relationship among the observed & latent variables are estimated. This analysis is the explanatory result of research model proposed to measure the adoption intention through path analysis. Hence, Structural Equation Modeling (SEM) is the widely accepted statistical analysis for evaluating the explanatory power of the structural model. According to SEM, major hypotheses is formulated to verify the significant relationship among the variables chosen for the analysis. The result is presented below.

Table 5.65

Result of hypotheses testing (IDBI)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported / Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.66	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.68	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.71	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.54	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.47	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.70	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.71	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.74	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.55	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.48	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.10	0.493	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.11	0.476	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.09	0.524	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.17	0.285	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.21	0.211	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.74	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.18	0.260	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.20	0.199	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.67	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.71	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.18	0.259	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.69	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.65	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.60	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.56	<0.001	Supported

Source: Primary Data

Table 5.65 shows the hypotheses testing results and observations of path between External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Response of Extended Technology Acceptance Model. Hence the result presents the path analysis of theses combined hypotheses formulated. The directional linkage between the constructs is analysed and interpreted on the basis of regression co-efficient at 99% confidence level. Moreover, this analysis is the explanation of perception level towards the adoption intention of Digital banking practices.

This analysis is intended to examine the direct and indirect relationship between external stimulus and cognitive response of proposed measurement model. The result reflects that self-efficacy (β=0.71, $p<0.001$), subjective norms (β=0.68, $p<0.001$) and service awareness (β=0.66, $p<0.001$) are the significant positive predictors of perceived usefulness. Furthermore, these factors are affected tremendously for creating usefulness behavior among digital banking users of IDBI. Besides that, system quality (β=0.54, $p<0.001$) and schemes availability (β=0.47, $p<0.001$) have significant positive impact and appears to be the second determinants of perceived usefulness. It found that all indicators of external stimulus have direct influence and which in turn leads to greater usefulness behavior among consumers.

The above table also presents the path analysis between external stimulus and perceived ease of use (PEOU) with combined hypotheses. These hypotheses are formulated by taking the five indicators of external stimulus. From this analysis, self-efficacy (β=0.74, $p<0.001$), subjective norms (β=0.71, $p<0.001$) and service awareness (β=0.70 $p<0.001$) are the critical and highly influencing factors of perceived ease of use. In addition, system quality (β=0.55, $p<0.001$), schemes availability (β=0.48, $p<0.001$) are the other next best enabling factors of perceived ease of use (PEOU). It means, the proposed hypotheses are supported for the model and established significant positive impact on latent variables.

The analysis of risk perception is very important for the estimation of digital banking acceptance. Hence, the extension of Technology Acceptance of Model is ready to consider the influence of external stimulus on risk perception. The result

indicates that all indicators of external stimulus have indirect negative relationship with risk perception in the order of service awareness (β= -0.10, p=0.493), subjective norms (β= -0.11, p=0.476), self-efficacy (β= -0.09, p=0.594), system quality (β= -0.17, p=0.285) and schemes availability (β= -0.21, p=0.211). To be clear, positive changes in the awareness, efficacy, quality and availability will negatively affect the risk perception of the respondents. Hence, the bank can ensure the greater acceptance of paper less activities for delivery banking products and services.

It is important to analyze the intra relationship among cognitive responses of the model. It is because of, these indicators are the mediating variables of external stimulus and affective response of the same model. The analysis demonstrates that perceived ease of use (PEOU) is considered as the important forerunner of perceived usefulness (PU) with significant path co-efficient of 0.74 ($p<0.001$). In other words, the paperless banking practices are more useful for its users when it is easy to use. On the contrary, the relationship of perceived risk (PR) on perceived ease of use (β= -0.18, p=0.260) and perceived usefulness (β= -0.20, p=0.199) is negative and any increase in the attitude of risk & threat, that will adversely affect the easiness and usefulness.

The proposed model is measured the causal relationship between cognitive response and affective response. So, the effect of PEOU, PU and PR on ATU is checked through path analysis. The analysis of hypotheses demonstrates that perceived usefulness (β=0.67, $p<0.001$) and perceived ease of use (β=0.71, $p<0.001$) are the critical estimators of attitude towards the use (ATU) of digital initiatives. Moreover, any positive changes in the perception of easiness and usefulness will directly affect the attitude of usage. On the contrary, the negative element of cognitive response i.e., perceived risk (β= -0.18, p=0.259) has indirect relationship with attitude of the customers. Generally, the concern about risk & threat will directly affect the privacy & security features of digital platform, which in turn leads to the uninstallation of DBP.

The model also proposed to understand the interest of consumers towards paperless banking. Generally, effective usage and attitude are considered as the

forerunners of consumer intention. Hence, the proposed hypotheses are designed to analyze the cause-and-effect relationship of usefulness and attitude towards behavioral intention (BI). The result indicates that PU (β=0.69, $p<0.001$) and ATU (β=0.65, $p<0.001$) are the strongest positive predictors of behavioral intention. It explains the positive variance in the consumer's interest towards online platform for conducting banking operations. Since the 'p' values are significant, the proposed hypotheses are accepted & validated and PU & ATU have significant positive impact on BI.

Finally, the result of adoption intention is the actual use (AU) of online banking. Usually, Intention is the main antecedent of actual use (AU). Therefore, there is a need to check the directional linkage of behavioral intention (BI) and actual use (AU) with the help of regression co-efficient. The result reveals that if behavioral intention goes up by 1; Actual Use also goes up by 0.60. It means, the regression co-efficient of 0.60 ($p<0.001$) explains the cause-and- effect relationship between observed and latent variables. Thus, the significant positive influence of behavioral intention on actual use has established.

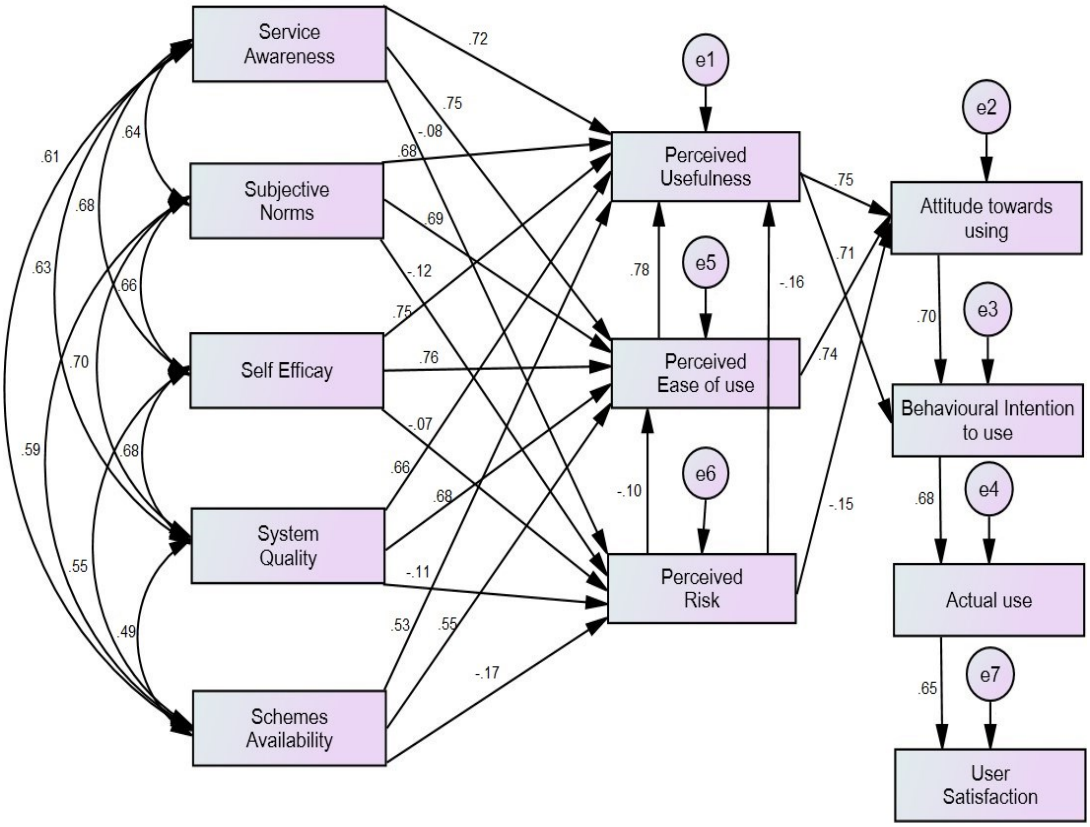
The measurement model is having a tail end with the assessment of user satisfaction (US). There is a need to measure the satisfaction level of consumers towards the new technology/innovation that they have followed. It is because of they are the end user of every innovative strategy of the bank. Here, the adoption intention is measured and interpreted with the view of user satisfaction (US). It is the important descendant of actual use (AU) of digital technology. Here the result reports that actual use (β=0.56, $p<0.001$) have significant positive impact on user satisfaction and the frequent use of paperless banking will enable greater satisfaction towards the same.

It is concluded that figure 5.22 designed a measurement model to estimate the acceptance/adoption of paperless banking initiatives of IDBI. The perception level of digital banking exhibits that they have experienced good knowledge and competency while using online platform for conducting their banking operations. The bank has set up professional strategy for innovating new ventures through sophisticated technology.

7. HDFC

Figure 5.23

Measurement Model on Perception level of Digital Banking Acceptance of HDFC



Result of Hypotheses testing (HDFC)

This part of analysis is going to report the result of perception on digital banking acceptance among customers of HDFC. So, a research model has prepared on the basis of an extension of Technology Acceptance Model with incorporating the indicators of External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Response. Furthermore, a proposed model is tested and analyzed on the basis of structural equations formulated by taking the relationship of key indicators. Here, multivariate analysis has done with the help of a set of assumptions. The result of the study provide support for the research model and for the hypotheses regarding the directional linkage among the model's variables. The results are presented in the below table.

Table 5.66

Result of hypotheses testing (HDFC)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported/ Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.72	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.68	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.75	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.66	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.53	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.75	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.69	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.76	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.68	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.55	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.08	0.554	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.12	0.437	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.07	0.590	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.11	0.475	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.17	0.366	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.78	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.10	0.497	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.16	0.393	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.75	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.74	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.15	0.426	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.71	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.70	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.68	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.65	<0.001	Supported

Source: Primary Data

Table 5.66 presents the result of path analysis with combined hypotheses. It exhibits the information about the hypotheses formulated among key indicators, path & path co-efficient, significance value and the results of hypothesis testing. Here, the proposed hypothesis is based on the significant impact of observed variables on latent constructs. Similarly, path co-efficient indicate how well the model is performing to predict the changes in dependent variables. Likewise, the hypotheses and test results are interpreted at 1% level of significance. Finally, the result presents the acceptance/rejection region of sample data.

First of all, the relationship between external stimulus and perceived usefulness (PU) is measured with the help of regression co-efficient. The result shows that self-efficacy ($\beta=0.75$, $p<0.001$) and service awareness ($\beta=0.72$, $p<0.001$) are the major positive predictors of perceived usefulness, followed by subjective norms ($\beta=0.68$, $p<0.001$) and system quality ($\beta=0.66$, $p<0.001$). In addition, schemes availability also has significant positive impact on perceived usefulness with beta co-efficient of 0.53 ($p<0.001$). The explanatory power of external stimulus on perceived usefulness is good and the positive changes will directly affect the usefulness of digital banking. Since the 'p' values of the proposed hypotheses are significant, it has considered to be validated for the model.

The next section of analysis compares the relationship of external stimulus on perceived ease of use (PEOU). If the customers feel easy and comfort with the digital banking initiatives, they will have good attitude towards the same. Moreover, some of the external variables are there to influence the changing behavior of ease of use. Here, these variables are identified with the help of path analysis. The result indicates that self-efficacy ($\beta=0.76$, $p<0.001$) and service awareness ($\beta=0.75$, $p<0.001$) are considered as the primary positive predictors of perceived ease of use (PEOU), followed by subjective norms ($\beta=0.69$, $p<0.001$) and system quality ($\beta=0.68$, $p<0.001$). Additionally, schemes availability ($\beta=0.55$, $p<0.001$) is the influencing factor and considered to be the secondary positive predictor of PEOU. Hence, all test values are significant at 1%, the proposed hypotheses are tested and validated.

The analysis of perception of risk concern is very important in Technology Acceptance Model. It is the crucial mediating factor in between external stimulus and affective response of the measurement model. Correspondingly, it is necessary to study the effect of external stimulus on risk perception. Hence, the regression co-efficient explains that service awareness (β= -0.08, p=0.554), subjective norms (β= -0.12, p=0.437), self-efficacy (β= -0.07, p=0.590), system quality (β= -0.11, p=0.475) and schemes availability (β= -0.17, p=0.366) have negative impact on risk perception. It is found that the positive changes in external variables will negatively affect the risk perception of customers towards online platform.

Here, cognitive responses are the major intermediating variables of Technology Acceptance Model. External variables and affective responses are considered as the antecedent and descendent of cognitive response respectively. Therefore, the interrelationship among all indicators of cognitive response is analyzed to discuss their role in the proposed model. It identifies that perceived ease of use (PEOU) and perceived usefulness (PU) are linearly related with the path co-efficient of 0.78. It means, the higher user' perception of the ease of use of digital banking practices, it higher the perceived usefulness of the same. One the contrary, perceived risk is the negative variable having indirect influence on PEOU (β= -0.10, p=0.497) and PU (β= -0.16, p=0.393). It can be concluded that among all the indicators of cognitive response, PEOU & PU are directly related variables and these are negatively influenced by the presence of PR. Therefore, hypothesis 1 is accepted and hypothesis 2 & 3 are rejected at % level of significance.

To determine the factor scores of each indicator of cognitive responses on attitude towards the use (ATU), beta co-efficient is used. The hypothesis testing result shows that attitude is anticipated through perceived ease of use (β=0.74, p<0.001) and perceived usefulness (β=0.75, p<0.001). These variables demonstrate high positive significant impact on overall variations in the attitude (ATU). This result validated the hypotheses formulated earlier. As seen in the figure and table, perceived risk (β= -0.15, p=0.426) has negative influence on attitude towards the use (ATU) and the proposed hypothesis is rejected at 1% level of significance. In other words, the

customers feel high amount of risk and security issues, then their attitude of use will be reversed.

The study also estimates the directional linkage of cognitive and affective response on behavioral intention (BI). Here, perceived usefulness (PU) and attitude towards the use (ATU) are taken as cognitive and affective responses respectively. It is found that PU (β=0.71, $p<0.001$) and ATU (β=0.70, $p<0.001$) have remarkable positive effect on BI. These are considered as the important drivers of behavioral intention (BI) with strong path of influence. Since the 'p' values are significant, the proposed hypotheses are accepted and supported for the analysis. Here, the significant effect on BI is together explained by the positive changes in PU and ATU.

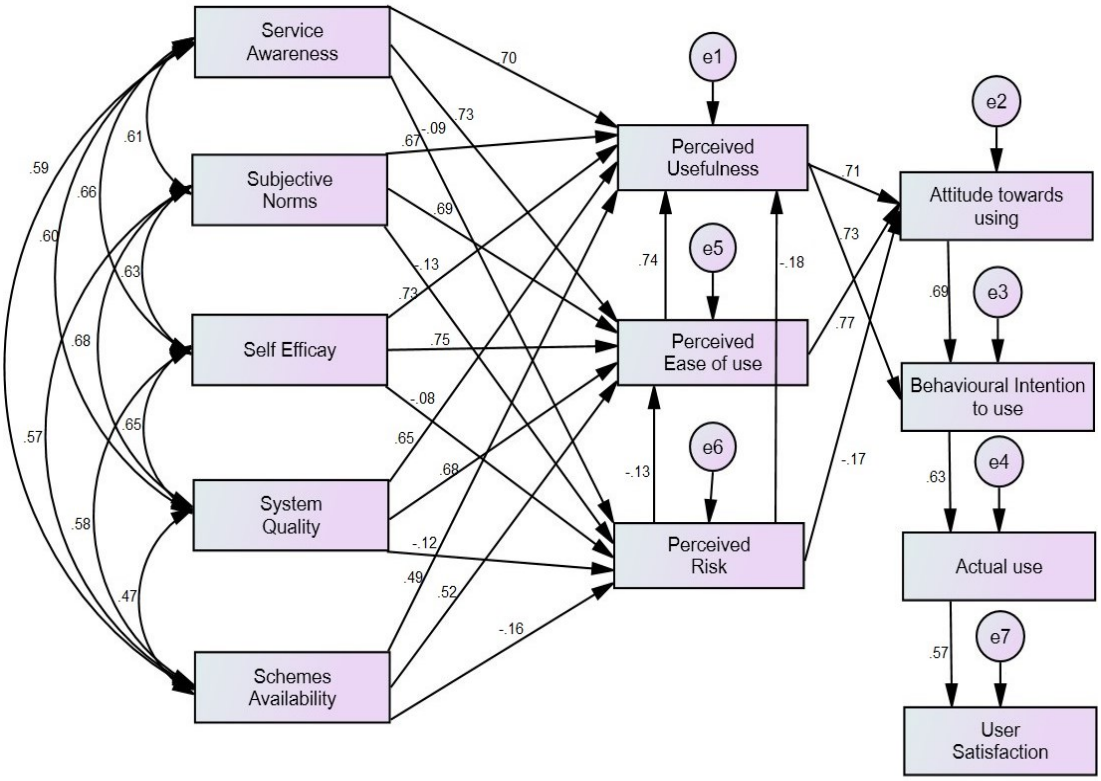
Similarly, the effect of behavioral intention towards behavioral response is studied by taking actual use (AU) as the observed variable. behavioral intention (BI) is considered as an essential forerunner of actual use with the path co-efficient of 0.68 ($p<0.001$). It implies that the path had positive effect with positive path co-efficient and there is a direct linkage between the variables. In addition, is the behavioral intention (BI) goes up by 1; actual use (AU) also goes up by 0.68. Therefore, the proposed hypothesis is supported for the model i.e., BI has significant positive impact on AU with highly influential features.

Lastly, it is necessary to examine the satisfaction level of digital banking users. It implies that the experienced users have a better level of satisfaction than that of inexperienced users. It means, actual use (AU) is the positive predecessor of user satisfaction (US) with the regression co-efficient of 0.65 ($p<0.001$). The result shows that the proposed model establishes its potential in predicting the satisfaction level of consumer's regarding digital banking acceptance. It is concluded that the level of satisfaction can be explained in terms of all the forerunners of Technology Acceptance Model. Moreover, these indicators are the primary drivers of perception, attitude, intention, usage, and satisfaction of customers of HDFC.

8. ICICI

Figure 5.24

Measurement Model on Perception level of Digital Banking Acceptance of ICICI



Result of Hypotheses testing (ICICI)

This analysis presents a discussion about the adoption level of digital banking practices of customers of ICICI Bank. Here, an extension of Technology Acceptance Model is used to express whether the new technology in banking will be accepted by its potential users. The key feature of this proposed model is its emphasis on the perception of potential users of paperless banking. Here, multivariate path analysis has conducted with the help of Structural Equation Modeling (SEM). It is because of there are many observed variables are affected by the adoption intention of Digital Banking users. Likewise, different hypotheses are formulated to test the interrelationship among the model variables. Table 5.67 presents the explanation of proposed hypotheses formulated for the analysis.

Table 5.67

Result of hypotheses testing (ICICI)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported/ Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.70	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.67	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.73	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.65	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.49	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.73	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.69	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.75	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.68	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.52	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.09	0.512	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.13	0.407	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.08	0.552	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.12	0.424	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.16	0.390	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.74	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.13	0.388	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.18	0.331	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.71	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.77	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.17	0.374	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.73	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.69	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.63	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.57	<0.001	Supported

Source: Primary Data

The above figure (5.24) has designed to express the directional linkage between observed and latent variables. In this order, External Stimulus are considered as observed variables, Cognitive Response are taken as mediating variables and Attitude, Intention, Usage & Satisfaction are identified as latent constructs of the model. According to these indicators, table 5.67 presents the result of hypotheses testing by suing path analysis with the help of path co-efficient. Here, the main hypotheses are assorted on the basis of subsidiary variables of External Stimulus, Cognitive Response, Affective Response, Behavioral Intention and Behavioral Response of the model.

Structural Equation Modeling (SEM) provides the multivariate analysis result of external stimulus and perceived usefulness (PU) of online platforms of ICICI Bank. It is visually represented in a set of matrix equations and graphical path diagram. The analysis interprets that amongst all the indicators of external stimulus; self-efficacy ($\beta=0.73$, $p<0.001$) and service awareness ($\beta=0.70$, $p<0.001$) have significant positive impact on usefulness of digital initiatives. Besides this, subjective norms ($\beta=0.67$, $p<0.001$) and system quality ($\beta=0.65$, $p<0.001$) are considered as the next best indicators, and having direct influence on perceived usefulness (PU). Likewise, schemes availability ($\beta=0.49$, $p<0.001$) have only low influence on the same variable. Finally, the result found that external variables of the measurement model are the positive determinants of adoption of online services.

Another explanation of the model is the cause-and-effect relationship between external stimulus and perceived ease of use (PEOU). In this case, self-efficacy ($\beta=0.75$, $p<0.001$) and service awareness ($\beta=0.73$, $p<0.001$) are the most important significant indicators of perceived ease of use (PEOU). In addition, since online system are more common and standardized now a days, the public have become increasingly competent in using the same. This generalization is tested by taking subjective norms and system quality as the significant factors with the beta co-efficient of 0.69 and 0.68 respectively. Furthermore, schemes availability ($\beta=0.52$, $p<0.001$) is identified as the least affecting factor of perceived ease of use (PEOU).

The model has also tested the perception on risk concern about digital platform provided by the bank. Here it is an assumption to measure whether there is any significant association between external stimulus and perceived risk. It discloses that the service awareness (β= -0.09, p=0.512), subjective norms (β= -0.13, p=0.407), self-efficacy (β= -0.08, p=0.552), system quality (β= -0.12, p=0.424) and schemes availability (β= -0.16, p=0.390) are the negatively associated variables of external stimulus. Therefore, higher the user's perception regarding the awareness, efficacy, quality and availability features of digital banking; lower the perception of risk concern. This result is verified with the negative insignificant regression value and proposed hypotheses are rejected at 1% level of significance.

With regard to the intra relationship among cognitive responses of the TAM, perceived ease of use (PEOU) and perceived usefulness (PU) are identified as the inter connected mediating variables in between external stimulus and affective response. Consequently, the perception of ease of use has significant positive effect (β=0.74, p<0.001) on the usefulness felt by the users. In other words, if it is convenient and flexible for its users, it also feels acceptable and useful to them. But the relationship of PEOU (β= -0.13, p=0.388) and PU (β= -0.18, p=0.331) tends to be negative on perceived risk (PR) factor of TAM. It is because of any amount of risk perception is there, that will adversely affect the convenience, flexibility and usefulness of smooth running of technology-based operations.

The aim of the present analysis is to investigate the factors that affect attitude towards the use (ATU) of digital banking practices of ICICI Bank. The analysis result has interpreted on the basis of path diagram shown in figure 5.23. The results & discussions present practical support for the proposed model and hypotheses formulated. Overall, perceived ease of use (PEOU) (β=0.71, p<0.001) and perceived usefulness (PU) (β=0.77, p<0.001) are capable to define the positive changes in the attitude of users and their style of adoption. But the amount of risk perception (β= -0.17, p=0.374) is not capable to define the same positive changes happened in the attitude of customers. Therefore, it can be concluded that PEOU & PU exerts positive influence on ATU and PR exerts negative influence towards the same.

The analysis is intended to simultaneously examine the direct and indirect relationship of cognitive response and affective response on behavioral intention to use (BI) the online banking services. Table 5.72 shows the hypotheses related with this analysis i.e., cognitive and affective response have significant positive impact on behavioral intention (BI). The finding indicates that the intention of consumers to sue the online banking services is anticipated positively through the perceived usefulness (β=0.73, $p<0.001$) and Attitude towards the use (β=0.68, $p<0.001$). These variables demonstrate positive changes of intention and the proposed hypotheses are supported for the analysis.

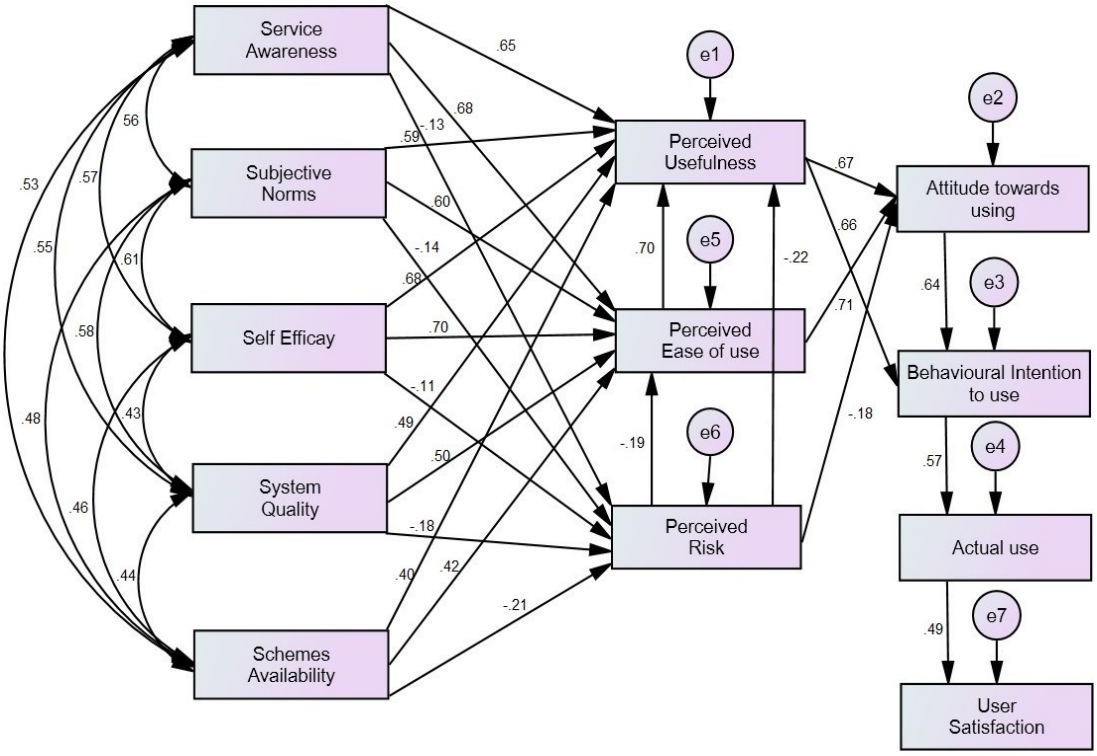
The analysis also assesses the effects of behavioral intention (BI) on actual use (AU) of digital banking practices. According to SEM, the path diagram (figure 5.23) tests the directional linkage between behavioral intention and actual use with the path co-efficient of 0.63 ($p<0.001$). It means, the hypothesis proposed that intention to use the online platform would be the positive predictor/indicator of actual use (AU) of the same. Finally, the test value verifies the assumption and reports that the former is the critical predecessor of the later construct. Therefore, the hypothesis is validated and supported for the model. Accordingly, if the customers have interest towards the novel technology adopted by the bank; they will experience the same to conduct their banking operations conveniently.

Last but not the least, the end result of actual use (AU) would be the user satisfaction (US) of digital technology. Consequently, the extension of Technology Acceptance Model is attempts to measure the impact of actual use (AU) on User satisfaction (US). Thus, the assumption is true and actual use has significant positive impact on user satisfaction with the regression co-efficient of 0.54 at 99% confidence level. It means, usage goes up by 1; satisfaction also goes up by 0.54 and there is only positive change will be occurred among them. Hence, the analysis of measurement model and hypotheses testing are concluded that the adoption intention of digital banking users of ICICI Bank is good and satisfactory.

9. AXIS Bank

Figure 5.25

Measurement Model on Perception level of Digital Banking Acceptance of AXIS Bank



Result of Hypotheses testing (AXIS Bank)

The upcoming analysis part discusses about the structural model (figure 5.25) designed to test the adoption intention of paperless banking practices among the customers of AXIS Bank. The model and the hypothesis testing result are capable to define the changes in the Perception, Attitude, Intention, Usage and Satisfaction of Digital Banking. Subsequently, the extension of Technology Acceptance Model (TAM) is employed by incorporating some additional observed, mediating and latent variables. Since the relationship of multiple measurement items is there, Structural Equation Modelling (SEM) is considered as the powerful technique to expose the result of path analysis of the combined hypotheses. The explanation of the proposed measurement model is given below with its hypotheses and subsequent results.

Table 5.68

Result of hypotheses testing (AXIS Bank)

Hypotheses	Path	Path Co-efficient (β)	P value (Sig.)	Result (Supported/ Not Supported)
Relationship between External Stimulus and Perceived Usefulness				
SA has significant positive impact on PU	Service Awareness ⟶ Perceived Usefulness	0.65	<0.001	Supported
SN has significant positive impact on PU	Subjective Norms ⟶ Perceived Usefulness	0.59	<0.001	Supported
SE has significant positive impact on PU	Self-Efficacy ⟶ Perceived Usefulness	0.68	<0.001	Supported
SQ has significant positive impact on PU	System Quality ⟶ Perceived Usefulness	0.49	<0.001	Supported
SAv has significant positive impact on PU	Schemes Availability ⟶ Perceived Usefulness	0.40	<0.001	Supported
Relationship between External Stimulus and Perceived Ease of Use				
SA has significant positive impact on PEOU	Service Awareness ⟶ Perceived Ease of Use	0.68	<0.001	Supported
SN has significant positive impact on PEOU	Subjective Norms ⟶ Perceived Ease of Use	0.60	<0.001	Supported
SE has significant positive impact on PEOU	Self-Efficacy ⟶ Perceived Ease of Use	0.70	<0.001	Supported
SQ has significant positive impact on PEOU	System Quality ⟶ Perceived Ease of Use	0.50	<0.001	Supported
SAv has significant positive impact on PEOU	Schemes Availability ⟶ Perceived Ease of Use	0.42	<0.001	Supported
Relationship between External Stimulus and Perceived Risk				
SA has significant positive impact on PR	Service Awareness ⟶ Perceived Risk	-0.13	0.398	Not Supported
SN has significant positive impact on PR	Subjective Norms ⟶ Perceived Risk	-0.14	0.352	Not Supported

SE has significant positive impact on PR	Self-Efficacy ⟶ Perceived Risk	-0.11	0.460	Not Supported
SQ has significant positive impact on PR	System Quality ⟶ Perceived Risk	-0.18	0.331	Not Supported
SAv has significant positive impact on PR	Schemes Availability ⟶ Perceived Risk	-0.21	0.218	Not Supported
Relationship between Cognitive Responses of Digital Banking				
PEOU has significant positive impact on PU	Perceived Ease of Use ⟶ Perceived Usefulness	0.70	<0.001	Supported
PR has significant positive impact on PEOU	Perceived Risk ⟶ Perceived Ease of Use	-0.19	0.287	Not Supported
PR has significant positive impact on PU	Perceived Risk ⟶ Perceived Usefulness	-0.22	0.175	Not Supported
Relationship between Cognitive Responses and Affective Responses				
PU has significant positive impact on ATU	Perceived Usefulness ⟶ Attitude towards use	0.67	<0.001	Supported
PEOU has significant positive impact on ATU	Perceived Ease of Use ⟶ Attitude towards use	0.71	<0.001	Supported
PR has significant positive impact on ATU	Perceived Risk ⟶ Attitude towards use	-0.18	0.342	Not Supported
Relationship between Cognitive Responses and Intention				
PU has significant positive impact on BI	Perceived Usefulness ⟶ Behavioral Intention	0.66	<0.001	Supported
Relationship between Affective Response and Intention				
ATU has significant positive impact on BI	Attitude towards use ⟶ Behavioral Intention	0.64	<0.001	Supported
Relationship between Intention and Behavioral Response				
BI has significant positive impact on AU	Behavioral Intention ⟶ Actual Use	0.57	<0.001	Supported
Relationship between Behavioral Responses of Digital Banking				
AU has significant positive impact on US	Actual Use ⟶ User Satisfaction	0.49	<0.001	Supported

Source: Primary Data

Table 5.68 explains the hypothesis testing results of the Structural Equation Modelling (SEM) presented in figure 5.25. SEM is, that may specify and estimate more complicated path models, with intervening variables between independent, dependent variables and latent factor as well. It will also discuss a general path model with latent factor. In this analysis, the Technology Acceptance among customers of AXIS Bank has studied by taking External Stimulus as independent variables, Cognitive Response as mediating variables and Affective & Behavioral Response as dependent variables. The strength of relationship is measured with regression co-efficient at 1% level of significance.

First of all, the extent of relationship between external stimulus and perceived usefulness (PU) is studied. Here, the analysis exhibits that self-efficacy ($\beta=0.68$, $p<0.001$) and service awareness ($\beta=0.65$, $p<0.001$) have maximum positive impact on perceived usefulness (PU), followed by subjective norms ($\beta=0.59$, $p<0.001$). On the other hand, system quality ($\beta=0.49$, $p<0.001$) and schemes availability ($\beta=0.40$, $p<0.001$) have only minimum positive impact on PU. Moreover, it notices that all the indicators of external stimulus are considered as the influencing factors behind the usefulness features of online banking. This result is the verification of the proposed hypotheses formulated earlier and these are considered to be validated.

The inference about the cause-and-effect relationship between external stimulus and perceived ease of use (PEOU) reveals that self-efficacy ($\beta=0.70$, $p<0.001$) and service awareness ($\beta=0.68$, $p<0.001$) are the major positive indicators of perceived ease of use, followed by subjective norms ($\beta=0.60$, $p<0.001$). These factors have remarkable effect on easiness, convenience and flexibility of online platform followed by AXIS Bank. Furthermore, system quality ($\beta=0.50$, $p<0.001$) and schemes availability ($\beta=0.45$, $p<0.001$) have only minor positive impact on PEOU. The customers are opined that awareness, efficacy and the norms followed by them are the important influencing factors for the convenience use of digital banking practices. Since the result is significant, the proposed hypotheses are considered to be validated.

With reference to the analysis of relationship between external stimulus and perceived risk, there is no significant positive relationship exists between them. It means, whenever there is any increase in the service awareness (β= -0.13, p=0.398), subjective norms (β= -0.14, p=0.352), self-efficacy (β= -0.11, p=0.460), system quality (β= -0.18, p=0.331) and schemes availability (β = 0.21, p=0.218); the risk perception will be decreased according to their experience in digital banking. Since all the 'p' values are greater than 0.01, the null hypothesis cannot be rejected at 1% level of significance and the positive impact has not been established among the variables. Subsequently, these variables are considered to be the negative indicators of perceived risk (PR).

The model also requires the intra relationship among cognitive responses of the measurement Model. It can be explained that perceived ease of use (β=0.70, p<0.001) is an important forerunner in shaping the perceived usefulness (PU) towards the use of paperless banking practices. The proposed hypothesis is supported with significant positive path co-efficient. Instead of this, the relationship of perceived risk (PR) on perceived ease of use (PEOU) (β= -0.19, p=0.287) and perceived usefulness (PU) (β= -0.22, p=0.175) tends to be negative with insignificant regression co-efficient at 5% level of significance. It means, if there any increase in the easiness and usefulness of digital banking practices; the amount of risk perception will reduce to some extent.

The connection between cognitive response and affective response displays that perceived ease of use (β=0.71, p<0.001) and perceived usefulness (β=0.67, p<0.001) are positively impacted the customer's attitude towards using (ATU) online banking. These factors have significant positive path co-efficient and ATU explains the variations because of positive indicators of cognitive response of adoption intention. As a result, the proposed hypotheses are supported and validated at 1% level of significance. But the perceived risk (PR) has no significant positive impact on attitude towards the use (ATU) of online banking. It has insignificant negative path co-efficient of -0.18 (p=0.342). The result of hypothesis testing exhibits an opposite relationship between PR and ATU.

The inter dependency of cognitive response on behavioral intention establishes that perceived usefulness (PU) observed as the most critical factor of behavioral intention (BI). The significant path co-efficient of 0.66 ($p=<0.001$) explains the direct positive impact of perceived usefulness (PU) on behavioral intention (BI). To be exact, perceived usefulness goes up by 1; behavioral intention also goes up by 0.66. since the result is significant the proposed hypothesis is accepted and positive relationship between perceived usefulness and behavioral intention is validated and established.

The hypothesis of the model also exhibits the path analysis between affective responses and behavioral intention (BI). The path for the hypothesis is significant with path co-efficient of 0.64 and 'p' value of less than 0.01. Accordingly, the interrelationship between attitude towards the use (ATU) of digital banking and its behavioral intention (BI) is recognized. Therefore, attitude towards the use (ATU) is considered as a crucial predecessor of behavioral intention and it will be the significant positive predictor to explain the direct impact on the same. It can be concluded that if there is any positive changes in the attitude (ATU) of digital banking users, that will directly affect their behavioral intention (BI) towards the same.

Finally, the actual use is measured by taking behavioral intention as the indicator of the model. If the customers have interest on innovative sophisticated technology of the bank, they will ensure the usage of same techniques for conducting their daily banking transactions. This generalization has proved with the help of cause-and-effect relationship of behavioral intention (BI) on actual use (AU) with the regression co-efficient of 0.57 ($p<0.001$). It means, BI has strong effect and appears to be the main positive indicator of actual use (AU). Likewise, the satisfaction level of digital banking users is measured and interpreted with the help of the pattern of usage of digital technology. It is found that the relationship is positive and experienced users have high level of satisfaction towards the innovative strategy of AXIS Bank. In other words, the positive changes of actual use will directly affect the user satisfaction with 0.49 regression co-efficient.

5.14 Conclusion

The present chapter is the analysis and discussion on Awareness, Acceptance and Satisfaction of Environmentally Sustainable Banking Practices and Digital Banking Initiatives of the sample banks. Further, this chapter also identifies the Enabling and Disabling Factors and Perception level of Digital banking acceptance with the help of Confirmatory Factor Analysis and Structural Equation Modeling. Hence, the researcher has formulated and tested an Extended Technology Acceptance Model by analyzing the relationship between External Stimulus, Cognitive Responses, Affective Response, Intention and Behavioral Responses.

With respect to the awareness level, the customers are extremely aware about only Paper-less banking (Digital Innovation, Internet/Mobile Banking) initiatives of the bank. Further, they are somewhat aware about the Green Financing/ Responsible Financing Initiatives, Slightly/Not at all aware about Green Policies/ Procedures followed by the banks.

Regarding the Digital banking acceptance, the sample customers have good level of Perception on Ease of Use, Usefulness, Attitude, Behavioral Intention, Actual Use and User Satisfaction. But some of hindrance factors are there to pull back from the digital banking such as, risk & threats, cost & charges, security & privacy, etc.

After the discussion on awareness, acceptance and satisfaction of environmental-sustainable banking practices from the perspective customers, an attempt has made to evaluate the ESG performance of the sample banks in accordance with the completeness and disclosure status of Principles of National Guidelines of Responsible Business Conduct. That is the subject matter of the ensuing chapter.

Chapter 6

ESG Performance Evaluation of Selected Public Sector and Old & New Generation Private Sector Banks

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6.1 Introduction

The importance of managing social and environmental impact on banking activities has led to the enhancement of sustainable development by mainstreaming the Environmental, Social and Governance parameters. Hence, the banks have threefold approach towards the management of Natural Capital, Social Capital and Financial Capital. They have given priority to the Environmental, Social and Governance (ESG) aspects for the sustainable and inclusive growth. However, the banking sector must strive to ensure the strong triple bottom line performance from environmental preservation, social inclusion and financial achievements. As a service sector, banks have the duty to drive sustainable development through ecologically balance, socially responsible and financially viable investments. The selected banks explore the dedicated ESG implementation within the framework of their operations. In addition to conduct the banking and financial activities, the banks are incorporating best practices in the ESG domain to transform inclusive development and low carbon economy. Hence, they have implemented the ESG criteria into their institutional framework by reducing environmental footprint, social commitment and strong foundation of trust to build a sustainable future. Therefore, banks have the vision to support environment and society without which they cannot prosper to achieve sustainable growth. As a responsible leader of financial services, the banking sector is committed to create value for all stakeholders for good governance. That will create positive changes in the threefold aspects of the sustainable development. Hence, the have to invest heavily for the achievement of ESG framework with the strategic objectives of the banks. The continuous efforts of banks are aimed to achieve key pillars in the line of inclusive growth, environmental footprints, socially responsible banking, sustainability and good corporate governance. As far as this section of discussion is concerned, it has been dealing with the ESG performance evaluation of sample banks selected for the study. Hence, the researcher has identified ESG scores by analyzing the criteria for the implementation Environmentally Sustainable, Socially Responsible and Governance aspects of the banks. As regards the identified ESG Scores of the banks, the performance of banks is analyzed in the purview of integration of ESG aligned principles.

6.2 Objective of the Chapter

- To evaluate and compare the ESG Performance of selected Public, Old Generation and New Generation Banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC).

6.3 Methodology and Database

In order to attain the objective of present section of discussion, secondary data are used. The data collected from Annual Reports, Business Responsibility Reports, Sustainability Reports, Corporate Social Responsibility Reports and Integrated Reports of the sample banks from 2016 to 2021 (last 5 years). This chapter is prepared according to the National Voluntary Guidelines on Social, Environmental and Economic Responsibility of Business, 2011 (renamed as National Guidelines on Responsible Business Conduct, 2018), Ministry of Corporate Affairs, Government of India. These guidelines have formulated with the objective of global leadership of Indian Companies in Responsible Business. According to NGRBC, nine principles formulated to follow an ESG Framework of companies and the present chapter is framed in this perspective for Banking Sector. According to this framework, disclosure score has presented as per the level of completeness of Business Responsibility Reporting Framework.

The disclosure score of the banks is calculated on the basis of completeness aspects of three sections of Business Responsibility Reporting Framework. The Section 'A' deals with general details of the banks, Section 'B' involves (1) Policy and Management Processes, (2) Governance, Leadership and Oversight, (3) Stakeholder Engagement and (4) Communications and Section 'C' consists of Principle-wise Performance of banks in two categories namely, Essential Indicators and Leadership Indicators. These are the benchmarks followed for assessing completeness of Business Responsibility Reporting. Further, NGRBC has formulated a grid as self-assessment tool to measure the level of completeness that assist the banks to develop an ESG Score based on the sections/ sub sections of BRRF. It has given below:

Section/ Sub section	High (20)	Medium (15)	Low (10)	Other (5)
Section B	All Complete	Qs 1, 5, 7, 8 and ten of the others complete	Qs 1 complete, Qs 5 or 7 or Qs 8 and seven of the other complete	Qs1 and five of others complete
Section C – Principles 1 to 9	All Complete	All Essential and Some Leadership Indicators Complete	All Essential Complete	Some but not all Essential Indicators Complete
Overall	Above 180	150-180	120-180	Below 120

(Guideline Drafting Committee, 2011)

Banks can calculate an overall score of their ESG performance by assigning scores to the level of completeness against the above-mentioned sections and sub sections. Here, scores of each of the completeness levels ranging from 20 to 5 (20 for high, 15 for medium, 10 for low and 5 for other). In order to calculate the overall score, adding the score of each Section B and the nine principles of Section C. Here, all the principles are inter-dependent, inter-related and non-divisible for others. According to these benchmarks, the ESG Performance Score of the selected banking sector is calculated and presented.

6.4 Disclosure Status of Management and Process of Banking Sector (Section B)

This section is aims to demonstrate the structures, policies and processes of Banking Sector towards adopting the Principles and Core Elements of National Guidelines for Responsible Business Conduct. In order to present the Section B of the report, there are some disclosure questions regarding (1) Policy and Management Processes, (2) Governance, Leadership and Oversight, (3) Stakeholder Engagement and (4) Communications.

Further, the disclosure score is given on the basis of details of Section B (Management and Process) and C (Principle-wise Performance) of the NGRBC. According to these details, the banking sector has to be disclosed Principles and Core Elements (Essential & Leadership Indicators) to exhibits their ESG Performance.

Table 6.1

Disclosure Status of Management and Process of Banking Sectors

Disclosure Questions			Banking Sectors
Policy and Management Processes	1	Policies that cover each Principle	The Public, Old and New Generation Banks have been reporting their principle-wise Performance and Core elements. Moreover, the banks are committed to stakeholders for communicating their policies, procedures and management practices. Further, they are intended to perform all the specified details regarding Policy & Management Process, Governance, Leadership & Oversight, Stakeholder's Engagement and Communication as per the NGRBC accordingly.
	2	Core Elements related to the principle that cover the policies	
	3	Policies relating to each principle that has translated into guidelines and procedures	
	4	Extent to which manpower, planning and financial resources have allocated for the implementation of the policies relating to each Principle	
	5	National and International codes and standards adopted to map various Principles	
Governance, Leadership and Oversight	6	Policies that have approved by the Board/ Top Management	
	7	Specified committees of the Board/ Director/Officer and processes to oversee the implementation of the policies	
	8	The process for board/ top management to review performance against policies & incorporating inputs	
	9	Process for board/ top management to review compliance with statutory requirements of relevance to the principles & rectify any non-compliances	
	10	Frequency of the reviews of the business's alignment with the Principles and Core Elements conducted by the board/ top management	
Stakeholder Engagement	11	The process to identify business's key stakeholders	
	12	The process to engage with stakeholders on the principles	
	13	The processes to identify groups that are vulnerable and marginalized stakeholders	
	14	The processes to identify issues related to inclusion and impact of adopting the principles on vulnerable and marginalized stakeholders	
Communications	15	The process to communicate to stakeholders regarding the impact of policies, procedures, decisions and performance that impacts them	
	16	The way of business to communicate the results of stakeholder engagement in the public domain	
	17	The process of communicating performance against these Guidelines to relevant stakeholders	
	18	Details of disclosures and reporting helped in improving business performance / strategy	

(Guideline Drafting Committee, 2011)

6.5 Sector wise discussion on Principle-wise Performance as per National Guideline for Responsible Business Conduct (Section C)

Here, the sector-wise discussion is conducted as per the disclosure status of Essential and Leadership Indicators to implement the Principles and Core Elements of the Guidelines. "The indicators are categorized as 'Essential' and 'Leadership'. While the essential level is expected from every business that has adopted these Guidelines, the leadership level indicators are expected to be put into place by those businesses which aspire to progress to a higher level in their quest to be socially, environmentally and ethically responsible" (Guideline Drafting Committee, 2011). Moreover, the disclosure status of Essential and Leadership Indicators is presented in Principle-wise among Banking Sector selected for the study.

6.5.1 Disclosure Status of Public Sector Banks on Principle-wise Performance as per National Guideline for Responsible Business Conduct

Table 6.2

National Guideline for Responsible Business Conduct- Principles wise Performance on Disclosure Status of Public Sector Banks

Principle 1: Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent, and accountable			
Indicators	**SBI**	**Canara**	**PNB**
Essential Indicators			
Policy related to Ethics, Corruption, Bribery etc.	Whistle blower policy, Vigilance functions	Whistle blower policy/ Vigil Mechanism	Whistle blower policy/ Vigil Mechanism
Coverage of Supplier/ Distributors	Vendor Meetups, Grievance Redressal and Standardized Procurement Processes	Not Disclosed	Not Disclosed
Details of Complaints/ Cases/ Disputes/ Penalties	Comprehensive Complaint Management System to redress the complaints	Shareholder's and customer's complaints are reported and redressed	Category wise complaints are reported and resolved
Leadership Indicators			
Coverage of all employees	Employees Grievance Cell, Prevention of Sexual Harassment,	Employees Grievance Redressal Policy & Prevention of Sexual Harassment	Employees Grievance Redressal Policy & Prevention of Sexual Harassment

Report on Responsible Business Conduct	Detailed Explanation has Provided and Reported	Detailed Explanation has Provided and Reported	Detailed Explanation has Provided and Reported
Examples of corrective action on fine/penalties imposed	Reserve Bank of India has imposed aggregate penalty of ₹7.5 crore for certain non-compliances	Not Disclosed	Not Disclosed
Examples of corrective action taken on complaints/ cases	A total of 13,598 complaints are received during the period, of which, 13,359 have addressed	During the period 53110 complaints received and 98.19% of the complaints are satisfactorily redressed	44,418 complaints have resolved during the period, with percentage of resolution at 97.9%.
Principle 2: Businesses should provide goods and services in a manner that is sustainable and safe			
Essential Indicators			
List top three products/ Services which incorporates environmental & social concerns/ risk/ opportunities	Financial Inclusion and Literacy Centers, RSETIs, Paperless Banking, Initiatives for the protection of Natural Capital etc.	Financial Inclusion Programmes, Rural Development as Self-Help Groups and Green Banking Initiatives	Business Models for environmental Protection, Training Centers, Infrastructure development, educational assistance
Investment in Specific Technologies	Responsible Investment in Sustainable Finance and Investment in Renewable Energy, Digital Banking & Infrastructure	Investment in Renewable Energy, Digital Banking Initiatives and Infrastructure	Investment in Renewable Energy, Digital Banking Initiatives and Infrastructure
Mechanism to recycle products or waste	Biodegradable and recyclable material is used throughout, making it a zero-waste event and Water plant recyclers are established.	The bank denoted it as Not Applicable	E-waste policy which involves purchasing of various items such as Paper, stationery products, discarded sacks, glass, cans and plastics made from recycled material
Process of collect, reuse, recycle and dispose products and waste	Process to segregate, collect, transport and recycle the various types of waste (dry, wet and e-waste) generated	Not Disclosed	Waste disposal is also undertaken in a proper and methodical way

Leadership Indicators			
Resource Use (Energy, water, raw material)	Energy efficient measures are implemented as inhouse and outhouse banking premises, solar installation, energy savings projects, installation of IPM+ for saving water consumption, protection of water bodies, rejuvenation of water resources	Replaced CFL/ Fluorescent lighting fixtures with new LED fixtures in all its premises to ensure higher energy efficiency, setting up of water purification plants and using the waste water for gardening for improving the green cover and solar lights for the benefit of public	Encourages the use of renewable energy by financing potentially viable renewable energy projects like solar/ wind/ biomass-based power generation etc., and promoting use of renewable energy sources at household levels
Reduction in resource use covering sourcing, production and distribution	Sourcing and production have conducted only through efficient resource mgt and reduction	The bank denoted as Not Applicable	The bank denoted as not Applicable
Sustainable Sourcing	As regards the sourcing the bank has adopted techniques as energy conservation measures including mass transportation system for employees	For sourcing, Bank has a set policy as per which the suppliers should meet the standards of energy generation, eco-friendly, pollution-free technologies.	The bank denoted as not Applicable
Procurement of goods and services from small vendors	Standardized procurement has made from small vendors	Procurement of goods has made from small/ local vendors	Bank has promoted this system by the way of SHGs and women entrepreneurs
Principle 3: Businesses should respect and promote the well-being of all employees, including those in their value chains			
Essential Indicators			
Details of Permanent, Temporary, Women and Disabled Employees	Number of Permanent, Temporary, Women and Disabled Employees are disclosed in every annual report	Number of Permanent, Temporary, Women and Disabled Employees are disclosed in every annual report	Number of Permanent, Temporary, Women and Disabled Employees are disclosed in every annual report
Employee Association	Detailed Explanation on recognized employee association and percentage of membership in all associations	Detailed Explanation on recognized employee association and percentage of membership in all associations	Detailed Explanation on recognized employee association and percentage of membership in all associations

Complaints on child labour, forced labour, involuntary labour and sexual harassment	Child/ forced/ involuntary labour is not yet reported. 44 sexual harassments reported and resolved	Child/ forced/ involuntary labour is not yet reported. 3 sexual harassments reported and resolved	Child/ forced/ involuntary labour is not yet reported. 15 sexual harassments reported and resolved
Safety and skill up-gradation training	Nayi Disha Programme, Leadership and digital learning programme, Training Program 'Garima'	Safety and Skill up-gradation training also conducted for all categories of employees	Classroom and e-learning training separately provided for all categories of employees
Leadership Indicators			
Categories of Employees	All categories of employees such as Permanent, Temporary, Women and Disabled are mentioned and their participation also	All categories of employees such as Permanent, Temporary, Women and Disabled are mentioned and their participation also	All categories of employees such as Permanent, Temporary, Women and Disabled are mentioned and the participation also
Examples of steps taken against harassment cases	Employee harassment, worksite discrimination and sexual defaults are identified and punished asper law	Employee harassment, worksite discrimination and sexual defaults are identified and punished asper law	Employee harassment, worksite discrimination and sexual defaults are identified and punished asper law
Work life Balance Issues	WLB issues are solved by the way mental recoupment classes, free time games, yoga classes, physical exercises to get relief from the work pressure	WLB issues are solved by the way mental recoupment classes, free time games, yoga classes, physical exercises to get relief from the work pressure	WLB issues are solved by the way mental recoupment classes, free time games, yoga classes, physical exercises to get relief from the work pressure
Principle 4: Businesses should respect the interests of and be responsive to all their stakeholders especially those who are disadvantaged, vulnerable and marginalized			
Essential Indicators			
Listing/ Mapping of groups of Stakeholders	Employees, investors, shareholders, customers, regulatory bodies, industry associates, NGOs, community members, vendors and distributors are the major stakeholders of the bank	The stakeholders of the Bank include Government, Investors, Employees and Customers of the Bank	Internal and External stakeholders of the Bank are its shareholders, investors, customers, employees, Government and regulatory agencies and their sub groups are there

Identification of disadvantaged, vulnerable and marginalized stakeholders	Provide basic facilities and amenities in the form of financial and non-financial services	Identified disadvantaged, vulnerable and marginalized customers & shareholders and implemented different initiatives for them.	Financial Inclusion and Priority Sector Lending are offered for them
Leadership Indicators			
Decision/ actions taken by the banks to address the interests of vulnerable/marginalized groups	Children's welfare fund and Service Beyond Banking activities are conducted for the categories	Equal treatment of employees, no discrimination, special benefits for SC/St categories, all benefits equalized for disabled persons	Participated in Govt. Programmes, formed Training Centre for Farmers, Rural Self Employment, Financial Literacy, etc.
Principle 5: Businesses should respect and promote human rights			
Essential Indicators			
Human Right Policies	Alignment with internationally recognized human right policies, zero-tolerance policy in place on discrimination & sexual harassment	Policies against women harassment and employee's grievances	Internationally recognized human right policies and separate cell for employee's work life protection
Training details for employees regarding human rights	Disclosed	Not Disclosed	Not Disclosed
Leadership Indicators			
Details of Stakeholder's complaints	Details are enclosed with facts and figures	Details are enclosed with exact facts and figures	Details are enclosed with exact facts and figures
Resolved complaints against human rights	98% complaints are resolved every year	100% complaints are resolved every year	97.6% complaints are resolved per year
Principle 6: Businesses should respect and make efforts to protect and restore the environment			
Essential Indicators			
Policies related to the protection of environment	Sustainability and Business Responsibility Policy, Environment and Social Management System	Credit Risk Management Policy by considering carbon emission criteria,	The bank has followed the Energy Conservation Guidelines issued by Govt. of India

Strategies/ Initiatives to address Global Environmental Issues	Reduction of Energy Consumption, Carbon Neutrality Project, Waste, Water & Natural Resource Mgt through Innovation, Promoting Renewable Energy Growth, Green Finance Initiatives, Green Bond Issuance, Socially Responsible Investments, Reduction of Internal Paper Consumption	In terms of CRMP, the Bank is not extending finance for setting up of new units consuming/ producing Ozone Depleting Substances (ODS). No financial assistance is extended by Bank to small/ medium scale units engaged in the manufacture of the aerosol units using CFC.	Emphasis on utilizing energy efficient electrical fixtures, Adoption of Solar PV cell-base sources of power and Solar Water Heating System, Reduction of carbon emission and energy consumption, Rain Water Harvesting, Segmentation, Targeting and Positioning model for Modern amenities
Identify and assess potential environmental risk	There is a process of identifying any climate risks that have the potential to generate substantive change in its business, NVG-SEE policy is also referred to when identifying, assessing and monitoring ESG risks	The bank identified potential environmental risk, but the details are not disclosed	The Bank implements various guidelines/ policies issued by different agencies of Govt. of India for planning and execution of project, conservation of environment and sustainable development
Leadership Indicators			
Environmental Impact Assessment	Details are disclosed	Details are not disclosed	Details are disclosed
Project related to Clean Development Mechanism	IB, MB, TB, Green Channel Counter, Green PIN facility, Green Remit Cards, Passbook Printing Kiosks, Queue Mgt System as paperless banking. Energy conservation measures to protect paper, electricity, water and soil. Investment in Green Financing and Green Bond by the way of Green Funds	CBS, Anywhere Banking, IB, TB, MB, ATMs, Biometric & Micro-ATMs for the use of rural folk, paperless Green PIN facility, for debit & credit cards, dispensed with printing of 'Receipt', opened Hi-tech CANDI branches, E-lounges e-governance for its administrative area.	The Bank does not have any project related to Clean Development Mechanism. We implement various Energy conservation guidelines/ policies issued by GOI/ IBA/ EESL, etc.

Initiatives on Clean technology, energy efficiency, renewable energy	Projects related to renewable energy, Ind-German Solar Energy Partnership, resource conservation measures in line with IGBC criteria, Energy Consumption Reduction and Mgt, Installation of IPM+ Software and Branch Server Consolidation	Environment-friendly green projects (windmill & solar), establishing techniques to save power consumption, Use of energy efficient appliances, complying with the CPCB rules, usage of generators for adopting clean technology	The bank is actively involved in utilizing and promoting Rooftop Photovoltaic Solar Power Units, Emphasis on utilizing latest technical advances in terms of Green Building Initiatives & Sustainable Projects
Emissions/ waste generated within the permissible limit of CPCB/ SPCB	Being a service sector organization, the Bank does not generate any toxic/hazardous pollutants	Being a service sector organization, the Bank does not generate any toxic/hazardous pollutants	Being a service sector organization, the Bank does not generate any toxic/hazardous pollutants
Show cause/ legal notices received from CPCB/SPCB	Nil	Nil	Nil
Principle 7: Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent			
Essential Indicators			
Membership in trade/ Chamber of association	• Indian Banks' Association (IBA) • Indian Institute of Banking and Finance (IIBF) • Federation of Indian Chambers of Commerce and Industry (FICCI) • Confederation of Indian Industries (CII) • The Associated Chambers of Commerce of India (ASSOCHAM)	a) Indian Banks' Association (IBA) b) Indian Institute of Banking and Finance (IIBF) c) Institute of Banking Personnel Selection (IBPS) d) National Institute of Bank Mgt (NIBM) e) National Payments Corporation of India (NPCI) f) The Clearing Corporation of India (CCI)	a) Indian Banks Association (IBA) b) Indian Institute of Banking and Finance (IIBF) c) National Institute of Bank Mgt (NIBM) Pune d) Associated Chambers of Commerce and Industry of India (ASSOCHAM) e) Federation of Indian Chambers of Commerce and Industry (FICCI) g) CII

Leadership Indicators			
Details about advocated/lobbied through above associations for the advancement or improvement of public good	Bank conducted and participated in numerous forums on topics like integration of SDG with business practices, partnership in the BFSI sector, impact investment, and waste mgt, etc.	Social objectives of extending the benefits of the banking services to all regions, adhering policy guidelines by GOI, Inclusive growth, equitable development, national priorities, food security issues	Forms various working groups to make inputs and suggestions regarding various economic & financial issues are considered while formulating the policies
Principle 8: Businesses should promote inclusive growth and equitable development			
Essential Indicators			
Social Impact Assessment	Explained and disclosed in detail. Assessment has made in every year by considering the progress of programmes	Explained and disclosed in detail. Separate programs are rescheduled for the benefit of excluded unbanked people	Explained and disclosed in detail. Bank undertakes various Govt. sponsored and social security schemes for rural people
Initiatives/ Process/ Programmes in pursuit of inclusive growth and equitable development	Digitalization, Infrastructure development, drinking water & sanitation facility improvement, skill development & livelihood creation, education development, linkage with GOI schemes, environmental conservation activity	Banking facilities to villages in affordable cost (implementation done under Brick & Mortar Model and Business Correspondent Model), Introduction of Hybrid Kiosk Model BC, Tab Banking, Composite Approach for branchless banking	Financial Inclusion initiatives of different Yojana of GOI, Financial Literacy Centre, Micro Credit Initiatives, Credit to weaker sections, women beneficiaries and minority communities under priority sector lending
Details of Programmes/ projects undertaken through in-house team/ foundation/ external NGO/ Govt. structure	Financial Inclusion are conducted by In-house parties, except this all others are initiated with the help of NGOs, society, org, GOI etc.	Financial Inclusion projects undertaken with the help of in-house team & other projects are conducted with the help of trust/societies	Dedicated division, Priority Sector Division, FI Division, MSME Division, CSR cell are undertaken programs/ projects
Leadership Indicators			
Company's direct contribution to community development projects	Details about the amount spent for community development projects are disclosed	Details about the amount spent for community development projects are disclosed	Details about the amount spent for community development projects are disclosed

Steps taken to ensure that this community development initiative is successfully adopted by the community	Inclusive training, social learning programs, Grama Seva Mission, Centre for Excellence are also meant for the development of community	Bank provided due diligence report about the CSR proposals and they have a mechanism to ensure the development processes for the community	PNB Vikas Village Adoption Scheme, Kisan clubs with the co-ordinations with all GOI and Panchayat Raj Institutions and Self-Help Groups.
Principle 9: Businesses should engage with and provide value to their consumers in a responsible manner			
Essential Indicators			
Number of consumer complaints in respect of data and privacy, advertising, delivery of essentials	Details are reported as regards the received complaints and pending resolution. No complaints are registered in respect of advertisement and delivery of essentials	Details are reported as regards the received complaints and pending resolution. No complaints are registered in respect of advertisement and delivery of essentials	Details are reported as regards the received complaints and pending resolution. No complaints are registered in respect of advertisement and delivery of essentials
Display characteristics of product information	Bank has provided information regarding products and services in printed media as well as digital media	Bank has provided information regarding products and services in printed media as well as digital media	Bank has provided information regarding products and services in printed media as well as digital media
Case against unfair trade practices, irresponsible Ad. & anti-competitive behavior	Nil	Nil	Nil
Leadership Indicators			
Company carryout any consumer survey/ consumer satisfaction trends	The bank has conducted regular evaluation of customer satisfaction through online and offline media to identify their feedbacks. Based on their replies, the bank has innovated different steps and procedures to capture the highest level of satisfaction.	To assess the quality of customer service rendered by the Banks, an online survey has conducted and to get the feedback directly from the customers, a self-contained, pre-stamped questionnaire has made available to all branches for distributing the same to customers for providing their feedback.	An online Centralized Grievance Redressal Management system to enable customer to make their grievances. 24x7 Contact Centre is provided and also nominated Standing Committee on Customer Services. And conducting customer surveys and making outbound calls

Source: Business Responsibility & Sustainability Reports

Table 6.3

ESG Disclosure Score of Public Sector Banks according to the completeness of Business Responsibility Reporting Framework by NGRBC

Sections/ Sub Sections	SBI	Canara Bank	PNB
Section B	All Completed – **Score 20**	All Completed – **Score 20**	All Completed – **Score 20**
Section C – Principle 1 to 9	All Completed – **Score 20 x 9 = 180**	All Essential and some Leadership Indicators Completed – **Score 15 x 9 = 135**	All Essential and some Leadership Indicators Completed – **Score 15 x 9 = 135**
Overall Score	**200**	**155**	**155**

Source: Secondary Data

According to the completeness of Business Responsibility Reporting Framework, the overall disclosure score of SBI is 200. It means, SBI has disclosed all the details of Section 'B' and Section 'C'. Here, All Essential and Leadership Indicators are disclosed along with nine principles of NGRBC and hence the disclosure score for Section 'C' is 180. On other hand, Canara Bank and PNB have an overall disclosure score of 155, because they have completed and disclosed all Essential and some of the Leadership Indicators of Principles in NGRBC. Accordingly, SBI is considered as the best Public Sector Bank in ESG performance as per Business Responsibility and Sustainability criteria.

6.5.2 Disclosure Status of Old Generation Banks on Principle-wise Performance as per National Guideline for Responsible Business Conduct

Table 6.4

National Guideline for Responsible Business Conduct- Principles wise Performance on Disclosure Status of Old Generation Private Sector Banks

Principle 1: Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent, and accountable			
Indicators	**Federal Bank**	**SIB**	**IDBI**
Essential Indicators			
Policy related to Ethics, Corruption, Bribery etc.	Whistle Blower Policy/ Vigil Mechanism	The bank has adopted a Code of Conduct of its Board and Senior Managerial Personnel in dealing with personal and professional conflict, HRM policy of the bank to protect the rights of employees	The bank has effective mechanism to check corruption, malpractices, embezzlement and misappropriation of funds. Bank's Intranet facility is provided for the employees to report any malpractices
Coverage of Supplier/ Distributors	Outsourcing in the areas of digitalization, e-waste management and raw material procurements	Outsourcing in the areas of digitalization, e-waste management and raw material procurements	Outsourcing in the areas of digitalization, e-waste management and raw material procurements
Details of Complaints/ Cases/ Disputes/ Penalties	8 complaints are received in 18-19 and fully resolved. During the year 2019-20 & 2020-21, the Bank has received 3 & 6 complaints under PDS respectively. All the complaints are investigated and resolved Satisfactorily.	117 complaints received in the year 2020-21, 261 complaints during 2019-2020, 332 complaints received from shareholders in 2018-19, 319 complaints received in the year 17-18. And 274 complaints registered in the year 2016-17	Details of total number of complaints received from all category of stakeholders are clearly identified with resolved disputes details and the specified guidelines of 'Grievances Redressal Policy'

Leadership Indicators			
Coverage of all employees	Full details are enclosed with the report	Details regarding employee's rights and duties, mechanism of whistle blower policy, all other details are enclosed	Details regarding ethics, transparency and accountability of the employees and their right of protection of needs are clearly defined
Report on Responsible Business Conduct	The report has presented in the form Business Responsibilities	The report of BRR has enabled to present all the details of responsible business conduct	The BRR has enabled to represent the practices of responsible business conduct
Examples of corrective action on fine/penalties imposed	Details regarding the corrective actions against fine/penalties imposed are expressed and disclosed in every year as per the rules	Most of the complaints resolved in every year (around 90%)	As regards the number of investor complaints regarding equity shares, flexi bonds are clearly explained as yearly basis
Examples of corrective action taken on complaints/cases	Complaints received from stakeholders and employees were resolved in every year asper their rights and duties	As same as fine/ penalties, complaints /cases from employees and customers resolved in every year (around 95%)	Around 85% of the complaints/ cases from customers are resolved in every year.
Principle 2: Businesses should provide goods and services in a manner that is sustainable and safe			
Essential Indicators			
List top three products/ Services which incorporates environmental & social concerns/ risk/ opportunities	Provides sustainable banking products by the way of ATMs, Cash recyclers, mobile & internet banking. As regards the social concerns, Federal Bank Hormis Memorial Foundation focuses on the areas of education, skill development, primary health care & rural development	Mobile, Internet and Doorstep banking. Bank also promote the use of digital products. They have taken steps for the conservation of environment by reducing the usage of paper, power and other non-renewable energy	Donation, Educational aids, Financing to solar products, priority sector lending, Digital Innovative Techniques, Micro loan facility, IDBI Surya Sakti (scheme for the utilization of renewable energy), Support to SHGs etc.

Investment in Specific Technologies	Investment new technology and Innovative ideas design to deliver cost effective best in class customer services, employee upgradation and growth of business	Investment in sophisticated technology for the upliftment of customers and employees. Branchless banking for next generation	Investment in Artificial Intelligence and Sophisticated Technology for the introduction of customer-centric activities for branchless banking
Mechanism to recycle products or waste	Promotion of Reduce, Reuse and Recycle campaign through SEED police	The BRR has not disclosed the details of recycling mechanism of waste	The BRR said that it is Not Applicable for the bank
Process of collect, reuse, recycle and dispose products and waste	Yes, in-house practices followed in banking premises and employee quarters. Further, out-house practices conducted through SEED programmes	Details are not disclosed	Not Disclosed
Leadership Indicators			
Resource Use (Energy, water, raw material)	According to the Sustainability performance, power, paper, water, waste and solar usage has clearly explained.	Details of resource usage with respect to power, paper& water are disclosed and corrective measures are taken to protect the resources.	The usage of power, paper, energy, raw materials, water are clearly explained in yearly basis
Reduction in resource use covering sourcing, production& distribution	The reports said that, these practices are not applicable for banking products	The reports said that these practices are not applicable for banking products	The reports said that these practices are not applicable for banking products
Sustainable Sourcing	The reports said that, this practice is not applicable for banking products	The reports said that, this practice is not applicable for banking products	The reports said that, this practice is not applicable for banking products
Procurement of goods and services from small vendor	The reports said that, this practice is not applicable for banking products	The reports said that, this practice is not applicable for banking products	The reports said that, this practice is not applicable for banking products

Principle 3: Businesses should respect and promote the well-being of all employees, including those in their value chains			
Essential Indicators			
Details of Permanent, Temporary, Women and Disabled Employees	Details are enclosed with business responsibility report of every year	Details regarding Permanent, Temporary, women and disabled employees are disclosed in every year under BRR	The representation of total employees comprised as permanent, temporary, women and disabled are clearly explained
Employee Association	Association for Officers and a Union for Award Staff recognized by the management. Association for Officers is Federal Bank Officers' Association (FBOA) and Union for Award Staff is Federal Bank Employees' Union	South Indian Bank Employees Association for Clerical staff & South Indian Bank Officers Association for Officers	All India Industrial Development Bank's Employees Association, Industrial Development Bank Workers Union, IDBI Karmachari Sangh
Complaints on child labour, forced labour, involuntary labour and sexual harassment	Details regarding child labour/ forced labour/involuntary labour, sexual harassment and discriminatory employment has disclosed with notable complaints and solution	The BRR has reported as no complaints are received in last five years regarding child labour issues.	As regards the child labour/forced labour/ involuntary labour and discriminatory employment, there is no complaints registered. But with respect to sexual harassment 12 complaints are registered.
Safety and skill up-gradation training	Details regarding the training programme and the participation of each category of employees are enclosed with percentage analysis	The bank conducts robust and periodic trainings like advanced & basic fire safety and evacuation related training irrespective all employees. Further, the bank conducts special training for officers and clerk regarding day-to-day operation	The bank has conducted safety/upgradation training for permanent, casual/temporary employees and employees with disabilities in every year. The percent of participation also ensured in every year

Leadership Indicators			
Categories of Employees	Each category of employees and their participation percentage to total are disclosed in detail	Employees in the category of permanent, women, casual, temporary, contractual and disabled are categorized in detail	Employees are categorized as permanent, temporary, casual, women and person with disabilities
Examples of steps taken against harassment cases	Protected Disclosure Scheme & Internal Complaint Committees (ICC) are the mechanism to address the grievances of employees/customers and also for the complaints of sexual harassment at workplace.	The bank has zero tolerance approach towards any action on the part of women harassment, there is an internal complaints committee asper the laws prevailing in the country.	The bank has revealed the information regarding personal and sexual harassment against women in every year. But the practices followed against these issues are not revealed
Solution for Work life Balance Issues	Webinars on Stress Management, Yoga, Health & Wellness, Photography, etc. are conducted periodically, Employee Talent Programmes through the official online platforms and SMILES, a Program to relieve stress and provide counselling to employees	Wellness leave introduced as a staff welfare measure and with a view to achieving proper 'work life balance'.	Not Disclosed
Principle 4: Businesses should respect the interests of and be responsive to all their stakeholders especially those who are disadvantaged, vulnerable and marginalized			
Essential Indicators			
Listing/ Mapping of groups of Stakeholders	The bank has mapped the internal as well as external stakeholders as shareholders, suppliers, customers, government, local authorities and general public	The bank has mapped its internal and external stakeholders	The bank has mapped the internal as well as external stakeholders

Identification of disadvantaged, vulnerable and marginalized stakeholders	As prescribed by RBI, the bank has followed priority sector lending schemes, lending to small/marginal farmers and weaker initiatives. Further, government-led initiatives to improve the access to financial services and insurance.	As per the extant directions of Reserve Bank of India on Financial Inclusion and lending to weaker sections and priority sector, the Bank is identifying its disadvantaged, vulnerable and marginalized stakeholders.	Providing excellence services to disadvantages/ vulnerable group of customers. The bank has duly signed with the reservation policy of Government. Installed Job Access with Speech (JAWS) software in the computer for visually challenged
Leadership Indicators			
Decision/ actions taken by the banks to address the interests of vulnerable/ marginalized groups	Special schemes for integrated and sustainable development of the economy, e.g.: - promotion of inclusive growth, CSR policy for health, education, environment for the advancement of society	Kiosk banking facility, CSR activities like SHGs development, women empowerment programmes, children's education, creation of employment opportunities and protection of ecological balance.	Financial Inclusion is the major decision taken by the bank to include the excluded category of customers. Further, separate redressal committee has set up to address the interest of vulnerable/ marginalized group
Principle 5: Businesses should respect and promote human rights			
Essential Indicators			
Human Right Policies	The bank follows the code issued by the Banking Codes and Standards Board of India, to ensure the protection of consumer's right. Further, protection of employees from discrimination and sexual harassment	The bank has the policy to ensure that there is no discrimination in selection of staff, suppliers and vendors. Further, protection of employee's rights and duties according to their job.	The Bank has various policies protecting human rights, directly or indirectly. These policies cover the Bank's operations and do not extend to its subsidiaries, supplier, NGOs, contractors, etc.
Training details for employees regarding human rights	Separate on the job training has provided to employees to identify any violation of human rights laws	Not Disclosed	Not Disclosed

Leadership Indicators			
Details of Stakeholder' s complaints	Stakeholder's complaints received through PDS regarding human right issues are disclosed in every year	15203, 27108, 63680, 57687 and 36023 compliant received in the year 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21 in this order respectively	2015-16- 1212 2016-17- 1193 2017-18- 10961 2018-19- 7223 2019-20- 5068 Complaints were received during last 5 year
Resolved complaints against human rights	99.90% of customer complaints, 100% of investor complaints and 97% of employee complaints are resolved in every year	98.7%, 99%, 97.4%, 98.41% and 96.82% complaints have resolved in 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21 in this order respectively	2015-16- 100% 2016-17- 100% 2017-18- 99% 2018-19- 100% 2019-20- 100% Complaints were resolved during last 5 year
Principle 6: Businesses should respect and make efforts to protect and restore the environment			
Essential Indicators			
Policies related to the protection of environment	Sustainability Policy and CSR policy are extended to banking activities with Environmental Management System	CSR policy, Sustainability Concern and environmental regulations in respect of its premises and operations	Policies regarding e-waste mgt, use of paperless eco-friendly technology conservation of energy etc. And it is extended to vendors also
Strategies/ Initiatives to address Global Environmental Issues	Energy Management, Renewable Energy Investment, LEDfication, Water Conservation, E-waste Management, Financing for e-vehicles, Digital Innovation and Paperless Banking, Reduced use of plastic materials	Introduce the concept of 'reduce, reuse and recycle' to eliminate the waste, saving energy initiatives, paper conservation measures such as e-statements and green PIN facility	Electricity conservation measures, Water conservation measures, waste treatment plants, reduced the usage of paper by the implementation of digitalization, e-waste management, virtualization of servers, promoting the usage of solar energy etc.

Identify and assess potential environmental risk	The bank follows environment laws with regard to its premises ad operations	The Bank is aware of the potential environmental risks and participates in initiatives to address the environmental concerns.	The bank's existing credit risk monitoring policy broadly ensures that all assisted clients continue to comply with the regulatory guidelines relating to sustainable development protection and pollution control
Leadership Indicators			
Environmental Impact Assessment	Environmental Impact Assessment has made with the help of sustainable banking practices followed as a part of UN-SDGs	Not disclosed in Business Responsibility/ Corporate Social Responsibility Report	Environmental Impact Assessment has made for in-house as well as outhouse practices on the basis of Responsible Business Conduct
Project related to Clean Development Mechanism	The Bank is not a manufacturing concern and does not generate waste or products or byproducts generally associated with manufacturing	It is not applicable as it is not a manufacturing company, however, the Bank assist to the extent possible the projects that promote such activities	Established an exclusive Cell working on Clean Development Mechanism. Carbon credit services, technical consultancy for assessment, funding, registration of projects, commercial advisory for sale of carbon credits
Initiatives on Clean technology, energy efficiency, renewable energy	Energy Management as in-house and outhouse practices, Renewable Energy Investment in the form of solar, wind and water, Afforestation programme through SEED development	Solar power plants, waste management measures, procurement & supply of eco-friendly cloth bags, weed cutting machines and recycling of machine	Mobile based Applications, Assessment of Potential environmental risk, Automatic processes, electronic media in place of paper-based media, Server Virtualization, etc.

Emissions/ waste generated within the permissible limit of CPCB/ SPCB	The Bank is not a manufacturing concern and does not generate waste or products or byproducts generally associated with manufacturing	The Bank complies with applicable environmental regulations in respect of its premises and operations.	The bank has reported as being in the service sector, the bank's operations generate very minimal emissions/ waste
Show cause/ legal notices from CPCB/ SPCB	Nil	Nil	Nil
Principle 7: Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent			
Essential Indicators			
Membership in trade/ Chamber of association	a. Indian Banks Association b. Indian Institute of Banking and Finance c. IACCI d. Kerala Mgt Association e. (FTAPCCI) g. National Institute of Bank Mgt h. CII and CII Indian Women Network i. Cochin Chamber of Commerce	Indian Banks' Association and Confederation of Indian Industry in India, Federation of Indian chambers of commerce and industry, Banking codes and standards board of India. Senior management of the Bank are members of various committees	• Banking Codes and Standards Board of India (BCSBI) • Indian Banks Association (IBA) • The Indian Institute of Banking and Finance (IIBF) • National Institute of Bank Management (NIBM)
Leadership Indicators			
Details about advocated/ lobbied through associations for the advancement /improvement of public good	Governance & Administration, Economic Reforms, Inclusive Development Policies, Energy Security, Water & Food Security, Sustainable Business Principles etc.	The bank directly through its CSR Cell involved in promoting education conservation of natural resources, training to promote sports, setting up old age homes and protection of culture	The bank has always been engaging with the regulators and policymakers and industry bodies such as IBA, in a responsible manner for improvement in the areas of banking, financial inclusion etc.

Principle 8: Businesses should promote inclusive growth and equitable development			
Essential Indicators			
Social Impact Assessment	As regards the social capital, the bank has considered all the stakeholder's interest as the priority of their activities. Hence, the impact assessment has made with the help of CSR strategy.	Financial Inclusion initiatives for serving the rural, unbanked and below poverty line customers is providing access to banking and financial services.	Residential Training Programme in job-oriented courses for the rural unemployed youth to empower them to be self-employed. Impact assessment of CSR initiatives carried out yearly.
Initiatives/ Process/ Programmes in pursuit of inclusive growth and equitable development	Federal Skill academies for economically backward sectors, scholarship for students, disaster management and rural development programmes	Financial literacy centers, quantitative and qualitative plans for delivery of relevant suites of products, coverage of sub service areas and business correspondents	Financial Inclusion, Promotion of Yojanas, Development of RSETI, Contribution to sustainable development & CSR initiatives
Details of Programmes/ projects undertaken through in-house team/ foundation/ external NGO/ Govt. structure/ other org.	The projects/ programmes are undertaken primarily through in-house teams and Federal Bank Hormis Memorial Foundation, with the assistance of implementation partners as required	Programmes/ projects are undertaken through in-house teams	Financial Inclusion programmes are undertaken by in-house teams with the help of outsourcing agencies, Business Correspondents (BCs). CSR programmes are undertaken through NGOs & agencies.
Leadership Indicators			
Company's direct contribution to community development projects	Directly spent contributions on CSR related activities for disaster relief, preventive healthcare, sustainable livelihood, education and rural development	Directly spent for promoting healthcare including preventive healthcare, sanitation and availability safe drinking water, promoting education & training to promote nationally recognized sports, ensuring environmental sustainability	Financial Support for village development, flood damaged areas and water shed to facilitate drinking water etc.

Steps taken to ensure that this society development initiative is successfully adopted by the community	The projects undertaken by Federal Bank Hormis Memorial Foundation are designed to the needs of the target group. The initiatives are: livelihood enhancement, providing housing and sanitation etc.	CSR and Financial Inclusion activities ensure that community development initiatives are reaching the target groups and it is being adopted and utilized by the beneficiaries. Periodic Review of Financial Literacy Programmes	Community based CSR initiatives undertaken in consultation with need-based stakeholders, inclusion of ground-level beneficiaries, etc.
Principle 9: Businesses should engage with and provide value to their consumers in a responsible manner			
Essential Indicators			
Number of consumer complaints in respect of data privacy, advertising, delivery of essentials	2015-16- 3% 2016-17- 2.5% 2017-18- 1.84% 2018-19- 1.97% 2019-20- 1.71% Complaints were identified and resolved	2015-16- 4.1% 2016-17- 2.04% 2017-18- 1.3% 2018-19- 1.8% 2019-20- 3.18% Complaints were identified and resolved	2015-16- 3.7% 2016-17- 1.14% 2017-18- 3.09% 2018-19- 2.56% 2019-20- 4.07% Complaints were identified and resolved
Display characteristics of product information	The details of schemes, services and products are given in the official website of the bank	The BRR said that it is not applicable for banking sector	The BRR said that it is not applicable for banking sector
Case against unfair trade practices, irresponsible advertising and/ anti-competitive behavior	Nil	Nil	Nil
Leadership Indicators			
Company carryout any consumer survey/	The bank has carried out customer survey during every FY. This time also the benchmark was Net Promoter	Online customer satisfaction survey and results are continuously monitored. Bank also conducts	Bank captures customer feedback on an ongoing basis. It has collected through Branch Level

consumer satisfaction trends	Score. The feedback received from customers through the survey's forms and key input to our ongoing process improvements thus bringing a delightful experience for our customers	customer level service committee to collect the feedbacks and suggestions for the improvement of products and services.	Customer Service Committee (BLCSC). Further, they have initiated an open forum for customer named as 'Asiye Baat Karein' in branches

Source: Business Responsibility & Sustainability Reports

Table 6.5

ESG Disclosure Score of Old Generation Banks according to the completeness of Business Responsibility Reporting Framework by NGRBC

Sections/ Sub Sections	Federal Bank	South Indian Bank	IDBI
Section B	All Completed – **Score 20**	All Completed – **Score 20**	All Completed – **Score 20**
Section C – Principle 1 to 9	All Completed – **Score 20 x 9 = 180**	All Essential and some Leadership Indicators Completed – **Score 15 x 9 = 135**	All Essential and some Leadership Indicators Completed – **Score 15 x 9 = 135**
Overall Score	**200**	**155**	**155**

Source: Secondary Data

According to the disclosure status of completeness aspects of sections/ sub sections of Business Responsibility Reporting Framework, Federal Bank has an overall score of 200. Here, Federal Bank has disclosed all Essential and Leadership Indicators of Section 'C' along with all other details of Section 'B'. Subsequently, Federal Bank has got 180 score in the case of Disclosure Status of Section 'C' itself. On the other hand, South Indian Bank and IDBI have an overall disclosure score of 155, due to the reason that these two banks have completed and disclosed only some of the Leadership Indicators of Principles in the NGRBC. But they have disclosed all the details of Section 'B' about Business Processes and Management. Accordingly, Federal Bank is considered as the best Old Generation Bank in ESG performance.

6.5.3 Disclosure Status of New Generation Banks on Principle-wise Performance as per National Guideline for Responsible Business Conduct

Table 6.6

National Guideline for Responsible Business Conduct- Principles wise Performance on Disclosure Status of New Generation Private Sector Banks

Principle 1: Businesses should conduct and govern themselves with integrity, and in a manner that is ethical, transparent, and accountable			
Indicators	**HDFC**	**ICICI**	**AXIS**
Essential Indicators			
Policy related to Ethics, Corruption, Bribery etc.	Whistle Blower Policy, Ethical Governance Principles and Policies. The code of conduct of the bank is applicable to employees with regard to ethics, accountability, conflict of interest, bribery and corruption.	Through the Group Code of Business Conduct & Ethics, has adopted 'zero-tolerance' approach to bribery and corruption. 'Anti-bribery and Anti-corruption Policy' and Whistle Blower Policy.	Banker's Fair Practice Code, Whistle Blower Policy, Policy for Ethical Governance, Compliance Policy, Anti-Money Laundering Policy, Policy on Prevention and reporting of frauds etc.
Coverage of Supplier/ Distributors	The participation of suppliers in the areas of technology, e-waste management handling and other CSR initiatives are covered and reported	The bank has covered all stakeholders primarily suppliers/ distributors for e-waste management, raw material procurement, and installation of sophisticated technology etc.	Distributors coverage identified for diversified branch network and digital channels, socially responsible initiatives, and other livelihood activities of the bank.
Details of Complaints/ Cases/ Disputes/ Penalties	Complaints/ disputes against ATM transactions and other technology-based registered and resolved yearly. 2015-16- 6224 2016-17- 3084 2017-18- 2620 2018-19- Zero 2019-20- 84	2015-16- 76 2016-17- 103 2017-18- 196 2018-19- 442 2019-20- 173 Complaints were received from stakeholders and resolved the same.	2015-16- 262 2016-17- 223 2017-18- 184 2018-19- 178 2019-20- 141 Complaints were received from stakeholders and resolved all.

Leadership Indicators			
Coverage of all employees	All employees comprised as permanent, temporary, women, disabled category are covered and their percentage of participation has ensured.	All employees are covered and details regarding permanent, temporary, women and disabled category have disclosed.	All category of employees and their participation are covered namely, permanent, temporary, women and disabled person.
Report on Responsible Business Conduct	Business Responsibility, Sustainability and CSR report have presented every aspect of Responsible Business Conduct of the bank	Every year, the bank has disclosed the details of responsible business conduct in BRR, CSR and ESG reports.	In every year, the bank has disclosed their responsible business conduct in BRR, SR, CSR and ESG reports.
Examples of corrective action on fine/penalties imposed	No fine/penalty has imposed against the bank	No fine/ penalty has imposed against the bank.	No fine/ penalty has imposed against the bank.
Examples of corrective action taken on complaints/ cases	In 2015-16- 90% 2016-17- 94.1% 2017-18- 97.4% 2018-19- 95% 2019-20- 99% Cases/ complaints are resolved.	In 2015-16- 89% 2016-17- 86% 2017-18- 94.7% 2018-19- 93.1% 2019-20- 98% Cases/ complaints are resolved.	In 2015-16- 99% 2016-17- 97.4% 2017-18- 93.7% 2018-19- 96.2% 2019-20- 95.9% Cases/ complaints are resolved.
Principle 2: Businesses should provide goods and services in a manner that is sustainable and safe			
Essential Indicators			
List top three products/ Services which incorporates environmental & social concerns/ risk/ opportunities	Digital Banking initiatives, Green Procurement, Energy efficient management, reducing paper consumption, electronic means of communication, retail Agri-loans, sustainable livelihood initiatives, etc.	Digital Banking, Rural Banking, Energy & Environment Resource Conservation, socially responsible initiatives like education, health care, protection of ecology, infrastructure, employment and empowerment etc.	Financial Inclusion, Micro-finance for women SHGs, Sustainable Lending Policy & procedures, Renewable Energy Investment, Waste Management, Mass rapid transportation, Paperless Banking Initiatives, Agri-growth activities.

Investment in Specific Technologies	Investment in biometric technology, Artificial Intelligence and other branchless banking techniques.	Specialized technology for in-house and out-house banking operations, Equipment based monitoring and control etc.	The bank has made considerable investment in technology and infrastructure to strengthen the core. It is mainly for Cyber Security, Fintech initiatives, Artificial Intelligence, etc.
Mechanism to recycle products or waste	e-waste recycling through authorized dealers, adoption of green protocol to avoid the usage plastic waste and solid waste mgt units are opened to sold plastic waste. Further, the bank has ensured the use of recycled plastic instead of virgin plastic	Dispose of e-waste through authorized vendors, installation of sewage treatment plants, wet waste compost utilized as fertilizer, and conscious effort for the reduction of dry waste generated by way of paper consumption.	The bank has centralized and robust waste management system that help segregate, collect, transport and recycle all category of waste. In addition, paper recycling has done. Engaged with authorized vendors to recycle e-waste.
Process of collect, reuse, recycle and dispose products and waste	The bank has dealership with authorized vendors of recycling of e-waste, dry-waste and wet waste. Moreover, the consumption plastic has reduced with internal green protocol policy.	Making use of certified recyclers who can ensure the safe disposal and recycling of e-waste, donating our refurbished IT assets, reducing our usage of printer toners by using re-manufactured toners	Bank has partnered with service providers who collect its dry waste and recycle them into usable stationary products. Wet waste recycled and processed in composting machines for domestic use.
Leadership Indicators			
Resource Use (Energy, water, raw material)	The details of power consumption, water and raw material usage has disclosed in the sustainability report of the bank. The bank has also introduced techniques to reduce the use of non-renewable energy.	As regards the consumption of power, paper and water, the details are given in the ESG report of the bank. It has to ensure the resource-use efficiency and greater adoption of clean and green energy.	With respect to the usage of power, paper and other energy, the detailed explanation has provided in the sustainability report of the bank. The bank initiated different strategy for the consumption reduction of energy.

Reduction in resource use covering sourcing, production and distribution	The distribution network enhanced to identify the optimum utilization of energy and sourcing has identified as the way to control the energy consumption level	Digital sourcing for the reduction of paper-based transactions. ICICI Academy enhanced sourcing Applications through digital channels.	As a part of resource reduction, the bank has focused on clean energy generation and sourcing, energy efficiency and improving resource utilization.
Sustainable Sourcing	For procurement of equipment, the Bank ensures that energy efficiency standards are considered during the purchase of electronic equipment such as computers, laptops, lighting devices, ACs etc. The Bank is also working with its hardware equipment suppliers to ensure that they follow energy efficiency norms.	Sustainable sourcing of materials. Under the open access mechanism for power sourcing, the Bank has signed power purchase agreements (PPA) for solar and wind energy purchase for large offices.	As paper is a major resource consumed during the Bank's normal course of business, it has focused on reducing its paper consumption by enhancing recycling, procurement of wheat straw paper, and rationalizing printing requirements and digitalization as paperless banking.
Procurement of goods and services from small vendors/ producers	Procurement of products and services from local suppliers is given preference by the Bank, while taking their relevant geography and footprint into consideration.	The bank procures environment-friendly copier paper manufactured from wheat straw, which is an agricultural residue. Further, procurement of digital applications has made through e-tendering	The manpower services required for offices generally hired from local agencies. In addition, they help women entrepreneurs and local & small producers through market linkages to sell their produce.
Principle 3: Businesses should respect and promote the well-being of all employees, including those in their value chains			
Essential Indicators			
Details of Permanent, Temporary, Women and	Participation of permanent, temporary, women and disabled employees are	Involvement of permanent, temporary, women and person with disabilities are	Detailed participation of permanent, hired on temporary/ contractual/ causal

Disabled Employees	provided. The recognized association details and the percentage of representation of employees are given in detail.	provided. Also disclose their percentage of participation in respective associations of the bank.	basis, women employees, employees with disabilities are enclosed with BRR of every year.
Employee Association	There is an employee association recognized by the management and minimum 0.20% of permanent employees of the bank ensures their participation yearly.	Indian Banks' Association, Confederation of Indian Industry in India, Institute of International Finance, The Federation of Indian Chambers of Commerce and Industry (FICCI)	Indian Banks' Association, Confederation of Indian Industry in India, Institute of International Finance, The Federation of Indian Chambers of Commerce and Industry (FICCI)
Complaints on child labour, forced labour, involuntary labour and sexual harassment	No complaint has registered with respect to child/ forced/ involuntary labour. Further, there is no internal complaints to address cases related to sexual harassment at the bank.	The Bank does not engage in any form of child labour/ forced labour/ involuntary labour and does not adopt any discriminatory employment practices and no harassment cases.	No complaints in respect of child labour. But sexual harassment complaints are there in the order of 32, 32, 47, 13, 45 in 2016-2020 (last 5 years) and these are resolved also.
Safety and skill up-gradation training	Concentrated learning and technical & behavioral training have provided to manage customer relationship. In every year extensive set of training programmes delivered through classroom e-earning modules.	advanced and basic fire safety training, first aid and Cardio Pulmonary Resuscitation (CPR) training and evacuation related training for floor marshals and employees. Further, the bank conducts comprehensive safety training for women employees.	The Bank has focused on employee safety and education through various initiatives including specific learning and development interventions. Personalized training and capability building to develop skills of the employees.

Leadership Indicators			
Categories of Employees	Total employees of the bank are categorized as Permanent, temporary, women and person with disabilities. The participation of employees to the total amount is disclosed.	Permanent employees, Permanent women employees, Casual/temporary/ contractual employees and Employees with disabilities	• Permanent Employees • Permanent Women Employees • Casual/ Temporary/ Contractual Employees • Employees with Disabilities
Examples of steps taken against harassment cases	The Bank's Code of Conduct & Ethics Manual and Policies details policies for Equal Opportunity and Prohibition of Sexual Harassment at the workplace. Further the bank has formed Internal Complaints Committee (ICC) to investigates complaints/ instances reported against the policies and procedures.	The Group Code of Business Conduct & Ethics (Code) which has adopted by the Bank emphasizes prohibition of harassment cases. Sexual harassment cases are handled as per the guidelines set under the Prevention of Sexual Harassment at Workplace (Prevention, Prohibition & Redressal) Act.	The Bank has formulated and adopted a Policy on Prevention of Sexual Harassment at Workplace and takes all necessary measures to ensure a harassment-free workplace and has instituted an Internal Complaints Committee (ICC) for redressal of complaints and to prevent sexual harassment.
Work life Balance Issues	The Bank has implemented numerous initiatives to attract diverse talents, to cultivate a stimulative learning environment and to ensure a safe and healthy work environment. Moreover, creating health talks and mental health exercises to ensure the WLB of employees.	Work life balance issues are resolved through refreshment courses, mental health checkups, stress relief programs, yoga classes, family entertainments, etc. The work life balance is ensured by the bank for their employees to avoid stress and strain.	Traveling, Health Advisories, etc. in addition, the bank launched 'With You Initiative' for the employees as psychological counselling and physical wellbeing support. 'Stay Positive' is another initiative for mindfulness and positive energy through yoga for a better heart.

Principle 4: Businesses should respect the interests of and be responsive to all their stakeholders especially those who are disadvantaged, vulnerable and marginalized			
Essential Indicators			
Listing/ Mapping of groups of Stakeholders	The bank has mapped the material sustainability topics to their value chain in order to help us identify and address impacts where they occur. For this purpose, regular and planned engagement are conducted with all the identified stakeholder groups.	The bank has mapped its internal as well as external stakeholders. Further, they have been mapping local business eco system.	The Bank engages with myriad stakeholders through formal and informal channels of communication. Moreover, the Bank undertook a comprehensive 'Stakeholder Engagement' initiative led by an external agency.
Identification of disadvantage, vulnerable and marginalized stakeholders	The Bank has identified women, people with disabilities, children, youth, farmer communities, as its disadvantaged, vulnerable and marginalized stakeholders.	The bank has identified the groups customers from disadvantaged, vulnerable and marginalized category.	The Bank and ABF also have social responsibility initiatives underway for marginalized or weaker sections of society such as women and children, persons with disabilities, tribal communities, and migrant workers.
Leadership Indicators			
Decision/ actions taken by the banks to address the interests of vulnerable/ marginalized groups	Voice guided ATMs for visually challenged, Rural and Inclusive banking initiatives, Priority Sector Lending, Skill Training & Comprehensive Livelihood Initiatives (SLI) (food/water & job security), ensure the engagement of SHGs, etc. under HDFC Parivartan.	Priority Sector Lending, Government-led initiatives, Inclusive business activities, ATMs for physically challenged groups, Skill development, healthcare, medical research & treatment facilities, school education, training facilities etc.	'Axis Sahyog' for Micro finance, digital payment, agricultural banking, financial literacy workshops, 'Asha Home Loans' for low-income segments, initiatives for education of girl, livelihood activities for the community development, digital literacy programmes etc.

Principle 5: Businesses should respect and promote human rights			
Essential Indicators			
Human Right Policies	Bank's Code of Conduct and Ethics Manual details a policy on respect for human rights, which adheres to the principles in the United Nations' Universal Declaration of Human Rights. It is applicable to all employees, associates and business partners.	Bank's philosophy of non-discrimination and the Banking Codes & Standards Board of India covers fair banking practices, transparency in services & products, high operating standards, cordial relationship with consumers and other stakeholders of the bank.	Policy on Human Rights, Code of Conduct & Ethics that laid down the acceptable employee behavior on human rights, 'Supplier Code of Conduct' which includes pertinent clauses on human rights ensure the contractual agreement with the suppliers.
Training details for employees regarding human rights	General Training Programme consisting the modules on human rights, prevention of sexual harassment etc.	General Training Programme consisting the modules on human rights, prevention of sexual harassment etc.	General Training Programme consisting the modules on human rights, prevention of sexual harassment etc.
Leadership Indicators			
Details of Stakeholder's complaints	Stakeholder's complaints regarding data and privacy breach. Customer complaints related to phishing, unauthorized transactions and cash dispensation. Complaints associated with corruption are also raised through the whistle-blower mechanism by all stakeholders including suppliers and customers.	With respect to employees, the bank has provided a mechanism of Whistle Blower Policy, As regards the customers, The Customer Service Council (CSC) of the Bank functions as the standing committee for customer service. All these reports are periodically reviewed by the Audit Committee of the bank.	The Bank has in place an employee portal, H-Response, for employees to communicate their grievances or concerns to the Management in a confidential and secure manner. The Customer Service Council (CSC) of the Bank functions as the standing committee for customer service. These are reviewed and resolved yearly.
Resolved complaints against human rights	There were no complaints received by the Bank specific to human rights violation, from other stakeholders.	There were no complaints received by the Bank specific to human rights violation, from other stakeholders.	There were no complaints received by the Bank specific to human rights violation, from other stakeholders.

Principle 6: Businesses should respect and make efforts to protect and restore the environment			
Essential Indicators			
Policies related to the protection of environment	Social and Environmental Risk Management System (SEMS), ESG Policies, E-waste management approach, Environmental Stewardship Policies. Board-approved environmental policy in 2019 to guide environmental initiatives through risk assessment, impact evaluation and emission reduction, etc.	ESG policies, Approach for the management of Environmental Footprints, Approach for Socially Responsible Banking, Policies & Procedures focus for promoting sustainability. Further, the bank has introduced Social and Environmental Risk Management policies for sustainable devt.	Policy on Environmental Management emphasizes on the domains of sustainable supply chains, green procurement, energy efficiency, waste management and managing carbon footprints. Policy on Corporate Social Responsibility and Sustainability Leding Policy & Procedures to avoid E&S risk factors.
Strategies/ Initiatives to address Global environmenta l issues	Energy Management, Renewable Energy, Emissions & Climate Change, Waste Management, Digital Banking, IT initiatives, Resource Efficiency, Investment in Carbon Disclosure Project, Reduction of direct & indirect emissions and energy consumption, E-waste Mgt, Responsible Lending, etc.	Energy Management and Conservation, Power saving efforts, Alternative Banking Services as digital, Waste Management, Water Management, Investment in Quality Project on Energy Conservation, Building Sustainable & Green Spaces and other sustainable business conducts.	Sustainable finance, Green Infrastructure, Investment in renewable energy, paper & waste management, water consumption reduction, energy efficiency measures, centralized energy management system, plantation, Green Building, Green Bond issue, Afforestation etc. for sustainability.

Identify and assess potential environmental risk	The Bank has a wholesale credit risk policy which details a Social and Environmental Risk Management System (SEMS) for screening and monitoring social and environmental risks associated with projects. The Bank also has an Environment Policy in place to serve as a framework for understanding and managing the environmental risks, impacts and opportunities. The policy incorporates elements of environmental performance, risk assessment & monitoring and governance & implementation.	The bank is aware of the potential environmental risks and participates in initiatives. Moreover, they require the borrowers of project loans to comply with the various national environmental standards. Responsible financing is considered as the important focus area for the bank to incorporate with Environmental & Social risk, Therefore, they integrate analysis of environmental and social risk assessment into the overall credit appraisal process.	The Bank has in place the Sustainable Lending Policy and Procedures (SLPP) that integrates environmental and social risk assessment into the credit appraisal mechanism. It applies to all new funding projects subject to the threshold criteria for qualifying projects as defined in the SLPP, and is managed by the Environmental and Social Monitoring Group (ESMG). The SLPP includes an exclusion list wherein the Bank refrains from lending.
Leadership Indicators			
Environmental Impact Assessment	With the aim to drive sustainability in value chain, The bank engaging with all stakeholders to ensure that they understand the social and environmental impact of the Bank's operations and the fundamentals of sustainability, all towards the endeavor to further reaffirm the position as an organization known for its business, social and environmental responsibility.	Environmental impact of their activities is measured with the help of amount of carbon emission. Therefore, the bank has initiated in-house and out-house strategies to reduce the carbon footprints from the environment. These activities are termed mainly under the head of 'go-green' concept of the bank.	Every activity carried out by the bank in the area of protection of 'Natural Capital' is deserved to attain the Environmental Impact Assessment in every year. Moreover, the bank has assessed the amount of carbon emission from their day-to-day operation. The intensity has reduced for the sustainable development for the future.

Project related to Clean Development Mechanism	Nil	The Bank assists projects that promote bio-diversity and environmental sustainability and that reduce greenhouse gas emissions.	The bank has clients with projects linked to Clean Development Mechanism
Initiatives on Clean technology, energy efficiency, renewable energy	In-house energy management practices (VRF ACs, LED lights, Occupancy sensors, Inverter system, green locks), LEED certified buildings, Use of solar powered Ups, Introducing Energy Management Modules, Installation of Capacitor Banks, etc.	Environment-friendly practices in its operations, installation of new opportunities to adopt technology, replacement of high energy consuming equipment, procurement of clean energy, financing for renewable energy projects and assessment of energy efficiency.	Renewable energy power generation, mass rapid transport system, energy efficient urban infrastructure, solar power generation, low energy consuming lighting, ACs, and other installations, customer-focused green banking initiatives and use of greener products.
Emissions/ waste generated within the permissible limit of CPCB/ SPCB	Being a service sector organization, the Bank does not generate any toxic/ hazardous pollutants	The Bank complies with applicable environmental regulations in respect of its premises and operations	Responsible disposal of wet, dry and e-waste through third party government authorized vendors, use diesel generators as back-ups, ensuring emissions and noise levels are within permissible limits.
Show cause/ legal notices received from CPCB/SPCB	Nil	Nil	Nil

Principle 7: Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent			
Essential Indicators			
Membership in trade/ Chamber of association	Indian Bank's Association and also the bank actively involved in consultation/ discussion forum with the government and other bodies in the banking industry.	Indian Banks' Association, Confederation of Indian Industry in India, Institute of International Finance and other govt. or regulatory bodies.	Indian Banks Association, All India Management Association, Association of Investment Bankers of India, Association of Mutual Funds in India, Associated Chambers of Commerce & Industry of India
Leadership Indicators			
Details about advocated/lobbied through associations for the advancement/ improvement of public good	Not Applicable	The Bank, directly, and along with ICICI Foundation, has been working on several initiatives for promoting inclusive growth and livelihood development.	The bank and its subsidiaries promote policies and initiatives that aim to create an efficient and transparent financial system, enhance financial literacy etc.
Principle 8: Businesses should promote inclusive growth and equitable development			
Essential Indicators			
Social Impact Assessment	HDFC Parivartan enables to make Social Impact Assessment. Moreover, asper Corporate Social Responsibility Policy Rules 2014, the bank working with NGOs for the promotion of community development.	Periodic Reviews are conducted in respect of various socially responsible initiatives, mainly; skill development initiatives, rural development activities and social awareness programmes as a part of CSR activities.	ABF conducts impact assessments of its programs by engaging reputed independent agencies/ institutions. ABF has also undertaken Social Return on Investment studies on key interventions (SRISI)

Initiatives/ Process/ Programmes in pursuit of inclusive growth and equitable development	Financial Literacy & Inclusion, Healthcare & hygiene, Skill Training & Livelihood Enhancement, Promotion of Education, Infrastructural Development, Promotion of alternative energy (solar, biogas and biomass), Natural Resource Management (Afforestation, Water Conservation, Rejuvenation of water sources) etc.	Inclusive growth, Skill training initiatives, rural livelihood programmes, value chain & entrepreneurship programmes, participation in social & environmental projects, improving agricultural productivity, healthcare protection, Water conservation, e-waste management and 'reduce, reuse and recycle' campaign.	Financial literacy and inclusion, rural development, promoting education, skill development, livelihood enhancement and healthcare. Retail microfinance program, and other Corporate Social Responsibility Initiatives for the wellbeing of the society. In addition, environmentally sustainable banking practices also conducts for ecological balance.
Details of Programmes/ projects undertaken through in-house team/ foundation/ external NGO/ Govt. structure/ other org.	The above-mentioned community development programmes/ projects undertaken through in-house/ foundation/ NGOs/ Govt. Structure/ Other Org.	The projects/ programmes are undertaken primarily through in-house teams and the ICICI Foundation, with the assistance of implementation partners as required.	The Bank undertakes CSR programmes/ projects directly or through Axis Bank Foundation or through any other Trust or agencies and entities as it deems suitable.
Leadership Indicators			
Company's direct contribution to community development projects	CSR projects mainly for Rural Development, Promotion of Education, Skill Development & Livelihood Enhancement, Healthcare & hygiene, Financial Literacy and Inclusion and Support for Farmers and other SHGs.	The bank has spent mainly for CSR initiatives like sill development, rural livelihoods, social & environmental projects, rural development activity, promoting education, disaster management and awareness campaign on social issues.	The bank has directly contributed for social empowerment through CSR projects namely, education, eradication of poverty, literacy program, healthcare, women empowerment, skill enhancement and protection of nature

Steps taken to ensure that this society development initiative is successfully adopted by the community	Continuously assesses and monitors the impact of its initiatives. The Bank ensures that the projects it undertakes receive complete participation and support from the community, thus ensuring that they are sustainable and generate the necessary impact.	Initiatives in the areas of rural development and social projects also encourage community participation at the village level and are focused on providing opportunities to target beneficiaries to improve their livelihood.	The bank conducts various initiatives with the help of ABF such as, self-sustain activities, long-lasting community empowerment, women advancement and encouragement program, children execution approach, youth trained initiatives etc.
Principle 9: Businesses should engage with and provide value to their consumers in a responsible manner			
Essential Indicators			
Number of consumer complaints in respect of data and privacy, advertising, delivery of essentials	2015-2016- 867 2016-2017-563 2017-2018- 433 2018-2019- 341 2019-2020-203 Complaints were received and around 91% complaints resolved in every year.	2015-2016- 433 2016-2017- 265 2017-2018- 301 2018-2019- 287 2019-2020- 198 Complaints were received and around 97% complaints resolved yearly.	2015-2016- 211 2016-2017- 189 2017-2018- 245 2018-2019- 176 2019-2020- 202 Complaints were received and around 95% complaints resolved yearly.
Display characteristics of product information	Displays the details of its financial products on the website, print media and social media platforms to spread awareness. The Bank ensures customers are empowered to make informed choices by providing details of the products and services in a transparent manner.	The details of products and services are displayed on printed and digital medias. Or otherwise, bank has taken efforts to make aware about the products by the way of customer campaign, circulating brochure, pamphlet and leaflets.	Bank strives to provide complete and relevant information on its products and services at all customer-facing platforms such as Online media and printed media. Also, awareness campaign is conducted among the existing and competitive customer.

Any case filed against unfair trade practices, irresponsible advertising and/or anti-competitive behavior	2015-16- 4 cases 2016-17- 3 cases 2017-18- no case 2018-19- no case 2019-20- 1 case alleged on unfair trade practices,	The number of cases is not disclosed, but the bank disclosed about the disputes procedure of every complaint received from the customers.	There are no cases against unfair trade practices, irresponsible advertising and/or anti-competitive behavior
Leadership Indicators			
Company carryout any consumer survey/ consumer satisfaction trends	Regular surveys to measure the satisfaction level of customers with respect to its products and services. The feedback received from different channels is collated and shared with respective product teams who in turn work to incorporate these suggestions / changes in the newer roll out of product versions.	Bank conducts detailed Customer Satisfaction Studies (C-SAT) for its key products and customer segments. On the basis of this survey, they have prepared a Net Promoter Score (NPS). In addition, extensive diagnostic researches in specific areas are conducted on a regular basis.	Annual Customer Satisfaction Survey (CSAT) to assess the perception and expectations of customers on various aspects of its products, services and brand. Furthermore, At the transactional level, Customer Transaction Survey (CTS) is an on-going survey that is conducted within a customer sample to understand their experience.

Source: Business Responsibility & Sustainability Reports

Table 6.7

ESG Disclosure Score of New Generation Banks according to the completeness of Business Responsibility Reporting Framework by NGRBC

Sections/ Sub Sections	HDFC	ICICI	AXIS
Section B	All Completed – **Score 20**	All Completed – **Score 20**	All Completed – **Score 20**
Section C – Principle 1 to 9	All Completed – **Score 20 x 9 = 180**	All Completed – **Score 20 x 9 = 180**	All Completed – **Score 20 x 9 = 180**
Overall Score	**200**	**200**	**200**

Source: Secondary Data

According to the Disclosure Status on the Completeness aspects of Business Responsibility Reporting Framework by NGRBC, the HDFC, ICICI and AXIS Bank have an overall score of 200. Here, all the New Generation Banks have disclosed Business Process and Management details as per Section 'B' and all Essential and Leadership Indicators as per Section 'C' of the framework. Hence, all the sample banks are considered as the best New Generation Banks in the ESG performance as per the Business Responsibility and Sustainability criteria.

6.6 Conclusion

Sustainability reporting frameworks have originated over time and banks have adopted these frameworks for measuring, monitoring and disclosing performance in areas of Environmental, Social and Governance (ESG). The Global Sustainability Reporting Frameworks are Global Reporting Initiative (GRI), Integrated Reporting (IR) and Sustainability Development Goals (SDGs). In India, ESG reporting is started with the Ministry of Corporate Affairs (MCA) issuing Voluntary Guidelines on Responsible Business Conducts. Now it is called as Business Responsibility and Sustainability Report (BRSR) as per SEBI circular in 10th May 2021. This framework is designed under three sections, Section 'A' deals with General Disclosure, Section 'B' exhibits Management and Process Disclosure and Section 'C' encloses the principle-wise Performance Disclosure of banks.

In this chapter, the ESG Performance of Public Sector, Old Generation and New Generation Banks have identified with the help of Disclosure Score on Completeness aspects of sections/ sub sections in the BRRF by NGRBC. According to the disclosure score, SBI from Public Sector, Federal Bank from Old Generation and HDFC, ICICI and AXIS from New Generation Banks are considered as the best performers of Environmental, Social and Governance aspects. More precisely, New Generation Banks are the frontrunner in the preparation, reporting and follow up of Business Responsibility and Sustainability Framework.

Chapter 7

Summary, Findings and Conclusions

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7.1 Introduction

Environmental Stability is the vital component of a sustainability framework along with Social Reforms and Economic Progress. The banking sector has placed its policies and procedures for Environmental and Social System Management that aims to follow the bank's actions and strategies towards a responsible business organization. Subsequently, the banks remain strongly committed to the Principles of Sustainable Development – Economic Prosperity (progress of the country), Social Responsibility (inclusion of community) and Environmental Sustainability (protection of nature). Hence, there is need to create a symbolic relationship with business environment of the banks. Moreover, the present research work has presented a humble attempt to review and compare the sustainable banking practices of the banks towards protection and preservation of ecological balance.

The present chapter exhibits the concluding part of the research work along with the terminal sections of summary of the previous chapter, findings and conclusions of the study based on the research problem, objectives, hypotheses and methodological design.

7.2 The Problem in brief

Over the past few years, contribution towards sustainable development is important to ensure stability of the surrounding that we live. In order to protect the financial, social and natural capital of the banking sector, it is essential to formulate a sustainability framework according to the globally accepted principles and policies. Moreover, it is quite relevant to exhibit the interrelationship between Environmental, Social and Governance (ESG) aspects of the banking structure. The planetary boundary of the banking environment is a very important part of ESG strategy. Without the protection of available natural capital/ resources; formation of social and financial capital is worthless. In this scenario the present research work attempts to discuss the most relevant area of ESG implementation i.e., Environmental Sustainability. It is one of the dimensions/ pillars of sustainable developments through responsible financing, renewable energy investments, green projects, carbon finance, resource efficiency management, paperless activities, etc.

The present research work attempts to investigate into the following major issues.

1. Is there any difference in the level of adoption of Environmentally Sustainable Practices among sectors and banks selected for the study?
2. What are the SWOC and SMART Green Goals and is there any significant difference among Sectors and banks?
3. Is there any relationship between adoption level of Environmentally Sustainable Practices and SWOC & importance of SMART Green Goals?
4. What is the level of awareness and acceptance regarding Environmentally Sustainable Banking Practices perceived by the customers?
5. What are the Enabling and Disabling factors of Digital Banking Acceptance?
6. What is the level of customers' perception and satisfaction towards Digital Banking Acceptance? and
7. Is there any difference in the ESG Performance of selected Public, Old Generation and New Generation Banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC)?

7.3 Objectives of the study

1. To investigate into and compare the adoption level of Environmental-Sustainable Practices among the sectors and banks selected for the study.
2. To identify and compare the SWOC and importance of SMART Green Goals of Sustainable Banking.
3. To analyze the relationship between adoption level of Environmentally Sustainable Banking Practices and SWOC analysis & importance of SMART Green Goals.
4. To examine and compare the awareness and acceptance level of Environmental-Sustainable Practices among the customers of the banks.
5. To identify the Enabling and Disabling factors of Digital Banking Acceptance and Frequency of use of Digital Initiatives.
6. To assess the perception and satisfaction level of customers regarding Digital Banking Acceptance and

7. To evaluate and compare the ESG Performance of selected Public, Old Generation and New Generation Banks according to the Principles of National Guidelines on Responsible Business Conduct (NGRBC).

7.4 Hypotheses

In line with the above stated objectives, the following hypotheses were formulated and tested with the help of appropriate statistical tools.

Based on Objective No. 1

$H0_1$: There is no significant difference in the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices and Products) among Public, Old Generation and New Generation Banks.

$H0_2$: There is no significant difference in the adoption level of Environmentally Sustainable Banking Practices (Green Processes, Practices and Products) among the sample banks.

Based on Objective No. 2

$H0_3$: There is no significant difference in the strengths, weaknesses, opportunities, and challenges of Sustainable Banking among Public, Old Generation and New Generation Banks.

$H0_4$: There is no significant difference in the SMART Green Goals of Sustainable Banking among Public, Old Generation and New Generation Banks.

$H0_5$: There is no significant difference in the strengths, weaknesses, opportunities, and challenges of Sustainable Banking among the sample banks.

$H0_6$: There is no significant difference in the SMART Green Goals of Sustainable Banking among the sample banks.

Based on Objective No.3

$H0_7$: There is no significant relationship between adoption level of Environmental-Sustainable Banking Practices and SWOC Analysis.

$H0_8$: There is no significant relationship between adoption level Environmental-Sustainable Banking Practices and Importance of SMART Green Goals.

$H0_9$: There is no significant relationship between the importance of SMART Green Goals and SWOC Analysis.

Based on Objective No.4

$H0_{10}$: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the demographic profile of the customers.

$H0_{11}$: There is no significant difference in the awareness level of Environmentally Sustainable Banking Practices according to the digital banking details of the customers.

$H0_{12}$: There is no significant difference in the Digital Banking Acceptance among customers according to their demographic profile.

$H0_{13}$: There is no significant difference in the Digital Banking Acceptance among customers according to their digital banking details.

Based on Objective No.6

$H0_{14}$: External Stimulus has significant positive impact on Cognitive Responses of Digital Banking Acceptance.

$H0_{15}$: Cognitive Responses have significant positive impact on Affective Response of Digital Banking Acceptance.

$H0_{16}$: Cognitive Responses have significant positive impact on Intention of Digital Banking Acceptance.

$H0_{17}$: Affective Response has significant positive impact on Intention of Digital Banking Acceptance.

$H0_{18}$: Intention has significant positive impact on Behavioral Responses of Digital Banking Acceptance.

7.5 Brief Methodological Design

The research design of the study is descriptive as well as analytical in nature. The required data are collected from both secondary and primary sources. The secondary data from the reports of RBI, SEBI, Banks, NGRBC, UN-SDGs, GRIs, books, journals, theses, dissertations etc. are collected and scrutinized for the study. Besides that, primary data are collected from the bankers and customers of selected Public and Private Sector (Old and New Generation) Banks in Kerala.

Here, four-stage sampling is adopted for the selection of banks, districts, managers and customers of the study. In the first stage, the selection of sample banks has made as per the available secondary records regarding the Disclosure Status of NGRBC, ESG Integrated Reporting (BRSR) and Sustainability Development Criteria for Global Reporting Initiatives (GRI). In the second stage, the districts from northern, central and southern regions of Kerala are selected due to the fact that the Administrative Offices and Main Branches of the sample banks are located in these districts. In the third stage, the sample managers of different departments of the Administrative Offices of the banks including Digital Wing, Sustainability and CSR are selected. Finally, in the fourth stage, data collected from customers of the banks using purposive sampling method. A total of 81 managers and 405 customers (Bill Godden, 2004) are selected as the primary respondents of the study.

In order to collect the primary data a structured questionnaire is used; that contain closed ended questions including both multiple choice questions and Likert Rating Scale. The Likert Scale is used to gather data regarding the main variables of the study. The adoption, agreement, importance and awareness measurement scales are employed in five points ranging from 5 to 1. SPSS Statistics 20 and AMOS 20 are used as the software for primary data analysis. Since the study proves the normality, reliability and validity requirements, parametric tests have used to compare the statistical difference between the variables. Therefore, Descriptive Statistics (Mean & SD), Levene's test of Homogeneity of Variance, Independent Sample 't' test, One-way ANOVA, Tukey HSD pos-hoc test, Confirmatory Factor Analysis and Structural Equation Modelling are used as the statistical tools and techniques.

7.6 Summary of the Chapters

The report of the research work is presented in eight chapters as detailed below:

The first chapter is introductory part of the research report. It deals with the significance of the study, statement of research problem, scope of the study, research questions, objectives & hypotheses, operational definition of concepts, research methodology, variables used for the analysis, statistical tools and techniques, conceptual model, limitations of the study and chapter scheme.

The second chapter of the research report exhibits the review of earlier studies regarding general studies on Environmentally Sustainable Banking Practices, studies on Digital Banking Acceptances and the studies on Sustainability Performance. The research gap identified is also presented in this chapter.

Chapter three is the summary of concepts and theories related with the research area. It covers the theoretical background of Sustainability, Sustainability Framework, Environmental-Sustainable Banking Practices and the role of Public and Private Sector (Old Generation and New Generation) Banks in the adoption of Green Processes, Green Policies/ Procedures, Green Products/ Services, Green/ Digital Innovation and Green Practices.

The fourth chapter starts the body of the thesis. Firstly, some of the general details regarding period of adoption of ESBP, guidelines followed, areas of green strategies adopted and reason for going green are presented. Thereafter, the adoption level, SWOC and SMART Green Goals have identified from the perspective of managers of the bank. In order to collect the primary data, the researcher has used structured questionnaire with closed end questions of multiple choices and Likert scale. Here, the measurement scales of adoption, importance and agreement are used to gather data on five-point Likert Scale. The analysis has done with the help of Descriptive Statistics, Levene's test of Homogeneity of Variance, One-way ANOVA, Tukey HSD Post-hoc test for Multiple Comparison and Structural Equation Modelling. This chapter compares the ESBP among sectors and banks selected for the study. In addition, the interrelationship between adoption level, SWOC and SMART Green Goals also presented by using measurement models.

The fifth chapter is the continuation of the body of the thesis. Firstly, general details regarding demographic and banking profile of the customers have identified. Thereafter, the level of awareness on ESBP, enabling & disabling factors and acceptance of Digital banking practices have identified from the perspective of customers. Here, the researcher has used the awareness and agreement measurement scales to collect the data on five-point Likert Scale. Further, the analysis has conducted by employing Descriptive Statistics, Levene's test of Homogeneity of Variance, Independent Sample 't' test, One-way ANOVA, Tukey HSD Post-hoc test for Multiple Comparison, Confirmatory Factor Analysis and Structural Equation Modelling. In this chapter the researcher has presented the Extended Technology Acceptance Model to discuss the relationship between External Stimulus, Cognitive Responses, Affective Responses, Intention and Behavioral Responses of the acceptance of Digital banking practices.

The sixth chapter is the final part of the body of the thesis. In order to evaluate the ESG performance of the banks, secondary data collected from the Annual Reports, Business Responsibility Report, Sustainability Reports and Corporate Social Responsibility Reports for the period of five years from 2016 to 2021. Here, the framework of National Guidelines on Responsible Business Conduct (NGRBC), 2018 is taken as the yardstick to identify the performance level of banks regarding the Essential and Leadership Indicators of Principles of responsibility. Thereafter, the researcher has formulated an ESG score of the banks according to their disclosure status and completeness of each and every indicator of the framework. This chapter is presented in tabular format for the easy presentation of the ESG aspects.

In chapter seven, the nutshell of the research work has presented in the headings of Introduction, Research Problem in brief, Objectives, Hypotheses and Methodological Design. Thereafter, the summary of previous chapters, findings of the study and conclusions are included. The findings of the study have presented in the order of objectives of the proposed research work. Therefore, it includes the adoption level of ESBP, period of adoption, reason for going-green, areas of green strategies, guidelines followed, SWOC analysis, importance of SMART Green Goals and the relationship among them from the perspective of bankers. Further, the demographic profile, banking details, awareness level, enabling factors & disabling factors of digital banking, perception on acceptance & satisfaction are presented from the point

of customers. Finally, the findings regarding ESG performance of the sample banks namely, Public and Private Sector (Old and New Generation) have also exhibited.

Chapter eight is the final chapter of the research report. Here, recommendations, implications to the stakeholders of the research and scope for further research are revealed.

For the purpose of discussion, the present chapter is divided into two parts. Part I presents the findings and the Part II is concerned with the conclusions drawn from the findings of the study.

PART I

7.7 Findings of the Study

Here, the findings of the study have been presented in three sections. Section 'A' deals with the adoption level, SWOC Analysis and importance of SMART Green Goals of Environmental-Sustainable Banking Practices from the perspective of bankers. Section 'B' includes the level of awareness, acceptance and satisfaction of Paperless Banking Practices from the perspective of customers. Finally, Section 'C' exhibits the ESG performance evaluation of Public and Private Sector (Old and New Generation) Banks in the light of Principles of NGRBC, 2018.

Section A

7.7.1 Level of Adoption, SWOC and importance of SMART Green Goals of Environmentally Sustainable Banking Practices from the perspective of bankers

Here, in order to discuss and compare the level of adoption, SWOC and SMART Green Goals among sectors/ banks selected for the study, the researcher has employed descriptive statistics, Levene's test of homogeneity of variance, One-way ANOVA and Tukey HSD post-hoc test for multiple comparison. Before that, the period of adoption, guidelines followed, areas of green strategies adopted and reasons for going green are presented.

7.7.1.1 Period of adoption of Environmentally Sustainable Banking Practices

According to the reports of banks, the period of adoption is classified into four, less than 1 year, 1 to 3 years, 3 to 5 years and more than 5 years. Major findings regarding the same are listed below.

- Majority of the Public Sector (67%), Old Generation (78%) and New Generation Banks (80%) have adopted the Environmentally Sustainable Banking Practices from more than 5 years.
- All the selected SBI, HDFC, ICICI and AXIS Banks have adopted the environmental sustainability from more than 5 years. In the case of Federal Bank, only 89% of them have implemented these practices from more than 5 years. As regards the Canara, PNB, SIB and IDBI, only 78% of the selected banks have adopted the sustainable banking practices from more than 5 years and the rest of them have adopted these activities from 1 to 5 years.

7.7.1.2 Guidelines followed for Environmental Sustainability

As per the reports of the banks, adoption of environmental-sustainable banking practices is a voluntary activity followed by the banks according to RBI Regulations, National Guidelines, Triple Bottom Line Approach, Environmental Principles, Bank's own Guidelines. The findings regarding the guidelines followed by the sectors and banks selected for the study have given below:

- Most of the Public (48%) and New Generation (44%) Banks have followed RBI regulations for environmental-sustainable banking practices. But 41% of the Old Generation Private Banks have followed National Guidelines on Responsible Business Conduct for the implementation of sustainability. Among them, 33% have followed the bank's own guidelines.
- As regards the sample banks, 78% of SBI, 56% Canara Banks, 100% of HDFC have followed the RBI regulations. On the other hand, 56% of PNB, Federal, SBI and 78% of ICICI Banks have concerned with the National Guidelines. Further, 67% of the AXIS Banks relies upon Principles of Sustainability and 67% of IDBI banks followed the Banks' own guidelines to ensure Environmental Sustainability.

7.7.1.3 The Areas of Green Strategies adopted

From the available literature, the researcher has identified main areas of green strategies adopted namely, operational activities, technological aspects, financial activities, client acceptance, physical infrastructure and investment avenues. In order to ranking the main reasons given by the sample sectors of bank, Arithmetic Mean is used and major findings are given below:

- Public and New Generation Banks have given their first rank for operational activities, second rank for technological aspects and third rank for client acceptance as compared with the Old Generation Private Banks. Old Generation Banks have given first rank for technological aspects, second rank for operational activities, third rank for client acceptance.
- With respect to the sample banks selected for the study, SBI, Canara and AXIS Banks have given their first priority of green strategies to operational activities as compared with other banks (they given second rank for the same activities). In the case of PNB, Federal, SIB, ICICI, HDFC Banks, the first preference for the implementation of green strategies is given for the technological aspects of operations. All the sample banks have given least priority for the investment opportunities of green strategies of the banks.

7.7.1.4 The Reasons for Going Green

The researcher has identified various reasons of the banks to going green for their in-house and out-house activities. In order to ranking the reasons, descriptive statistics (Mean and SD) is used and following are the major findings.

- The Public and Old Generation Private Sector Banks have identified 'optimum utilization of scarce resources' as the main reason for going green. But New Generation Banks have noticed that 'increasing energy consumption' is the main reason behind the sustainable development. Moreover, 'growing consumer interest on environmental-friendly goods & services' and 'higher expectation of the general public on environmental responsibilities' are identified as the next best reasons. All the banking sectors have more or less same opinion regarding the least ranking reasons namely, 'big investments for Environmental Impact Assessment' and 'stringent environmental rules & regulations for future export markets.'

- In accordance with the sample banks, SIB, HDFC and AXIS Bank have noticed the main reason for going green is that, 'increasing the level of energy consumption'. SBI identified the reason of 'energy price hike' for environmental sustainability. Further, Canara, Federal and ICICI Banks have given their first rank for 'optimum utilization of scarce resources' amongst the reason of going green. On the other hand, PNB and IDBI have noticed main reason for greener activities is that the 'growing interest of consumers toward environment-friendly good and services. Most of the sample banks have given least ranking for 'requirement of big investment for Environmental Impact Assessment'.

7.7.1.5 The Adoption level of Environmentally Sustainable Banking Practices

Here, the Environmentally Sustainable Banking Practices are classified into three, Green Processes, Green Practices and Green Products & Services. In order to discuss and compare the adoption level, Descriptive Statistics (Mean and SD) and One-way ANOVA are used respectively. Following are the major findings of the analysis work carried out for the same.

Sector-wise Discussion and Comparison

- As regards the Green Processes, the level of adoption level of Enterprise Resources Management, Customer Relationship Management and Product Life Management are more or less same in the case of Public and Private Sector (Old and New Generation) Banks. But there exists a significant difference in the adoption level of Supply Chain Management among three sectors ($f = 12.01$ and $p = <0.01$) and the New Generation Private Banks have high level of adoption of Supply Chain activities as compared with Public and Old Generation Banks.
- With respect to Green Practices, there exists significant difference in the adoption level of Green Policies & Procedures, Green Investment, Green Partnership, Inhouse Energy Management Practices and Green Financing activities among Public Sector, Old Generation and New Generation Private Sector Banks. Moreover, New Generation Private Sector Banks have high level of adoption than that of other two categories of banks. It has proved in the Tukey HSD post-hoc test for pair-wise comparison of banking sector. However, there is no significant difference among the three sectors towards the adoption level of Out-house Energy Management and Employees Related Green Practices.

- In the case of Green Products and Services, there is significant difference in the adoption level of Digital Innovation, Informative and Communicative services of Internet Banking among three sectors of banks. Here, Public Sector banks have high adoption level of Digital Innovation as compared with other two sectors. However, New Generation Banks have good adoption level of Informative and Communicative services of Internet Banking. There is no significant difference in the adoption level of transactional services of IB and Mobile Banking services.

Bank-wise discussion and comparison

- According to Green Processes, there exists significant difference in the adoption level of Supply Chain Management ($f=9.86$, $p<0.01$), Enterprise Resource Management ($f=9.52$, $p<0.01$), Customer Relationship Management ($f=14.11$, $p<0.01$) and Product Life Management ($f=10.93$, $p<0.01$) among the sample banks selected for the study. Here, SBI, HDFC, ICICI and AXIS Banks have good level of adoption level of Green Processes compared to other banks and these banks are statistically differed from other sample banks.
- As far as Green Practices are concerned, there exists significant difference in the adoption level of Green Policies & Procedures ($f=16.61$, $p<0.01$), Green Investment ($f=18.25$, $p<0.01$), Green Partnership ($f=3.02$, $p=0.006$), In-house ($f=5.51$, $p<0.01$) & Out-house Energy Management Practices ($f=7.92$, $p<0.01$), Employee Related Practices ($f=12.45$, $p<0.01$) and Green Financing activities ($f=7.18$, $p<0.01$) among the sample banks selected for the study. Moreover, SBI, HDFC, ICICI, AXIS, IDBI Banks have good level of adoption of the Green Practices compared to other banks.
- In the case of Green Products & Services, the adoption level of Green Innovation is high in State Bank of India. Thus, SBI is significantly different ($f=4.743$, $p<0.01$) from other sample banks selected for the study. Further, the sample banks except PNB are fully adopted the Mobile Banking services. Therefore, PNB is significantly different ($f=9.16$, $p<0.01$) from other banks with low adoption level of Mobile Banking services. Besides that, there is no significant difference among sample banks according to the adoption level of informative, communicative and transactional practices of Internet Banking.

7.7.1.6 SWOC Analysis of Environmentally Sustainable Banking Practices

In the line of adoption level, there is a need to measure the Strength, Weakness, Opportunities and Challenges of Environmental Sustainability. In order to discuss and compare the SWOC among sectors/ banks, the researcher has used descriptive statistics, One-way Analysis of Variance and Tukey HSD post-hoc test for multiple comparison respectively. Following are the major findings regarding SWOC analysis.

Sector-wise discussion and comparison

- Public sector banks have identified their strengths of environmental sustainability in the area of 'innovative strategies for energy as well as tech savvy techniques'. At the same time, Old and New Generation Banks have recognized 'triple bottom line approach' as the main strength for sustainable growth. In addition, Old Generation Banks have noticed one more strength of environmental sustainability is the 'low carbon emission through green/ responsible financing activities.'
- In the case of weaknesses of go-green activities, Public Sector and New Generation Private Banks identified 'cost of installation of energy efficient materials' and 'absence of Environmental Audit & Management' are the main weaknesses. Thus, Old Generation Private Banks have noticed that 'infancy stage of development' and 'less adoption of Environmental Accounting Practices' are the core weaknesses.
- Further, Public and New Generation Banks have identified same opportunities of sustainable growth i.e., 'separate cell for sustainability development' and 'implementation of environmental due diligence'. On the other hand, Old Generation Banks have different opinion regarding the opportunities and they have noticed 'Corporate Social Responsibility Standards' and 'rewards & recognitions for best sustainable practices' as the key opportunities.
- Regarding the challenges of environmental-sustainable practices, Public Sector Banks have identified 'difficult to get green coin rating' and 'financial risk due to creating separate fund for CSR activities' are the important challenges. On the other side, Old and New Private Sector Banks noticed 'Problems of Environmental Risk Management as Core Risk Management Process' is the main challenge.

- The overall mean scores of strengths, weakness, opportunities and challenges of Environmentally Sustainable Banking Practices describes that there is no significant difference among the banking sector selected for the study. It is because of the fact that majority of the variables identified by the sectors are more less same when compared with the overall score of the total constructs.

Bank-wise discussion and comparison

- SBI, PNB, SIB, ICICI and AXIS Bank have identified 'an innovative strategy for sustainable development' as the strength of environmental stability. On the other side, IDBI and HDFC have considered 'triple bottom line approach' as the strength of planet and people development. Federal Bank and Canara Bank have noticed 'energy as well as techy savvy integration' and 'participation from the bottom of earth' as the main strengths of sustainability respectively in this order.
- In the case of weaknesses for the adoption of environmental-sustainable practices, SBI, PNB, SIB, ICICI, HDFC and AXIS Bank have identified the 'absence of Environmental Audit Management' as one of the problems behind go-green activities. Though, Canara, Federal and IDBI have noticed 'cost of installation of energy-efficient items' as the main issue for the adoption of environmental-friendly practices.
- With respect to the opportunities for the implementation of sustainable operations, PNB and AXIS Bank have suggested a separate cell for the promotion of sustainable growth. But Canara Bank, SIB, ICICI have noticed the 'implementation of environmental due diligence' as the way to responsible business. On the other hand, SBI, Federal Bank, IDBI, HDFC have recommended 'a standardized CSR strategy' for the responsible development of banks.
- In regard to the challenges of sustainable practices, ICICI and AXIS Bank have identified 'credit risk due to the changes in environmental regulations & requirement of reducing the emission level' as the main issues regarding the same. On the other hand, other sample banks have noticed the 'reputational risk due to high cost and less adoption of EMS', 'problems of Enterprise Resource Management as Core Risk Management process', 'difficult to get Going Coin Rating Certification' and 'financial risk due to creating separate fund for CSR activities' as the main challenges for environmentally sustainable practices.

- The One-way ANOVA test result exhibits that there is significant difference in the identification of strengths, weaknesses, challenges and opportunities among the sample banks selected. It is found that the banks have different opinion regarding the SWOC for the adoption of environmental-sustainable activities.

7.7.1.7 SMART Green Goals of Environmental-Sustainable Banking Practices

SMART Green Goals are the Specific, Measurable, Attainable, Realistic and Timely goals for the adoption of ESBP. In order to discuss and compare these goals among sectors and banks, the researcher has employed descriptive statistics, One-way ANOVA and Tukey post-hoc test. Following are the major findings of the analysis.

Sector-wise discussion and comparison

- Public, New Generation and Old Generation Banks have considered the main specific goals namely, 'specific CSR policies and procedure' (4.66), 'planning before going green' (4.62) and 'Coalition of Green Capital and its utilization' (4.55) respectively in this order.
- In regard of measurable goals, Public, New Generation and Old Generation Banks have identified that 'risk and return from every Environmentally Sustainable Banking Practices' (4.85, 4.51) and 'Innovation in Green Technology Products' (4.62) as the main objectives.
- Aim of environmentally and socially responsible CSR practices (4.74), customer care and support for all their queries (4.48) and Environmental Standards in lending and making investments (4.59) are the main attainable goals suggested by the Public, Old Generation and New Generation Banks in this order respectively.
- Setting Intelligence Assistance to Energy Consciousness (4.81), policies for waste energy recycling process (4.48) and digital way to connect Agri Business (4.62) are recommended as the key realistic goals for the adoption of ESBP.
- In the case of Timely Goals, 'disclosure of environmental and social performance in Sustainability Report and CSR Report Simultaneously' (4.66), '24*7 assistance for online banking customers' (4.42) and 'introduction of retail and corporate internet banking practices on need base' (4.63) are the important factors noticed by the three sectors of banks respectively in this order.

- In order to compare the difference in the importance of SMART Green Goals, One-way ANOVA is employed and the significance difference in the measurable, attainable and realistic goals of ESBP has established. But there is no significant difference in the specific as well as timely goals of environmental sustainability.

Bank-wise discussion and comparison

- Federal, ICICI and AXIS Banks have identified the 'planning before going green', SBI, SIB and HDFC have suggested the 'objectives and motives to carry out the practices and Canara, PNB and IDBI have noticed the 'Coalition of Green Capital and its utilization' as the specific goals of environmental-sustainable practices.
- SBI, Federal, IDBI and HDFC have observed the 'Innovation in green technological products', Canara, PNB and ICICI have point out the 'risks and returns from green management practice' and SIB and AXIS Banks have gathered the 'direct and indirect cost of all activities' as the measurable goals of ESBP.
- SBI and ICICI have identified the 'security and confidentiality in Digital sector', PNB, Federal and HDFC have noticed the 'customer care and support for all queries', SIB and AXIS Bank have suggested the 'literacy and educative power from the bottom level' and Canara and IDBI have indicated the 'aim of environmentally & socially responsible CSR practices' as the attainable goals of SMART Green Goals.
- Federal Bank and IDBI have observed the 'introduction of concepts to reduce carbon foot prints', SBI, Canara and SIB have highlighted the 'set of rules of thumb for energy efficient usage' and HDFC, ICICI and AXIS Bank have proposed the 'digital way to connect Agri Business' as the realistic goals of environmental-friendly banking practices.
- SBI, Canara and PNB have noticed the 'disclosure of environmental performance and social performance in SR & CSR Report', SIB, HDFC and AXIS Bank have noted the 'adoption for Principle of caring for environment' and Federal, IDBI and ICICI have indicated the 'introduction of retail and corporate Internet Banking on need base' as the timely goals of sustainable development.
- There exists a significant difference in the importance of Specific, Measurable, Attainable, Realistic and Timely Green Goals among the sample banks selected

with the significant test values at 1% level of significance. It found that the sample banks have noticed different SMART Green Goals for the adoption of Environmentally Sustainable Banking Practices with the consideration of business responsibility and sustainability framework.

7.7.1.8 Relationship between the adoption level of ESBP and SWOC analysis

- In the case of Public Sector Banks, the measurement model of Structural Equation Modeling explains the significant positive cause-and-effect relationship between adoption level of ESBP (Green Processes, Practices and Products & Services) and SWOC analysis with the beta co-efficient of 0.39, 0.41 and 0.67 respectively. The level of adoption is considered as the important predecessor factor of the strengths, weaknesses, opportunities and challenges of environmental sustainability.
- In regard of Old Generation Private Banks, the model exhibits the significant positive causal relationship between the adoption level of ESBP (Green Processes, Practices and Products & Services) and SWOC analysis with the beta co-efficient of 0.39, 0.48 and 0.61 respectively. It means, positive/negative changes in the adoption level of environmental-friendly banking practices predicts the same positive/negative changes in the strength, weakness, opportunity and challenge.
- With respect to New Generation Private Banks, the measurement model elucidates the significant positive directional linkage between adoption level of ESBP (Green Processes, Practices and Products & Services) and SWOC analysis. It means, one point increase in the Green Processes, Green Practices and Green Products & Services predicts 61%, 60% and 74% increase in the SWOC of Sustainable development respectively in this order. Since, the values of regression co-efficient are significant, the former variables are considered as the predictors of later variable.

7.7.1.9 Relationship between the adoption level of ESBP & SMART Green Goals

- The hypothesis testing result of relationship between the adoption level of ESBP and SMART Green Goals establishes the positive correlation with significant path co-efficient of 0.40, 0.44 and 0.62 respectively for Green Processes, Green Practices and Green Products & Services. Since, the values are significant, the explanatory power of the independent variables on dependent variable has proved.

Consequently, the changes in the adoption level of ESBP predicts the same changes in the importance of SMART Green Goals also.

- According to the measurement model of relationship between the adoption level of Green Processes, Practices & Products and SMART Green Goals of Old Generation Private Banks, there exists a significant positive relationship with beta co-efficient of 0.42, 0.44 and 0.63 respectively in this order. Since, the test values are significant at 1% level of significance, the former variables are considered as the important positive determinant of later variable.
- In the case of New Generation Banks, the hypothesized relationship between the adoption level of ESBP and SMART Green Goals is established at 1% level of significance. Accordingly, one-point changes in the Green Processes, Practices and products predicts 56%, 62% and 72% changes in the importance of SMART Green Goals respectively in this order. Therefore, the existence of cause-and-effect relationship has proved.

7.7.1.10 Relationship between SMART Green Goals and SWOC analysis

- The measurement model of association between SMART Green Goals and SWOC analysis of Public Sector Banks elucidates the significant positive causal relationship with the regression co-efficient of 0.52. It means, one-point increase in the importance of SMART Green Goals predicts 52 percent increase in the SWOC analysis. Therefore, the former variable is considered as the important positive predictor of later variable.
- In the case of Old Generation Private Banks, the hypothesized relationship between SMART Green Goals and SWOC analysis established with the path co-efficient of 0.50. It indicates that 50% changes in the strengths, weaknesses, opportunities and challenges of environmental-sustainable banking practices are due to the importance of SMART Green Goals of banks. Therefore, the positive influence of the independent variable on dependent variable has proved.
- With respect to New Generation Private Banks, the result of Structural Equation Modelling describes the significant positive impact of SMART Green Goals on SWOC of Environmentally Sustainable Banking Practices with beta co-efficient of 0.67. Here, the explanatory power of the former variable on later variable is 67% and the increase of one variable predicts the value of other in this order.

Section B

7.7.2 Level of Awareness, Acceptance and Satisfaction of Environmentally Sustainable Banking Practices from the perspective of customers

Here, the proposed research work has analyzed the awareness level of customers towards Green Policies & Procedures, Green Financing, Green/Digital Innovation and Internet & Mobile Banking. Further, the enabling & disabling factors, perception and satisfaction regarding Paperless Banking acceptance have included. The frequency of use of digital initiatives also identified for the fruitful findings of the objectives of study. Following are the findings related to the analysis and results.

7.7.2.1 Demographic Profile of the customers

- Of the total sample customers, 49% are male and 51% are female. Most of the respondents coming under the age group of 25-40 (42.5%).
- It is found that majority of the respondents have possessed higher education (50.9%). 34% of them acquired graduate level education followed by the technical qualified (9.8%) and secondary qualified respondents (5.2%).
- In the case of present status of occupation, 29% of customers are private employees followed by students (27.4%), professionals (14.3%) and government employees (13.6%).
- It is found that most of the customers are residing in semi-urban area (50.6%) followed by urban area (35.1%) and rural area (14.3%).

7.7.2.2 Digital Banking details of the respondents

- Equal number of sample customers are selected from Public Sector, Old Generation and New Generation Private Banks (135 each). Similarly, three banks are selected from each sector and customers also in the same proportion (45 each from banks).
- Of the total customers, 30.6% are visited the bank on quarterly basis followed by half yearly (24%) and yearly (20.2%) basis. Only, 6.9% of the respondents have visited the branches in weekly/ monthly basis.

- With respect to the experience of using Digital Banking, 43.2%, 32.6% and 24.3% of respondents have 1-3 years, more than 3 years and below 1 year of experience respectively in this order.
- It is found that majority of the respondents have used authenticated sources for downloading the mobile banking applications (76.0%). Likewise, 84.4% of customers have used their personal devices for conducting online transactions.
- It is found that 37.5% of the respondents gathered information of Paperless Banking from their colleagues/ friends/ family members. Apart from this, 34.4% collected details from banks' website/ brochures/ pamphlets etc. Similarly, 42.1% of the customers are keeping the records/ documents as screenshot after every transaction.

7.7.2.3 Discussion on awareness level of Environmental-Sustainable Practices

- It is found that the respondents are not well aware about the Green Policies and Procedures of the regarding environmental sustainability.
- In the case of Green Financing/ Responsible Financing practices, the customers have awareness regarding only agricultural financing activities (4.32).
- With respect to Green/Digital Innovation, the customers have good idea about the services of point-of-sale terminals (4.48) followed by the passbook printing kiosks (4.31), cash cheque collector (4.20) and queue management system (4.16). They don't have much idea about the Green Remit cards, remote deposits, solar ATMs etc. But only the SBI customers have idea about Green Channel Counter.
- In the case of Internet Banking, the respondents have good level of knowledge about almost all the products and services offered by the banks. But in the case of online share trading, the level of awareness is very low (2.42) as compared with other services. Further, the customers have very good awareness regarding the online ticket booking and e-shopping facilities (4.63).
- In respect of Mobile Banking, the respondents have good awareness about almost all the applications and services provided by the banks. More precisely, they have very good knowledge about the mobile wallets (4.69) and very poor idea about the online portfolio analysis (2.12).

7.7.2.4 Comparison of awareness level according to demographic profile

The level of awareness regarding environmentally sustainable banking practices has compared among the customers according to their demographic profile. In order to conduct the analysis, awareness level is considered as the dependent variable and demographic profile is denoted as the factor variable. Moreover, Independent sample t-test, One-way ANOVA and Tukey HSD post-hoc test for multiple comparison have employed and the notable findings are given below.

- There exists an age-wise significant difference in the awareness level of Green Policies, Green Financing, Green/Digital Innovation, Internet and Mobile Banking. Here, above 55 age group customers are significantly differed from other category of customers regarding the level of awareness.
- It is found that there exists significant difference in the awareness level of Green Policies, Green/ Digital Innovation, Internet and Mobile Banking Practices according to the educational qualification of the respondents. Here, the customers who have only secondary level of education are significantly differed from other categories. Moreover, there is no significance in the awareness level of Green/ Responsible Financing activities according to the educational qualification of the customers.
- There exists significance difference in the awareness level of Green/ Digital Innovation, Internet and Mobile Banking according to the present occupation status of the customers. Here, farmers/ self-employed customers are significantly differed from other categories regarding the same. Besides, there is no significant difference in the awareness level of Green Policies and Green Financing according to the same occupation status of the customers.

7.7.2.5 Comparison of awareness level according to Digital Banking details

- There is only significant difference in the awareness level of Green/ Digital Innovation in accordance with the selected banking sectors of the study. Here, customers of Public Sector Banks are significantly differed from Old and New Generation Private Banks. It is because of the fact that Public Sector Banks are frontrunners of innovative technology-based services for their customers. In addition, there is no significant difference in the awareness level of other ESBP.

- Similarly, there exists only significant difference in the awareness level of Green/ Digital Innovation according to the sample banks selected for the study. Here, SBI customers are significantly differed from other customers because of the innovative customer-centric technologies of the State Bank of India. Additionally, there is no significant difference in the awareness level of customers towards Green Policies, Green Financing, Internet and Mobile Banking practices.
- Likewise, there exists only significant difference in the awareness level of customers towards Green/ Digital Innovation according to the mode of visit in banking premises with significant test statistic at 5% level of significance.
- It is found that there is significant difference in the awareness level of customers regarding Internet and Mobile Banking according to their experience of usage. It means, the customers have more than 3 years of experience in the field of online platform, the level of awareness is comparatively higher than that of others. Further, there is no significant difference in the awareness level of customers regarding Green Policies, Green Financing, Green/Digital Innovation according to the experience of usage.

7.7.2.6 Discussion on acceptance level of Digital Banking Practices

In order to discuss the acceptance level of Digital banking practices among customers, Descriptive Statistics (Mean and SD) is used. Here, Perceived Ease of Use, Perceived Usefulness, Perceived Risk, Attitude towards use, Behavioral Intention to use, Actual Use and User Satisfaction are taken as the variables of acceptance. Following are the major findings regarding the results and discussions.

- In respect of Perceived Ease of Use (PEOU), 'learning before use (4.42) and easiness of changing password & ID (4.42)' are considered as the main underlying concepts of easiness.
- With respect to Perceived Usefulness (PU), 'greater management & control of finance (4.46) and saving money, time & effort (4.45)' are identified as the key indicators of usefulness.
- In the case of Perceived Risk (PR), 'interruption of third party (3.60) and anxiety about failure transaction (3.67)' are denoted as the major factors of risk.

- With regard to Attitude Towards Use (ATU), 'self-sustain in transaction-based decision making (4.44) and enlightens the idea about transformation of traditional way of banking to modern (4.43)' are pointed as the important dimensions of attitude of customers regarding online platform.
- According to Behavioral Intention to Use (BIU), 'digitalized technology for regular task (4.54) and strong recommendation to others (4.46) are considered as the key behavioral intention of the customers towards digital banking.
- As stated in the opinion of Actual Use (AU), 'integration of various functions on website (4.45), enhancement of greater productivity over banking activities (4.42)' are identified as the important contributing factors of actual use.
- Finally, with respect to User Satisfaction (US), the customers have good level of satisfaction on paperless features of sustainable banking practices (4.51) and up to date information of online platform (4.41).

7.7.2.7 Comparison of acceptance level according to demographic profile

- It is found that there is significant difference in the attitude of customers towards ease of use of digital banking according to gender of the respondents with 'p' value of 0.013 and 'f' value of 2.48. There is no significant difference in the attitude of usefulness, risk, intention, usage and satisfaction according to the gender of respondents.
- There exists significant difference in the opinion of customers towards ease of use and actual use of online platform according to the age group of respondents. Here, the respondents of above 55 age groups have different level of perception than that of others.
- There exists significant difference in the perception of customers towards ease of use, attitude towards use and satisfaction of paperless banking according to their educational qualification. Here, technically qualified respondents have good level of perception towards the easiness, attitude and satisfaction.
- There is no significant difference among the customers towards the acceptance of digital banking according to their present occupational status. Therefore, the customers perception on e-banking platform is not based on their occupation.

7.7.2.8 Comparison of acceptance level according to digital banking details

- It is found that there exists a significant difference in the risk perception of customers of Public Sector Banks (F=6.51 and p= 0.002). On the other hand, there is no significant difference among sample customers of Public and Private Sector Banks towards PEOU, PU, ATU, BIU, AU and US. It explains that the customers of Public Sector Banks feel more risk and threat while conducting online transactions than that of other banks.
- Similarly, there is significant difference in the risk perception of SBI customers than that of other sample customers of selected banks with t-statistic of 2.55 and significance value of 0.010.
- There exists significant difference in the actual use of digital banking with respect to the mode of visit in branches. The pair-wise comparison indicates that yearly visiting customers of the bank have high level of digital banking usage than that of weekly/ monthly visiting customers.
- In the case of preference of banking services, there is significant difference in the perception of user satisfaction among the customers who have preferred to use digital banking only than that of the customers who have the preference of Digital Banking as well as Branch Banking.
- With respect to experience of e-banking usage, there exists significant difference in the perception of ease of use, usefulness, attitude, intention, actual use and satisfaction among the customers. The pair-wise comparison implies that the customers who have more than 3 years of experience in online platform have good level of perception than that of customers who have less than 3 years of experience. However, there is no significant difference in the risk perception of customers according to their experience in the field of e-banking platform.
- There exists significant difference in the risk perception of customers according to the sources (download) of banking applications, devices used for e-banking access, sources of information and post-procedure of every banking transaction. Here, the customers who have used authenticated sources for e-banking access and keeping the documentation of every transaction for future reference, then the risk perception is comparatively low than that of others.

7.7.2.9 Enabling Factors of Digital Banking

These factors are the critical determinants of digital banking acceptance. Here, the researcher has identified the main factors from the literature such as, information & communication, clear & easiness, convenience & flexibility, trust & confidence and self-esteem & prestige. In order to measure the influence of each and every dimension, Confirmatory Factor Analysis has employed. The major findings are denoted below.

Sector-wise discussion

- The customers of Public Sector Banks have identified that clear & easiness (β=0.87), information & communication (β=0.79) and convenience & flexibility (β=0.76) are the main enabling factors of digital banking. Further, trust & confidence and self-esteem & prestige are considered as the least influencing factors of e-banking activities.
- The customers of Old Generation Private Banks opined that clear & easiness (β=0.76) is the critical determinant of paperless banking followed by information & communication(β=0.62), convenience & flexibility (β=0.60) and trust & confidence (β=0.59).
- The customers of New Generation Banks pointed that convenience & flexibility (β=0.874) is the most important push factor for the acceptance of online banking. At the same time, At the same time, information & communication (β=0.75), clear & easiness (β=0.73) and trust & confidence are considered as the next best enabling factors of Digital Banking.

Bank-wise discussion

- The SBI customers have identified the convenience & flexibility (β=0.74) as the major enabling factor of e-banking followed by clear & easiness (β=0.68) and information & communication (β=0.62). At the same time, trust & confidence (β=0.42) and self-esteem & prestige (β=0.38) are considered as the least contributing factors of Digital Banking.
- The Canara Bank customers have noticed the clear & easiness (β=0.74), convenience & flexibility (β=0.67) and information & communication (β=0.61) as the important indicators of Online Banking Acceptance.

- The PNB customers have found the convenience & flexibility (β=0.72) and trust & confidence (β=0.68) as the main push factors. Moreover, clear & easiness (β=0.60) and information & communication (β=0.55) are identified as the next best indicators of e-banking.
- The Federal Bank customers have noticed the trust & confidence (β=0.78) and clear & easiness (β=0.73) as the main enabling factors of e-banking. Furthermore, information & communication and convenience & flexibility have same level of importance in the adoption intention with the Beta Co-efficient of 0.68.
- The SIB customers have observed the convenience & flexibility (β=0.67) and clear & easiness (β=0.62) are considered as the most important pointers of Digital Banking. Instead, trust & confidence (β=0.50) and self-esteem & prestige (β=0.43) are considered as the least influencing factors of e-banking.
- The IDBI customers have identified the clear & easiness (β=0.70) as the main aiding factor of paperless banking followed by information & communication (β=0.62) and convenience & flexibility (β=0.62).
- The HDFC Bank customers have noticed the trust & confidence (β=0.77) and information & communication (β=0.72) are the main push variables which have followed by clear & easiness (β=0.66) and convenience & flexibility (β=0.66). Self-esteem & prestige (β=0.58) is not considered as the basic push factor for the adoption intention.
- The ICICI bank customers have pointed the trust & confidence (β=0.74) and clear & easiness (β=0.70) are the critical determinant of online banking practices. Further, convenience & flexibility (β=0.67) and information & communication (β=0.62) are considered as the next best push factors.
- The AXIS Bank customers observed the trust & confidence (β=0.70) as the main push factor of Digital Banking. Further, clear and easiness and convenience & flexibility with same beta co-efficient of β=0.66 explains the equal importance in the adoption intention.

7.7.2.10 Disabling Factors of Digital Banking

These are the pushback factors of paperless banking and negatively influencing the adoption intention. Here, the researcher has identified the pull factors

from the previous literatures such as, security & privacy, risk & threats, knowledge & awareness, cost & charges and complexity & problems. In order to measure the pull effect these factors, Confirmatory Factor Analysis has employed. The major findings have presented in the heads of sector-wise as well as bank-wise.

Sector-wise discussions

- The customers of Public Sector Banks have identified the risk & threat (β=0.75), security & privacy (β=0.71) and cost & charge (β=0.70) as the main disabling factors for the acceptance of Digital Banking Initiatives. It is because of the fraudulent practices of unethical hackers; the banking customers have unnecessary anxiety while doing the online transactions.
- The customers of Old Generation Private Banks have noticed that cost & charge is the main disabling factor for the use of Digital Banking with 'β' value of 0.78. Further, risk & threat (β=0.71) and complexity & problems (β=0.61) are the next important pull factors of e-banking.
- In the case of New Generation Private Banks, the customers have pointed out the cost & charges (β=0.82), risk & threats (β=0.77) and complexity & problems (β=0.69) as the main pull factors for the acceptance of e-banking services. In addition, knowledge & awareness (β=0.51) is the least considered pull factor for the e-banking acceptance. It means, the Digital Banking users of New Generation Banks have good knowledge and awareness about the usage of online transactions.

Bank-wise discussion

- The SBI customers have noticed that cost & charges (β=0.78), risk & threat (β=0.72) and security & privacy (β=0.66) are the main disabling factors for the adoption intention of Digital Banking. At the same time, knowledge & awareness (β=0.52) and complexity & problems (β=0.48) are the least considered disabling factors of Digital Banking.
- The customers of Canara Bank have pointed the risk & threat (β=0.64) as the main disabling factor of e-banking followed by security & privacy (β=0.57) and cost & charges (β=0.50). But they don't have much issues regarding knowledge & awareness (β=0.43) about the use of online transactions.

- In the case of PNB, the digital banking users have found that cost & charge (β=0.64) is the main pull factor followed by knowledge & awareness (β=0.57) and security & privacy (β=0.50). Even if the customers have trust and confidence on PNB Digital Platform, they have concern about the security and privacy issues.
- As far as Federal Bank is concerned, the respondents have observed that risk & threat (β=0.57) and knowledge & awareness (β=0.50) are the most significant disabling factors of adoption intention. Likewise, cost & charge (β=0.44), security & privacy (β=0.38) and complexity & problems (β=0.32) are considered as the least significant pull factors of Digital Banking Acceptance.
- With respect to SIB, the customers have perceived that knowledge & awareness (β=0.65), cost & charge (β=0.61) are the main disabling factors for the use of paperless banking followed by security & privacy (β=0.55), risk & threat (β=0.47) and complexity & problems (β=0.40).
- In regard of IDBI customers, they have opined that risk & threat (β=0.62) is the main disabling factor tailed by cost & charges (β=0.57) and security & privacy (β=0.51). They also pointed that knowledge & awareness (β=0.44) and complexity & problems (β=0.37) are not as much as considered as the main pull factors of digital banking acceptance.
- In the view of HDFC customers, risk and threat (β=0.58) and security & privacy (β=0.50) are the main disabling factors followed by knowledge and awareness (β=0.42). On the other hand, cost & charges (β=0.36) and complexity & problems (β=0.32) are not considered as the main pull factors of adoption intention.
- The perspective of ICICI and AXIS Bank's customers reveals that risk & threat (β=0.67) and knowledge & awareness (β=0.61) are the main pull factors which disables the use of online banking. Similarly, security & privacy (β=0.55), cost & charges (β=0.43) are the next pull factors that back out the use of digital technology in banking transactions.

7.7.2.11 Frequency of use of Digital Initiatives

- The customers of Public and Private Sector Banks (Old and New Generation) have always used the Digital Initiatives like, ATM/CDM, POS terminals, net banking, mobile applications, and cheque deposit machines. They have sometimes used the

passbook printing kiosk and queue management systems. But in the Public Sector Banks, the customers have always used the Green Channel Counter for conducting instant banking transactions. Tele banking and Green Remit Cards are the rarely used digital initiatives.

- Similarly, it is found that the customers of all the sample banks have always used the ATM/CDM, POS terminals, net banking, mobile applications, and cheque deposit machines as the green channel banking. But except SBI customers, others have rarely used the e-banking products like, Green Channel Counter, Green Remit Cards, Tele Banking, Remote Deposits. In the case of SBI customers, the usage of Green Channel Counter and Green Remit Card is comparatively high.

7.7.2.12 Perception level of Digital Banking Acceptance

In order to understand the perception level of Digital Banking Acceptance among the customers, the researcher has developed an Extended Technology Acceptance Model. Here, Structural Equation Modeling has used to determine the causal relationship between the dimensions of the proposed model. In accordance with the level of perception, External Stimulus, Cognitive Responses, Affective Responses, Intention and Behavioral Responses are taken as the study variables.

Sector-wise Discussion

- The hypothesized measurement model proposed for the digital banking adoption of Public Sector Banks denotes that there is significant positive cause-and-effect relationship among the study variables. Here, external stimulus is considered as the important positive predictor of cognitive responses with significant regression co-efficient and so on. It is found that one-point changes in the behavioral intention predicts 78 percent changes in the actual use. Further, one-point changes in the actual use predicts 58 percent changes in the user satisfaction also.
- The result of adoption intention of Digital banking practices of the Old Generation Private Banks discloses the significant positive causal relationship between the dimensions of Extended Technology Acceptance Model. Moreover, the existence of behavioral intention explains 80 percent of the variance (R square) in the actual use; and the presence of actual use explain 65 percent of variance (R square) in the user satisfaction of e-banking practices.

- The discussion of digital banking acceptance of New Generation Private Banks exhibits that there is significant positive directional linkage between the variables of measurement model. Additionally, the beta coefficients of 0.82, 0.78, 0.84 and 0.68 denotes the high positive relationship between attitude, behavioral intention, actual use and user satisfaction. Since, the values are significant, it is found that the former variables have the explanatory power to predict the later variables.

Bank-wise discussion

- The bank-wise comparison and discussion on perception level of digital banking adoption intention discloses that there is significant positive cause and effect relationship between External Stimulus, Cognitive Responses, Affective Responses, Intention and Behavioral Responses of Extended Technology Acceptance Model of each and every sample bank.
- In the case of SBI, Canara and PNB, the actual use of e-banking is related with the user satisfaction with the beta co-efficient of 0.41, 0.44 and 0.50 respectively in this order. Therefore, the variance in user satisfaction can be predicted with the changes in actual use of the online system.
- With respect to Federal, SIB and IDBI, there exists significant positive causal relationship between actual use and user satisfaction with the path co-efficient of 0.58, 0.49, and 0.56 respectively. Hence, the positive increase in the actual use simultaneously affects the increase in user satisfaction also.
- In regards of HDFC, ICICI and AXIS Banks, the relationship between the study variables have established and the actual use is considered as the significant critical determinant of user satisfaction with regression co-efficient of 0.65, 0.57 and 0.49 respectively in this order.

Section C

7.7.3 ESG Performance Evaluation of Public Sector, Old Generation and New Generation Private Banks

In order to evaluate the Environmental, Social and Governance Performance of the sample banks, the researcher collected data from the secondary sources of reports. Based on the information, ESG disclosure score has calculated according to the completeness of responsible business activities asper Principles of National Guidelines on Responsible Business Conduct (NGRBC), 2018. Consequently, the principle-wise performance has evaluated under the purview of essential and leadership indicators of sustainability framework. Following are the findings based on the ESG performance of the sample banks.

- In the case of Public Sector Banks, it found that SBI has completed all the requirements of disclosure framework of the National Guidelines. Therefore, according to the disclosure status, the bank has an overall ESG score of 200. At the same time, Canara Bank and PNB have completed not all the requirements of disclosure framework; hence their disclosure score is 155. It can be said that the ESG performance of the SBI is better than that of Canara and PNB.
- With respect to Old Generation Private Banks, it found that Federal Bank, SIB and IDBI have completed all the details of stakeholder's engagements, governance, leadership, policies & management process etc. But only Federal Bank has completed the disclosure of all the essential and leadership indicators of Principles of Responsible Business; hence, the overall ESG score is 200. In addition, Canara and PNB have an overall ESG score of 155 due to the reason that these banks have completed only some of the indicators of Principles of Responsible Business.
- In regard to the New Generation Private Sector Banks, the ESG performance score of HFDC, ICICI and AXIS Bank is 200. It means, all the sample banks have completed all essential and leadership indicators of Principles of National Guidelines on Responsible Business Conducts as well as the requirements of the communications, stakeholder's engagement, governance, leadership, policy and management process. Hence, New Generation Banks are the best ESG performers compared to Public Sector and Old Generation Banks.

PART II

7.8 Conclusions

The important conclusions drawn from the foregoing findings are listed below.

- Majority of Public Sector, Old Generation and New Generation Private Sector Banks have adopted the environmental-sustainable banking practices from more than 5 years. Further, National Guidelines on Responsible Business and RBI Regulations are the main guidelines followed by the banks for the effective implementation of sustainability framework. Furthermore, the technological aspects, operational activities and client acceptance are considered as the important areas for the adoption of Green Strategies. In addition, increasing level of energy consumption rate, growing interest of the general public on environmental-friendly services, higher expectation of the general public on social responsibilities etc. are identified as the reasons for going-green.
- There is moderate level of adoption of Green Processes (Enterprise Resource Management, Customer Relationship Management and Product Life Management and Supply Chain Management) among all the sample banks. More than that there is high level of adoption of Green Practices among New Generation Banks (more precisely HDFC and AXIS Bank) compared to Public Sector and Old Generation Private Sector Banks. Moreover, SBI from Public Sector and Federal Bank from Old Generation Banks have almost good level of adoption of Green Practices.
- Green Financing/ Responsible Financing, Inhouse & Out-house Energy Management Practices, Employees Related Practices are considered as the fully adopted Green Practices; whereas, Green Partnership and Investment is identified as the least adopted Green Practices. In the case of adoption level of Green Innovation, SBI is considered as the frontrunner compared to other sample banks. In respect of adoption of Internet and Mobile Banking services, almost all the sample banks have high level of adoption (More precisely, Federal Bank and HDFC Bank).
- With respect to SWOC analysis, innovative strategies for the energy savvy as well as tech savvy activities, recognition of triple bottom line approach and low carbon emission through responsible financing are considered as the main strengths of

environmental-sustainability. Further, cost of installation of energy efficient materials, absence of Environmental Audit and Management and less adoption of Environmental Accounting procedures are identified as the main weaknesses for the adoption of environmental-friendly banking practices. Additionally, the implementation of separate cell for sustainable development, environmental due diligence and standardized CSR strategies are the main opportunities for sustainability growth. Also, the financial risk due to creating separate fund for environmental responsibilities, problems of environmental risk management as core risk management etc. are identified as the key challenges for the implementation of go-green concept. Moreover, there exists significant difference in the identification of strengths, weaknesses, opportunities and challenges of sustainable practices among sectors/ banks selected for the study.

- In the case of SMART Green Goals, specific CSR policies & procedures, coalition of green capital & its utilization etc. are noticed as the specific green goals of environmental sustainability. Besides that, risk & return from sustainable banking practices, innovation of green technology, direct & indirect cost of CSR activities etc. are identified as the measurable green goals of sustainability. Similarly, security & confidentiality for digital banking, customer care & support, environmental standards in lending & making investments etc. are noticed as the key attainable green goals for sustainable growth. Likewise, intelligence assistance to energy consciousness, policies for e-waste management, setting rule of thumb for energy efficiency measures etc. are considered as the main realistic green goals for sustainable development. In addition, disclosure of environmental & social performance, adoption of caring for environment as the principal concept, introduction of retail & corporate internet accessibility etc. are identified as the timely green goals of environmental sustainability. Moreover, there exists a significant difference in the importance of measurable, attainable and realistic green goals among sectors/ banks selected for the study. Instead, there is no significant difference in the importance of specific and timely green goals.
- There exists significant cause-and-effect relationship among adoption level, SWOC analysis and importance of SMART Green Goals. It found that the adoption level ESBP is considered as the significant positive predictor for the SWOC analysis and importance of SMART Green Goals. In addition, the causal

relationship between SMART Green Goals and SWOC has established with significant test statistics and SMART Green Goals are considered as the immediate predecessor of SWOC analysis of environmental sustainability. The explanatory power of the former variable has proved.

- The level of awareness of customers regarding Green Policies and Green Financing is very low as compared with the level awareness of Green/ Digital Innovation. Moreover, there is high level of awareness about Internet and Mobile Banking services offered by the banks for the customers. Similarly, there exists significant difference in the awareness level of customers towards Green Policies, Green Financing, Green/Digital Innovation, Internet and Mobile Banking according to their gender, educational qualification and present occupation status. Likewise, there exists significant difference in the awareness level of customers regarding Environmental-Sustainable Practices according to sectors, banks, mode of visit in branch, preference of banking services and experience in the use of e-banking.
- The digital banking users have good level of digital banking acceptance in accordance with the characteristics/ features of easiness, usefulness, risk perception, attitude towards use, behavioral intention to use, actual use and user satisfaction. In addition, learning before use and easiness of changing password as considered as the features of easiness; whereas, greater management & control of time, money and effort is identified as the main feature of usefulness. Besides that, the interruption of third party and anxiety about failure transactions are denoted as the main risky factors; whereas, self-sustain transaction-based decision making and transformation of traditional way of banking are identified as the key factors of attitude towards the use. Further, the digitalized technology and strong recommendation to peer groups are the main factors of behavioral intention. In the same way, the integration of various functions on website and enhancement of greater productivity over banking operations are denoted as the main variables of actual use; whereas, paperless features of sustainable banking and up-to-date information of online platform are the indicators of good satisfaction level.
- There exists significant difference in the acceptance of digital banking practices among customers according to their demographic profile and digital banking details. Experience is considered as the important factor for the acceptance of

Digital banking practices. Here, the customers of Public Sector Banks (more precisely SBI) have perceived high risk factors than that of other sample banks.

- Clear & easiness, convenience & flexibility are denoted as the main enabling factors of Digital Banking adoption intention, whereas cost & charges, risk & threats are the main disabling factors of the same. Then, self-esteem & prestige is not considered as the important enabling factor. Similarly, knowledge & awareness is considered as the least affecting pull factors of digital banking adoption intention.
- There is good level of perception towards the adoption intention of digital banking practices. External stimulus (Service Awareness, Subjective Norms, Self-efficacy, System Quality and Schemes Availability) and cognitive responses (Perceived Ease of Use, Perceived Usefulness and Perceived Risk) are the significant positive predictors (except risk perception) of affective response (Attitude Towards the Use), intention (Behavioral Intention) and behavioral responses (Actual Use and User Satisfaction) of the model. Similarly, affective responses and behavioral intention have strong effect and appears to be the crucial predecessor of behavioral responses of adoption intention. Here, Perceived risk is the only one negatively influencing cognitive responses in the measurement model. The directional linkage in the path analysis explains the variance in the actual use of Digital Banking predicts the variance in user satisfaction with significant test statistics.
- SBI and Federal Bank have witnessed better ESG Performance in the category of Public and Old Generation Banks with an overall score of 200. Whereas, ESG Performance of HDFC, ICICI and AXIS (all the New Generation Banks) are more or less same with an overall ESG score of 200 each. All other sample banks (Canara, PNB, SIB and IDBI) have moderate level of ESG performance with an overall score of 155 each. So, New Generation Banks are considered as the best ESG performers in accordance with the disclosure status of Principles of National Guidelines on Responsible Business (NGRBC), 2018.

Chapter 8

Recommendations and Scope for Further Research

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8.4 Scope for Further Research.....526

8.1 Introduction

The present chapter is the concluding part of the research work. It includes the recommendations/suggestions, implications of the study and scope for further research in this area. Recommendations are developed and presented for the improvement of this relevant area in the present context. It has formulated according to the findings of the study. Implications are the contribution of the research work towards the stakeholders namely, regulatory authorities, bankers and customers (general public). Moreover, the scope for further research delivers different opportunities for the upcoming researchers in the particular research area.

8.2 Recommendations/ Suggestions

Based on the findings and conclusions of the study stated in the previous chapter, the following Recommendations/Suggestions are put forth.

- Canara, PNB, SIB and IDBI are in the infancy stage of Sustainable Banking. They have to identify the impact of environmental-friendly operations by integrating the ESG criteria with traditional banking practices. Therefore, there should be a proper Internal Mechanism to assess the SWOC and importance of SMART Green Goals for achieving business responsibility and sustainability stewardship for the banks.

- The adoption level of Green Investment is very low. Therefore, the banks have to formulate Investment/ Project appraisal cell for making portfolio analysis in respect of investment in renewable energy projects, water management, recycling units, protection of wildlife sanctuaries, etc.

- SBI is the only bank that introduced varieties of Green/ Digital Innovation for the development of paper-less banking practices. The other banks can also study the aftereffects of these banking practices. Moreover, they may introduce the Digitalized Invention with the help of Sophisticated Technology, Artificial Intelligence, Machine Learning System and Robotic Automation.

- Less adoption of Environmental Accounting Practices and absence of Environmental Audit Management are identified as the major weaknesses for

sustainable development. Therefore, consider these two relevant areas as a part of the Accounting and Financial Management of the banks.

- Implementation of Environmental Due Diligence and Corporate Social Responsibility & Business Sustainability Standards are considered as the main opportunities of the bank for sustainable growth. Hence, the banks have to formulate Social and Environmental System Plan, Clean Development Mechanism, e-Governance Practices in accordance with the global guidelines.

- Credit risk due to the changes in environmental regulations, reputational risk due to high cost and less adoption of environmental management system, inclusion of environmental risk assessment as the core risk management processes and financial risk due to creation of separate fund as natural capital are denoted as the main challenges of environmental sustainability. Therefore, the banks should have to develop an Environmental Risk Assessment and Management Framework in order to eliminate the challenges faced by them.

- The awareness level of the majority of the customers is found to be low in the case of basic Sustainable Banking Initiatives provided for them. Therefore, it is necessary to form a separate Sustainability/Green Committee to conduct awareness campaigns, media coverage programmes and demonstration classes according to the convenience of customers. Further, take necessary steps to inculcate the topics of Environmental Accounting, Auditing and Risk Management from the grassroot level by designing a curriculum syllabus, conducting workshops, seminars, conference, case studies and programs for the college students.

- There is good level of Perception regarding Digital Banking Acceptance. But Risk, Privacy Issues, Cost & Charge are considered as the main disabling factors. Therefore, the bank can pay more attention towards the protection of Privacy Information, Third Party Involvement and Cost Minimization. Separate Digital Cell may be formulated by the banks for checking online threats and frauds and also protect the customer by providing proper compensation for the unauthorized misuse of their accounts.

- The sample banks are following the National Voluntary Guidelines for Responsible Business Conduct. However, their disclosure status is different. It is because these practices are followed only for voluntary manner and not for compulsory. Though, the Capital Market Regulators have initiated steps for the compulsory disclosure of Business Responsibility and Sustainability Reporting, there should be a separate amendment in the existing provisions by insisting Environmental Accounting, Energy Auditing, Sustainability Index, Carbon Disclosure Statements etc. for every company compulsorily.
- One of the main objectives of Environmentally Sustainable Practices is the investment in Paperless Banking/ Digital Innovation. But there exists a problem of e-waste management. Hence, there should be an updated system to use Best Available Technology (BAT) for collection, segregation, dismantling, recycling and reuse of electronic waste in the line of National Environmental Policy for e-waste Management & Handling Rules, 2010.

8.3 Implications of the Research

The implications of the present research work on different beneficiaries are briefly explained below.

A. Bankers

Environmental Sustainability is the word associated with the Triple Bottom Line Approach of banking. Regarding the protection of natural resources and ecological balance, the banks have identified the specific areas of Investment, Partnership, Financing and Technology for reducing the greenhouse gas emission level. But, the participation of the Green Investment, Green Partnership and Green Financing is comparatively low. Most of the banks have concentrated on paperless initiatives only. But this is not enough for the sustainable development of the banks. Therefore, the banks can conduct a SWOC analysis to prepare an importance and performance grid of the environmental-friendly banking practices. Moreover, the evaluation of SMART Green Goals can be made for the effective and efficient management of the objectives of go-green activities. Accordingly, the banks can

integrate conscious self- regulatory measures for adopting, promoting and disclosing the sustainable banking practices. Thereby they can achieve an excellent sustainability score/ index of Environmental, Social and Governance aspects in the global level. This will promote the banks to conduct more and more environmental protection measures in the areas of investment, partnership, financing, innovation and technology for the betterment of Financial, Social, Natural and Intellectual Capital of the banking sector. It will be beneficial for the next generation by the way of elimination/ reduction of carbon emission, environmental degradation, unusual weather patterns, etc.

B. Customers

Customers are the main stakeholders of the bank. If the bank has implemented Environmentally Sustainable Banking Practices, it will be beneficial for the customers in the areas of Responsible Financing and Paperless Banking. Therefore, the customers need to know about the customer-centric approach of sustainable banking with the objective of client acceptance for the integration of state-of-arts technologies. Consequently, the customers can avail the offers, subsidies and concessions provided by the banks in the line of sustainable/ responsible financing for green buildings, green homes, electronic vehicles, electronic agricultural equipment etc. Furthermore, the participation of paperless banking will help them to clear out the branch banking system and thereby they can save money, effort and time. It will be beneficial for banks to reduce the paper consumption level and recycling cost of dry-waste. Thereby, the customers can indirectly participate for the venture of low-carbon emission through material as well as energy efficiency and management. Moreover, the interest in environmental-friendly activities and expectation on socially responsible services of stakeholders promotes the bank to make productive changes in the field of Sustainable Banking for the near future.

C. Regulatory authorities

It is hoped that the study can provide an insight to the regulatory authorities to frame the importance and performance metrics of Sustainable Banking Practices. Thereby, they can implement compulsory guidelines for the effective implementation

of Sustainability Framework and Reporting in accordance with the Sustainability Development Goals, Equator Principles and ESG Integrated Reporting for accelerating the reforms to tackle climate changes and decarbonize the economy. Accordingly, RBI can issue constructive, productive and uniform policies and procedures in the line of International Sustainability Code of Conduct for the long-term sustainable growth of the banks. Further, essential requirements on Environmental Accounting, Energy Auditing, Carbon Emission Standards and Sustainability Index will be the fruitful measure for the successful implementation of Environmental Key Performance Indicators and Sustainable Strategy of the banks. Moreover, in order to ensure key performance on sustainable strategies, Government can upgrade the circumstances of the environmental markets to offer incentives, financial supports, fiscal subsidies, tax credits, environmental funds, climate risk fund, credit facility with comparatively low interest rate, etc. to the commercial banks.

8.4 Scope for Further Research

Based on the present research work, the following topics are suggested for the future research work.

1. Business Responsibility and Sustainability Framework of New Generation Private Sector Banks in Kerala.
2. Sustainable Development Goals of Public and Private Sector Banks- An Evaluation.
3. Comparative Analysis of Environmental, Social and Financial Performance of Public and Private Sector Banks.
4. Role of Public and Private Sector Banks in Green Financing/ Responsible Financing Initiatives.
5. Performance analysis of Sustainable Banking Practices of Old and New Generation Private Sector Banks – A Comparative Analysis.
6. Digital Banking - An Evaluation of Theories/ Models of Technology Acceptance between Public and Private Sector Banks.

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Appendices

Appendix I

Questionnaire on-

Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis

(Perspective of Bankers)

I, Greeshmadas M H, Research Scholar, Department of Commerce and Management Studies, University of Calicut, kindly request you to fill the following questions as a part of my research on the topic "Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis". I ensure that the data collected will be kept purely confidential and will only be used for my academic purposes.

Thanking You,

Greeshmadas M H

1. **How long have been adopted the Environmentally Sustainable Banking Practices in the office?**

   Less than 1 year ☐ 1-3 Year ☐ 3-5 year ☐

   More than 5 years ☐

2. **What are the guidelines followed for the adoption of Environmentally Sustainable Banking Practices (Multiple options can mark)?**

   1) RBI regulation ☐
   2) National Voluntary guidelines for Social, Environmental and Economic Aspects ☐
   3) Principles of Sustainability/ Triple bottom line approach (planet, people and profit) ☐
   4) Equator Principles ☐
   5) Environmental principles ☐
   6) Bank's own guidelines ☐

3. **Rank the areas where you have adopted Green Strategies. (Use rank 1 for the most adopted area and rank 6 for the least adopted one)**

   1) Operational ☐
   2) Technological ☐
   3) Financial ☐
   4) Client Acceptance ☐
   5) Physical Infrastructure ☐
   6) Investment ☐

4. Rank the reasons behind "go-green" (Put rank 1 for the highest preferred reason, rank 12 for the lowest)

1) Increasing energy consumption ☐
2) Energy price hike ☐
3) Optimum utilization of scarce resources ☐
4) Growing consumer interest in Environmentally friendly goods and services ☐
5) Strict regulations/Compliance requirements ☐
6) Higher expectations by the public on enterprises environmental responsibilities ☐
7) Stakeholders pressure ☐
8) Improvement in brand equity ☐
9) Value addition as a competitive advantage ☐
10) Future of export market likely to experience stringent environmental rules ☐
11) Demand for pollution control technologies in the line of IFC and ADBs ☐
12) Big Investments require Environmental Impact Assessment ☐

5. Adoption level of Environmentally Sustainable Banking Practices

The scale of adoption ranging from 5 to 1 as, 5 – Fully Adopted, 4 - Moderately Adopted, 3 - Somewhat Adopted, 2 – Slightly Adopted and 1- Not at all Adopted

Environmentally Sustainable Banking Practices	5	4	3	2	1
I. Green Processes					
1. Supply chain management					
➢ Separate subsidies and concession for Green Supply chain activities					
➢ Digitalization of network design					
2. Enterprise Resource Management					
➢ E-HRM techniques for hiring and training the staffs					
➢ Intelligent device management					
3. Customer Relationship Management					
➢ Electronic Innovativeness					
➢ E-contact with respondents					
4. Product life Management					
➢ Technological Innovations in Products and Practices					
➢ Effective system for e- waste management					

II. Green Practices					
1. Green Policies and Procedures					
➢ Social and Environmental System Plan (SEMSP)					
➢ Clean Development Mechanism (CDM)					
➢ Customer Experience Excellence Projects (CEEP)					
➢ Debit Card Management System (DCMS)					
➢ Environmental Management System Certification (EMSC)					
➢ Environmental Accounting and Disclosure					
➢ SMART Green Goals (Specific, Measurable, Attainable, Realistic and Timely)					
➢ E- Governance and E- Auditing					
➢ Clean Water Act and Clean Air Act formalities					
➢ Environmental Impact Assessment (EIA)					
➢ Environmental Audit Management (EAM)					
➢ Incorporation of Environmental Risk in Core Risk Management Process					
2. Green Investments					
➢ Green procurement of Desktop Visualizations					
➢ Investment in Renewable Energy					
➢ Energization Project Participation					
➢ Support projects ranging from community cleanups to national initiatives on climate change, Water, air, biodiversity and more					
➢ Signed "Green Pledge" of the Ministry of New and Renewable Energy					
➢ Clean energy investments					
➢ Sponsoring the Plantation Programs					
➢ Offering and promoting mutual funds that focus investments in "green Companies"					
3. Green partnership					
➢ Partnership with International Green Organizations					
➢ Partnership with Indian Govt., World Bank and UNAID to support SME project in the area of Green Research and Clean Technology					

➢ Partnership with WWF for the conservation of species and wildlife					
4. Energy Management Practices					
a) Inhouse Practices					
➢ Solar panel on the rooftop of the branch					
➢ Green office guidelines circulation to the employees for conscious about energy saving					
➢ Web cam for video conferencing instead of physical meeting					
➢ Double side printing of documents					
➢ Automatic shutdown of computer, lights, fans, air coolers at branch					
➢ Energy Auditing and Disclosure					
➢ Electronic statement generation					
➢ Day lights and paper ventilation instead of electrical lighting and ACs					
➢ E waste Management Techniques					
➢ Gardening on the ground and roof of the premises					
b) Outhouse Practices					
➢ Implementation of energy conservation measures					
➢ Tie up with vendors of recycling pf paper and plastic					
➢ Solar powered ATM and CDM					
➢ Air quality and Wastewater Management					
➢ Rainwater harvesting					
➢ Installation of windmills					
➢ Water ATMs for rural people					
➢ Electronic vehicles and mass transportation system for employees					
➢ Avoid ATM Statement Printing					
➢ Green checking of accounts (e-passbook)					
➢ Achieving Carbon Neutrality					
5. Employees Related Practices					
➢ Environmental training and Education					
➢ Green performance evaluation					

➢ Green Reward System					
➢ E-HRM process from recruitment to remuneration					
➢ Electronic means of communication					
➢ Participation in Green Events					
6. Green Financing					
➢ Finance for pollution control equipment					
➢ Finance to the unit that are within the permissible limit of pollution level					
➢ Reduced margin, softer interest rate, zero processing fee on home loans for environmentally friendly residential projects rated by IGBC					
➢ Carbon credit plus to finance clean development mechanism					
➢ Separate loan for Electronic Vehicles with subsidy					
➢ Finance for green buildings					
➢ Green mortgage for organic farming					
➢ Agricultural financing					
➢ Climate Risk Financing					
➢ **Financed for Specialized Sectors**					
❖ Biogas Plant					
❖ Solar System					
❖ Bio Fertilization Plant					
❖ Effluent Treatment Plant					
❖ Environmentally friendly brick fields					
❖ Energy saving bulb production plants					
❖ Waste disposal plants					
❖ Wastepaper recycling plant					
❖ Waste battery recycling plant					
❖ Clean water supply projects					
III. Green Products					
1. Green Innovations					
➢ Insta Banking					
➢ Core Banking Solutions (CBS)					
➢ Green Data Centre					

➢ Real Vision Imaging (RVI)					
➢ SWAYAM/ Passbook Printing Kiosks					
➢ Green Credit Cards					
➢ Green Channel Counter					
➢ Remote Deposit					
➢ Green Channel Networks					
➢ Queue Management System					
➢ Green Remit Cards					
➢ Green CDs					
➢ Cash/ Cheque Collector					
➢ Cash Deposit Machine (CDM)/Recyclers					
➢ Point of Sale terminals					
➢ Micro ATMs					
2. Digital Innovations					
a) Internet Banking					
➢ **Informational**					
❖ Details about scheme of deposits					
❖ Portfolio of investments					
❖ Information about different kind of loans					
❖ Particulars about varieties of online services					
❖ Online e- locker enquiry					
➢ **Communicative**					
❖ 24*7 help desk					
❖ Quick response on queries					
❖ Response about authentication, privacy, confidentiality, data integrity etc.					
❖ Openness and freedom for serving ideas					
❖ Know You Customer Facility					
➢ **Transactional**					
❖ Fund transfer between intra and inter accounts					
❖ Request for opening an account, closure of loan accounts, issue of demand draft					

❖ Utility bill payment					
❖ Online share trading and insurance premium payments					
❖ Online ticket booking for travelling and accommodation purposes					
b) Mobile Banking					
➢ M Commercial Activities					
➢ Mobile Applications					
➢ Mini statement and checking of account history					
➢ Details of term deposit					
➢ Insurance policy management					
➢ Fund transfer between customers linked accounts					
➢ Third party fund transfers					
➢ Cheque Status					
➢ Credit card information					
➢ Branch of ATM location					
➢ Helpline and emergency contact					

6. SWOC Analysis of Environmentally Sustainable Banking Practices

Mark the statements as 5 - Strongly Agree, 4 - Agree, 3 - Neutral, 2 - Disagree and 1 - Strongly Disagree

SWOC	5	4	3	2	1
Strength					
An innovative strategy for sustainable development					
Consideration of triple bottom line approach for sustainability					
Energy Savvy as well as Tech Savvy Technique					
Assure low Carbon Emission through green financing					
Participation from the bottom of earth as a motive					
Weakness					
Low awareness among people					
Infancy stage of development					
Cost of installation of energy efficient materials and recycling					
Low customer care and technical issues in digital banking					

Less adoption of Environmental Accounting Practices					
Absence of Environmental Audit Management					
Opportunities					
Set up Separate Cell for promote green management practices					
Implement environmental due diligence					
Improve Corporate Social responsibility standards					
Participation in the wealth of nature as a competitive advantage					
Get rewards/ awards and recognition					
Threats					
Credit risk due to any change in environmental regulations and new requirement of emission levels					
Reputational risk due to high cost and less adoption of Environmental Management System (EMS)					
Problems of Environmental Risk Management as Core Risk management process					
Difficult to get Going Coin Rating Certification					
Financial Risk Due to creating separate fund for CSR activities					

7. Importance of SMART Green Goals of Environmentally Sustainable Banking Practices

Mark the statements as 5-Extremely Important, 4-Very Important, 3-Moderatley important, 2-Less Important, and 1-Not at all Important

SMART Green Goals	**5**	**4**	**3**	**2**	**1**
Specific					
Planning before going green					
Set of guidelines and regulations to comply the procedures					
Objectives and motives to carry out the practices					
Coalition of Green Capital and its utilization					
Specific CSR policies and procedure					
Measurable					
Innovation in green technological products					
Innovativeness in green practices					
Risks and Returns from every green management practice					

Direct and indirect cost of all activities					
Motivational rewards in the form of grants and subsidies					
Attainable					
Security and Confidentiality in Digital sector					
Customer care and support for all their queries					
Literacy and educative power from the bottom level					
Aim of environmentally and socially responsible CSR practices					
Environmental standards lending and making investments					
Realistic					
Introduction of concepts to reduce carbon footprints					
Set of rules of thumb for energy efficient usage					
Policies for waste energy recycling process					
Digital way to connect Agri Business					
Setting Intelligence Assistance to Energy Consciousness					
Timely					
24*7 assistance for online banking customers					
Disclosure of environmental and social performance in Sustainability report and CSR Report Simultaneously					
Adoption for Principle of Caring for environment from National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business (NVG-SEE) notified by the Ministry of Corporate Affairs, GOI					
Introduction of retail and corporate internet banking practices on need basis					
Ascertainment of financial performance with regards to environmental and social performance					

Thanking you,

Yours Faithfully,

Greeshmadas M H
Research Scholar
DCMS, University of Calicut

Appendix II

Questionnaire on-

Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis (Perspective of Customers)

I, Greeshmadas M H, Research Scholar, Department of Commerce and Management Studies, University of Calicut, kindly request you to fill the following questions as a part of my research on the topic "Environmentally Sustainable Banking Practices in the Public and Private Sector Banks in Kerala – A Comparative Analysis". I ensure that the data collected will be kept purely confidential and will only be used for my academic purposes.

Thanking You,

Greeshmadas M H

1. Demographic Profile

i. Gender

Male ☐ Female ☐

ii. Age (in years)

Below 25 ☐ 26-40 ☐ 41-55 ☐ Above 55 ☐

iii. Educational Qualification

Elementary Education ☐ Secondary Education ☐

Technical Education ☐ Graduate Level Education ☐

Higher Level Education ☐

iv. Occupation

Student ☐ Business ☐ Govt. Employee ☐

Private Employee ☐ Profession ☐ Farmer/Self employed ☐

v. Area of residence

Urban ☐ Semi Urban ☐ Rural ☐

2. Digital Banking details

a) Type of bank

Public Sector ☐ Old Generation Bank ☐ New Generation Bank ☐

b) Name of the bank

SBI ☐ CANARA BANK ☐ PNB ☐

FEDERAL BANK ☐ SIB ☐ IDBI ☐

HDFC ☐ ICICI ☐ AXIS ☐

c) Mode of visit in banking premises

Weekly ☐ Monthly ☐ Quarterly ☐

Half yearly ☐ Yearly ☐

d) Which type of banking services do you prefer?

Digital Banking Only ☐ Digital Banking and Branch Banking ☐

e) How long have you been using Digital Banking?

Less than 1 year ☐ 1-3 year ☐ Above 3 years ☐

f) From where you have downloaded the application (app)

Banks' Website ☐ App store/Play store ☐

Directly from Search Engine ☐ Sending through Apps/BT/Wi-Fi ☐

g) From where you have accessed the e-banking facilities

Home PC ☐ Office ☐ PC ☐

Public Browsing Centre ☐ Personal Devices ☐

h) The sources of information about digital banking from,

Banks Site/Brochures ☐ Public/social media ☐

Colleagues/Friends/Family ☐

i) The practice has done after making every transaction

Taking Print out ☐ Save as documents ☐

Keep Screen Shot ☐ Nothing ☐

3. Do you know the Digital Banking is a component of Environmentally Sustainable Banking Practices of banks?

Yes☐ No ☐

4. Level of Awareness on different Environmentally Sustainable Banking Practices of bank

The values are given for 1-not at all aware, 2- slightly aware, 3- somewhat aware, 4- moderately aware and 5- extremely aware

Environmentally Sustainable Banking Practices	5	4	3	2	1
1. Green Policies					
➢ Banks follows National Voluntary guidelines for Social, Environmental and Economic Aspects					
➢ Caring for environment is the basic principle of Corporate Social Responsibility of banks					
➢ Social and Environmental System Plan by setting SMART Green Goals					
2. Green Financing					
➢ Green Home loans for environment friendly residence rated by GRIHA					
➢ Finance for fuel efficient vehicles by making waiver on processing and transaction fee					

➢ Finance for Green Buildings certified by IGBC					
➢ Agricultural financing					
➢ Climate Risk Financing					
➢ Finance for specialized sector like biogas plant, bio fertilization plant, waste disposal plant etc.					
3. Green/Digital Innovations					
✓ SWAYAM/ Passbook Printing Kiosks					
✓ Green Credit Cards/Green Remit Cards					
✓ Green Channel Counter					
✓ Remote Deposit					
✓ Cash/Cheque Collector					
✓ Solar ATM/CDM/Recycler					
✓ Queue Management System					
✓ Point of Sale terminals					
Internet Banking					
❖ Immediate Payment Services (IMPS)					
❖ Instant Fund/Money Transfer (IMT), RTGS/NEFT					
❖ e-tax for online tax payment					
❖ Online Account Generation and term deposits (e-TDR/e-STDR)					
❖ e-passbook for checking transaction details					
❖ Online request for - application for loan, closure of loan account, Issue of cheques and Demand Draft					
❖ Utility bill payments					
❖ Online share trading					
❖ Online ticket booking and e-shopping					
Mobile Banking					
✓ M Commerce (Merchant Payments and Insurance premium payment)					
✓ Mobile applications					
✓ Mobile wallets e.g.: - Paytm, google pay, phone pay etc.					
✓ Tab Banking for account generation and filing KYC details					

✓ Realtime GPS Navigator to locate ATM and Branch					
✓ Mobile/DTH/Toll Recharge					
✓ Authorize, modify, reschedule, and cancel transactions					
✓ Portfolio analysis					

5. Enabling and Disabling Factors of Digital Banking

The values given for your opinion as 1-strongly disagree, 2-disagree, 3-no opinion, 4-agree and 5-strongly agree

Enabling Factors	5	4	3	2	1
1. Information and Communication					
Bank's websites have unrestricted access to all information					
Prompt response available from the service provider					
Website design is authentically attractive					
2. Clear and Easiness					
Interaction with e-banking doesn't require any mental work					
Information content and text are easy to understand					
Learn to use digital banking is easy and skillful for me					
3. Convenience and Flexibility					
Anywhere, Anyway, Anyhow, Any channel and Any time channel					
Language used in the website is simple and lucid					
24*7 availability of details of products and services					
4. Trust and Confidence					
Bank doesn't misuse personal information					
Confidence in new technologies adopted					
Bank has reputed status in the society					
5. Self Esteem and Prestige					
Self-service channel creates nice experience					
Increase my image from peer groups					
I feel modernized expression of myself than others					

Disabling Factors					
1. Security and Privacy					
Suspicious about access of account by third party					
Afraid of mistakes occurred while making transaction					
Confusion in different method of authentication for sign-in procedure					
2. Risk and Threat					
Worry about incomplete transaction due to poor connection					
Usage of Internet Banking may expose fraud/ cyber attacks					
Transmission error may occur due to delay in bank's verification					
3. Knowledge and Awareness					
Lack of technology-based knowledge and proficiency					
Absence in updating knowledge					
Deficiency in transmission of bank's support and response					
4. Cost and Charge					
High transaction and processing fee					
Internet maintenance cost is comparatively high					
Heavy deduction from balance for debit & credit card usage					
5. Complexity and problems					
Complicated procedure to conduct transaction					
Recovery problem due to incomplete operation					
Beginner problems for branch banking customers					

6. Frequency of using green/digital initiatives of banks

Please put tick mark in relevant column based on your experience as 1- Never, 2- Rarely, 3- Sometimes, 4-Often and 5- Always

Digital Banking Services	**5**	**4**	**3**	**2**	**1**
ATM/CDM					
POS Terminals using Debit Card/Credit Cards					
Net Banking					

Mobile Applications					
Mobile wallets e.g.: - Paytm, g-pay, phone pay etc.					
Tele Banking					
Green Channel Counter					
Passbook printing Kiosks					
Green Remit Cards					
Queue management system					
Remote Deposits					
Cheque Deposit Machine/Kiosk					

7. Perception on Digital Banking Acceptance

Please indicate the extent to which you agree or disagree with each of the following statements as, 1-Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree and 5-Strongly Agree

Service Awareness	5	4	3	2	1
I have full idea about digital banking services provided by the banks					
I know the benefits of using branchless banking					
I have read all the steps before doing any transaction					
I know the procedures before starting a transaction and after ending it					
I am always vigilant about risk while using e-banking					
Subjective Norms					
My friends, family and colleagues encouraged me to use digital banking					
The time-consuming experience from branch banking induced me to digitalization					
Bank employees and Professional advisors have motivated me to use online banking					
Information from public/ social media drive me to digitalization					
I prefer to do most my financial transaction in-person					
Self-Efficacy					
I am confident to use digital banking practices					
I am able to check the efficiency of system before processing transaction					

I don't have any confusion when changing the procedure as well as system					
I feel comfortable while using electronic banking myself					
I have the ability to execute my banking transactions effectively and efficiently					
System Quality					
I am satisfied with the speed of internet connection available for accessing online banking facilities					
I am happy with the server response from bank's website while accessing it					
Website is equipped with adequate security features					
I am vigilant when operating my account from public places					
I used to shut down my login page after completion of every transaction from any devices					
I keep checking the reliability of computer, devices, internet and websites					
Schemes Availability					
One touch access to different variety of banking schemes					
Multichannel are available for promoting transactions					
Domestic and International, Personalized, and professionalized services are available					
Precautions before and after entering details are attractively visible on screen					
24x7 customer online support system facilitates clarity of queries					
Perceived Ease of Use					
Learning before operating transaction is easy for me					
Using digital banking doesn't require lot of mental effort					
Communication with internet banking site and help desk is clear and understandable					
My PC proficiency has helpful for me to conduct transactions					
It is simple to change user id & password whenever any security issues arise					
Perceived Usefulness					
Electronic banking enables me greater management and control over my finance					

Using Digital Banking saves time, money & effort and it would increase the efficiency of my daily task					
Online banking increases the choice of selecting alternative opportunities of banking facilities					
It improves my capability of convey ideas to peer groups about Digital Banking options and offers					
The digitization allows me effective language skill probably needed for the confirmation of transactions					
Perceived Risk					
I am worried about poor maintenance and low internet connection of website					
I am afraid to seek help from bank's officials when there is any fault or failure in running transactions					
I am suspicious about reliability and authenticity of online applications (app)					
I am not sure about interruption of third parties (hacking)					
When a transaction error occurs, I feel anxiety regarding whether to get compensated or not					
Attitude towards Usage					
I feel digital banking is a feasible way of managing my banking activities					
It is an enlightened idea about transforming traditional way of banking to the modern arena					
I have pleasant experience and comfortable feeling while using electronic banking					
I feel self-sustain in transaction-based decision making of banking					
I will expand my channel of activities of banking through digitalization					
Behavioral Intention to Use					
I presently intend to use digitalized technology for my regular task					
I believe electronic banking is worthwhile for me conducting banking needs					
I plan to use SMART banking activities very often in future					
I have no reluctance while accepting technological transformation					

I will strongly recommend others to practice electronic banking facilities					
Actual Use					
Period of use of e-banking enhances me greater productivity over banking activities					
The usage of new technology can accomplish my banking needs without visiting branches					
I found that various functions of e-banking are well integrated on website					
User-friendliness of website attracts me to improve my access and usage					
I would imagine that diversification and popularization of e-banking will drive out branch banking					

Please mark your response as 1 for Extremely Dissatisfied, 2 for Dissatisfied, 3 for No opinion, 4 for Satisfied and 5 for Extremely Satisfied

User Satisfaction	1	2	3	4	5
Up to date information on bank's website					
Performance of promised quality services					
Skill and knowledge of help desk for customer care					
Detailed guidelines for precautions to convey trust and security					
Maintenance of error-free transaction records					
Vigilant about the errors they made and provides compensation for it					
Quick confirmation of the transactions					
Paperless sustainable banking practice					

Thanking you,

Yours faithfully

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