

Prospects and Challenges of Grass Based Handicrafts Units in Kerala

Thesis

*Submitted to the University of Calicut
for the Award of the Degree of*

DOCTOR OF PHILOSOPHY IN COMMERCE

By

RAJENDRAN M K

Under the Supervision of

Dr. JUBAIR T

Associate Professor

Department of Commerce

Kunnamangalam Govt. Arts & Science College
(Affiliated to University of Calicut)



**Department of Commerce
Government College Kodanchery
Kozhikode, Kerala – 673580
(Affiliated to University of Calicut)**

October 2025

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I hereby declare that the work presented in the thesis entitled "**Prospects and Challenges of Grass Based Handicrafts Units in Kerala**" is based on the original work done by me under the guidance of **Dr. Jubair T**, Associate Professor, Department of Commerce, Kunnamangalam Government Arts & Science College, and has not been included in any other thesis submitted previously for the award of any degree. The contents of the thesis have undergone a plagiarism check using **iThenticate** software at C.H.M.K. Library, University of Calicut and the similarity index found within the permissible limit. I also declare that the thesis is free from AI-generated content.



RAJENDRAN M K

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Dr. JUBAIR T

Dr. JUBAIR T. (PEN:572978)
Associate Professor, Department of Commerce
Kunnamangalam Govt. Arts & Science College
Choolur P.O., Kozhikode - 673 601



Dr. Jubair T,

M.Com., Ph.D.

Associate Professor
Department of Commerce
Kunnamangalam Government Arts & Science
College, Kozhikode, Kerala-673601
Mob: 9895427550
Email: jubairktr@gmail.com

Research Supervisor
Department of Commerce
Government College, Kodanchery
Kozhikode, Kerala-673580

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Place: Kodanchery

Date: 24/03/2026



Dr. JUBAIR T

Dr. JUBAIR T. (PEN:572978)
Associate Professor, Department of Commerce
Kunnamangalam Govt. Arts & Science College
Choolur P.O., Kozhikode - 673 601



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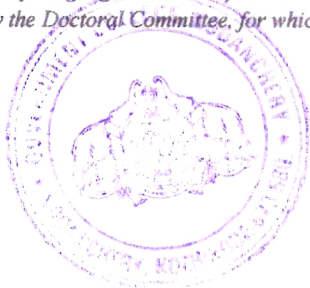
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Abstract

The handicraft industry plays a vital role in preserving cultural heritage, promoting environmental sustainability and supporting community development. Globally, it employs around 200 million craftspeople, including more than six million in India. The policy reforms, such as the 2017 amendment to the Indian Forest Act that classified bamboo as grass, have improved artisans' access to raw materials and supported their livelihood. Kerala's grass-based handicraft industry, shaped by its ecological diversity and cultural heritage, exemplifies the dual role of preserving tradition while fostering socio-economic development.

This study focuses on micro enterprises engaged in producing bamboo, reed bamboo, cane, screw pine and kora grass products. These units encounter significant challenges in organisational effectiveness, technological advancement, marketing strategies and institutional support. While government and non-government agencies extend training, financial aid and infrastructural support, the effectiveness of such interventions remains underexplored. To bridge this gap, the study evaluates organisational effectiveness, environmental sustainability, marketing efficiency, institutional support and the overall prospects and challenges of these enterprises. By addressing under-explored aspects of handicraft units, the study contributes to the theoretical base and offers practical insights for policymakers to design better schemes and strengthen institutional mechanisms. Geographically, the study is limited to Kerala, chosen for its distinctive natural resources, cultural heritage and policy framework. Sectorally, it concentrates on grass-based units, with respondents being microenterprises registered under the Udyam Aadhaar system. Temporally, the research is based on primary data collected between April 2024 and March 2025.

Methodologically, this study adopted a mixed-methods approach, both descriptive and analytical in nature. Primary data was collected from 291 systematically selected units out of a total population of 1,064, supplemented by secondary sources. Quantitative data were obtained using structured questionnaires and statistical tools such as chi-square, independent sample t-test, ANOVA, correlation and regression were employed to analyse relationships among variables.

The results show that the grass-based handicraft industry is largely sustained by elderly artisans, with very limited participation from youth and few new entrepreneurs entering the sector. Several weaknesses were identified, including ineffective

inventory management, challenges in raw material sourcing, inadequate skill development and fragile financial systems. Training programs did not yield substantial improvements in innovation or marketing performance, while limited technological adoption, weak online presence and unexploited export potential continue to hinder growth. This sector continues to display resilience through sustainable practices and reliance on traditional knowledge systems.

The findings highlight the need for focused interventions, with education and income levels emerging as strong predictors of organisational effectiveness and marketing performance. Key recommendations include establishing common facility centres in every district to support raw material storage and technological needs, creating a unified digital platform for marketing products and procurement of raw materials, and implementing youth and gender-specific training in management, digital literacy and branding. By staying rooted in tradition, adopting sustainable practices and strengthening institutional support, Kerala's grass-based handicraft sector has the potential to evolve into a model of sustainable and resilient enterprise. In the hands of artisans, this industry not only sustains livelihoods but also safeguards dignity and self-respect, reaffirming the enduring role of handicrafts in shaping an inclusive and sustainable society. Moreover, the research opens pathways for future studies in this field, thereby extending the significance of the present study.

Key Words: Grass-based handicrafts, Organisational effectiveness, Environmental sustainability, Prospects, Challenges, Institutional support, Marketing efficiency.

സംഗ്രഹം

സാംസ്കാരിക പൈതൃകം സംരക്ഷിക്കുന്നതിലും, പാരിസ്ഥിതിക സുസ്ഥിരത സാധ്യമാക്കുന്നതിലും, സാമൂഹികവികസനത്തെ പിന്തുണയ്ക്കുന്നതിലും കരകൗശല വ്യവസായം നിർണായക പങ്കുവഹിക്കുന്നു. ഇന്ത്യയിൽ നിന്നുള്ള ആറ് ദശലക്ഷത്തിലധികം പേരുൾപ്പെടെ ആഗോളതലത്തിൽ, 200 ദശലക്ഷത്തിലേറെ കരകൗശല വിദഗ്ധർ ഈ മേഖലയിൽ ജോലിചെയ്യുന്നുണ്ട്. പൂല്ല് (ഗ്രാസ്) വിഭാഗത്തിൽ മുളയെ (ബാംബൂ) ഉൾപ്പെടുത്തിയ 2017-ലെ ഇന്ത്യൻ വനനിയമഭേദഗതിപോലുള്ള നയ പരിഷ്കാരങ്ങൾ, കരകൗശല വിദഗ്ധർക്ക് അസംസ്കൃത വസ്തുക്കളുടെ ലഭ്യത വർദ്ധിപ്പിക്കാനും അവരുടെ ഉപജീവനമാർഗ്ഗത്തെ പോഷിപ്പിക്കാനും സഹായകമായി. പാരിസ്ഥിതിക വൈവിധ്യവും, സാംസ്കാരിക പൈതൃകവും കൊണ്ടു രൂപപ്പെട്ട കേരളത്തിലെ തുണവർഗാധിഷ്ഠിത കരകൗശല വ്യവസായം, സാമൂഹിക-സാമ്പത്തിക വികസനത്തെ ത്വരിതപ്പെടുത്തുന്നതിനൊപ്പം പാരമ്പര്യം സംരക്ഷിക്കുന്നു എന്നുള്ളതും പ്രാധാന്യപ്പെട്ടതാണ്.

മുള, ഈറ്റ, ചുരൽ, കൈത (തഴ), മാനിപ്പൂല്ല് എന്നിവ കൊണ്ടുള്ള വസ്തുക്കൾ ഉത്പാദിപ്പിക്കുന്നതിൽ ഏർപ്പെട്ടിരിക്കുന്ന ചെറുകിട സംരംഭങ്ങളിലാണ് പഠനം ശ്രദ്ധ കേന്ദ്രീകരിക്കുന്നത്. ഈ കരകൗശല യൂണിറ്റുകൾ സംഘാടന ഫലപ്രാപ്തി, സാങ്കേതിക പുരോഗതി, വിപണനതന്ത്രങ്ങൾ, സ്ഥാപനപിന്തുണ എന്നിവയിൽ കാര്യമായ വെല്ലുവിളികൾ നേരിടുന്നു. സർക്കാർ, സർക്കാരിതര ഏജൻസികൾ സംരഭകർക്കും കരകൗശല തൊഴിലാളികൾക്കും പരിശീലനം, സാമ്പത്തിക സഹായം, അടിസ്ഥാന സൗകര്യപിന്തുണ എന്നിവ നൽകുന്നുണ്ടെങ്കിലും, ഇത്തരം ഇടപെടലുകളുടെ ഫലപ്രാപ്തി കാര്യമായി പഠനവിധേയമാക്കപ്പെട്ടിട്ടില്ല. ഈ വിടവ് നികത്തുന്നതോടൊപ്പം സംഘാടനത്തിലെ ഫലപ്രാപ്തി, പരിസ്ഥിതി സുസ്ഥിരത, വിപണന കാര്യക്ഷമത, സ്ഥാപന പിന്തുണ എന്നിവയും, സംരംഭങ്ങളുടെ മൊത്തത്തിലുള്ള സാധ്യതകളും വെല്ലുവിളികളും ഈ പഠനം അപഗ്രഥനവിധേയമാക്കുന്നു. കരകൗശല യൂണിറ്റുകളുടെ ഇനിയും പഠനവിധേയമാക്കപ്പെടാത്ത വ്യത്യസ്ത വശങ്ങളെ അപഗ്രഥിക്കുന്നതിലൂടെ ഈ പഠനം, മികച്ച പദ്ധതികൾ രൂപകൽപ്പന ചെയ്യുന്നതിനും സ്ഥാപനസംവിധാനങ്ങൾ ശക്തിപ്പെടുത്തുന്നതിനും നയരൂപകർത്താക്കൾക്ക് സൈദ്ധാന്തിക പിന്തുണയും പ്രായോഗിക ഉൾക്കാഴ്ചയും നൽകുന്നു.

പഠനത്തിന്റെ ഭൗമശാസ്ത്ര മേഖല കേരളം മാത്രമായി പരിമിതപ്പെടുത്തിയിരിക്കുന്നു, കേന്ദ്ര സർക്കാരിന്റെ 'ഉദ്യം - ആധർ' സംവിധാനത്തിന് കീഴിൽ രജിസ്റ്റർ ചെയ്ത ചെറുകിടസംരംഭങ്ങളെയാണ് ഈ പഠനത്തിനായി തിരഞ്ഞെടുത്തത്. 2024 ഏപ്രിലിനും, 2025 മാർച്ചിനും ഇടയിൽ ശേഖരിച്ച പ്രാഥമിക ഡാറ്റയെ അടിസ്ഥാനമാക്കിയുള്ളതാണ് ഈ പഠനം. വിവരണാത്മകവും, വിശകലനപരവുമായ സ്വഭാവമുള്ള ഒരു മിശ്രരീതി സമീപനമാണ് പഠനത്തിനായി സ്വീകരിച്ചത്. സംസ്ഥാനത്ത് ആകെ രജിസ്റ്റർ ചെയ്ത 1,064 യൂണിറ്റുകളിൽ നിന്ന് സിസ്റ്റമാറ്റിക് സാംപ്ളിംഗ് രീതി വഴി തിരഞ്ഞെടുത്ത 291 സംരംഭങ്ങളിൽ നിന്ന് സ്കക്ചേർഡ് ചോദ്യാവലി ഉപയോഗിച്ചാണ് പ്രാഥമിക ഡാറ്റ വിവരങ്ങൾ ശേഖരിച്ചത്. കൂടാതെ സെക്കണ്ടറി ഡാറ്റ സ്രോതസ്സുകളും അനുബന്ധവിവരങ്ങൾക്കായി ഉപയോഗിച്ചിട്ടുണ്ട്.

ഡാറ്റ വിശകലനത്തിനായി കൈ-സ്ക്രയർ, ടി-ടെസ്റ്റ്, അനോവ, കോറിലേഷൻ, റിഗ്രഷൻ തുടങ്ങിയ ടെസ്റ്റുകൾ ഉപയോഗിച്ചു.

തൃണാധിഷ്ഠിത കരകൗശലവ്യവസായം പ്രധാനമായും നിലനിർത്തുന്നത് പ്രായമായ കരകൗശല വിദഗ്ദ്ധരാണെന്നും, യുവാക്കളുടെ പങ്കാളിത്തം വളരെ കുറവാണെന്നും, പുതിയ സംരംഭകർ ഈ മേഖലയിലേക്ക് കാര്യമായി പ്രവേശിക്കുന്നില്ലെന്നും പഠന ഫലങ്ങൾ തുറന്ന് കാണിക്കുന്നു. ഫലപ്രദമല്ലാത്ത ഇൻവെന്ററി മാനേജ്മെന്റ് അസംസ്കൃത വസ്തുക്കളുടെ ലഭ്യതയിലുള്ള വെല്ലുവിളികൾ, അപര്യാപ്തമായ നൈപുണ്യ വികസന പരിശീലനങ്ങൾ, ദുർബലമായ സാമ്പത്തിക സംവിധാനങ്ങൾ എന്നിവയുൾപ്പെടെ നിരവധി പോരായ്മകൾ ഈ രംഗത്തുള്ളതായി പഠനത്തിലൂടെ കണ്ടെത്തുകയുണ്ടായി. ഈ മേഖലയുടെ നവീകരണത്തിലോ വിപണനക്ഷമതയിലോ കാര്യമായ പുരോഗതിയുണ്ടാക്കാൻ പരിശീലന പരിപാടികൾക്ക് സാധിച്ചിട്ടില്ല. അതേസമയം, പരിമിതമായ സാങ്കേതിക സ്വീകാര്യത, ഓൺലൈൻ സംവിധാനങ്ങളുടെ പരിമിതമായ സാന്നിധ്യം, ഉപയോഗപ്പെടുത്താത്ത കയറ്റുമതി സാധ്യതകൾ എന്നിവ വളർച്ചയ്ക്ക് വിഘാതമാകുന്നു. സുസ്ഥിരമായ രീതികളിലൂടെയും പരമ്പരാഗത വിജ്ഞാന സംവിധാനങ്ങളെ ആശ്രയിക്കുന്നതിലൂടെയും ഈ മേഖല പൈതൃക മൂല്യങ്ങളുടെ സംരക്ഷണത്തിന് സഹായകമായി വർത്തിക്കുന്നു.

വിദ്യാഭ്യാസവും വരുമാനവും സംഘടനാ ഫലപ്രാപ്തിയുടെയും വിപണനക്ഷമതയുടെയും പ്രധാന സ്വാധീന ഘടകങ്ങളായി നിലനിൽക്കുന്നതിനാൽ, ശ്രദ്ധാപൂർവ്വമായ ഇടപെടലുകളുടെ ആവശ്യകത പഠനം ചൂണ്ടിക്കാണിക്കുന്നു. അസംസ്കൃത വസ്തുക്കളുടെ സംഭരണം നടത്തുന്നതിനും സാങ്കേതികപിന്തുണ നൽകുന്നതിനുമായി എല്ലാ ജില്ലയിലും പൊതു സഹായ കേന്ദ്രങ്ങൾ സ്ഥാപിക്കുക, അസംസ്കൃത വസ്തുക്കളുടെ ലഭ്യതയ്ക്കും ഉൽപ്പന്നങ്ങളുടെ വിപണനത്തിനും ഒരു ഏകീകൃത ഡിജിറ്റൽ പ്ലാറ്റ്ഫോം സൃഷ്ടിക്കുക, മാനേജ്മെന്റ്, ഡിജിറ്റൽ സാക്ഷരത, ബ്രാൻഡിംഗ് എന്നിവയിൽ യുവതീയുവാക്കൾക്കായി പ്രത്യേക പരിശീലനപദ്ധതി നടപ്പിലാക്കുക എന്നിവയാണ് ഈ പഠനം മുന്നോട്ട് വെക്കുന്ന പ്രധാന ശുപാർശകൾ. പാരമ്പര്യത്തിൽ വേരുന്നിയതും പരിസ്ഥിതി സുസ്ഥിരവുമായ രീതികൾ സ്വീകരിക്കുന്നതും സ്ഥാപനപരമായ പിന്തുണ ശക്തിപ്പെടുത്തുന്നതും വഴി, കേരളത്തിലെ തൃണവർഗാധിഷ്ഠിത കരകൗശല മേഖലയെ സുസ്ഥിരവും പ്രതിരോധശേഷിയുള്ളതുമായ മാതൃക സംരംഭങ്ങളായി മാറ്റാൻ സാധിക്കും. ഒരു ഉപജീവന മാർഗ്ഗം എന്നതിലുപരിയായി കരകൗശലവിദഗ്ദ്ധർ ഈ മേഖലയെ അവരുടെ അന്തസ്സം ആത്മാഭിമാനവും സംരക്ഷിക്കുന്ന മേഖല കൂടിയായാണ് കാണുന്നത്. കരകൗശല മേഖലയിലെ തുടർപഠനങ്ങൾക്ക് ഈ പ്രബന്ധം വഴിതുറക്കുകയും അനിവാര്യമായ ഒരു ചുവടുവയ്പായി സ്വയം അടയാളപ്പെടുത്തുകയും ചെയ്യുന്നു.

പ്രധാനപദങ്ങൾ: തൃണവർഗാധിഷ്ഠിത കരകൗശല വ്യവസായം, സംഘടനാഫലപ്രാപ്തി, പരിസ്ഥിതിക സുസ്ഥിരത, സാധ്യതകൾ, വെല്ലുവിളികൾ, സ്ഥാപനപിന്തുണ, വിപണന കാര്യക്ഷമത

Abbreviations

ACC	:	Artisan Credit Card
ANOVA	:	Analysis of Variance
BC	:	Business Challenges
BO	:	Business Opportunities
BTSG	:	Bamboo Technical Support Group
CAGR	:	Compound Annual Growth Rate
CBCPT	:	Centre for Bamboo and Cane Processing Training and Technology Transfer
CGF	:	Credit Guarantee Fund
CGST	:	Central Goods and Services Tax Act
CHCDS	:	Comprehensive Handicrafts Cluster Development Scheme
CHPZ	:	Cultural Heritage Preservation Zones
CSR	:	Corporate Social Responsibility
CVDP	:	Craft Village Development Program
<i>df</i>	:	Degrees of Freedom
DCH	:	Development Commissioner Handicrafts
DHT	:	Directorate of Handlooms and Textiles
DIC	:	District Industries Centre
DICRC	:	Design Innovation and Craft Resources Centre
DST	:	Department of Science and Technology
EDP	:	Entrepreneurial Development Programme
EPC	:	Export Promotion Council
EPCH	:	Export Promotion Council for Handicrafts
EPZ	:	Export promotion zones
ESP	:	Environmental Sustainability Practices
GDP	:	Gross Domestic Product
GHISD	:	Global Handicraft Index for Sustainable Development
GIG	:	Geographical Indications of Goods
GIs	:	Geographical Indications

GSS	:	Government Scheme Support
GSTIN	:	Goods and Services Tax Identification Number
HACWS	:	Handicrafts Artisan Comprehensive Welfare Scheme
HMCM	:	Handicrafts Mega Cluster Mission
ICT	:	Information and Communication Technology
i-STED	:	Innovation - Science and Technology based Entrepreneurship Development
IWABRI	:	Ikatan Wanita Bank Rakyat Indonesia
KFRI	:	Kerala Forest Research Institute
KSBM	:	Kerala State Bamboo Mission
KSHDC	:	Kerala State Handicrafts Development Corporation
ME	:	Marketing Efficiency
MSME	:	Micro, Small and Medium Enterprises
NCDPD	:	National Centre for Design and Product Development
NGO	:	Non-Governmental Organisation
NHDP	:	National Handicraft Development Programme
ODOP	:	One District One Product
OE	:	Organisational Effectiveness
OHI	:	Organisational Health Index
PMEGP	:	Prime Minister's Employment Generation Programme
QWL	:	Quality of Work Life
SD	:	Standard Deviation
SE	:	Standard Error
SFURTI	:	Scheme of Fund for Regeneration of Traditional Industries
SHG	:	Self Help Group
SIDBI	:	Small Industries Development Bank of India
SMEs	:	Small and Medium Enterprises
SPSS	:	Statistical Package for the Social Sciences
TIES	:	Trade Infrastructure for Export Scheme
UNCTAD	:	United Nations Conference on Trade and Development
UNESCO	:	United Nations Educational, Scientific and Cultural Organisation

Chapter 1

INTRODUCTION TO THE STUDY

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1.1 Introduction

The handicraft industry is a living expression of creativity, culture and rural development, linking traditional knowledge with the modern market. This chapter explores the theoretical and historical evolution of handicrafts in both the global and Indian contexts. It further highlights the developmental role of the industry along with its environmental sustainability practices. Building on these discussions, the chapter provides an overview of grass-based handicraft units in Kerala and their potential for rural employment generation. In the present context, the sector offers many opportunities, although the management of challenges remains a concern. Finally, the chapter presents a summary of the relevant literature, the research problem, objectives, scope, significance, methodology and limitations of the study.

1.2 Background of the Study

The handicraft industry is one of the most important economic sectors that goes beyond commercial exchange by preserving cultural heritage, promoting environmentally sustainable business practices and fostering community development (Ghose & Ali, 2023). This industry is one of the most prominent industries in the world, showing more impressive development than others. Approximately its worth was \$ 718 billion in 2020, with projections reaching \$ 1,000 billion by 2025. The records indicate a compound annual growth rate (CAGR) of around 10 to 12 per cent (Mozumdar, 2020). It is in the path of outstanding development, which indicates that the demand has shifted to the products which are made with authenticity, sustainability

and ethics, endowed with cultural stories and environmental qualities (Holt, 2012). The growth in the industry is significantly influenced by the growing concerns of people in the world. They believe that it's a tool for environmental sustainability and a good substitute for other manufactured goods in the market (Oyekunle & Sirayi, 2018).

The handicraft industry creates an important link between historic handicrafts, traditional skills and modern market forces. It involves approximately 200 million craftspeople worldwide, a large proportion of whom are women from rural and underprivileged communities (Shafi et al., 2021). There are more than six million artisans in India who are major contributors to the Indian economy and handicrafts exports were about 3.5 billion dollars in the financial year 2020-21 (Choudhary & Mishra, 2022). The gradual advancement of technology has transformed the handicraft market, enabling artisans to access international markets through e-commerce services and digital marketing (Escaith, 2021). The sale of handicrafts digitally has exhibited remarkable growth, with specific platforms reporting an annual growth rate greater than 25 per cent (Ithurbide & Singh, 2022). This technological revolution has created a direct link between consumers and artisans, overcoming geographical barriers and reducing the role of intermediaries (Basak, 2024).

The Indian handicrafts industry shows the wealth of cultural diversity and an artistic background. It represents the preservation of the centuries-old traditions related to changing demands of the modern market (Lyu et al., 2024). The industry provides economic growth, particularly in rural regions. It also proves that conservative practices do not lead to innovation and commercialisation in the modern market to retain cultural originality (Fu, 2024). By the amendment of the Indian Forest Act in the year 2017, a new Law came into force, which declared bamboo as a grass and not a tree. This has given chances to artisans and businesspeople to obtain raw materials according to their requirements (Bheemaiah, 2022). Kerala, often referred to as God's Own Country, holds a particular place in the handicraft industry due to its rich natural and cultural resources (Unnikrishnan, 2024). The tropical climate and diverse

ecological conditions of the state ensure the availability of raw materials, which include various types of grasses, bamboo, cane and other forest products, that form the foundation of handicraft production (Che & Hashim, 2024).

The grass-based handicraft sector in Kerala is a rare combination of sustainability, tradition and economic growth. The industries covered in this category involve the usage of various materials such as bamboo, reed bamboo, screw pine, cane, kora grass and other native types of grasses to develop functional and decorative products (Leelavathy, 2023). The traditional history of the handicraft industry in Kerala can be traced to communities whose livelihoods depended on forest and agricultural activities. Over generations, artisans from these communities have passed down knowledge of material properties, processing methods, design and other related skills (De Munck, 2019). The traditional handicraft industry, once limited to homemade products sold in local markets, is now evolving into structured small and micro enterprises. These businesses market their products not only regionally and nationally but also in global markets, pointing to a significant socio-economic transformation (Abisuga et al., 2017).

1.3 Review of Literature and Research Gap

The handicraft industry plays an important role in developing countries like India, Iran, Indonesia and South Africa, a source of income to underprivileged communities, young people and women, and a way of reducing poverty (Abisuga-Oyekunle & Muchie, 2020). It takes a leading role in rural sustainable development, the creation of new jobs and the contribution to the national economy, as well as the empowerment of women, gender equality, the preservation of cultures and the traditional craft skills (Surti et al., 2024). As far as environmental dimensions are concerned, the risk to the sector is the reduction in biodiversity due to improper resource collection management (Deshmukh et al., 2024). To resist the latter, it is essential to set natural resource management organisations and regulations, as well as to adapt to traditional methods

and technological advancements in ecological sustainability and protection of resources (Knoepfel & Nahrath, 2005).

More than that, effectiveness and performance, managing the work with strategy, structure and technology to accomplish organisational objectives amid dynamic environments (Yadav et al., 2024). The success and sustainability in the local and global markets are inherently challenging to define the sector on a global level and to apply appropriate quality management, but successful and sustained implementation is achieved by the effective management, responsible business practices, operations and empowering human resources (Van & Makhitha, 2016). Despite its significance, handicraft units have problems with marketing inefficiency and strong challenges such as limited access to the market, high competition with alternatives and exposure to economic crises such as COVID-19 (Yadav et al., 2023). Nevertheless, significant market potential can be achieved by effective marketing and tourism, applying digital marketing and e-commerce, developing branded products and developing good distribution channels (Muhammad et al., 2018).

The obstacles of the handicraft industries also involve such operational problems as supply of materials and staff retention, lack of financial resources, structural difficulties between the traditional and modern production modes, poor internal management and inadequate institutional support (Chary & Rao, 2016). The only way to beat these obstacles is to provide specific intervention programmes, policy interventions and a more favourable environment towards the artisans and businesses. When it comes to unlocking the potential of handicraft industries, the sector is perceived to provide significant job creation as well as stimulate socio-economic development, where e-commerce, digital marketing and tourism integration are seen as strategic options for expanding the market as well as increasing the cultural authenticity (Mathur & Ranawat, 2024). To realise this potential, supportive mechanisms must be developed with government assistance, institutional interventions and supportive networks between stakeholders to cater to their financial needs, market clarity and innovation, and to develop employees (Usharani, 2024).

Despite the huge potential for growth and the growing demand of the market, the handicraft industry of Kerala, based on grass products, is facing many challenges stopping its growth and sustainability. The literature review indicates that there are major research gaps about the environmental sustainability practices, organisational effectiveness and marketing efficiency on the performance of the handicraft units. Various types of assistance are given to the handicraft sector by different governmental and non-governmental agencies. However, the effectiveness of these interventions and their relationship to the performance of the unit are insufficiently comprehended. Also, there is an urgent need to have systematic documentation and analysis on the contribution of the sector to environmental sustainability, the creation of employment opportunities and the promotion of rural development.

1.4 Research Problem

The grass-based handicraft industry in Kerala is highly prospective and its market potential is showing a remarkable upward trend. Still, the industry is suffering from several barriers that prevent its growth and development. An experimental execution of the literature reveals that there are a few unanswered questions in the research. These questions include matters related to the environmental sustainability practices, organisational effectiveness, marketing efficiency, handicraft supportive schemes and prospects, challenges faced by grass-based handicraft units in the state, etc. The industry is characterised by a large number of small and micro-business enterprises working with different levels of formalisation, absorptions of technology and market penetration. Although the government and non-governmental agencies offer different forms of support, the efficacy of intervention and its relation to the current performance of units is not properly realised. In addition, there is a need to systematically study the contribution of this sector towards environmental sustainability, employment creation and rural development.

Grass-based handicraft is an under-researched topic and the present research fills the research gap by reporting the operational, marketing and sustainability aspects of

grass-based handicraft units in Kerala. The outcome of the research is expected to guide the ways of making operations more efficient, marketing more effective and developing the sector in general. Amid the growing significance of environmental issues, the findings and recommendations of the present study can play an important role in promoting sustainable production processes and responsible consumption.

1.5 Research Questions

Existing knowledge on the state of Kerala's handicraft industry using grass seeks to address the following questions:

- How do grass-based handicraft units contribute to ecological conservation?
- What management practices are followed by grass-based handicraft units for organisational effectiveness?
- What are the methods used by these units to maximise their production cycles and utilisation of the available resources?
- What are the factors influencing organisational effectiveness and productivity?
- What are the issues faced in raw material procurement and supply chain management?
- What are the problems in accessing capital and managing financial resources?
- Whether the marketing channels and strategies applied by units are effective?
- What is the effectiveness of various support programs of the government and NGOs?
- What are the prospects of grass-based handicraft units in production, marketing and business development?
- What are the challenges faced by grass-based handicraft units in the procurement of raw materials, production, marketing and business development?

- How is organisational effectiveness related to marketing efficiency, government support and the environmental sustainability practices of the grass-based handicraft units?
- What interventions are needed strategically to improve the overall performance and sustainability of the grass-based handicrafts industry in Kerala?
- How are the grass-based handicraft units significant in economic development?
- How are the grass-based handicraft units significant in psychological and social development?

The above research questions serve as the foundations of the present study, shaping the objectives, scope, research design, methodology, data collection, analysis and discussions.

1.6 Objectives of the Study

The objective of this study is to comprehensively analyse the grass-based handicraft industry in Kerala, focusing on its environmental sustainability practices, organisational effectiveness, marketing efficiency and the prospects and challenges faced by grass-based handicraft units. The specific objectives are:

1. To analyse the role of handicraft units in Kerala for maintaining environmental sustainability.
2. To analyse the organisational effectiveness of grass-based handicraft units.
3. To analyse the marketing efficiency of grass-based handicraft units.
4. To analyse the prospects and challenges faced by grass-based handicrafts units in production and marketing.
5. To evaluate the role of government and non-government agencies in the promotion of handicraft units.

6. To analyse the multi-directional influence of key aspects of grass-based handicraft units on organisational effectiveness

1.7 Scope of the Study

Geographical Scope: The study considered only the state of Kerala in India due to its unique natural resource endowment, rich cultural heritage and distinctive policy environment.

Sectoral Scope: The study focuses on grass-based handicraft units, i.e., units using bamboo, reed bamboo, screw pine, cane, kora grass and other grass materials. It includes the product categories and production processes connected with these materials.

Respondents' Scope: The present study of handicraft units comprises microenterprises registered under the Udyam Aadhaar scheme. Such attention provides credibility to the data alongside coverage of enterprises supported by the government.

Functional Scope: In the study, there are various aspects of the business operations which are examined and they include:

- The organisational effectiveness
- Marketing promotions and efficiency
- Environmental sustainability behaviour
- Usage of government support
- Opportunities and issues

Temporal Scope: The study spanned five years (2020 - 2025); the primary data were collected during a focused period of one year from April 2024 to March 2025.

Organisational Scope: The study focuses on micro-entrepreneurs involved in the production and marketing of grass-based handicraft products.

1.8 Significance of the Study

This study is significant as grass-based handicraft units support rural development, provide livelihoods and promote eco-friendly practices. This study emphasises various perspectives on academics and practical requirements. Academically, the study advances the narrow literature of the topic on handicrafts based on grass, giving it a deep research focus to fill the gap, which researchers have unduly ignored. The research has addressed key gaps by providing an extensive understanding of the organisational effectiveness, marketing efficiency, supportive schemes and environmental sustainability practices in grass-based handicraft units. In doing so, it contributes significantly to the scholarly literature on traditional industries and sustainable development.

Policy-wise, the research gives evidence-based information that can guide the government in decision-making and program design. Since different government departments are investing significant resources in developing handicrafts through various schemes. Therefore, evaluating the effectiveness of these interventions is essential for improving policies and optimising the use of resources. The study also offers practical suggestions that can serve in the formulation of policy and facilitate better results of government support programs.

The study provides practical implications to practitioners, including the use of product skills by artisans and entrepreneurs and support organisations, which may be applied by them to increase business performance and sustainability. The study extends a helping hand to anyone who needs advisory services concerning the efficiency of operations, implementing good marketing strategies and going green as a business.

Environmentally, the research helps to appreciate the ecological value of grass-based handicrafts and their possible effect on stimulating sustainable production and consumer behaviour. With the growing levels of environmental concerns globally, there is an increasing need to explore alternatives to purely manufactured and synthetic

products. Assessing the environmental benefits of traditional handcrafted products can provide a significant pathway toward sustainable solutions.

The social relevance of the research study is in its review of the role of the sector in generating employment, empowering women, as well as in rural development. This industry provides a higher level of mental health for artisans than all other government programmes. The research examines the social effects of handicraft activities on local communities. It gives an insight into how the potential of traditional industries contributes to inclusive development and community growth.

1.9 Research Methodology

It describes the research design, population, sample, sampling methods, sample frame, sample unit, data sources, data collection tools and tools for analysis. The details of which are in the following paragraphs.

1.9.1 Research Design and Approach

The present study used a mixed-methods research design. It uses inductive and deductive research designs to study different aspects of the grass-based handicraft units in Kerala. The research was mostly based on the quantitative research framework that emphasises gathering and interpreting numerical data to determine patterns, test hypotheses and determine the relationship between variables. The research is descriptive and analytical in nature, which compiles both primary and secondary data. This type of research design made it possible to present and compile facts on the current state of grass-based handicraft units, their features and indicators of operations.

1.9.2 Population of the Study

The target population is the handicraft units registered in the District Industries Centres (DIC) as part of the Udyam Adhaar registration system in Kerala state. The population consist of a complete database of grass-based handicraft businesses formally documented within the regulatory framework of the state. This included units

engaged in manufacturing and marketing products made of bamboo, reed bamboo, cane, screw pine and kora grass. The population involved a total of 1,064 registered units as on March 31st 2024, and the details were collected from the official website of MSME

1.9.3 Sampling Method and Technique for the Study

The study resorted to a systematic random sampling technique to ensure the coverage of the targeted population in a representative manner. The process of systematic sampling entailed the computation of a sampling interval (k) from the formula $k=N/n$, to give $k=1,064/291=3.65$, which was rounded to 4. This method involved selecting every fourth unit from the registered database, ensuring systematic coverage of the entire population while minimising selection bias.

1.9.3.1 Sampling Frame

The sampling frame of the study is a registered list of grass-based artisans in Kerala, which ensured proper representation of the genuine business entities. It was based on the Udyam registration system introduced by the Ministry of Micro, Small and Medium Enterprises, Government of India. The names and addresses of artisans were collected from the official website of handicrafts.

1.9.3.2 Sampling Unit

The sample unit for the study is the individual grass-based handicraft units registered on the official website of MSME.

1.9.3.3 Sample Size Calculation

The detailed active registration status of grass-based handicraft associated with bamboo, reed bamboo, cane, screw pine and kora grass entailed 1,064 units mentioned on the Udyam registration site. A sample of 291 grass-based handicraft units was selected from a total of 1,064 registered units applying the formula of Yamane (1967). This formula was adopted as it helps prevent overestimation during data compilation.

The use of this formula is justified when the original sample size exceeds 5 per cent of the finite population. Taro Yamane's formula is specifically used to determine the adjusted sample size. The equation $n = N / (1 + Ne^2)$ was used, n of the desired sample size was 291, N of the population of 1,064 registered units and the margin of error e was 5 per cent (0.05). The formula used to calculate it was $n = 1064 / (1 + 1064 * 0.05^2) = 290.71$, then rounded to 291 participants. This method of determining sample size follows established statistical principles of finite population probability sampling. It ensures adequate representation while also considering the practical aspect of the data collection process.

1.9.4 Data Collection Tools

A structured questionnaire is the tool used for the collection of primary data. This method ensured uniformity in the data collection process while allowing flexibility in systematically eliciting responses on preset research themes. The three highly developed theoretical models were used to develop the questionnaire construction since they provided excellent sources and data collection concepts. The McKinsey 7-S model was the primary reference model, which is a rich approach towards organisational analysis. The organisational health index (OHI) model developed by McKinsey Company was also included to determine organisational effectiveness. The third theoretical framework was the Balanced Scorecard, which was developed by Kaplan and Norton in 1992. This framework provides a multi-faceted approach to measuring and managing organisational performance.

1.9.5 Secondary Data Collection

This study relies on secondary data collected from various reliable sources to complement the primary investigation. The secondary data includes published reports and statistical records relevant to the handicraft industry. Key sources involve the annual reports published on the official website of the Ministry of Industry, MSME, Export Promotion Council, Directorate of Handlooms and Textiles, Handicrafts, Kerala State Bamboo Mission and UNCTAD. In addition, well-documented

information from District Industries Centres and NGOs working with handicraft entrepreneurs. Scholarly articles, research papers accessed through Google Scholar and Shodhganga have been reviewed to give theoretical and empirical insights as they apply to the handicraft industry.

1.9.6 Pilot Data Analysis

A pilot study was done by administering a structured interview schedule with a sample of 53 participants to try out the reliability and validity of the research instrument before carrying out full-scale data collection. This was done to ascertain possible issues related to the clarity of questions, response categories, duration of interviews and data collection procedure. After the responses from the entrepreneurs, one question was deleted and five questions were restructured. Pilot data were statistically analysed with initial statistical methods to evaluate measurement scales' internal consistency and determine any faulty items in need of modification or exclusion. Cronbach's alpha coefficients were estimated for multi-item scales to guarantee acceptable levels of reliability. Content validity was established through expert evaluation and ensured that the instruments adequately covered all variables derived from the objectives.

1.9.7 Data Quality Analysis

The research employed rigorous data quality testing procedures, including reliability testing, normality checking and criterion validity testing to determine the psychometric characteristics of measurement tools and ensure data suitability for intended analytical processes (Pallant, 2020). Following Table 3.1. shows the data quality analysis output for the overall 291 responses used for this study and all the results were found satisfactory within the recommended values.

Table 1.1*Data Quality Analysis Results*

Sl. No	Variables	No. of Items	Reliability (Cronbach's alpha) α	Normality		Validity test (Pearson's Correlation Coefficient)
				Skewness	Kurtosis	
1	Environmental Sustainability	11	0.723	1.649	5.377	<0.001
2	Organizational Effectiveness	20	0.852	0.753	0.934	<0.001
3	Marketing Efficiency	11	0.869	0.100	-0.398	<0.001
4	Business Opportunities	7	0.755	0.556	0.084	<0.001
5	Business Challenges	7	0.703	-0.065	-0.709	<0.001
6	Govt & NGO's Support	10	0.791	0.836	0.6	<0.001

Source: Primary data

Reliability Analysis: Reliability was tested using Cronbach's alpha coefficient (Tavakol & Dennick, 2011). Test results were found to be satisfactory to exemplary in all constructed variables, with Cronbach's alphas ranging from 0.703 to 0.869, well above the traditional benchmark of 0.70 recommended for exploratory research purposes (Nunnally & Bernstein, 1994). Organisational effectiveness showed the strongest internal consistency ($\alpha = 0.852$), followed by marketing efficiency ($\alpha = 0.869$), suggesting good measurement reliability for these essential constructs.

Environmental sustainability posted positive, reliable ($\alpha = 0.723$), while Government & NGO support ($\alpha = 0.791$) and business opportunities ($\alpha = 0.755$) showed satisfactory levels. Business challenges had the lowest but still satisfactory reliability coefficient ($\alpha = 0.703$), indicating sufficient internal consistency for research (George & Mallery, 2019). These reliability coefficients gave assurance on the measurement instruments' capacity to yield consistent values in the target population of grass-based handicraft entrepreneurs.

Normality Assessment: Normality testing was conducted with the use of skewness and kurtosis statistics to assess the distributional nature of the main study variables, which is a necessary condition for establishing the appropriateness of parametric statistical analysis (Field, 2018). Testing showed differences in levels of distributional nature across the six main variables under investigation in the study. The data are almost in line with the normal curve and numerically strongly distributed within the recommended ranges.

Environmental sustainability showed positive skewness (1.649) and extreme positive kurtosis (5.377), reflecting a right-skewed distribution with extreme peakedness beyond normal distribution expectations (Tabachnick & Fidell, 2019). This departure from normality implied the existence of outliers or extreme values that needed special attention in subsequent analyses. Organisational effectiveness showed moderate positive skewness (0.753) and kurtosis (0.934), reflecting moderate deviation from normality but within acceptable parameters for most analytical processes.

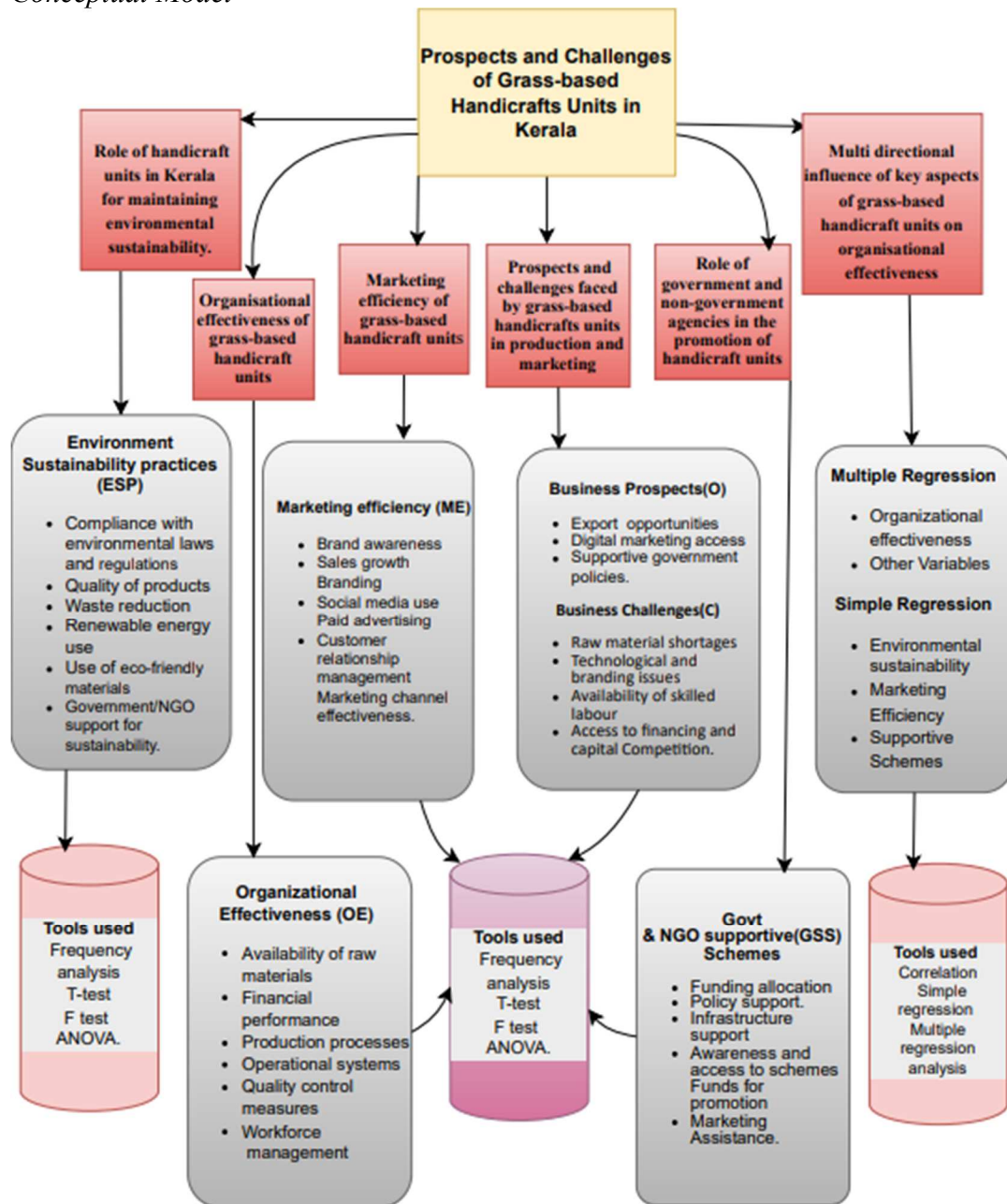
Marketing efficiency had negligible skewness (0.100) and negligible negative kurtosis (-0.398), conveying normal distribution properties closer to actuality compared to other variables. Business opportunities had moderate positive skewness (0.556) with negligible kurtosis (0.084) and business challenges had slight negative skewness (-0.065) and negative kurtosis (-0.709), conveying a relatively flat distribution. Government & NGO Support had moderate positive skewness (0.836) and moderate positive kurtosis (0.6), indicating a fair amount of deviation from normality but within parameters amenable to statistical analysis.

Content Validity Analysis: Content validity testing was performed with Pearson's correlation coefficient to analyse the correspondence among measurement items and their respective constructs and ensure that instruments effectively represented the intended theoretical domains (Polit & Beck, 2017). All variables showed statistically significant relationships ($p < 0.001$), with strong evidence of content validity for all measurement scales. The uniform strength of correlation coefficients (<0.001) for all six variables confirmed strong relationships between each item and its associated constructs, validating the theoretical integrity of the measurement model. Normality

curves provide visual evidence of the distributional characteristics observed through skewness and kurtosis testing of the key study variables.

1.9.8 Variables and Tools Used (Conceptual Design) for the Study

The study employs various important variables to address the objectives of the study. Demographic variables, such as age, gender, educational qualifications, monthly income, location and years of business experience, are used to analyse the socio-economic profile of the respondents. Number of employees working, major products produced, nature of business activity, availability of storage facility, mode of acquisition of raw materials, method of acquisition of raw materials, training received, reason for doing handicraft business unit and type of raw material used are the variables used to analyse operational characteristics of units in Kerala. The key variables, such as environmental sustainability practices, organisational effectiveness, marketing efficiency, supportive schemes, business opportunity and challenges, are employed to address the objectives of the study. The analysis of primary data was carried out with the use of various analytical tools and statistical packages. Microsoft Excel and IBM SPSS (Statistical Package for the Social Sciences) are the software packages used for analysis. The analytical strategy was based on descriptive and inferential statistics. Descriptive statistics include measures of central tendency, frequency analysis, variability and characteristics of distributions of all the significant variables. Analytical tools such as ANOVA and independent *t*-tests were applied to determine the significant difference among the groups. Post-hoc tests and mean comparison were used to identify particular differences between groups and guarantee a credible results interpretation. Chi-square tests of independence are used to measure the relations between categorical variables of the study. Correlation analysis was used to measure the relationship between the variables of the study. The simple and multiple regression analyses served as the tool for testing multidirectional relationships of the variables. Figure 1.1 shows the conceptual design for presenting the relationship of variables and tools used to attain the study objectives.

Figure 1.1*Conceptual Model*

Source: Primary Data

1.10 Limitations of the Study

- **Geographical Limitations:** The study is limited to Kerala state, which may affect the generalisation of the findings in other states or regions. Differences in geography, culture and the areas of policy could lead to variation in outcomes.

Furthermore, district-level variations within Kerala were not extensively explored, potentially overlooking region-specific challenges and opportunities.

- **Sampling Limitations:** Unorganised and unregistered handicraft units are excluded, which can form a large share of the sector. These limitations have an impact on generalising the results to the whole ecosystem of grass-based handicrafts.
- **Methodological Limitations:** Cross-sectional research design limits the capacity to develop cause-and-effect relationships and changes in the time development of business performance and the market dynamics. The study lacked extensive objective measures such as actual financial performance data, quantitative environmental impact assessments, or verified market share information. Instead, it relied primarily on perceptual data provided by respondents.
- **Data Collection Limitations:** Seasonal bias in data collection timing could have been introduced since handicraft production tends to vary with time.
- **Material Limitations:** Forest-based grass material such as bamboo, reed bamboo, screw pine and kora grass used in this study. These materials are available in non-forest areas. Non-forest-based grass, such as banana fibre and other minor agro-based materials like paddy straw, is not included in this analysis. The focus on grass-based handicrafts exclusively excludes other handicraft sectors like textile, metal, or wood crafts, potentially missing cross-sectoral insights.
- **Temporal Limitations:** The study gives an overview of the industry at a particular time of the year and it does not give the chance to capture the seasonal changes, as well as the changes in the business performance over time.

Nevertheless, an earnest attempt has been made to overcome these limitations and strengthen the reliability and applicability of the findings.

1.11 Structure of the Thesis

The thesis is organised into six chapters, each contributing to the comprehensive analysis of the grass-based handicraft industry in Kerala:

Chapter 1: Introduction to the Study: Establishes the research context, problem statement, objectives, scope, significance, methodology framework and limitations for the study.

Chapter 2: Review of Literature: Provides a comprehensive review of existing literature on the role of handicraft industries, environmental sustainability practices, marketing strategies, supportive schemes and organisational effectiveness.

Chapter 3: Theoretical Framework of Grass-Based Handicrafts Units in Kerala: Presents a detailed global, Indian and Kerala outlook of the handicraft industry, administrative framework and supportive schemes. This chapter also develops a historical conceptual, theoretical, technical and socio-economic understanding of grass-based handicrafts in Kerala.

Chapter 4: Results, Interpretations and Discussions: Discuss the findings of data analysis, including descriptive statistics, multiple regression analysis and hypothesis testing.

Chapter 5: Findings of the Study: Synthesises the research findings of the study.

Chapter 6: Recommendations: Suggests the strategic recommendations based on research findings, discusses their implications and suggests areas for future research.

Citation and Referencing Style: The thesis follows the APA style of referencing for citing sources and preparing the reference list.

1.12 Conclusion

In summary, this chapter has described the wider framework of the handicraft industry by mapping its theoretical and historical foundations and assessing its significance in both global and Indian outlooks. It has focused on the industry's growth-oriented role, its impact on environmental sustainability and the specific possibilities for creating rural employment. Whereas the industry provides vast prospects, it also undergoes important challenges that require strategic measures and supportive schemes. The described methodology guarantees a strict procedure of data collection and data analysis, which results in reliable findings. By showing the research problem, objectives, scope, significance and methodology, this chapter has established the base for the next chapters, which will deliver an extensive review of related literature, analysis, findings and recommendations. The identified limitations guarantee transparent information on the scope of the study and its boundaries.

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Chapter 2

REVIEW OF LITERATURE

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2.1 Introduction

Research literature interprets the handicraft sector as a vital employment source and income generator which maintains global and regional importance, mostly in developing economies and preserves cultural heritage. Surpassing traditional employment generation, the handicraft industry actively reduces poverty and empowers women as entrepreneurs while creating job opportunities for young people. Handicrafts substantially sustain rural areas by strengthening rural economies and creating new economic potentials in urban areas through cultural cluster initiatives. The handicraft industry in India stands as a noteworthy employment creator that boosts the national GDP while being vital for advancing economic development. The Indian state of Kerala is an ideal region to analyse the handicraft sector because it maintains robust traditional business operations and operates micro-industries including handloom production, coir processing and environmentally friendly souvenir production sectors that connect to tourism activities. The review presents consolidated information from multiple studies about the development role of the handicraft sector, environmental sustainability practices, organisational effectiveness, marketing efficiency, supportive schemes and major handicraft sector opportunities, together with widespread difficulties of handicraft industries. By examining these studies, this chapter reveals major trends, explores present gaps and demonstrates a theoretical base for the present study.

2.2 Review Across Various Dimensions

The following section provides an overview of existing literature that explores the diverse dimensions of the handicraft industry.

2.2.1 The Multifaceted Role of the Handicraft Sector

The handicraft sector has long been acknowledged for its role in areas of importance beyond economic activities, as it embodies an important social and cultural dimension. The first set of papers reviewed in this chapter outlined the different features of these industries with particular emphasis on handicraft industries in developing countries. In a collective sense, these papers identified the handicraft industry as a significant source of income and employment generation, as well as an important sector for socio-economic development, which includes poverty alleviation as well as women's economic empowerment. Several papers clearly outlined the significance of handicrafts in terms of maintaining the cultural heritage of communities in ways that transmit those skills to future generations. Several studies describing specific lands or regions in India, such as Jammu and Kashmir, rural regions, or specific countries like Iran, Indonesia and South Africa, indicated how handicrafts maintain and create sustainable development of local and rural economies through job creation and legitimising local power, influence and economic strength and autonomy at the village level. The papers also indicate that handicrafts have the potential to assist other sectors, such as tourism. This review draws from the selected papers to discuss how handicraft industries perform and deliver on these important economic, social and cultural functions.

The handicraft micro-enterprises played an important role in youth employment in South Africa, which is critical to empower young people with entrepreneurial abilities (Abisuga Oyekunle, 2017). The primary goals of this study were to determine firstly, how to develop the micro-enterprise handicraft link for job demand, income and poverty alleviation and secondly, to aid vulnerable youth. The main themes discussed were the handicraft sector's ability to provide income and employment opportunities for the deprived or disadvantaged and the fact that skills can be easily transferred across generations and the importance of the tourism sector as a demand driver.

Though there are various government, non-governmental activities and private sector initiatives to alleviate unemployment, including youth unemployment. They all require urgent reassessment with more effective, sustainable and youth-focused actions. The study was conceptualised with an exploratory approach and utilised qualitative data collection through semi-structured face-to-face interviews with local creators and buyers located throughout the Western Cape Province. The data analysis adopted an eight-step qualitative process and descriptive statistics. The findings indicated that handicraft micro-enterprises in the Western Cape, which are predominantly female-centred, boast a healthy percentage of youth involvement.

The protective role of handicrafts is highlighted through IWABRI (Ikatan Wanita Bank Rakyat Indonesia) initiatives in Blora, which support women's empowerment and revitalise traditional craftsmanship to sustain cultural traditions (Hidayah, 2024). The investigation implements a case study method to analyse how IWABRI validates the essential function of handicraft units to protect cultural heritage among communities, along with advancing their social development. The research establishes that handicrafts have multifaceted contributions that go beyond their functions as economic activities. This research enhances the comprehension of cultural preservation strategies that use economic development as a grassroots approach.

The relationship between village independence, handicraft production and its impact on rural employment in the context of sustainable rural development in Iran has been examined (Divandari et al., 2017). The research uses a case study approach to study how handicraft production affects the local socio-economic system of Sar Aqa Seyyed, a particular rural territory. Handicrafts play a crucial role in rural sustainable development because they create sustainable livelihoods. The main discovery establishes that throughout rural areas, including Sar Aqa Seyyed, handicraft production serves as a vital element for sustainable development because it creates jobs and enables villages to operate independently. Handicrafts display the capability to increase rural economic strength and rural autonomy. The research demonstrates how traditional art skills contribute to sustainable rural development programs at a broader level.

The contribution of handicrafts to the Indian economy has been analysed using secondary data on economic statistics and sectoral reports (Ahmad & Yadav, 2016). Experts have conducted an economic evaluation of handicrafts' impact on India's national economy. The primary discovery shows that the Indian economy heavily relies on handicrafts because they provide considerable employment opportunities. Handicrafts are essential for the economy as they provide substantial job opportunities, thus supporting the national economic profile. Literature shows that handicrafts serve as a fundamental economic employment source as they contribute to the national GDP. The research demonstrates how crucial the Indian handicraft industry is to the national economy.

Through a specific case study (Bano, 2016) on the economic development role of the handicraft carpet industry in India, the research evaluates the economic development support that the carpet handicraft industry provides to India. The research project selects the carpet industry for investigation while evaluating production quantities, together with export statistics and livelihood generation effects. The carpet industry of India exists primarily as an export sector that brings substantial economic value to the country while sustaining millions of artisan jobs. Research through the literature of these documents on the specific handicraft sectors, particularly carpets, demonstrates substantial export worth and job creation abilities. This particular handicraft sector in India has shown significant economic influence on the national economy. The research project delivers a comprehensive assessment of how the carpet handicraft industry impacts the economy.

The Indian handicraft sector promotes rural economic development while empowering women (Singh & Singh, 2023). The research investigates how the handicraft sector empowers women in India while supporting rural economic development. The research also demonstrates how women, along with rural populations, play a substantial role in handicraft operations while channelising their capacity to better themselves through this industry. Statistical data and established studies serve as evidence to show how the handicraft industry functions mainly in rural areas where women lead it to fuel the economic development of rural regions

and create opportunities for women's empowerment. The sector maintains social and economic importance across the Indian domain. This research outlines the complementary features that handicraft activities deliver toward enhancing rural growth alongside strengthening gender equality.

The economic value and social equality effects of handicraft enterprise activities are vital in rural Kashmir, India (Islam et al., 2020). The research evaluates the relationship between wicker handicraft production and regional household income levels and inequality measurement. The research method includes conducting socio-economic interviews about wicker handicraft production with inhabitants in rural Kashmir. The wicker handicraft businesses operating in Kashmir provide substantial household income that reduces domestic income inequalities across the region. Handicrafts provide regions with an opportunity to develop local economic success and distribute wealth more equally among their residents. This investigation reveals the positive social and economic effects that the wicker handicraft business creates for rural Kashmir society. Handicraft entrepreneurship in Kashmir has received attention in this scholarly literature regarding its economic value for the regional economy.

The coir industry in Kerala functions as an example of rural non-farm sectors in flexible capitalist systems (Bordoloi, 2017). The research analyses a major Kerala rural industry to demonstrate non-agricultural employment patterns in rural areas. Research studies about non-farm rural employment and economic growth serve as background knowledge in Indian settings. The research evaluates the coir industry through the lens of flexible capitalism to understand its impact on the rural economy. The report contains evaluations regarding the organisational framework and operational patterns of the coir industry within Kerala. Research indicates that the operation of the coir industry serves as an essential example of rural non-farm activities, enabling additional job creation within Kerala. Supportive policies need to be implemented because they will enhance the contribution that these sectors make to the rural economic realm.

Kudumbashree system has been identified as an agent for sustainable empowerment of women in Kerala state (Pandala et al., 2023). The research evaluates the role that these units play in sustaining women's empowerment across a long-term horizon within the state. Studies of Kudumbashree demonstrate how the organisation successfully helps women set up micro-enterprises, enhancing their social and economic status. The current research expands upon prior Kudumbashree examinations by concentrating on the long-term empowerment effects these units provide to women. Analysis gives priority to the lasting, sustainable effects of the Kudumbashree model. Research has uncovered that Kudumbashree serves as a vital project for sustaining the empowerment of women across Kerala. Programs such as Kudumbashree demonstrate the necessity of creating micro-enterprises for handicrafts in building sustainable improvements in women's lives and livelihoods.

Research in Kudumbashree units of Ernakulam district of Kerala has been conducted to analyse the contribution of micro-enterprises towards the empowerment of women (Shihabudheen, 2012). The research aims to evaluate the women's empowerment from micro-enterprise production that encompasses handicrafts at this particular location. The field study presented in this work investigates the direct effects of Kudumbashree units on women who reside in Ernakulam district. Women gain empowerment through the Kudumbashree project since it enables them to establish micro-businesses, which fight poverty while fostering socio-economic growth. The results demonstrate how micro-enterprises, specifically handicrafts, prove successful in empowering women as tools of community-led development and demonstrate the beneficial consequences these programs generate for women. The empowerment literature explains how economic activities support women to improve their economic and social standings.

The marketing strategies of Kudumbashree micro-enterprises are found innovative in the Malappuram district of Kerala (Irshad & Juman, 2015). The research investigates both handicrafts and other micro-enterprises launched by Kudumbashree and the marketing methods used in the Malappuram District of Kerala. Literature about microfinance operations and women-led self-help groups serves as background information. The study probably surveys Malappuram District units managed by

Kudumbashree. According to research findings, Kudumbashree has promoted micro-enterprise development while observing diverse marketing approaches adopted by its units. This research examines the Kudumbashree initiative from the local perspective at a specific regional level.

The progression of socio-economic conditions among members involved in handicraft-based self-help group micro-enterprises is vital for the development of Kerala (Kumar, 2011). Studies and data about SHG-linked micro-enterprises in Kerala constitute the probable research methodology. This paper reviews microfinance literature and self-help group research in India with specific reference to the Kerala region. The main topics of this study will focus on poverty reduction alongside women gaining power in society and sustaining economic operations. The study presents both advantages and obstacles of implementing micro-enterprise development through this model.

The economic and social impact of micro-entrepreneurship of women involved in Kudumbashree-supported handicraft businesses and other female participants in Kerala is inevitable for policy making (Edathil, 2024). Research into Indian women entrepreneurs specialising in Kerala themes forms the background foundation for this study. This research focuses on women micro-entrepreneurs in Kerala who go through assessments of economic progress, as well as social position and empowerment effects. Research results would most likely demonstrate positive socio-economic transformations among women participants in micro-enterprise activities and also demonstrate that entrepreneurship can bring empowerment to women situated in Kerala.

The production-based informal aspects of globalisation have been evaluated through the study of home-based cashew workers in Kerala (Kuzhiparambil, 2016). This investigation provides data about informal labour relations with global markets in Kerala and it adds contextual understanding to the handicrafts' economic environment. The research relies on literature about informal economies in conjunction with globalisation as its analytical framework. Qualitative research methods appear to be used as part of the research that investigates cashew processing

home-based workers within this industry. This research study investigates how home-based cashew processing functions in worldwide manufacturing networks. The informal sectors in Kerala's local market combine with worldwide markets to offer both international market access and local home-based work opportunities. The research displays how local production networks maintain connections with worldwide economic operations.

Based on these initial analyses of the studies provided, particularly in developing countries such as India, Iran, Indonesia and South Africa. One significant role identified by handicraft industries is their contribution to being an important employer, often providing a source of income to impoverished or underprivileged groups, youth and women. In addition to hiring, handicrafts help create income and can be seen as a way to alleviate poverty. Furthermore, handicrafts are important for rural sustainable development as they create jobs in the context of handicrafts and contribute to the national economy by creating jobs and value. Socially, handicrafts are important for the empowerment of women, gender equality, cultural preservation and the competencies of traditional craft skills. In conclusion, all of the studies demonstrate the handicraft sector's importance not only as an economic contributor but also as an enabler of social development, cultural preservation and sustainable livelihoods across numerous geographic contexts.

2.2.2 Environmental Dimensions and Sustainability in the Handicraft Sector

The link between the handicraft community and the environment is a vital research area that looks at how traditional practices work with or against natural resources regarding balance within the ecosystem. The studies explored in this section put together different elements of environmental sustainability practices in the handicraft industry. Several studies argue that handicrafts can help support conservation through the sustainable use of natural resources. Instances like controlled harvesting of non-timber forest products such as pine needles or palm fibres as well as sustainable use of bamboo or sourcing dyestuffs from native plant species; a ways of protecting local biomes. Some studies particularly explored the application of circular economy principles, for example, in using waste material (such as shell waste) in crafts that

could have less environmental impact as opposed to discarding waste before it reaches the manufacturer. Additionally, traditional production practices are argued to be eco-friendly, especially traditional textiles like handloom have been claimed to consume less water and energy and also use more natural dyestuffs compared to their industrial counterparts. Some communities have tried promoting organic farming and waste management programs that significantly support traditional crafts by preserving natural resources. The literature also describes major barriers; the natural resources harvested to produce crafts can result in biodiversity loss if not appropriately managed. Uncontrolled harvesting of resources contains the potential to over-exploit nature and hurt populations. The possibilities for sound natural resources management institutions and frameworks have to be in place. Economic incentives can engage the right resources for sustainability, but resource management responsible for the ecology does not guarantee better management and managing resource practices is trickier than managing resources when it comes to traditional versus technocratic processes that render resource decay. Additionally, it has been suggested that design for sustainability has the potential to play an important role in sustainable handicraft production and engagement in marketing. This review used these sources to assess the relationships among handicraft production and environmental sustainability for opportunities related to resource conservation (social and environmental) and the relative contexts of resource management and impact.

Compatibility of forest use of non-timber resources with conservation has been explored by examining handicraft production involving *Pinus montezumae* needles in Cofre de Perote National Park, Mexico (Lopez-Serrano et al., 2018). This research is illustrated through a case study analysis of handicrafts from *Pinus Montezumae* in Cofre de Perote National Park and applies the ecological and economic costs and benefits of this production. The rationale for the study is to explore whether handicraft production would provide economic returns to the community while contributing to conserving the forest. Literature describing non-timber forest products and their interlinkage with conservation identifies a potential for sustainable resource use. The authors found a positive link between collecting pine needles for handicraft production and the environmental benefits of that production,

but only under certain conditions. The authors conclude that the collection of pine needles for handicraft production is a sustainable way for local communities to earn income and a way to conserve the forest by helping mitigate fire risk and secure carbon in trees. The study serves as an example of conservation-through-use.

Rainforest 'conservation-through-use' has been examined through the harvest of chambira palm fibre and handicraft production within a land-scarce community of the Peruvian Amazon (Coomes, 2004). This research aims to examine the potential of handicraft production derived from this resource as a workable conservation method. This study is primarily a case study at the community level, considering a particular community as well as how its members utilise the ecology and natural resources available to them, the chambira palm fibre for handicrafts production. The author recognises that although the handicraft production from the extraction makes the sustainable use of the natural resource, the livelihoods from the extraction may conflict with preserving the species if it depends on market demand. These observations show the complexity of the concept of 'conservation-through-use' and the trade-offs that are involved in conservation practices. The author emphasises the necessity for systematic management of economic aspects of the resource and the consideration of species conservation.

Environmental innovation and sustainability of small Mexican handicraft firms have been examined to determine drivers and effects of adopting green practices (Sanchez Medina et al., 2011). The theoretical framework of the study by the authors is based on environmental innovation and sustainability in small enterprises. This study probably entails a survey and case studies examining small Mexican handicraft firms that have adopted environmental innovations. One of the key findings is the positive correlation that exists between sustainable practices and the economic performance of these companies. In particular, the research observes that it is a drive for profit and not just an environmentally driven impulse to conserve the environment. This implies that economic rewards may result in sustainable practices in handicraft enterprises and also provides some information on the motivations as an advantage for environmental innovation.

The contribution of sustainable design to furthering the sustainability of handicraft production and market promotion in Northern Thailand has been explored (Chudasri, 2015). The context for this study is provided by the design for sustainability and handicraft development literature. The nature of research indicates that there will be some examination of handicraft production and marketing practices in Northern Thailand, and then some design-led interventions to determine improved ways of doing. One key finding indicates that design for sustainability can help in handicrafts product development, marketing and knowledge transfer to make these companies sustainable. The implication is that design thinking with sustainability inclusion can be beneficial to handicrafts. The research indicates how design is crucial to the agenda of sustainability.

Sustainability of bamboo handicrafts production in economic, social and environmental contexts has been analysed against welfare and its related variables in Indonesia (Irwansyah et al., 2023). The study emphasised the conservation nature of bamboo handicrafts production. Literature on sustainable handicrafts and bamboo as a resource formed the context for the study. This study probably involves a multi-dimensional analysis of bamboo handicraft production in Indonesia, with the investigation of several dimensions of sustainability indicators. The authors learned that bamboo handicrafts can achieve some level of economic, social and environmental sustainability, and nature conservation and protection were also crucial. This means that bamboo handicrafts can be a sustainable business if handled well.

An environmental implication in the semi-arid regions of Manicaland, Zimbabwe, has been examined regarding rural livelihoods and biodiversity (Chibisa & Rwizi, 2009). Apart from the study, the setting includes some literature on traditional crafts and environmental management in a developing world context. The research is a field study in Manicaland that mentions the utilisation of resources and the resultant biodiversity implications of the production of traditional crafts. One of the findings documented in the review is that harvesting of some tree species for traditional craft production entailed biodiversity loss, implying the necessity of effective natural

resources management institutions. This discovery emphasises the adverse environmental consequences that might be incurred in making traditional crafts an unsustainable activity. The research also reveals, nonetheless, that there are already management and regulatory regimes that can be appropriated to mitigate the adverse environmental effects of traditional crafts.

The application of plant species to handicrafts has been evaluated as a means to encourage conservation of the Atlantic Forest and Cerrado biomes in Minas Gerais, Brazil, through sustainable native plant extraction (Mourao & Melo, 2023). Its study relies on biodiversity conservation and sustainable product development. Case studies of plant species used in handicrafts, assessing their conservation status and potential for sustainable harvesting. One of the key findings is that indigenous plant species utilised in handicrafts can safeguard regional biomes while encouraging the sustainable development of handicrafts. This conclusion agrees with findings of employing the economy and structured economic activity as a stimulus for conservation. The study finds a correlation between handicraft production and conservation.

Butterfly and moth handicrafts from the Bantimurung Nature Recreation Park in Indonesia have been researched for their conservation implications (Putri, 2016). The research seeks to establish the impact that butterfly and moth handicrafts have on the butterfly and moth population in a protected environment. Literature on wildlife trade and conservation offers a background to the research. One of the findings is on the regulation of harvesting activities for butterfly populations and even the threat of over-exploitation, demonstrating the necessity for management and monitoring for wildlife-based handicrafts. The illustration offers an instance whereby economic utilisation has the potential to hurt biodiversity and is cause for alarm, whether legal or illegal market activity is involved, based on the management of wildlife.

A lifecycle study of bamboo and aluminium lamps was done to compare their environmental effects, with an emphasis on resource consumption and waste generation (Bordoloi & Boruah, 2022). The main aim is to measure the environmental impact of such handicraft products. The methodology was based on lifecycle

assessment and existing sustainable product design. For the overall purpose, there would be an examination of the particular phases in the lifecycle of the lamp, from the raw material extraction to lamp disposal. One of the findings is that handicraft products that utilise materials like bamboo can have the lowest environmental footprints, thus supporting principles of sustainable resource utilisation and empirical evidence on the environmental performance of certain handicraft items.

Utilisation of shell waste as raw material for decorative handicrafts has been examined to determine its contribution towards recycling and enabling the circular economy (Koyyimah & Fahrurrozi, 2024). Circular economy and waste management literature present background and show secondary emphasis. This study is concerned with examining the process of utilising shell waste in handicraft production, as well as the environmental benefits of waste utilisation. Among the principal findings is that shell waste in handicrafts leaves a lesser impact on the environment compared to other ways of disposing of waste, has a recycling approach and supports the idea of the circular economy. It shows how the waste can be utilised in product usage that can further establish some value while mitigating some of the environmental expense of utilising such waste. The study gives a clear example of implementing a circular economy in the handicraft scenario.

Environmental sustainability of the handloom industry has been spoken about, with handloom manufacture identified as an environmentally friendly process (Annaldewar et al., 2021). Literature on textile production and environmental degradation gives the background. The focus of the work is on naturalist sustainability elements. This study is most likely to explore the environmental consequences of the handloom industry in relation to the environmental viability of the industry. The findings indicate that the handloom industry attains environmental sustainability by promoting ecological activities, including the utilisation of natural dyestuffs, a lower water footprint and an equally lower energy footprint. This is especially critical when the inferences take into account that natural production methods are usually less damaging to the environment compared to industrial methods. The focus of the work is on naturalist sustainability elements.

The sustainability of handicrafts has been examined about good governance, linking sustainable practices in the handicraft industry to governance principles (Kashyap & Dua, 2025). The paper looks at how transparency, accountability and stakeholder participation can encourage sustainable practices in the handicraft industry. It is a key argument related to the contributions of handicraft units to environmental sustainability through the efficiency of resources concerning production and socio-economic development (as its prevalence supports cultural heritage and generates jobs) as a part of good governance principles. The paper focuses on the wider social benefits of a sustainable handicraft sector.

Textile handicraft has been presented as a lesson in sustainability, with an emphasis on its sustainable aspects and its role in addressing environmental impacts through textile production (Ferreira et al., 2012). The approach involves examining traditional production methods and materials, their environmental impact, and comparing them to industrial textile production. A likely theme will be traditional textile handicraft using resources more efficiently and having less environmental impact than industrial textile production. The main point the article likely conveys is that traditional textile handicrafts can help us understand and create sustainable art and potentially sustainable production.

Sustainability in the handloom sector has been described as the 'Midas touch of sustainability' and portrayed as a 'tale of sustainability' crafted through traditional practices (Memon et al., 2022). This work might emphasise the innate sustainable characteristics in the handloom and handicraft sectors, with the literature describing and emphasising the eco-friendliness of crafts in that context. Authors likely employ qualitative content analysis, drawing on existing understanding and examples to illustrate the sustainable issue. A key argument is that the handloom and handicraft sectors are considered sustainable due to their use of natural materials and traditional methods, highlighting the sustainable heritage of crafts.

Sustainable approaches to rejuvenating the handloom and handicraft sector in India have been examined, with a focus on making these industries environmentally sustainable (Shrivastava, 2020). The literature on sustainable textiles and handicraft

production in India provides additional context (examination of current practices and suggestions for sustainable alternatives). One key finding indicates that these sectors are using natural and biodegradable materials and eco-friendly technologies, improving their sustainability. The authors suggest that Indian handloom and handicrafts have the potential for sustainability and provide suggestions to improve upon this potential.

Sustainability in traditional handlooms has been described with an emphasis on the eco-friendly aspects of traditional handloom production (Balaji & Mani, 2014). Literature comparing traditional and industrial textiles and production provides background information. They likely used content analysis on resources and processes to investigate traditional handloom weaving. A primary theme would be a lower environmental footprint due to basic natural materials used and energy efficiencies. Their work would promote the importance of maintaining and promoting traditional handloom practices for their sustainability and social justice features.

Empowerment of women through sustainable handicrafts has been explored, focusing on the intersection of environmental sustainability, handicrafts and women's economic and social empowerment (Surti et al., 2024). The literature related to gender and sustainability and women in craft forms the basis of the study. The research likely takes a case study or analysis of initiatives related to practices for women in sustainable handicrafts. One of the findings is that the industry empowers women through engagement in sustainable practice, in addition to the achievement of gender equality and social inclusion. In this respect, the study was understood to be about sustainable handicrafts contributing towards a sustainable environment and the empowerment of women.

The relearning of a handloom cluster has been examined with respect to both sustainability and empowerment (Beddig, 2008). The thesis probably discusses how to revive handloom clusters with sustainability and artisan empowerment at the forefront of the development vehicle. The literature on clusters, sustainability and artisan empowerment is a strong theoretical backdrop for the study. The study likely uses a case of an identified handloom cluster with sustainability and empowerment

initiatives that may be educational. One of the key points in the study is that the use of natural dyes, such as those sourced from the jack tree, adds sustainability and international market opportunities, which could enhance economic sustainability, defined as the viability of the enterprise to earn a livelihood for artisans. The implications of learning sustainability and empowerment from this study show interplay for clusters by way of revitalisation initiatives.

Sustainable practices in Kerala's traditional occupations, such as handicrafts, have been examined through a contextual analysis of literature, with a focus on the role of technology and technological advancement (Unnikrishnan, 2024). The literature surrounding sustainability in handicrafts suggests a proclivity for eco-friendly practices, but also acknowledges the difficulties posed by modernity in crafting. Most of the work in this area contains a qualitative analysis of Kerala's traditional jobs and handicrafts context that considers the environmental impact of traditional jobs and the fired work, for correction and improvement. While this may not seem like a pressing need, this research contains a significant finding regarding the handicraft industry in Kerala, contending with resource deterioration and a call for the technological installation to combine its resources for both sustainable viability and future competitiveness. In conclusion, the evidence supports the need for balance between entrenched traditions and prescribed modernity for ecological sustainability and economic and tourism ramifications of future, value-added and organic products. While researchers illustrate the sustainability challenges in Kerala, the works suggest the use of modern technology may be viable, directed toward modern labour standards for a contextually integrated workforce.

The published studies review multiple obstacles during this research. The risk of centres that collect resources to produce handicrafts causing biodiversity decline when management is inadequate, while unregulated collection of butterflies and moths threatens their population survival rates. Well-founded natural resource management institutions, together with regulatory frameworks, need to be established immediately. To ensure ecological sustainability, proper resource management, together with the alignment between traditional techniques and technological progress to prevent

resource deterioration, is necessary. The promotion of sustainable handicraft goods and their markets will be improved through the application of design for sustainability methods. The review draws from existing sources, explains how handicraft production interacts with environmental sustainability through resource-saving potentials, on the other hand presents obstacles for resource administration and environmental effects.

2.2.3 Managing for Effectiveness and Performance in Handicraft Enterprises

Success, as well as sustainability, hinges on organisational performance in all industrial sectors, including the handicraft sector. The research included here focuses on the management of handicraft businesses to enhance organisational performance to achieve their strategic goals. Specialists highlight that operational effectiveness and process improvement strategies require harmonisation with Lean manufacturing strategies and Lean Six-Sigma methods for handicraft production to attain greater production and market dominance, as well as waste reduction. The study illustrates how organisational and human factors together are significant since innovative work behaviour is important at both individual employee and organisational levels for improving performance. Co-operation, security and the work environment influence Craft workers' well-being and improved effectiveness. The research supports the fact that organisational design, in conjunction with communication styles, impacts measuring effectiveness, particularly in growing or formalising businesses. Handicraft companies require proper management standards with effective corporate governance to ensure successful implementation and longevity. The growth of handicraft SMEs relies on innovation, with product innovation being a top priority, along with their capacity to adjust to socio-cultural and economic changes. To be successful with outside aspects, such as e-commerce adoption, companies need to examine three aspects, namely, awareness, together with human resource capability and market force strength, for success in the digital environment. Several studies within this area go into detail about how we should conceptualise and measure this industry in light of global definition challenges and establish appropriate operational measures. The structured spatial patterns referred to as creative cultural clusters illustrate the overall social, cultural and economic impacts arising from effective

management frameworks. Various studies indicate that effective management and organisation involve various strategies for unleashing handicraft business potential and improving performance for long-term economic value creation in society.

The development of a manufacturing firm has been analysed with the application of Lean Six-Sigma tools with the help of a brief case study (Tran et al., 2020). Although Tran et al.'s research was conducted on a typical manufacturing firm, the Lean Six-Sigma methods outlined in their research might prove useful for enhancing handicraft production efficiencies. The objective of the research was to showcase the application of Lean Six-Sigma methods and their advantages to manufacturing. There is ample literature on operations management and process improvement to guide the case study approach. Through the case study, the authors established that the implementation of Lean Six-Sigma methodologies can rectify operational inefficiencies through process enhancement, hence enhancing productivity. This means that an equivalent method would enhance the productivity of handicraft production.

Lean manufacturing of handicraft production has been emphasised, with a suggested system of production to facilitate productivity and competitiveness of craft industries, especially in Morocco (Chouiraf & Chafi, 2018). This research takes into account what can be done by integrating Lean manufacturing concepts into the handicraft industry. Literature on Lean manufacturing and its application to small and medium businesses has guided this work. This piece of writing is likely not a reporting of conceptual studies, yet perhaps a case study of a craft business based in Morocco. The strongest finding was that Lean manufacturing concepts can enhance productivity and competitiveness through waste reduction and optimisation in the production management of craft businesses. In addition, this research supports the notion that contemporary manufacturing methods can be transferred from manufacturing and applied in the craft industry.

The relationship between job training, self-efficacy, innovative work behaviour and employee performance in Balai Besar Handicraft and Batik Yogyakarta has been analysed (Hastiti et al., 2023). The research aims to identify what affects employee performance in a handicraft and Batik centre. They draw on human resource

management and organisational behaviour literature for theorising. This study is probably an employee survey at Balai Besar Handicraft and Batik. They find that innovative work behaviour has a positive impact on employee performance in handicraft units. That indicates that the existence of innovative behaviour is important for employee performance regarding organisational performance in the handicraft sector.

A challenge for the handicrafts industry in creating a global definitional concept from an economic viewpoint, as opposed to simply defining handicrafts, has been outlined (Benlamoudi et al., 2024). This study will consolidate and highlight the requirement for an open and transparent definition of handicrafts at the international level to provide supportive policy and assistance. As far as the literature on definitional economic classifications, classifications of industry and the definitional and ascription of the handicraft sector is concerned, this book is probably a conceptual treatise on the different definitions of handicraft and the imperative for international understanding that can facilitate the sector. The authors present an argument that the definition and concept of the handicrafts industry is needed to create cheap and efficient support programs, and formulate models that determine ascribed economic development.

The research posits that a definition of crafts is imperative towards taking the industry forward. Organisational effectiveness has been debated, encompassing its conceptualisation, criteria and models (Manfredi et al., 2024). Though not exclusively focused on handicrafts, this paper is a theoretical starting point for comprehension or assessment of organisational effectiveness that may also have the potential to be applied to handicraft units. The research aims to give an introduction to the theory of organisational effectiveness. The literature presented in the contextual setup and the context of organisational theory and administration is utilised as an anchorage for the discussion. There is a variety in views regarding organisational effectiveness and a variety in criteria and models that have been tested. This paper will not be prescriptive but will offer a synthesis to best apply a framework that might tackle the performance of various kinds of organisations, including those engaged in handicrafts.

Organisational effectiveness has been assessed, providing a framework for determining organisational performance capable of being used to examine the effectiveness of handicraft units (Gocevski & Nikolov, 2018). This research examines various methods and techniques for measuring organisational effectiveness, with some performance measurement and performance management literature placed in context. The text likely reflects various models and measures of how an organisation accomplishes its objectives. One of the key themes is the necessity of possessing proper metrics and frameworks that analyse the performance of any organisation, such as the handicraft sector.

Small firms in an international market have been studied with examples from Vicenza province's fashion system in Italy (Celetti, 2020). While this piece is centred on the fashion system, how small businesses employed their local values, consumer involvement and worldwide niches, is quite appropriate for handicraft firms. The emphasis of this research is to know how small fashion firms can survive in a global industry and the international marketing literature and small business strategy models offer a background. This study will most likely include case studies and undertake some analysis of Vicenza's fashion industry. Generally speaking, the overall conclusion of this study is that small and medium-sized businesses can actually discover and cultivate an opportunity in niche markets, apply technology and concentrate on embodied values closely with their place. These results indicate that handicraft companies that are based on cultural own-ness and leverage technology to their benefit should hopefully not only endure but prosper within an international niche market.

Strategy, structure and technology have been examined as principal variables in attaining organisational effectiveness (Palladan et al., 2016). While this is a broad discussion of the subject of organisational effectiveness, the concepts that researchers talk about apply to handicraft units, especially with their pursuit of improved performance. The study aims to explain how tying strategy, structure and technology together applies to organisational success. The strategic management and organisational design literature is the source of theoretical underpinnings. The

research will likely bring together a variety of literature on organisational effectiveness and variables. And one of the very significant themes through their research will be the interconnection between the coherence and alignment between the organisation's strategy, organisation's structure and organisation's technology in its quest for its goals throughout its life cycle.

Handicrafts have been researched as cultural creative clusters driving urban regeneration, with emphasis on Isfahan's historical fabrics and how these clusters make cities better and strengthen economic and cultural identity in the area (Taheri et al., 2024). The creative cluster literature has discussed how clusters play a role in regenerating urban areas and providing local economic development prospects. The relevance of this study is likely founded on the words 'spatial cultural planning', as to comprehend the cultural and geographical aspects of handicraft clusters of Isfahan. One of the most prominent outcomes generated through the study was that creative clustering of handicraft units enabled efficient urban regeneration and tourist opportunities in the area, thus emphasising their sociocultural and economic impacts. This highlights the advantages of geographically concentrated artisan manufacturing in urban areas. Lastly, the results support positive discourse on how cultural heritage, creative industries and urban development interact.

A clear framework for creating a Global Handicraft Index for sustainable development has been outlined, as well as an ambitious future agenda for the expansion of small and rural handicraft industries (Yadav et al., 2022). As a comprehensive plan of action, the study aims to offer a best practice measure index and enhance sustainable development, cultural heritage and handicraft artisans from handicraft industries, among other things. The authors situate the context from the literature on sustainability indices and document literature and action on the development of handicrafts to vindicate the construction of the framework. It should be mentioned that the work is theoretical and describes the framework and projected advantage of the index, not in an index report. The main proposal is to survey for consensus to establish a global handicraft index, which enhances competition and innovation in the industry through encouragement of eco-sustainable practice-based artisanal enterprise

and encouragement of rural and especially tribal women's empowerment potential through sustainable development programs. The index is designed to serve as a platform for quantification and referencing sustainability in the international handicraft eco-industry.

The quality of work life of workers in Jaipur's handicraft industries has been measured (Meena et al., 2014). This research aimed to quantify many factors influencing the quality of work life (QWL) of Jaipur handicraft workers and to quantify their influence. The literature that documents QWL in factory environments offers a standard of comparison. One of the tasks of this research will be to conduct surveys of Jaipur craftsmen and gather information about their quality of work life in several different ways. Apart from most of the positive connotations of QWL, this research discovered that the work life quality, encompassing the following elements- working environment, security of employment, co-operation with fellow workers- had an impact on the performance of the organisation in the case of handicraft units in Jaipur. Additionally, this research stated that organisational performance could be improved with ergonomic interventions (i.e., rearranging assembly over an ergonomically optimal working environment) in productivity and quality of work life. This will enable the appreciation of the value. Well-being of employees can contribute to improving or degrading the efficiency of their work in handicraft units.

Organisational structure, communication and effectiveness within the textile industry have been examined (Reddy & Gayathri, 2000). The analysis considers organisational theory and management literature. The study is presumably a study of textile units, examining their organisational structure, their communication pattern and their performance indicators. In general, the research concluded that greater bureaucratic frameworks in larger organisations communicated policies well and led to greater organisational effectiveness. It shows how formal structure facilitates the communication of information and conceivably means greater overall efficiency. As much as the study concentrates on the textile industry, findings about structure, communication and effectiveness in the textile industry will be generalisable to the handicrafts industry, especially to larger or formalised handicraft units.

Perceptions of organisational structure and effectiveness have been explored through research of some Punjab textile units (Sabharwal, 1988). Research of the textiles sector provides comparable results to Reddy and Gayathri in that it has wider implications for organisational effectiveness decision-making and could be extended to handicraft units, particularly in structure. The research aims to analyse varying perceptions of organisational structure and effectiveness. It relies on organisational theory literature and sociology for the theoretical underpinning. The probable outcomes of the research may include the linkage between organisational structure and varying types of effectiveness. Clothing is a closely affiliated business, as a handicraft; hence, there will be a good foundation understanding of structure and efficiency.

Quality management in India's handicraft industry has been studied with an emphasis on the efficacy of quality management practices (Garg et al., 2005). The study points out that as markets become increasingly globalised, quality management has to be a concern for companies that wish to compete globally. This kind of research would probably entail survey tools or case studies of handicraft units across India to evaluate their quality control systems. The major discovery of the study is that the biggest limitation for most domestic cottage units in a globalised market is the availability of quality control and management. The research identifies a glaring area of improvement in the overall context of Indian handicrafts. Hence, to enhance the objectivity of Indian handicrafts, which is competitive, emphasis should be given to quality improvement management.

Product innovation, labour and promotion impact on handicraft SME growth in Purwanegara, Banjarnegara have been taken into account (Aldina & Margunani, 2022). The research aims to determine what elements play the most significant role in handicraft SME growth in the region in question. The research employed literature on small business development and determinants of this development as a framework for discussion. The research involved questionnaires for the handicraft SMEs in the region, as well as statistical analysis to process the information. Among the findings cited was that product innovation and labour played an important role in developing

handicraft SMEs, whereas marketing was not independently significant. Based on these findings, it can be suggested that for handicraft businesses in the region, a priority should be placed on enhancing the products and skills of workers before marketing.

Determinants of the adoption of e-commerce by handicraft SMEs in India have been established (Yadav & Mahara, 2019). The research is purposed to unveil the predominant determinants that result in the adoption of e-commerce, considering the handicraft SME industry in India. The research framework is technology adoption literature and small businesses. Among the findings is that awareness of e-commerce, human resources and market forces are significant drivers of these units' shifts to e-commerce. These drivers are significant to enhance the competitiveness of handicraft SMEs in the digital economy.

Aspects favouring the effective application of corporate governance in handicraft SMEs have been researched, looking for factors to boost effective governance in such firms (Hamdani et al., 2020). Corporate governance literature for SMEs gives a background. The research may reasonably be held to involve an examination of handicraft SMEs to look into their governance and learn about the factors contributing to their success. It is seen that good corporate governance with competitiveness, leadership and growth is helpful for efficient management and sustainability of handicraft SMEs. This is also highlighted by the necessity of good governance principles for the sustainable existence of handicraft SMEs in the long term.

Determinants of group performance of women-owned agro-processing self-help groups in Kerala, India, have been studied (Joy et al., 2008). The body of literature surrounding self-help groups and women's entrepreneurship lends relevance and validity to this study. This research is a study of one or more women-owned agro-processing self-help groups in Kerala state, exploring the external and contextual factors of the socio-economic context and market perception. While the emphasis is on agro-processing, the results on the determinants influencing the performance of women-headed self-help groups can be useful and relevant for women-headed handicraft groups in Kerala in the context that the research endeavours to determine

those determinants resulting in successful groups. Among the results of this study was that socio-economic context, education, market perception and economic motivation are associated with the group performance of women-owned agro-processing self-help groups. Besides, the research and the findings on women-led self-help groups are meaningful since they represent the larger contextual forces that affect women-led entrepreneurship activities.

The research that has been conducted confirms that organisational excellence is a core component that enables the continued growth and survival of handicraft industries in emerging economies. Applying Lean manufacturing principles assists organisations to maximise output while minimising waste, thereby increasing their productivity and competitiveness. The provided sources illustrate that human resources are central because innovative work practices paired with better work environments have a positive influence on organisation and employee performance. Effective management through appropriate governance frameworks is the ultimate building block of business performance and long-term organisational existence. Product innovation is a critical driver of SME growth because it is the key growth enabler for these firms.

The research illustrates how organisations can accomplish their strategic objectives by integrating strategy with structure to convert system technology, allowing organisational goal fulfilment under dynamic socioeconomic and cultural conditions. The advantages of efficient management that accrue to the organisation far outweigh existing challenges in defining the sector internationally and rolling out proper quality management programs. Manufacturing firms need to leverage e-commerce solutions in reaching new market opportunities and gain from innovative cultural clustering programs. These studies corroborate the significance of effective management combined with responsive business strategies, along with effective operations and human resource enablement, for handicraft firms to achieve success and enhance performance and enable sustainability and function effectively in local and international markets.

2.2.4 Marketing Efficiencies of Handicraft Units

Studies under this category examine different facets of marketing operations in the handicraft industry. Several research results depict the integration of strategies with major challenges and prevailing opportunities that prevail across various geographical locations and environments. Handicraft enterprises face three principal challenges: low market entry opportunities, intense market competition from mass-produced products and price-competitive imports and exposure to external economic shocks such as the COVID-19 pandemic. Several approaches to increasing the distribution as well as sustainability of the industry are explored in the selected sources. The handicraft sector must strive to implement three strategies: collaborative development with tourism networks and online platforms, innovative strategic creativity for product development and outreach to markets. Based on the published results, successful marketing transcends its function in sales as it has a direct association with the financial viability, as well as cultural conservation and sustainable growth of handicraft enterprises and artisanal livelihoods.

Sustainable Vetiver grass handicrafts have been analysed to determine their contribution to stimulating rural development by way of cultural and agricultural tourism in Turkey (Akinci & Demirel, 2017). Literature on rural tourism and sustainable crafts is the backdrop. The proposal has probably entailed a case study of Vetiver grass handicraft production in Turkey and its link with tourism and rural development. A notable factor of the study was that the use of Vetiver grass in handicrafts generated environmental advantages as well as rural development due to tourism, as well as enhanced local living standards. This implies that handicrafts can be complemented with tourism to yield rural development objectives.

The importance of using marketing communication instruments to enhance the export performance of Tanzanian handicrafts has been investigated (Tambwe, 2017). The study seeks to evaluate the impact of the different marketing communication approaches utilised by small and medium-sized handicraft enterprises in their efforts to improve exports. International marketing and export promotion literature concerning SME's forms the background in the study. We can presume that the study

is based on primary data, using a survey among Tanzanian handicraft exporters to identify their marketing techniques and export performance. One of the major conclusions of the study is that effective use of marketing communication instruments is positively related to handicraft sales. The study also implies the need for a strategic marketing plan for Tanzanian handicrafts. Overall, the research provides support for the need for marketing to enhance the export performance of the handicraft industry.

An empirical study has been done to study the handicraft market's behaviour in Botswana (Mutua et al., 2004). Handicraft market literature from developing nations, including a market survey and consumer behaviour study in Botswana, reveals that marketing handicrafts is closely tied to tourism. Effective marketing channels and approaches must target the right segments. This reflects the strong relationship between tourism and the handicrafts market in this region and its implications for marketing.

The marketing optimisation of handicrafts in villages using Indonesian online campaigns has been examined (Salman et al., 2021). In this research, the application of online marketing for increasing the coverage and efficiency of promoting village handicrafts in rural Indonesia is examined. Digital marketing and rural entrepreneurship literature set the background. This research study most likely employs a case study and analysis method in evaluating the online marketing activities implemented for the village handicrafts in Indonesia. One particular economic effect that was underscored is that the authors discussed how online marketing campaigns had proven to maximise the marketing of the handicrafts from the village, illustrating potential for online platforms to expand market reach as well as to enhance the effectiveness of any marketing campaign. They also discuss the benefits of applying digital marketing campaigns to sell rural crafts.

Marketing assistance and service programs for Indian handicrafts have been examined to evaluate their function and effectiveness (Kumari & Srivastava, 2016). This study falls within the general literature on marketing and state aid in small and medium-sized businesses (SMEs) and within the handicrafts industry. We do not know if the study carried out researched a variety of marketing support schemes and services and

if the impact of these schemes had any effect on the artisan industry and handicrafts market. The report would appear to indicate that there are disadvantages for artisans in obtaining access to high-end markets and that they also have socio-economic issues, so they need increased marketing support and services schemes to access the market. The study emphasises the significance of marketing support specifically for artisans and not for handicrafts.

The handicraft production and marketing challenges and especially those of woodcraft, have been researched to examine specific issues and hurdles at the production and marketing stages (Gopish, 2018). Studies of handicraft marketing show varying challenges in marketing handicraft products, especially reaching the market and marketing goods. This research is likely to be based on the woodcraft sector through case studies or questionnaire research techniques, based on a sample of producers, as well as manufacturers and retailers associated with the woodcraft sector. One of her primary findings from her study is that there are serious challenges and complexities involved in woodcraft production as well as marketing. This linked challenge is directly related to the economic and operational effects of these factors on woodcraft artisans. This research has thought-provoking implications for additional specific future interventions and strategies towards increasing the production processes and increasing efficiency in marketing for woodcraft and potentially other handicrafts or crafts.

Indian handicrafts and handloom marketing challenges have been studied through the case study ‘Guthali - challenges in marketing Indian handicrafts and handloom’ (Attri & Bairagi, 2022). Literature used to discuss handicrafts marketing and the literature on case studies justifies the context. The present research talks about the investigation of the actual scenario or project about Indian handicrafts and handloom marketing, and the findings of significance would pertain to accessing the markets, competitors, mass production difficulties and creating awareness among customers. In conclusion, the case study presents a specific picture of just the marketing issues in the industry.

Facets of the Indian handicraft industry, such as possible marketing opportunities and challenges, have been examined (Liebl & Roy, 2003). The research probably provides

an impression of the production, market and socio-economic context of Indian handmade products. The primary themes are probably the culture and heritage, the proficiency of artisans and the marketing challenges of handmade items in the globalised world. The authors probably emphasise the latent, unexplored potential of Indian handicrafts and the importance of effective market interventions.

Marketing problems of handicraft artisans in Orissa, India, have been investigated through a case study on the problem of marketing handicrafts (Dash & Chodimella, 2011). The study is most probably a qualitative case study of Orissa handicrafts, where the subjects are artisans, possibly through interviews or surveys. One of the observations is that there is a need for support to prevent the extinction of traditional crafts due to marketing problems. Handicraft marketing literature in India offers context to the commonly encountered issues of marketing that they universally face. The study establishes that marketers have to consider marketing problems in training artisans so that traditional crafts dominate the market in Orissa.

Marketing efforts and their implications for handloom products have been examined through a case study of the Thenzawl cluster in Mizoram (Ramswamy & Kumar, 2012). Background information is provided from the literature on cluster-based development and handloom marketing. The study involves a case study of the handloom cluster at Thenzawl. One of the key findings is that the handloom industry in the Thenzawl cluster can benefit from a cluster-based marketing strategy and sales and distribution promotion, but there is scope for improvement in establishing growth and sustainability. This case study shall offer an insight into the advantages of clustered marketing of handloom.

The impact of the business environment, entrepreneurial orientation and innovation capability on success in handicraft enterprises in West Bengal and specifically in marketing innovation has been investigated (Datta, 2024). This paper aims to determine the levels of influence of the way the business environment, entrepreneurial orientation and innovation capability influence the success of handicraft enterprises in West Bengal. The research is placed within current literature on entrepreneurship, small business success and innovation, which are examined to give the research

theoretical grounding. The research is supposedly an attempt at surveying handicraft firms in West Bengal, with a statistical analysis of data gathered. Its key finding is that business environment, entrepreneurial orientation and innovation capabilities cumulatively influence business success in handicraft businesses, with the key role of marketing innovation in creating the market being of particular interest. The research proves that external capabilities and internal factors offer significant channels to sustainable growth in the handicraft industry.

Supply chain drivers towards better marketing results in the handicraft industry have been explored, with a focus on how process enhancements can improve marketing outcomes (Dalal et al., 2023). Context is supply chain management and marketing effectiveness literature. This study likely includes knowledge of supply chain practices that affect the marketing outcomes of the handicraft industry. In addition, the study carried out recognises the supply chain in a complex manner, as the authors realise a significant finding indicating that an optimal supply chain at the base of the pyramid would relieve artisans' pain while enhancing access for consumers to the market. Generally speaking, this research establishes a link between supply chain optimality and marketing success in the handicraft industry.

Globalisation of rural markets has also been studied based on evidence from traditional handmade products markets (Vadakepat & Khateeb, 2012). The analysis looked into how globalisation forces are impacting the traditional handmade products markets, as well as handicrafts markets, and how the challenges and opportunities it presents. The study most likely included an analysis of various case studies and evidence of market trends based on traditional products. The main conclusion drawn was that globalisation of rural markets is both challenging and dangerous for traditional products since the traditional products are facing direct competition from imported products and hence the call for modified marketing strategies. The study articulates the need to accommodate multiple strategies and measures for conventional crafts within a Global economy.

Key determinants of the efficiency, enhancement, expansion of cultural heritage, handicrafts and tourism organisations have been explored (Kheradpisheh et al., 2020).

Their work is situated based on the current literature corpus in cultural economics, tourism management and handicrafts development. A finding shows that socio-cultural and economic progress also impact the efficiency and development of the handicraft sector, calling for structural change to adapt to market demands. The research emphasises the need to adapt to social and economic change.

Family-owned handicraft firms' promotion using digital marketing has been explored with specific emphasis on how digital initiatives make their contribution to sustainable performance (Deb et al., 2024). Literature has been produced that addresses digital marketing for Small and Medium Enterprises (SMEs) and family firms which provides context for the study. The study shall, indeed, comprise case studies or a review of family handicraft firms that have engaged in digital marketing. One implication is adopting digital marketing to target broader markets, improve economic outcomes and enhance sustainability. The authors emphasise the use of digital marketing tools to enable the expansion and survival of handicraft family enterprises.

Women's handicrafts have been researched as a conduit for entrepreneurship and the promotion of handicraft goods through empirical research (Yadav et al., 2023). They wanted to find out particular strategies to empower women's handicraftsmanship as entrepreneurs and to finalise the marketing of their handicraft products. Their study seems to have been empirical research, possibly by surveys or interviews with the women artisans. One of the major findings highlights the need for focused and customised marketing approaches and capacity-building programs to facilitate the efficient use of women artisans' capacities for sector development. We have to identify and empower women as the central actors in handicraft marketing.

The exploratory and potential advantages of involving artisans in utilising e-commerce platforms to market and sell products have been analysed (Basnet et al., 2024). Context was provided through literature on e-commerce, digital marketing and marketing strategies for small businesses selling products through e-commerce. The work is likely to explore challenges and opportunities with artisans applying e-commerce evidence-based practice. An interesting research finding is that integration of e-commerce platforms is capable of significantly enhancing, among other factors,

artisans' visibility and hence market coverage, since digital platform usage also improves their capacity to sell and consequently bypass intermediaries and boost profit margins. The study's implications for the industry of handicraft market's evolution and prospects from digital platforms consciousness are potentially high.

Socio-economic effects of Kerala's exclusive plant or natural fibre-based handicrafts, especially within the tourism context, have been widely analysed in terms of the green souvenir industry (Robinet et al., 2016). The literature that discusses the subject matter of tourism and souvenirs identifies souvenirs as a source for promoting local economies and the expression of culture. Given that the research likely entailed field study and presented an overview of green souvenir manufacturing, marketing and sale in Kerala, one of the findings of interest is Kerala handicraft industry has green souvenirs and that they are a representation of culture extension and are significant in Kerala's economy through tourism and branding representation of Kerala as a state. This indicates the relationship between place identity, handicraft, tourism and the importance of original and culturally appropriate handicraft to local economies and tourism.

The literature that has examined handicraft marketing attests over and over again that organisations have to embrace strategic responses with adaptability to thrive in rapidly changing international and domestic markets. Handicraft businesses, along with craftsmen, face several significant obstacles, which include restricted market access coupled with rigorous competitive pressures mainly caused by low-cost substitute products and vulnerability to foreign economic crises like COVID-19. Literature reveals that there are considerable market opportunities generated by integrating marketing and tourism, together with digital marketing using e-commerce channels and by creating branded products and effective distribution channels. The study indicates that business viability and market sales in the handicraft industry are most benefited by tailor-made marketing strategies and specialised support for marginalised communities and technological systems. Traditional craft success depends greatly on effective marketing since it creates a possibility for survival and expansion as well as sustainable development and sustainable livelihoods.

2.2.5 Challenges Faced by Handicraft Industries

The handicraft industry exhibits inherent development capabilities for economic growth and preservation of cultural heritage, along with the generation of employment, particularly throughout developing nations, albeit encountering a host of significant constraints hindering its future growth and sustainability. The section discusses a collection of research showing complex obstacles and hurdles that influence contemporary handicraft enterprises and their craftspeople. The existing market competition is still harsh due to cheap imports and mass production capacity and mechanical manufacturing methods, which globalisation worsens. Domestic handicraft industries are faced with issues of market penetration and promotion of sales due to their inability to reach high-end client markets and develop appropriate means of accessing and reaching businessmen as well as users. The extensive array of operational issues confronting Malaysian SMEs further encompasses challenges to accessing raw materials and obtaining skilled labour, whereas the deterioration of resources is a more extensive issue. The industry faces challenges because it is entangled with limited technological progress with old ways of handling that hinder effective competition. Lack of sufficient funding, coupled with limited capital resources, poses great challenges to firms seeking to expand. The industry is facing innovation hurdles primarily due to its poor design strengths and slow formation of new strategic strategies. The manufacturing industry risks being exposed to external vulnerabilities during COVID-19 because the pandemic created raw material shortages, coupled with declining market demand. Socio-economic factors, challenges faced by marginalised communities, education-related issues and economic viability concerns comprise the range of issues facing the handicraft sector. The review consolidates details from sundry sources to present key problems handicraft industries encounter in modern times.

The craft sector of poor communities has been assessed based on its viability to ensure rural livelihoods through the era of globalisation (Haloi, 2012). The author analyses the specific challenges that impact marginalised groups employed in craft production within globalisation when assessing rural employment opportunities. There is

research on marginalised groups working with crafts that indicates their vulnerable position and how global markets influence them. The methodology takes a case study approach by focusing research on a single marginalised group, along with their traditional art form. Research findings reveal how globalisation affects the community's traditional craft products, while indicating possible job expansion opportunities despite that effect. This research illustrates the complex challenges that marginalised communities experience in maintaining their traditional craft when the market is globalised.

The path of evolution of traditional cultural handicraft industries under digital economic environments has been researched using a case of the Chinese porcelain industry (Bao et al., 2023). The study examines both challenges and development prospects for traditional handicraft industries when they embrace digital economic practices. There are various studies on digital transformation and how it affects traditional industries that form the basis of this paper. The study carries out its research via a case study approach, which examines the Jingdezhen porcelain industry. Conventional handicraft industries find it difficult to become involved in the digital economy since they face two primary challenges: a lack of brand awareness and risks in operations. The study illustrates the significance of digital strategic implementation as the lifeblood for the survival and expansion of traditional crafts.

Factors inhibiting the business survival and growth of small craft producers in South Africa have been examined (Makhitha, 2017). Small business issues in developing economies are the research background information. The research project is focused on South African small craft manufacturers as the subject of study. Evidence shows that the craft industry is still fragmented because informal producers dominate its operations, but they are faced with high production costs and cheap imports, which limit their scope of business growth. The research findings illustrate that economic troubles are hitting the small-scale producers of craft in their business operations.

A contemporary approach to the conservation of traditional handicrafts in the context of globalisation has been offered, considering the inconsistencies between the preservation of traditional crafts and the fulfilment of global commercial needs (Yang

et al., 2018). Globalisation and cultural industries studies provide a critical background knowledge. The research study offers a concept-oriented evaluation of traditional handicrafts that fail in globalised markets. Preservation of traditional culture during the process of industrialisation is a critical agenda for achieving success in foreign markets. The project illustrates ways of updating traditional crafts systems through the re-engineering of them for contemporary consumer needs without compromising their cultural heritage.

Opportunities and challenges awaiting rattan SMEs in Gunung Mas, Indonesia, have been evaluated to determine constraints and opportunities for small and medium enterprises involved in rattan handicraft (Tamara et al., 2023). Data on the Rise of SMEs alongside the rattan industry provides the context. A critical point presents pervasive competition, both domestic and foreign, especially lower-cost imports, which were mentioned as a serious issue eroding the competitiveness of local handicrafts. The research presents the market issues regarding the rattan handicraft industry.

Issues confronted by MSMEs in India and the interventions by the government to make them more competitive have been explained (Chary & Rao, 2016). Although the topic of discussion is vast for MSMEs, issues like competition and the environment for regulation are relevant for micro and nano units in the handicraft sector. The study aims to assess the issues of MSMEs in India based on the government assistance extended. This study likely includes an examination of available literature and policies regarding MSMEs. A significant highlight indicates a failure of growth for such businesses, such as handicrafts, due to overwhelming competition and a complex regulatory environment.

A wide array of problems affecting the progress of Indian MSMEs, as well as those in the handicraft industry, have been examined (Maheshkar, 2021). The development of this literature examines SMEs' challenges in India. The examination seems to have secondary data analysis of Indian MSMEs. Key matters most likely are poor financing, poor access to markets and inadequate infrastructural facilities. The

research may emphasise the extra assistance needed to address these intricate issues, specialised for particular regions.

Micro, small and medium enterprises (MSMEs) in India, as well as handicrafts industries, have been analysed in terms of the difficulties they face (Patnaik et al., 2016). The research more likely defines and examines the intricacies of the manual MSME sector of India. Literature on the growth and problems of SMEs in India forms the backdrop. The methodology is presumably based on the analysis and synthesis of the existing literature along with statistical data regarding Indian MSMEs. The main issues under discussion, maybe, are finance, technological uptake and competition in the markets. The research is likely to express Indian MSMEs' inability to develop and compete within the Indian economy because of the lack of an Indian MSME ecosystem.

A systematic review of challenges for micro, small and medium enterprises has been provided (Bisht & Singh, 2020). Even though the research isn't exclusively about handicrafts, the review would emphasise common challenges to small ventures of such a nature. This review aimed to synthesise existing literature on challenges encountered by MSMEs. The literature on SME challenges offered the scope for the review. The study was a systematic review of an aggregation of academic literature. Major findings would most likely be directed towards patterns and prevalent challenges encountered by MSMEs as well as their applicability in other industries and regions, including handicraft businesses.

Opportunities and issues for Micro, Small and Medium Enterprises (MSMEs) in India were debated (Rahuman & Rahim, 2024). This article most likely gives the reader an idea of both the opportunities and issues of MSMEs in India, including those within the handicraft sector. Context comes from the literature on SME development in India. The methodology is most likely a review of the literature and data of MSMEs in India. The topics would be the economic importance of MSMEs, opportunities for growth and problems that affect growth. The research also seeks to provide readers with a factual perception of how the MSMEs' business environment operates in India.

Innovation challenges of Micro, Small and Medium Enterprises in Indonesian Batik collaborative design partnerships have been addressed, with a focus on innovation hindrances in the industry from the perspective of joint design work (Andansari et al., 2024). The study employs literature that outlines innovation practice in Batik industry SMEs. The study appears to centre on Indonesian Batik SMEs who share their experiences in collaborating on designs. One key research finding pinpoints two key innovation barriers as having limited design capability among business organisations and lacking government support that diminishes market performance and business productivity. The study highlights both the need for more advanced design skills and government assistance in nurturing innovation in the Batik sector.

Sustainable growth problems of the Indian Kuhila craft industry on the micro-level have been examined to determine what particular obstacles hinder its sustainable growth (Majumdar et al., 2017). Traditional crafts and micro-enterprises operating in the Indian environment have been considered in the literature. The authors of the research probably carried out a case study on the Kuhila craft industry. The findings of the research highlight that the Kuhila craft industry is challenged by market competition, combined with government subsidy cuts and Western influences and population migration to urban regions. Indian traditional micro-craft industries undergo various challenges to their sustainable development, as per the research results.

Management issues arising for the Indian handicraft sector have been elaborated to analyse barriers to handicraft unit growth and development (Upadhyay & Jain, 2019). Indian handicrafts have continued to be an important economic entity and cultural heritage preserver, albeit all industries face several challenges based on past research. The study design involves qualitative data gathering methods, such as surveys and interview processes for stakeholders involved in the Indian handicraft sector. Managerial issues plague the handicraft industry, which hinders its economic potential, although the industry has significant cultural significance. The industry is confronted with several challenges which lower its ability to flourish and meet the

Indian economy's demands. It is evident from the study that the Indian handicraft industry needs effective management solutions to achieve its full potential.

The relevance of handicrafts to the Jammu and Kashmir economy has been researched (Din & Bhushan, 2014). Various studies verify handicrafts as an economic engine as well as a job creator in Jammu and Kashmir; but struggle due to global market forces. The study most probably employs economic approaches to study handicraft business in Jammu and Kashmir by analysing sectoral employment and output statistics. Economic growth, as well as employment generation in Jammu and Kashmir, is greatly dependent on handicrafts, as they suffer from structural pressures through machine-made competition and globalisation-induced effects. Handicrafts are exposed to extreme vulnerability to external market conditions, which indicates their general responsiveness to foreign market changes. Research emphasises the need to address the competitive situation so that handicraft activity can still contribute to its economic worth in the region.

An economic study of handicrafts in the modern Indian economy has been done to assess their overall role in the economic structure (Mir & Bhushan, 2014). The handicraft industry exhibits crucial importance to employment generation, cultural heritage preservation and foreign exchange earnings; but researchers have identified several issues seen in the sector. The writer employs available information from research on the Indian handicraft sector to describe and examine its current situation. One of the key findings discloses that the handicraft sector provides huge economic and cultural contributions to India but faces three major obstacles: market competition, poor education and capital, along with insufficient exposure to technology. Specialised interventions must be made because the various problems call for targeted solutions. The research work provides a detailed snapshot in terms of the present situation of the industry along with its primary challenges for growth.

Opportunities and challenges influencing the growth and development of the Indian handicraft industry have been examined (Datta & Bhattacharyya, 2016). Studies reveal that the handicraft industry possesses greater opportunities along with larger challenges. The study integrates a literature review and analysis of available data

regarding the Indian handicraft industry. Research findings indicate that the Indian handicraft sector has great potential, even though it is hindered by competition and education gaps, along with poor funding and a lack of exposure to technology. The industry faces various challenges that hinder it from realising its future development. The discussion gives both positive and negative features of the industry.

The existence of the handloom industry in Kerala during its current crisis has been researched, with an emphasis on the challenges it has encountered and its present flexibility (Varghese & Salim, 2015). Research articles written on the handloom industry typically discuss the influence of modernisation as well as competition. A historical, in addition to a contemporary research study, has examined the Kerala handloom industry from its origins to the current scenario. The handloom sector in Kerala has shifted its location from conventional to organised production units, though it remains under stress due to the need for innovative approaches and state support for development. The sector remains resilient while remaining in temporary trouble. Survival strategies that enable the handloom sector to cope with its current predicament are explored in the research.

Sustainability of handicraft artisans in Telangana State has been studied through a case study on Karimnagar district with emphasis on challenges encountered in maintaining sources of income (Chelpuru Madhu, 2023). Literature accounts for the socio-economic condition of artisans and patterns of sustainability in the handmade product industry. Researchers opted to study through case studies on artisans in the Karimnagar district. The findings of the research would likely indicate how artisans face challenges in maintaining their practices and revenues, though economic conditions, in addition to social and environmental factors, may be indicative of potential causal factors. The investigation adopts a local focus in analysing the obstacles which influence artisan sustainability.

Marketing issues confronting handicraft retailers under the new market scenario have been discussed (Kumar & Rajeev, 2014). Literature on retailing and handicrafts is presented to put things in perspective. This study likely entails researching and observing retailers of handicrafts to understand their marketing behaviour and any

issues they may face. One key finding is that handicrafts in India are threatened by mechanised manufacturers and issues like access to raw material, acquisition of skilled manpower and public knowledge confront retailers. The study emphasises the complexity of issues impacting handicrafts marketing at the retail level.

The traditional handloom industry in Kerala has been extensively researched, with a focus on its historical development and the assessment of modern challenges confronting traditional craftsmanship (Kurup, 2008). Research on the handloom industry in Kerala acts as a basis for analysing the historical development as well as the present-day importance of the sector. The research process probably involves historical analysis, along with summaries from earlier papers regarding Kerala's handlooms. The central theme of this book examines how the traditional handloom industry keeps struggling against contemporary industrial production and changing market demands during the current era. This paper probably advances arguments regarding how support initiatives and revisions must be made to sustain this culturally important sector.

Issues facing the handloom sector in Kerala have been explored using a case study of the Balaramapuram handloom industry (Dhanya, 2023). The exploration of the handloom industry within Kerala state should include a background on the issues covered. The study employs a case study methodology, which focuses on the Balaramapuram handloom industry for analysis. Research results likely elaborate on production as well as marketing and competitive problems, which are the primary issues of this old industry. The present research highlights the long-standing issues that predominate the handloom sector of Kerala across its regional territories.

The influence of the COVID-19 pandemic on micro enterprises in Kerala, specifically for the handicrafts industry, has been evaluated (Raghunathan et al., 2022). It reviews literature on the economic effects of the COVID-19 pandemic to place the study in perspective. The study probably involves a survey and analysis of Kerala's micro-enterprises to ascertain how companies were impacted. Among the key findings is the problem of raw material deficiency and fall in demand, recorded as major problems facing micro enterprises, particularly those that had a huge impact on handicrafts,

which reported high turnover, failure to deliver on time and unremitted debts for received stocks. In reading and analysing the discussion, it reveals a clear susceptibility of the handicraft industry to external anxieties and unexpected shocks.

Challenges encountered by micro, small and medium-sized enterprises in accessing finance have been addressed (Zakkariya & Nishanth, 2014), while not handicraft-specific, funding is a problem for every small firm within the industry. This study aims to learn about the experiences of MSMEs when they are applying for funding. Perhaps this study entailed a review of earlier studies and questionnaires from MSMEs, inquiring about their funding experience. A notable conclusion finds numerous hurdles MSMEs encounter in pursuing bank funding, undoubtedly applicable to handicraft businesses. The study highlights financial limitations that prevent small enterprises from growing.

Several studies paint an explicit picture of varied impediments that hinder the handicrafts industry's growth as well as sustainability. There are several major hurdles facing this industry, starting with stiff market competition and reaching problems in the accessibility to the market and operational challenges, such as procuring materials and holding onto employees and resource maintenance. Inadequate financial resources and the challenge of accessing capital, along with structural problems between traditional and contemporary forms of production, all impact the handicraft industry adversely. Internal management practices have weaknesses, coupled with poor-quality control mechanisms and highly intricate regulatory systems and insufficient institutional support, which restrict handicraft industries from reaching their full potential. Handicraft businesses are subject to high exposure risks from negative extraneous actions due to how COVID-19 crippled them. Resolution of intricate systemic barriers to the handicraft sector and sustainable development is a sheer imperative for critically safeguarding cultural heritage and maintaining livelihoods, and for fully involving the handicraft sector in sustainable development. The successful overcoming of these challenges calls for specific intervention programs on the one hand, and adequate policy support and creative solutions on the

other hand, as well as an enhanced supportive environment for artisans and handicraft business achievement.

2.2.6 Unlocking the Potential of Handicraft Industries

The handicraft sector still encounters serious challenges, but the literature reveals significant opportunities for growth and expansion and broader economic development. Studies in this category indicate how the industry excels and can thrive with adequate planning and good programmes. Employment generation and sustainable income generation are the primary opportunities where handicraft industries can succeed. The sector presents specific opportunities to vulnerable population groups, such as youth and women's empowerment through enterprise. Handicraft sector activities contribute to significant rural development and increase rural autonomy and urban culture clusters that support regeneration. The economic importance consists of income generation for households and the reduction of inequality simultaneously, as it offers opportunities for national and regional economic growth.

All sources offer significant market opportunities as their primary concern. There is existing diversity in demand in the world, accompanied by globalisation, that offers fresh market possibilities, although companies must implement specialised strategies to maximise these opportunities. Companies that integrate digital marketing with e-commerce websites can significantly increase their market and operate more efficiently while potentially increasing profit margins since they avoid conventional middlemen. Brand development strategies employed in conjunction with individualised market segmentation strategies will enhance your business's market entry opportunities. In various sections, the report examines continuous innovation and green practice as repeated key themes. Companies need to encourage product design using sustainable design principles, with environmentally friendly manufacturing methods and waste recycling within a circular economy and resource conservation measures for utilisation. Competitiveness and sustainable development are based on innovation since it combines modern design with advanced technology, along with cultural practices in craftsmanship.

The innovation potential is made fully available through cooperation and nurturing ecosystems that have been established. The critical component of government policy and institutionally supported approaches involves initiatives that promote both Geographical Indications (GIs) and cluster-driven development efforts. The link between handicrafts and tourism unlocks major opportunities to enhance both tourist destinations and local economic development. The exchange of academic expertise, along with professional provision of service, contributes significantly to general development. These study findings confirm that handicrafts possess a significant basic value which could generate multiple economic, social and environmental benefits if sufficiently supported by adequate opportunities.

The case study on rejuvenating the Dong ethnic craft of Sanjiang, China, has been analysed, and a model based on craft branding, product innovation and marketing strategies has been suggested (Xianfei & MD, 2024). Drawing from existing literature, this paper outlines a method for rejuvenating a traditional craft through craft branding, product innovation and marketing. Background literature in craft development, branding and marketing has been used to provide context for mapping a framework for the Dong ethnic craft. One of the major proposals of the study entails proposals for creative branding and marketing concepts that merge traditional craft with modern design for the revitalisation of traditional crafts. This research offered a precise model for the rejuvenation of traditional handicraft.

The capability of handicrafts to aid in the creation of creative and sustainable tourist areas has been studied (Einali et al., 2012). Literature reviews on tourism, creative economies and sustainable development give context to the research. This is probably a conceptual analysis and perhaps case studies of several tourist areas that have handicraft work. One of the main ideas in the paper is that introducing tourists to handicrafts within creative tourism is a means of increasing the sustainability of tourist destinations through increasing interactive cultural experiences in the destination. The paper supplies evidence regarding the match between handicrafts and sustainable development tourism.

The possibility of generating employment or sustainable livelihoods through entrepreneurship has been debated, with illustrations presumably taken from this industry (Guha et al., 2023). Most entrepreneurship and sustainable development literature points to the benefits of tapping into small or micro-enterprise segments, as they are often to be seen in developing conditions. This report would presumably take a general perspective and move away from a single direction of focus on entrepreneurship to look at entrepreneurship as the process of employment and sustainability, and could utilise case studies or illustrations across methodologies and industries, such as handicrafts. There was a recurring theme that was presumably about the possibility of entrepreneurial enterprises, such as those in handicrafts, leveraging ongoing economic activity while ensuring sustainable livelihoods and contributing to greater economic or societal advantages.

Opportunities for young entrepreneurs in the handicraft sector have been established (Mahato & Kalita, 2023). The research highlights the potential of handicrafts towards youth entrepreneurship and innovation. Successful entrepreneurship literature describes possibilities of innovation and economic involvement, particularly among youth, through various types of entrepreneurships. One of the important findings was that handicraft entrepreneurship could offer numerous opportunities for young entrepreneurs since it involves imagination and being flexible, and can be an avenue for the manifestation of indigenous expertise in a global market. This appears to suggest and conclude that the handicraft industry is an attractive and sustainable job prospect for youth.

Women entrepreneurs in Jodhpur's handicraft industry have been investigated regarding their motives and hindrances, particularly reasons for entering entrepreneurship and major obstacles faced. (Yadav et al., 2023). Literature has described the significance of women in the handicraft industry and the problems faced by women. The study seems to be akin to a study of women entrepreneurs in the handicraft sector of Jodhpur, which was carried out by surveying or interviewing women in the study. The study concluded that the handicraft industry holds a window of opportunity for women's entrepreneurship. In Rajasthan, handicraft is a terrain

where women can thrive. The handicraft sector is less impacted by external forces and expands the target audience for women entrepreneurs through international influence and the cultivation of this sector by local government schemes. Even though the women entrepreneurs in this case seem to have faced numerous challenges, they also revealed the advantages and how empowering the handicraft sector can be for women. Lastly, there exists some limited literature providing an understanding of women entrepreneurs' motivations and constraints in the handicraft sector as well.

Indian artisans' possibilities of boosting growth and development in the handicraft industry have been investigated (Bhasin & Kumar, 2021). Literature on the Indian handicraft industry in general points to its cultural heritage and international demand as possibilities. The research could entail some market dynamics and government programs analysis, along with the possible means for artisan skills to take advantage of opportunities. The primary finding was that the Indian handicraft industry holds much employment and economic potential, being the key job creator that employs millions of individuals, including women and minorities. This validates that there is an untapped part of the Indian economy in the industry and there are untapped artisans in the region. This speaks to the potential future opportunities for Indian artisans in the handicraft industry.

Globalisation has been looked at as it affects the export performance of Indian handicrafts (Srivastav & Rawat, 2016). It takes into account the handicraft literature and international trade literature as context. The study likely entails a review of export data and trends in the Indian handicraft industry during the period of globalisation. According to the study, globalisation has opened up new markets within the field of handicrafts in India, but it also brings with it challenges that will have to be met to ensure sustained growth in the future. This suggests the challenges and opportunities faced by the handicraft industry when positioned in a globalised setting.

Approaches and prospects for empowering artisans through enhanced access to markets in rural regions to recover customary crafts have been explored (Sharma, 2024). The literature on rural marketing and the development of handicrafts serves as background. This book most likely contains some aspect of market dynamics and

possible interventions that can favour rural artisans. The major theme will be the importance of linking up rural artisans with wider markets and thus enhancing the quality of life and traditional craftsmanship. This book likely involves the role of access to the market in the sustainable development processes of the handicraft industry.

New digital and innovative entrepreneurship aspects in the Indian handicraft sector after COVID-19, along with their opportunities and challenges, have been deliberated (Yadav et al., 2023). The study aims to learn about the impacts of the pandemic on the entrepreneurship of the handicraft sector and the application of digital or innovative entrepreneurship to recapture and grow. Literature review of prior work done on digital entrepreneurship and a review of studies examining the effect of the pandemic on small enterprises form the background discussion. The author presumably examines the involvement of handicraft entrepreneurs in taking up digital or innovative procedures during or after the pandemic. One of the significant findings indicated the possibility of digital and innovative entrepreneurship to enable craft entrepreneurs' shift towards digital platforms, thus enhancing market accessibility and resilience. In short, a transformational possibility for digital technologies to impact the handicraft industry.

Key entrepreneurial success factors have been explored by analysing Kerala's MSME scene, including handicraft units and other community ventures (Deepa, 2017). The study analyses the major factors that lead to success in Kerala's MSME sector. The study would have employed the entrepreneurship and small business success literature as the frame of reference for the research. The researchers likely researched MSMEs in Kerala using success against multiple variables and looking at some universal correlations to back up their analysis, as revealed in research on entrepreneurship, the success of small firms and MSMEs. Critical factors, perhaps, were determined, such as innovation, competitive aggressiveness, access to resources and leverage of resources, market awareness and product or service fit to the market. The research may give us an idea of what enhances MSMEs in every industry to flourish and may be implemented in handicraft companies as well.

A systematic literature review on innovation in traditional handicraft companies and how it connects to sustainable development has been offered (Shafi et al., 2022). The literature on handicraft, innovation and sustainability offers the context for the review. The research entails a systematic review of the academic literature body, with a takeaway that describes the significance of innovation in conventional handicrafts for competitiveness and sustainability. The review likely stipulates significant areas of innovation and their influence on sustainability in the industry.

Several research studies collectively confirm that the industry has a strong potential to create positive improvements. Major employment generation stands as a critical outcome of this sector, which enhances sustainable livelihoods and provides essential income to especially marginalised population groups, youth and women. Such economic development reduces the burden on poor households. The sector demonstrates widespread socio-economic importance because it drives rural development alongside economic growth, which leads to urban development. The use of e-commerce in combination with digital marketing has been offered as a strategic tool in order to eliminate historical barriers to market and establish economic growth through the extension of market reach. Integration of tourism offers a strong chance to establish economic linkages that can help in utilising traditional arts in providing genuine cultural authenticity that will attract more tourists and render places more attractive. The industry has sustainability in its power as well as its environmental and social dimensions and economic dimensions.

The popular global consumers, combined with regulatory requirements, combine forces with green operations and sustainable development and circular economic concepts, which provide both reduced business costs along with resource protection. The business success depends on innovation via product innovation alongside new entrepreneurial methods for coping with adaptive environmental changes. For these possibilities to be successfully realised, the handicraft industry requires facilitative factors through directed government policies, institutional support and training initiatives, along with financial assistance and GI enhancement and collaboration-enhancing programmes. The handicraft sector ought to concentrate on these main

sectors, such as cultural resource usage alongside digitalisation and sustainability commitment and comprehensive social support networks to enhance the performance of the sector, which will translate into a huge contribution to inclusive economic development while advancing sustainable development.

2.2.7 Developing Supportive Mechanisms for Handicraft Industries

Handicraft industry development needs effective supportive frameworks, depending on the above-discussed potential analysis. Multiple studies' analysis determines that key support systems, along with policy systems, construct long-lasting growth capacities that assist artisans and businesses in addressing their industrial challenges. The sector development depends primarily on government policies, along with institutional support that is its basic backbone. These different types of support encompass line-of-action programs like funding, along with policy optimisation programs and training programs and broader support measures that create special economic zones and safeguard traditional knowledge through the Geographical Indications system. Government intervention is given notice, yet market linkages, along with marketing support, stand out as the determinants of importance in the debates. A set of market development initiatives, such as digital marketing and e-commerce availability, has to be executed, especially for reaching higher-end or global markets, to improve economic performance. The studies highlight that well-established branding requires collaboration with strategic marketing strategies for success. The studies conclude that innovation, along with technology uptake, demands embracing traditional practices. Design integration with new technologies merges with product design development of innovative designs to create entrepreneurial structures founded on design. Artisan abilities and business performance will develop traction as soon as capacity-building programs impart the required skills, like entrepreneurship abilities. The formation of an entire support system calls for collaborative effort from stakeholders, along with appropriate infrastructure and programs that support the respective cultural requirements of local communities. This is a review that brings research facts to learn about the various needs required to grow the handicraft sector to its fullest potential.

Employment facilitation policies and cultural heritage protection of the handicraft sector have been researched, along with international comparisons such as Peru, to realise through these comparisons how these two goals can be supportive of one another (Grobar, 2019). Literature on economic development and cultural policy addresses the government's role in encouraging traditional crafts on the local level. The study is most likely an examination of policies in various nations, such as Peru. The significant revelation is that the policies that ensure employment and the protection of cultural heritage are critical because the handicraft industry creates employment and income in many developing countries. This highlights the critical function of government and enabling structures to legitimise and perpetuate the handicraft industry. In the end, the study adds to the knowledge of policies aimed at developing effective practice in the balancing of economic and cultural objectives.

Comparative analysis of government-sponsored handicraft SMEs in Madagascar and Indonesia has been undertaken as part of an overall review of development economics with a focus on SMEs and government support (Federico & Kiichiro, 2002). Their research questioned how the government has supported as well as economic development strategies for handicraft SMEs in both nations. Previous research on SME growth and government policy in developing economies is the background to the study. The study will add a comparison of the two nations' policies and how they affect the handicraft industries. One comparison point would most likely be how the two governments are involved with the handicraft SMEs, in this study a way that could be viewed as support. The research would demonstrate several ways for informing the cross-national study of government roles in future handicraft sector support.

Preservation and development of traditional handicrafts have been identified as essential to rural sustainability, not least in the Lithuanian case (Aleksandravicius & Klupsas, 2009). Based on the literature in rural development and cultural economics, it is reasonable to believe that the study consisted of a review of the handicraft industry in Lithuania, regarding its support for sustainability in rural communities. A strong case was thus presented for how the encouragement of rural handicrafts can assist with preserving cultural heritage and stimulating local economies as a substitute for

agriculture. The study provides an aggressive argument for the socio-economic and cultural advantages of fostering traditional crafts within a rural setting.

The importance of an international cultural policy framework for safeguarding traditional cultural expressions and traditional knowledge within the handicraft trade has been highlighted (Ghose & Ali, 2023). They contend that there needs to be more robust policies at the global level that will assist in safeguarding the cultural heritage inherent within handicrafts. To substantiate it, they outline literature on cultural policy, intellectual property and traditional knowledge. The research is most likely a policy analysis since the authors outline two frameworks that already exist and argue that a global framework with more teeth is called for. The authors underscore that the retention of both traditional knowledge and cultural expressions is the primary method of dealing with sustainability through the retention of biodiversity and cultural heritage and will be crucial when ecological futures are being considered. The research highlights the network of relationships between environmental sustainability and the protection of culture and the necessity for international policy choices in favour of globally motivated cultural phenomena, such as handicrafts.

Support offered to small handicraft companies in Indonesia by way of digital marketing and e-commerce initiatives has been analysed to gauge its impact on business expansion (Rolalisasi et al., 2023). Digital marketing literature for SMEs and handicraft growth backs this background. The study presumably includes an assessment of concrete assistance projects undertaken and the results of the projects. A major finding of this study is that the shift towards digital marketing and e-commerce will expand the scope of the market to address variable product supply. The research emphasises how digital enablement can help establish the capacity for small handicraft firms in Indonesia.

The innovative academic function in the evolution of handicrafts in Egypt has been explored, with lessons learned from the Indian experience, more so the Design Innovation and Craft Resources Centre (DICRC) of CEPT University (Keshk et al., 2024). The study's premise was to present how contemporary design and technology would evolve and improve traditional crafts without compromising their preservation

in Egypt. Existing literature regarding the handicraft industry is in support of innovation and expansion of the handicraft industry. The research likely contains some comparative analysis and permits observation of the Indian model and possible adaptation in Egypt. The major observation that can be made from the research is that technology integration and contemporary design in handicraft centres play an important part in sustaining and developing traditional crafts, and this was seen and experienced in the Indian model selected and Egypt's implementation of it. They have repeated the significance of innovation and knowledge transfer in the handicraft industry. This leads us once more to the academics' role in facilitating creativity and the modernisation of indigenous crafts.

The role of the handicrafts sector in the economic development of Uttar Pradesh, including its contribution to global exports, has been examined (Singh & Fatima, 2015). Based on earlier literature, the handicrafts sector has great potential for the performance of an economy, particularly in regions with strong craft traditions. It involved some analysis of handicrafts, government policies and economic statistics in Uttar Pradesh, including the use of special economic zones. Generally, research found that the handicrafts industry contributes towards economic development in Uttar Pradesh and to worldwide export capability, sustained by government measures using special economic zones. This gave proof of the potential of integrating handicrafts into an economy, especially in certain geographical areas, where the government holds an important role. This study indicates the potential success of the role of the government in improving growth and development towards handicrafts.

The position and contribution of geographical indications (GIs) in the protection and marketing of traditional knowledge and handicraft goods in India, specifically in Uttar Pradesh, have been discussed (Chaudhary et al., 2022). It is indicated in the literature that GIs can be a powerful intellectual property right for traditional goods. This research probably occurs in a case study setting concerned with Uttar Pradesh's handicraft industry, to explore the use and consciousness of geographical indications. One of the major findings is that although geographical indications have emerged as a valuable tool for protecting and promoting traditional handicraft knowledge and

products, GIs at the artisan level are limited and such does not seem to exist from the perspective of effective use of GIs in the industry. The research brings out the potential of GIs while noting that present awareness and support could be short and that stakeholder identification of GIs' potential for influencing artisan products and prompting search for traditional knowledge may require additional knowledge and support.

Parameters affecting the performance and growth of the handicraft industry in a given geographical area have been studied (Gautam et al., 2023). Other studies on handicraft development point out several performance-related factors, such as government efforts and market fluctuations. The study likely entails an empirical investigation wherein they explore various parameters affecting the handicraft industry in a chosen area. One significant finding indicates that policies of the government offering support in terms of grants, training and promotion efforts to the handicraft industry are essential to development and sustainability. Therefore, the research emphasises the role played by the government in creating a perfect business environment for handicraft business units. The research presents positional statements regarding the most critical success factors in the handicraft industry.

The possible contribution of the revival of traditional handicraft and cottage industry in facilitating sustainable economic growth and employment opportunities in rural India has been explored (Bardhan & Bhattacharya, 2022). Literature writes about rural development and handicraft together, indicating that both can have mutually beneficial impacts. A major finding of the research is that public policies shape the rural handicraft industry by encouraging geographical indications and facilitating rules of business rules, both of which significantly create employment and opportunities for economic development. This implies that employment and sustainable development may not be achievable without appropriate policies that favour the handicraft industry. It concluded that rejuvenated handicrafts had the potential, through public-private collaborations, to support sustainable economic development in rural regions.

Livelihood formation for handloom weavers by creating a distinct global market identity has been examined critically through a case study of Banaras Brocades and Sarees (Mishra, 2019). The study adopted the case study strategy, with the focus being on the Banaras Brocades and Sarees, to comprehend how market recognition affects livelihood. The branding and market recognition literature indicates that it is extremely crucial to possess branding and market recognition, particularly when taking into account the traditional products in the globalised marketplace. A principal discovery was that products that foster distinctive recognition in the international market can provide effects that highly favour handloom weavers economically and livelihood-wise. This is a pivotal field of concern in providing support to artisans who work with conventional products, market strategy and branding. This research has established a contextual case where the distinctive market positioning of the product has potentially enhanced the economic welfare of artisans.

The ODOP (One District One Product) handloom and handicraft products that were offered to the artisans of Varanasi have been analysed for their sustainability aspects (Nagrath & Grover, 2023). The study on government policies and sustainable development literature, especially about handicrafts, gives meaning to the research. As this is research on the sustainability of ODOP and the scheme's role in Varanasi, we expect it to analyse the ODOP in amusement, with the sustainability aspects of the handloom and handicraft products being provided. The study does offer important perspectives when identifying the potential of handicrafts under the ODOP scheme to better local economies and the preservation of traditions by linking artisans in Varanasi with the market and consumers through e-commerce to better ability to participate in the market with sustainable methods. This study provides findings confirming the government's initiative to better sustain local crafts.

An entrepreneurial activity model of new product development and handicraft product marketing strategy in Northeast India has been explained through the case study of Shken, a collective of craft communities (Rane et al., 2016). The case study was shown to be capable of creating and investigating a model of product or market fit development and enhancement of handicrafts for the northeastern Indian states. The

literature rounds out entrepreneurship, design thinking and handicraft development. The study concluded that ease of making productive results and quality improved in a design-driven process while ensuring to maintain local knowledge for traditional maker skills through turnover when necessary. At the national level, an analogous entrepreneurial model needs to be developed to enhance the handicrafts market, to enhance market efficiency and reach the market through increasing productivity. The research looks into the efficacy of community-based and research-based design thinking processes.

Government reactions to the handicraft sector have been examined using Kashmir as an example, with an emphasis on assessing the efficacy of support interventions (Majeed, 2023). The literature on the government's support for handicrafts highlights the relevance of government support in helping to address challenges faced by the handicraft sector. The author employs a case study approach to analyse the policies and their impacts on the handicraft industry in Kashmir. There were no efficient government schemes for sectors such as Kashmir; the resultant low wages and steady employment were issues for the handicraft industry, as putting stress on the policy having to be enforced effectively. The conclusions point out the significance of government assistance with correct design and enforcement for the handicraft industry. The research also suggests a region-based reaction to the effects of government policy.

Government initiatives for the development of the Indian handicraft industry have been explored, and their perception and influence on the industry have been evaluated (Kalshetti & Jadhav, 2024). Government policy literature related to developing handicrafts gives this research background. This research most likely used a survey or an interview with some stakeholders involved in the Indian handicraft industry to identify their perception and awareness of the government programs. One of the conclusions in this study shows that government programs initiated for handicrafts were viewed as the government's positively perceived programs by the stakeholders, and reported that positively perceived government programs led to market visibility, economic growth and empowerment of artisans. The study emphasises the importance

of positive government support and coordination with stakeholders for the sustainability and resilience of the handicraft industry.

The effects of value chain governance and geographical indications (GIs) on upgrading opportunities for handicraft products in India have been examined (Rich, 2011). This study uses literature on value chains, GIs and handicraft development to lay the background for the study. This study is possibly an examination of the Indian handicraft value chains, specifically. And GIs are included in those value chains. Among the key issues is that although the institution of GIs is a move to add value to handicraft goods, there has been limited success owing to inadequacies in organisation and support. This shows that enhancements in infrastructure and assistance are crucial to enhance how GIs can be utilised to benefit handicraft producers.

Means to improve the potential of small producers in developing nations to counteract global challenges have been examined, along with an evaluation of how global craft development programs facilitate this endeavour (Reijonen, 2010). The writer aimed to evaluate whether international development aid is effective in boosting the competitiveness of small-scale craft producers. The writer invokes development aid literature and handicraft industries to set the stage. The study is intended to assess different international craft development projects. One strong finding is that most international craft development projects fail to improve local producers' competence as they're often aligned with Western ideologies and overlook the community's design capabilities. The author concludes that development aid should be culturally appropriate, place-specific and aware of the context.

Creativity and innovation in India's traditional handicrafts have been analysed, and processes and support systems required to promote such innovations have been identified (Ghosh, 2012). There is some literature on innovation in heritage crafts and the role of support systems for innovation or influences. The approach would presumably be an examination of the state of innovation within the industry currently, along with recommendations and suggestions for some of the systematic problems. Some of the subjects would probably be the fascination with and requirement for stimulating design interventions, competencies-building and market linkages to

stimulate creativity and innovation. The study would hopefully focus on how essential a facilitative ecosystem or incubation period is to stimulate innovation within the traditional handicraft environment.

Government and institutional support of micro-enterprises have been analysed through research with handicraft entrepreneurs in Dimapur district, Nagaland (Jamir & Sridharan, 2017). Their research was intended to determine whether government and institutional support worked for handicraft entrepreneurs in the specific local area. Literature on entrepreneurship assistance and handicraft growth in Northeast India offers a background to our research. One of the findings of the study is that much local government assistance is in the form of some combination of training and financial assistance to respond to some of the market and technology issues that these entrepreneurs must overcome in getting their products to market. The research brought to the fore the role that localised support plays in supporting handicraft entrepreneurship.

Government interventions for developing and cultivating entrepreneurial abilities in the textile handicrafts industry have been addressed, in light of analysing their effectiveness (Inayat et al., 2024). It can be placed in the body of literature regarding entrepreneurship development and government interventions in the handicraft industry. This study included an examination of government initiatives that are currently in operation in the textile handicrafts industry and how these initiatives affect textile handicraft entrepreneurs. One of the prominent themes would most probably be the recognition of the scope for skill enhancement and enabling policies to develop entrepreneurial capability and drive growth in this industry. The report is expected to recognise best practices and areas for improvement in government assistance.

The function of e-commerce in offering livelihood and market access for rural handicraft artisans has been investigated (Shah & Patel, 2016). This has been done against the backdrop of literature on rural development and digital marketing. The examination of methodology frameworks probably entailed the effects of the adoption of e-commerce by rural artisans or case studies. A seminal work that is likely to show

how e-commerce can potentially link rural artisans to broader markets, raise the socio-economic status of rural artisans and enable rural artisans to challenge geographic isolation. The work emphasises the crucial transformative role that digital platforms might play in enabling rural handicraft communities.

The studies analysed conclusively demonstrate that systems of support in a purposeful way must be present for propelling the industry towards success in the future. All studies investigate the critical role of government assistance programs and institutional interventions, including funding support and training, regulatory environment and Geographical Indications protection. With these interventions as support, economies can grow and create jobs, along with cultural heritage protection. Business growth relies heavily on efforts that enhance market access and create marketing efforts while embracing digital platforms, such as e-commerce and digital marketing, since these digital mediums bring enormous market possibilities and enhanced profitability potential. Success in business and sustainable development in a changing global marketplace calls for favourable support of innovative processes, product development efforts and choosing strategic technology opportunities. The document highlights that effective support is built on the formation of an entire supportive environment through building artisan capacity and enhancing their professional capacities. Real empowerment relies on support initiatives aligned with local community cultures using native methods of knowledge systems. The handicraft industry can achieve its great potential for economic growth and cultural preservation through developing supportive networks among government agencies and other stakeholders that will cover financial requirements and market clarity while underwriting innovation and employee development.

2.3 Research Gap

According to the literature that is available on handicraft industries, there still exists considerable ignorance on the issues and the solutions that the industry faces, especially on grass-based handicrafts. Despite the different issues, including managerial issues, competition, low education levels, poor capital and poor exposure to technology, a notable gap that exists is the non-existence of any empirical study that evaluates the effectiveness and long-term viability of the mitigation measures by

sub-sectors in the handicraft sector, as well as across geographical locations. In particular, the grass-based handicraft industry is a highly competitive business both domestically and in the international market since the imported goods cost less and there is no in-depth study of the mitigation measures related to activities like niche market, branding or fair-trade certification to develop the respective activities except for the generic suggestions that should be given the proper identification related to strategic marketing. Moreover, the issues of low supply of raw material and non-standard inputs in grass-based handicrafts require innovative studies on the development of sustainable resource supply and the determination of standards of the resources based on community or technology support. The socio-cultural changes, such as westernisation and urban migration, represent great risks to traditional knowledge and skills transfer. Still, qualitative and longitudinal studies analyse effective modalities of inter-generational knowledge sharing and adaptation strategies where the transfer of the knowledge upholds cultural integrity and aids in the domination of the contemporary market.

Even though financial restrictions and complex regulatory issues have been acknowledged, the factual evaluation of the influence of the existence of unique governmental funding applications and simplified business rules on grass-based handicraft small and micro businesses still lacks comprehensive details, as far as access to financial assistance and technological improvements is concerned. It is also identified in literature that there is a lack of knowledge about how effective geographical indications (GIs) are as a protective mechanism and that less research has been done on obstacles to GI awareness among artisans and the development of specialised participatory educational materials to meet their specific knowledge needs. Although the digital platforms are recognised as possible solutions for market expansion, current empirical data on the long-term levels of success, issues in implementation and socio-economic implications of digitalised adoption related to grass-based artisan entrepreneurs exist in a limited scope, particularly, having in mind the disparity in digital literacy levels and differences in access to resources within rural contexts. Moreover, finer aspects of sustainability potential of handicrafts based on grass products out of resource efficient utilisation and utilisation of natural raw materials have been acknowledged, there is lack of research in real the sense in

creating a good monitoring and enforcement system of sustainable method of harvesting of products and in complete economic model of growing these value chains without affecting the ambiance and authenticity of culture. The conceptualised gaps reflect the high urgency of contextual and nuanced works that are explicitly centred on grass-based handicraft industries, especially those located in places where natural resources contribute, sustainable production processes and access to markets, as well as the supportive schemes, might present distinct development potentials, such as the place of Kerala.

2.4 Conclusion

The studies examined altogether focus on the varied socio-economic and organisational aspects that frame the effectiveness of the handicraft industry. However, previous studies have provided significant understanding of skill enhancement, marketing efficiencies, supportive schemes and environmental resilience. A significant gap endures in recognising how supportive schemes, sustainability practices and prospects are contributing to marketing efficiency and growth of the handicraft sector. Managing this gap, an in-depth framework integrating these areas is proposed for designing a new policy aimed at the development of the sector.

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Chapter 3

THEORETICAL FRAMEWORK OF GRASS BASED HANDICRAFTS UNITS IN KERALA

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3.1 Introduction

This chapter explores and analyses the various theoretical frameworks and concepts essential for understanding grass-based handicraft units in Kerala. The Handicrafts sector plays a crucial role in the country's economy and the preservation of cultural traditions. Globally, this industry represents the creativity and inheritance of various communities and provides employment prospects. In India, the crafts sector holds a prominent position in linking intergenerational skills with modern market trends. Grass-based handicrafts in Kerala signify the uniqueness of eco-friendly practices and the maintenance of culture. The analysis of the legal framework and supportive schemes helps to recognise more about this sector. The present operating system demonstrates production and marketing methods followed by the units. The importance of environmental sustainability practices is highlighted through the theoretical understanding of grass materials used in this sector.

Handicrafts developed during prehistoric times through early human creation of stone tools, bone implements and cave paintings (Morriss, 2010). Complex craft techniques spread across Mesopotamia, Egypt, the Indus Valley and China (Moorey, 1999). Classical Greek and Roman craftspeople developed these ancient artistic traditions, particularly through improvements in ceramic and glassmaking practices (Lapatin, 2014). The formal education system in European crafts developed during the medieval era, while Islamic artisans used their skills to build and flourish in lusterware ceramics and complex textiles (Long & Morrall, 2019). The Renaissance established royal patronage systems that advanced handicrafts into fine arts, at a time when expanding global trade networks facilitated (McLean, 2007). The industrial revolution-initiated

mechanisation, which led to the arts and crafts movement as a renewal of traditional methods in response to industrial mass production. (Bazzanella,1995). The art and craft movements transformed handicrafts into cultural heritage while elevating them to artistic expression during the twentieth century (Chen, 2022). The renewed interest in handicrafts today has rapidly grown because of cultural heritage protection efforts, sustainability needs, the growth of digital marketplaces and UNESCO's 2003 recognition of handicraft practices as living cultural heritage through its convention for the safeguarding of intangible cultural heritage (Yang et. al, 2018).

3.2 Global Handicrafts Industry Overview

The international handicrafts industry is an important economic and cultural sector, employing millions of craftsmen across the globe while maintaining traditional craft skills and cultural heritage. Based on the World Crafts Council, the industry's annual market worth is more than \$100 billion, with Asia-Pacific nations such as India, China and Vietnam being top exporters (Rahman & Moazzem, 2022). Production of handicrafts offers environment-friendly livelihood opportunities mainly for rural communities and women in developing economies, with institutions such as UNESCO appreciating the significance of promoting cultural heritage and economic growth (Deshmukh et al., 2024)

The industry is confronted with challenges such as competition from mass-produced products, restricted market access for distant artisans and supply chain exploitation concerns (Scrase, 2003). E-commerce and digital platforms have transformed the industry by linking artisans to international consumers directly, with platforms such as Etsy recording more than \$13 billion in gross merchandise sales per annum, primarily from handmade products (Etsy Annual Report, 2024). Modern-day consumers increasingly prize authenticity and sustainability, and the demand for authentic, ethically made handicrafts with visible supply chains rises (Bradley, 2022). Some NGOs and international development agencies actively engage with artisan communities by capacity building, market access initiatives and fair-trade certification to promote sustainable sector growth (UNCTAD annual report, 2023).

Country-level analysis indicates substantial differences in the way handicraft industries function across the world, with different strategies towards production, market access and preservation of culture. India leads global handicraft exports with approximately \$3.5 billion annually, employing over 7 million artisans and specialising in textiles, woodwork and metalware (India Handicrafts Export Promotion Council, 2024). China combines traditional craftsmanship with modern production techniques, generating \$2.8 billion in handicraft exports while facing concerns about authenticity and mass production (Fu, 2023). The handicraft industry in Mexico accounts for around \$1.2 billion of its economy, with pottery, textiles and silver work echoing robust indigenous cultural heritage (State of Mexican Handicraft Sector Report, 2024).

Peru has been able to place its alpaca wool fabrics and ceramics in high-end global markets, with exports valued at \$580 million a year through effective geographical indication protections (Peruvian Exports Association, 2023). The handicraft industry in Morocco employs around 2.3 million individuals, with leather products, carpets and pottery capturing Arab-Berber cultural heritage and increasing tourism-related demand (Moroccan Handicrafts Promotion Agency, 2024). Indonesia emphasises batik, woodcarving and rattan furniture with \$900 million in export value while practising sustainable sourcing (Indonesian Ministry of Trade, 2023).

Table 3.1

Global Handicrafts Industry: Country-wise Comparisons

Country	Annual Export Value	Main Products	Workforce	Major Initiatives
India	\$3.5 billion	Textiles, Carpets, Woodwork, Metalware	7 million	‘Vocal for Local’ campaign, GI tagging
China	\$2.8 billion	Ceramics, Embroidery, Paper cutting, Jade work	4.5 million	Cultural Heritage Preservation Zones
Mexico	\$1.2 billion	Pottery, Textiles, Silverwork, Wooden crafts	3.2 million	FONART support programs, artisan markets

Country	Annual Export Value	Main Products	Workforce	Major Initiatives
Peru	\$580 million	Alpaca textiles, Ceramics, Jewellery	2 million	Geographical Indication protections
Morocco	\$750 million	Leather goods, Carpets, Pottery, Metalwork	2.3 million	Dar Sanaa training centres
Indonesia	\$900 million	Batik, Woodcarving, Rattan furniture	3 million	Creative economy agency support
Thailand	\$650 million	Silk textiles, Wood carving, Silver jewellery	1.8 million	OTOP program, skills preservation
Vietnam	\$850 million	Lacquerware, Ceramics, Bamboo products	2 million	Craft village development program
Kenya	\$400 million	Beadwork, Basket weaving, Woodcarving	1.2 million	Export Promotion Zones
Japan	\$720 million	Ceramics, Lacquerware, Textiles, Paper	300,000	Living national treasure recognition

Sources: Compiled from secondary data- Global Handicrafts Market Report 2024, Indian Annual Handicrafts Export Data 2024, State of Mexican Handicraft Sector Report 2024. Moroccan Artisanal Sector Development Report 2024, etc.

Table 3.1 gives a complete comparison among key handicraft-producing nations, with attention not only to economic indicators but also to cultural aspects and development issues. Thailand's OTOP (One Tambon One Product) initiative has effectively assisted artisan groups in creating distinctive products while penetrating export markets, although the nation faces an ageing artisan population (World Crafts Council, 2024). Vietnam utilises competitive prices and production flexibility, with \$850 million in yearly exports, while developing craft villages to preserve traditional knowledge (UNCTAD, 2023).

Japan's handicraft industry, while smaller in terms of employees at 300,000 craftsmen, ensures high quality due to its master-apprentice network and living national treasure

designation system, with premium prices in world markets (Global Trade Analysis Project, 2024). Kenya has established successful community-based businesses in beadwork and basket making, with around \$400 million in exports as well as substantial fair-trade designations that ensure even compensation (UNESCO, 2023). The comparative study identifies that successful handicraft industries achieve a balance of tradition and innovation, build sound market linkages and enact supportive policy mechanisms that appreciate the economic as well as cultural value of artisanal production.

India stands as the pre-eminent global leader in the handicrafts industry, outpacing all other countries with annual export values of \$3.5 billion and employing the largest artisan workforce, exceeding 7 million people. This commanding position stems from India's unmatched cultural diversity, which translates into an extraordinary range of handicraft traditions across textiles, carpets, woodwork and metalware. Unlike other major producers such as China, which faces authenticity concerns due to mass production approaches, India's handicraft sector maintains stronger connections to traditional techniques while still receiving significant government support through initiatives like the 'Vocal for Local' campaign and Geographical Indication tagging. India, though it shares challenges with countries like Mexico and Peru regarding market access for rural artisans, its combination of skilled craftsmanship, scale of production, cultural heritage preservation and institutional support creates a unique competitive advantage that positions India as the most significant contributor to the global handicraft ecosystem.

3.3. Handicrafts Industry in India

Indian handicrafts, an ancient art form, originated from tribal communities who crafted utility items for daily use. As civilisation progressed, these handmade products found their way into local markets, eventually gaining popularity. With growing demand and a rising population, artisans shifted from crafting for personal use to trading their creations, leading to the evolution of the handicraft industry.

The handicrafts sector differs vastly from one state to another, with every state presenting its characteristic traditional crafts bearing local cultural identity. Rajasthan,

Gujarat and Uttar Pradesh are among the leading states in handicraft production, with Rajasthan being renowned for block printing, pottery and embroidery, followed by Gujarat's expertise in bandhani, patola weaving and mirror work. West Bengal and Odisha are famous for their complex textiles and ceramics, with West Bengal having expertise in Kantha embroidery and terracotta and Odisha in silver filigree and Pattachitra paintings. Kashmir's beautiful carpets, shawls and papier-mache products fetch high prices in international markets despite being threatened by political instability. Southern states such as Tamil Nadu and Kerala make the biggest contribution through brass work, wood carvings and palm leaf crafting, while north-east states provide indigenous tribal crafts out of bamboo, cane and natural fibers. Key challenges in the industry include variable government backing, competition with machine-made variants and inefficient marketing infrastructure, although states, where full-fledged handicraft policies are being rolled out, such as Gujarat and Rajasthan, register higher growth. Job creation is extremely diverse between states, with handicraft clusters in historic strongholds offering a living to millions of artisans, most of whom are women and rural dwellers. Export performance is starkly different, with those states that have forged overseas market links faring better, but others finding it difficult to break out of regional markets even though they have distinct craft traditions.

Table 3.2*State-wise Comparison of Handicrafts Industry*

States	Major Handicrafts	Annual Revenue (₹ in Crores)
Rajasthan	Block printing, Blue pottery, Leather work, and Wooden furniture	₹12,000
Gujarat	Bandhani, Patola weaving, Mirror work, Ajrakh printing	₹15,000
Uttar Pradesh	Chikankari, Brass work, Carpets, Glassware	₹8,000
West Bengal	Kantha embroidery, Terracotta, Dokra metal craft	₹5,000
Kashmir	Pashmina shawls, Carpets, Papier-mache, Walnut wood carving	₹3,000

States	Major Handicrafts	Annual Revenue (₹ in Crores)
Tamil Nadu	Bronze sculptures, Tanjore paintings, Palm leaf art	₹4,500
Odisha	Pattachitra, Silver filigree, Stone carving, Palm leaf engraving	₹2,500
Kerala	Wood carving, Bell metal craft, Coir products	₹3,000
Maharashtra	Warli painting, Bidriware, Paithani sarees	₹6,000
North East States	Bamboo & cane crafts, Tribal textiles, Mask making	₹2,000

Sources: Compiled from secondary data- Annual Report of Development Commissioner (Handicrafts) India -2023; Report of Export Promotion Council for Handicrafts (2024), Report of National Centre for Design and Product Development, etc.

The Indian handicraft industry has a more academic tone, with the likes of Rajasthan, Gujarat and Uttar Pradesh as production centres that account for a total of about 45% of the country's national handicraft produce and emerging Gujarat is also an export powerhouse. The industry is a vital job generator which ensures an income to more than seven million artisans spread across the country, with women being 70% of the workforce in states such as Rajasthan and West Bengal, making the role of the industry all the more important in the context of gender inclusive economic development. Growth patterns differ greatly across states. Certain states with comprehensive handicraft policies see strong annual growth rates of 8 to 12 per cent, whereas a negligible 3 to 5 per cent in states with weak support systems. Market access capabilities leave much to regional differences, with well-functioning international market links developed for traditional handicrafts centres in Rajasthan and Gujarat, while artisans in north-eastern states and Odisha find it difficult to access the global market despite having unique craft traditions that should command premium prices. The sector is also characterised by a strong urban-rural divide, with urban craft clusters in Maharashtra and Tamil Nadu using e-commerce platforms and new marketing techniques, particularly more so than rural artisan communities in the other states and in so doing, thus calling for specific digital inclusion strategies for these vulnerable populations to close the urban-rural technological gap.

Kerala is a helpful addition to India's rich handicrafts area, distinguishable from the rest by the exclusive production of coir products, bell metal crafts and screw pine artwork characterising the state's cultural heritage as well as ingenious use of local materials. Having a projected annual turnover of ₹3,000 crore in its handicrafts, Kerala has admirably managed to combine its age-old crafts with current market trends in particularly its wood items and hand-loom varieties, which have brought national as well as international attention to it. The state has moderate levels of export performance while sustaining strong domestic demand because of its strong tourism linkages and the fact that handicraft purchases are part and parcel of the destination experience at any point in the state. Kerala's government interest in the sector has been consistently moderate to high, but has concentrated on co-operative structures, which have especially helped women artisans in coastal and rural areas.

3.4 Handicrafts Industry in Kerala

Kerala's handicraft sector demonstrates unique regional specialisation across districts, including Ernakulam as a commercial centre for coir, wood carvings and traditional jewellery that benefit from good tourism linkages and export infrastructure. Palakkad district has strong traditions of bamboo crafts, with products varying from practical ones to decorative ones, covering around 15,000 artisans who largely operate through cooperative societies. Thiruvananthapuram district unites traditional bell metal work with state patronage through training institutes and marketing support, enabling artisans to modify their products for modern markets while retaining genuine techniques. Thrissur is differentiated by its elaborate gold jewellery work and ancient Aranmula mirror work, the latter of which enjoys a Geographical Indication designation that safeguards its proprietary metal alloy recipe and working techniques. Wayanad's tribal handicrafts, with their bamboo and reed items and unique ideas, are challenged by preservation despite their cultural value and increasing tourist demand. Alappuzha dominates Kerala's coir sector with its large production network of small-scale units and cooperatives that offer flexible employment, especially for women in coastal areas. Kannur-handloom sector manufacturers produce the renowned Kannur-

handloom fabrics using decentralised production units through the blending of traditional patterns and modern designs to ensure market trends. Kasaragod's distinctive Theyyam-inspired craft pieces exhibit strong cultural ties while lagging in covering marketing reach from local markets and beyond due to their artistic uniqueness. Screw pine crafts of Kottayam use eco-friendly local materials converted into household goods, mats and bags, generating alternative income for rural people while confronted with challenges from modernisation, necessitating design intervention.

Table 3.3

District-wise Comparison of Handicrafts Industries in Kerala

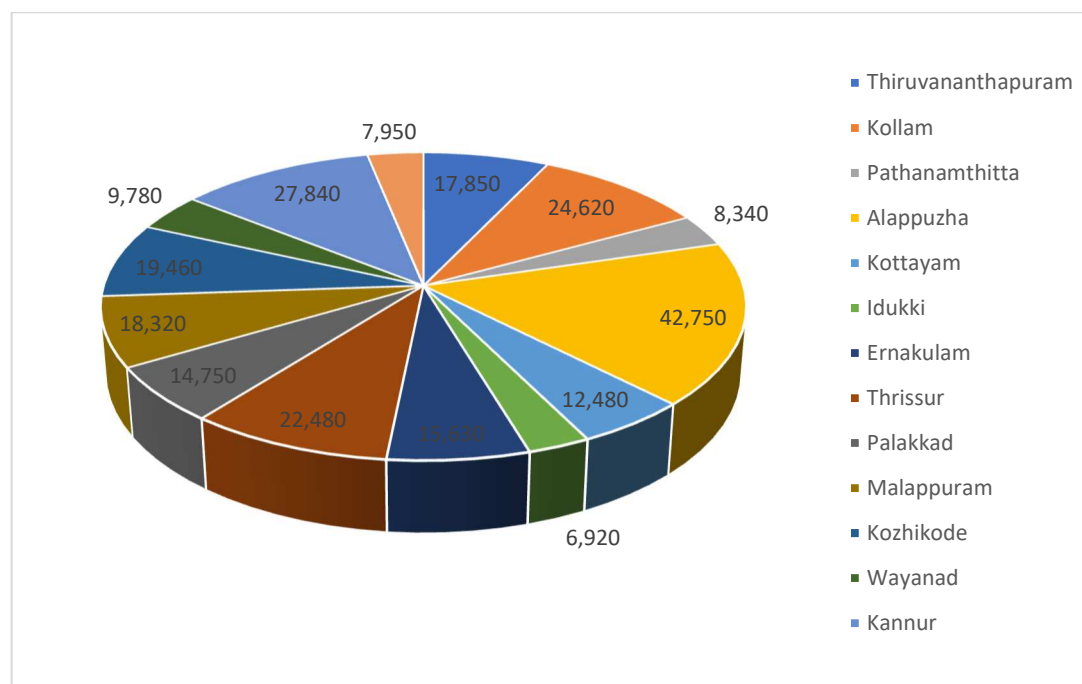
Districts	Primary Handicrafts	Number of Artisans	Annual Production Value (₹ Crores)	Export Contribution (%)	Active Craft Clusters	Govt. Support Centres
Thiruvananthapuram	Wooden handicrafts, Coconut shell crafts	17,850	84.5	12.3	18	5
Kollam	Screw pine crafts, Cashew wood crafts	24,620	103.2	15.8	21	4
Pathanamthitta	Bell metal crafts, Stone carving	8,340	41.7	3.2	9	2
Alappuzha	Coir products, Marine crafts	42,750	215.6	22.4	26	6
Kottayam	Lace crafts, Bamboo crafts	12,480	58.3	5.6	12	3
Idukki	Hill crafts, Spice crafts	6,920	27.4	1.8	8	2
Ernakulam	Handmade paper products, Modern crafts	15,630	97.8	8.7	14	5
Thrissur	Gold ornaments, Bronze crafts	22,480	175.3	14.5	19	6
Palakkad	Palm leaf crafts, Pottery	14,750	62.1	4.9	16	4
Malappuram	Wood inlay, Traditional musical instruments	18,320	78.6	6.2	17	3

Districts	Primary Handicrafts	Number of Artisans	Annual Production Value (₹ Crores)	Export Contribution (%)	Active Craft Clusters	Govt. Support Centres
Kozhikode	Wooden furniture, Textile printing	19,460	86.4	7.3	15	4
Wayanad	Bamboo crafts, Tribal handicrafts	9,780	32.5	2.1	11	3
Kannur	Handloom textiles, Theyyam crafts	27,840	124.7	9.8	22	5
Kasaragod	Ivory-alternative crafts, Lacquerware	7,950	29.8	2.4	9	2
Total	-	249,170	1,217.9	100	217	54

Sources: Compiled from secondary data- District Handicraft Mapping Report of Kerala State Handicrafts Development Corporation. (2023), Report of Kerala State Bamboo Mission. (2023), Report of the Department of Industries & Commerce, Kerala. (2024), Report of Directorate of Handlooms and Textiles, Kerala, etc.,

Figure 3.1

District-wise Comparison of Handicrafts Industries in Kerala: Number of Artisans

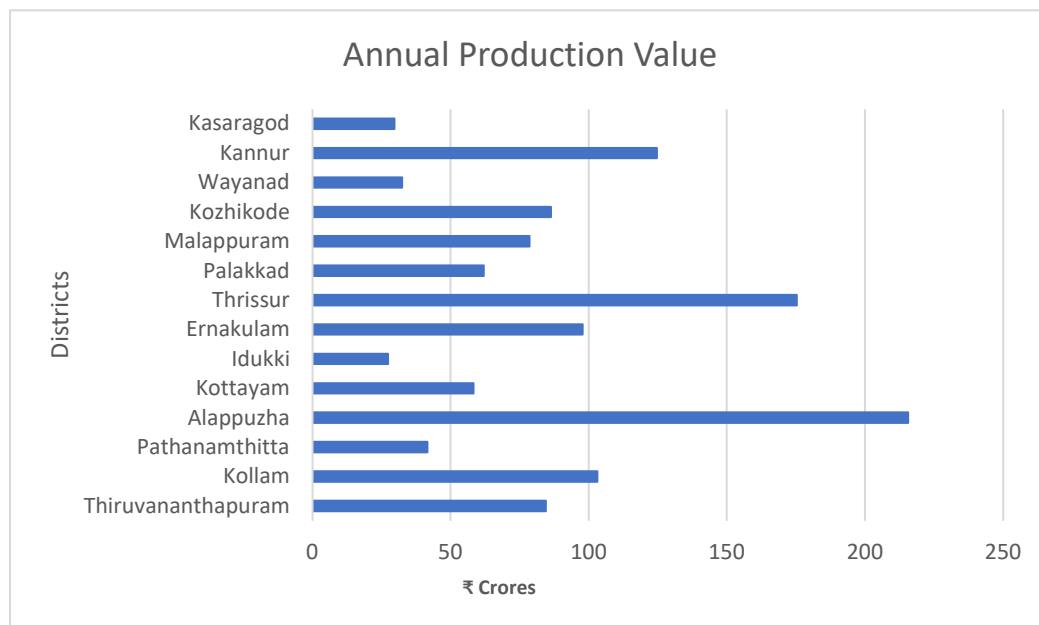


Source: Compiled from Secondary Data

Only Alappuzha district hires around 42,750 craftspeople (nearly 17.2% of Kerala's total artists) and earns up to ₹215.6 crores through handicrafts, mainly producing coir and fish craft. Collectively, Idukki and Wayanad districts have fewer artisans with 6,920 and 9,780, respectively, despite being masters in craftwork from bamboo, reed and cane. There are many Alappuzha district residents finding employment in the handicraft sector. People in Idukki and Wayanad can find some jobs through agriculture. However, Idukki and Wayanad depend more on handicraft industries created from grasses such as bamboo and cane than from other areas. More crafts from bamboo are found in the forested hill areas of South Malabar because the land there encourages the growth of bamboo, illustrating how nature impacts the region's artisans. It proves that development policies for handicrafts should be made based on where they are practiced, rather than relying on a single plan for everyone.

Figure 3.2

District-wise Comparison of Handicrafts Industries in Kerala: Annual Production Value



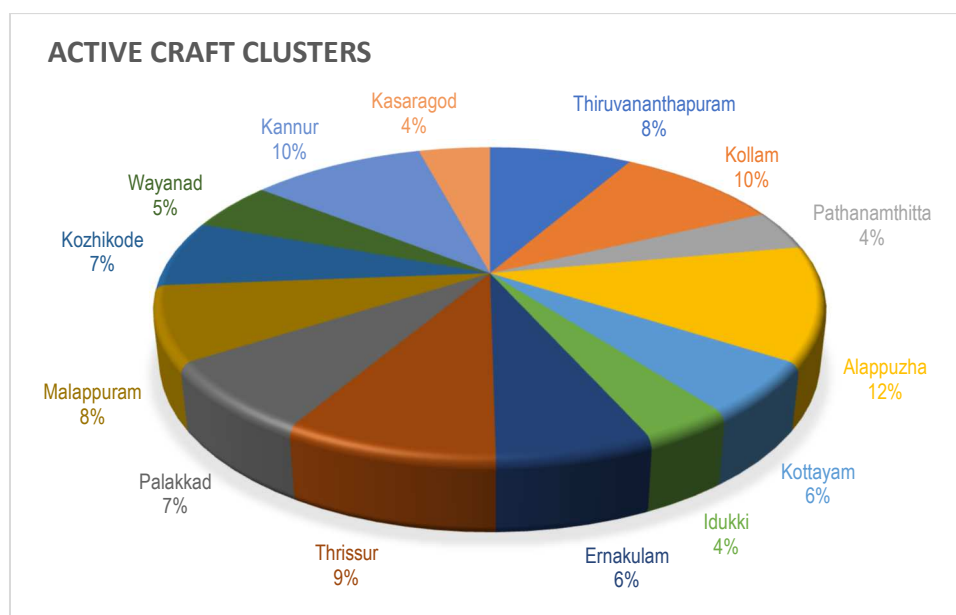
Source: Compiled from secondary data

It is clear from an analysis of Kerala's handicraft sector that Alappuzha and Thrissur have a major impact on the state's economy by producing coir products and

ornaments, respectively (Figure 3.2). With strong and well-developed government support and links to the global export market, these two districts have helped many artisan families earn a good income. Handicrafts from Alappuzha and Thrissur districts substantially boost Kerala's annual output, whereas Idukki, Wayanad and Kasargod play a limited part in handicrafts. Idukki, Wayanad and northern Kasargod regions are affected by geographic loneliness, limited access to transportation and not as many developed channels for sales, though helped by remarkable crafts. Though the economy may not grow tremendously there, these places play a key role in preserving native talents and valuable skills which are not easily expressed in financial terms. Because of the economic difference between regions, development plans targeting trade and technology should enable artisans in these regions to keep their unique characteristics.

Figure 3.3

District-wise Comparison of Handicrafts Industries in Kerala: Active Craft Clusters



Source: Compiled from secondary data

As a result of the historical heritage and economic growth of the areas, the evolved handicraft activity structure of Kerala differs from region to region. Figure 3.3 shows that both Alappuzha and Kannur have a higher number of active craft clusters than other districts in Kerala, with Alappuzha mainly focused on coir and Kannur centred

on textiles. With aid from the government, these coastal districts have protected their heritage and can still sell handicrafts that match today's trends. In comparison, places like Pathanamthitta, Idukki and Kasaragod have few well-organised villages focused on crafts, due to the limited government support available, even though they are famous for their crafts created with forest resources. It is evident from the way clusters are distributed in Kerala that both geography, past trading links and important policies from the government play a role in determining the success or difficulties of craft communities. A more balanced opportunity for artisans in Kerala could be achieved by designing policies that support strengthening organisations and infrastructure in districts that do not have many clusters.

The bamboo, cane, screw pine and reed bamboo-based industries embody two key economic and cultural role players in the handicraft landscape of Kerala, especially, in Wayanad (9,780 artisans with bamboo crafts and score of 9.1 out of 10 in tribal heritage related to the preservation of skills development), Kollam (24,620 artisans where screw pine crafts account to ₹103.2 crores of annual income and got a GI tag), Alappuzha (where reed bamboo, not reinforced by others due to strong coir industry with 42,750 in handicrafts), Kottayam (12,480 artisans with bamboo crafts an essential craft) and Idukki (indicated a score of 8.4 out of 10 in preserving bamboo crafts despite scarce social market linkage). Altogether, these natural fiber crafts create sustainable livelihoods for 96,550 artisans (approximately 39% of the total craft workforce of Kerala), with women's participation rates relatively higher in these sectors from a range of 66% in Idukki to 84% in Wayanad. With their aggregate annual production exceeding the revenue of ₹437 crores, marking their economic significance, representing their environmental significance to denote their role in employing renewable assets and traditional ways of working with a low carbon footprint, which represents Kerala's indigenous eco-friendly craft traditions, aided by social awareness to also capture cultural preservation with social sustainable development. (Kerala Department of Industries and Commerce, 2023; Directorate of Handicrafts, Government of Kerala, 2022).

3.5 The Legal Framework

India's handicraft industry is largely regulated by the Development Commissioner (Handicrafts) within the Ministry of Textiles, as instituted by the Handicrafts Development and Promotion Act. This regulatory agency enacts schemes such as the 'National Handicraft Development Programme' and 'Comprehensive Handicrafts Cluster Development Scheme', which offer financial support, skill enhancement and marketing facilitation to artisans (Ministry of Textiles, 2020). The legal framework is also supported by the Geographical Indications of Goods (Registration and Protection) Act, 1999, which has served to protect many traditional crafts such as Kashmir Pashmina, Banarasi Brocades and Channapatna toys (Intellectual Property India, 2021).

The administrative framework consists of handicraft development corporations at the state level and national-level organisations such as the Export Promotion Council for Handicrafts (EPCH) that conducts the Indian Handicrafts and Gifts Fair and other trade promotion programs. These institutions collaborate with the National Centre for Design and Product Development and the Craft Development Institute to offer end-to-end support throughout the value chain (EPCH Annual Report, 2022). The Central Cottage Industries Corporation of India and the Handicrafts and Handloom Export Corporation are government-sponsored marketing agencies for genuine Indian handicrafts.

Recent legislative changes involve changes to the Micro, Small and Medium Enterprises Development Act to favour handicraft businesses and carrying out the 'One District One Product' scheme that aims to highlight distinctive handicrafts per district (Ministry of MSME, 2020). National awards for master craftspeople, set up under the regulatory scheme of the Ministry of Textiles, acknowledge and financially reward remarkable artisans, whereas the 'Shilp Guru Awards' reward master craftspeople who have made remarkable achievements in the conservation of traditional crafts (India Brand Equity Foundation, 2023).

The crafts cluster initiative under the Office of the Development Commissioner (Handicrafts), Ministry of Textiles, Government of India, aims to showcase products

made by cluster artisans from various regions. Through partner implementing agencies, the initiative provides artisans with essential technical and marketing knowledge, helping promote traditional crafts in a modern, competitive market.

3.5.1 Development Commissioner (Handicrafts)

The office of the Development Commissioner (Handicrafts) is the nodal agency in the Government of India for craft and artisan-based activities. It supports the development, marketing and export of handicrafts, promoting craft forms and skills. This assistance is provided in the form of technical and financial support, including schematic interventions implemented through its field offices. As the nodal agency, the Development Commissioner leads the country's efforts to promote the handicrafts sector. The office supports artisans and the sector through various developmental schemes, operating through its six regional offices in Mumbai, Kolkata, Lucknow, Chennai, Guwahati and New Delhi, along with 61 field units. The office of the Development Commissioner (Handicrafts) implements various schemes under the National Handicraft Development Programme (NHDP) and the Comprehensive Handicrafts Cluster Development Scheme (CHCDS) to promote and develop the sector.

3.5.2 Udyam Registration

The Ministry of Micro, Small & Medium Enterprises (MSME) has introduced a composite criteria classification for MSMEs, which considers both the investment in plant and machinery or equipment and the turnover of the enterprises. This new classification system replaces the earlier process of filing the Udyog Aadhaar Memorandum, which has been implemented through the 'Udyam' registration portal developed by the ministry. Existing and prospective entrepreneurs can now complete their 'Udyam' Registration online through the portal.

As of January 10, 2021, 65,23,067 enterprises have been classified under this new system. Among these, 21,13,233 enterprises belong to the manufacturing category, while 44,09,834 are categorised under the Service sector. In addition, the ministry has granted an exemption from the requirement of having a GSTIN (Goods and Services

Tax Identification Number) for MSMEs, in line with the provisions of the Central Goods and Services Tax Act, 2017. This move has contributed to an increase in registrations on the Udyam registration portal.

Furthermore, with effect from July 2, 2021, the Government has included retail and wholesale trades as part of the MSME category. These businesses can now register on the Udyam registration portal and are eligible for benefits under priority sector lending. Similarly, from August 2, 2021, urban street vendors have also been recognised as MSMEs. They are now eligible to register on the Udyam registration portal and avail themselves of benefits related to priority sector lending.

The top five industrial sectors with the highest number of registrations are food products, textiles, apparel, construction activities and construction of buildings. These sectors highlight the strong presence of MSMEs in key industries that significantly contribute to the country's economic growth. This ministry, vide notification no. S.O. 2119(E) dated 26.06.2020, has notified a composite criterion of classification of MSMEs based on investment in plant & machinery/equipment and turnover. The guidelines regarding composite criteria for the classification of MSMEs are available in the Indian Gazette. Key features of Udyam registration are as follows:

- Anyone can obtain Udyam registration through the portal.
- The process is fully digital and paperless (no documents need to be uploaded).
- Registration is free
- Exemption from the requirement of GSTIN (notification no. S.O. 1055(E) dated 05.03.2021)
- An e-certificate titled 'Udyam Registration Certificate' is issued online upon registration.
- The certificate includes a dynamic QR code to access enterprise details on the portal.

- Deliberate misreporting during registration or updation is punishable under section 27 of the Act.
- The online system is integrated with income tax and GST systems; data on investment and turnover is auto-fetched.
- Exports are not considered part of turnover.
- Only one Udyam registration per enterprise is permitted, but it may include any number of activities (manufacturing or service).
- Aadhaar is mandatory for registration.
- PAN and GSTIN are mandatory from 01.04.2021.

3.5.3 Special Measures Under Aatmanirbhar Bharat Abhiyaan

Artisans and weavers form the third-largest group among India's impoverished population. Their dependence on producing 'non-essential' goods often leads to minimal policy attention, despite initiatives like 'Vocal for Local' and 'Atmanirbhar Bharat.' (self-reliant India). In the wake of the COVID-19 pandemic, the Hon'ble Prime Minister recognised the crucial role played by Micro, Small and Medium Enterprises (MSMEs) in nation-building. Consequently, MSMEs received significant attention and became a key component of the initiatives introduced under the Aatmanirbhar Bharat Abhiyaan. The government allocated substantial resources to the MSME sector and accorded it high priority in the implementation of measures aimed at revitalising the economy. To provide immediate relief, several announcements were made as part of the economic package. The Government of India demonstrated a clear commitment to energising MSMEs across the nation and the Ministry of MSME diligently focused on all aspects to support and strengthen this vital sector.

3.5.4 Crafts Clusters of India

The Crafts Clusters of India is an initiative by the Office of DC (Handicrafts), Ministry of Textiles, Government of India, to showcase different products made by artisans from clusters across India. Artisans are provided with technical and marketing know-

how for making these products by implementing agencies partnered with DC (Handicrafts) for the upliftment of these artisans. Craft clusters in India refer to geographical areas where a specific craft or handicraft tradition is concentrated. These clusters are known for their skilled artisans, traditional techniques and unique products. In the southern state of Kerala, craftsmen create unique products using grass and coir fibers. The crafts showcase the traditional skills of local artisans and reflect the natural abundance of the region.

3.5.5 Artisan Cluster

KFRI's bamboo cluster includes skilled artisans engaged in producing bamboo and cane-related eco-friendly products such as handicrafts, food products, nursery items and utility products. These artisans have successfully registered their enterprises under the Udyam Aadhaar Scheme through the i-STED, DST project of the Kerala Forest Research Institute, aimed at promoting value-added bamboo-based industries. Several traditional, socio-politically backward bamboo and cane artisans, as well as non-traditional entrepreneurs, have received training to establish and run their units.

The program provides these artisans with free technical and social support from experts, creating better opportunities for the value-added utilisation of bamboo and cane-precious, renewable, low-input natural resources. These resources are used for handicrafts, woven mats, utility items, furniture, joinery, panel products, as well as for housing and the construction sector. The livelihood of marginalised bamboo and cane artisans and the sustenance of bamboo and cane-based industries in the region have been significantly improved, creating a successful model that can inspire other regions.

3.6 Supportive Schemes for the Handicraft Industry in India

The Government of India has introduced various support schemes through the Office of the Development Commissioner (Handicrafts) in the Ministry of Textiles for developing and promoting the handicraft industry. The National Handicraft Development Programme (NHDP) is an umbrella scheme that encompasses elements such as marketing assistance, design improvement and technology up-gradation.

Under this system, the Marketing Support & Services scheme finances attendance at domestic and foreign exhibitions, allowing artisans to present their work directly to buyers. The Design & Technology Up-gradation scheme also provides workshops, training sessions and support in creating modern designs while retaining traditional looks, enabling artisans to meet contemporary market needs while retaining cultural integrity (Ministry of Textiles, 2023).

Financial assistance is provided through schemes such as the Mudra Yojana, under which artisans and craftsmen are given loans of up to ₹10 lakhs without collateral and the Artisan Credit Card scheme, which facilitates easy availability of working capital. The Credit Guarantee Fund for Micro Units provides guarantee cover against loans to handicraft micro units. The Interest Subvention Scheme for Handicrafts offers interest subsidy on term loans and working capital to registered handicraft units, lowering the financial burden on artisans considerably. The Handicrafts Mega Cluster Mission (HMCM) has developed integrated handicraft parks in places such as Varanasi and Jodhpur, with centralised facilities for production, skill upgradation and marketing (SIDBI, 2022; India Brand Equity Foundation, 2023).

The ecosystem of skill development comprises the Handicrafts Artisan Comprehensive Welfare Scheme, which provides health insurance under Ayushman Bharat and life insurance cover under Pradhan Mantri Jeevan Jyoti Bima Yojana, resolving social security issues of artisans. The Guru Shishya Parampara program finances master craftsmen to teach apprentices traditional crafts in danger of extinction, while the Human Resource Development program provides training programs to improve the technical knowledge of current and new artisans. The Ambedkar Hastshilp Vikas Yojana is aimed at organising artisans into self-help groups and offering them basic services such as technology transfer, design inputs and marketing support (National Centre for Design and Product Development, 2022).

Infrastructure development is also aided under the Infrastructure and Technology Development Scheme, which finances the setting up of Common Facility Centres, Resource Centres and Design Banks in handicraft clusters. The Handicrafts Exhibition Scheme hosts Gandhi Shilp Bazaars and craft bazaars across the nation, providing direct marketing opportunities for artisans. The Comprehensive Handicrafts Cluster

Development Scheme (CHCDS) takes a holistic approach to development by addressing the entire value chain challenges in identified craft clusters. Online efforts like the Indian Handicrafts and Gifts Virtual Fair and the e-commerce platform 'Tribes India' helped artisans connect to global markets, particularly pertinent during the COVID-19 pandemic era when traditional marketplaces were not accessible (Export Promotion Council for Handicrafts, 2022; Ministry of Tribal Affairs, 2023).

Table 3.4

Supportive Schemes for the Handicraft Industry in India

Scheme	Implementing Agency	Key Objectives	Benefits to Artisans	Year Introduced
Marketing Support & Services	Office of Development Commissioner (Handicrafts)	Enhance marketing capabilities and market access	Funding for domestic and international exhibitions, publicity & market development	2006 (Revised in 2018)
Design & Technology Upgradation	Ministry of Textiles	Improve product design and production technology	Design workshops, training programs, trend forecasting and product development assistance	2005 (Revised in 2017)
Mudra Yojana	Small Industries Development Bank of India (SIDBI)	Financial inclusion of artisans and craftspeople	Collateral-free loans up to ₹10 lakhs under Shishu, Kishore & Tarun categories	2015
Artisan Credit Card	Ministry of Finance & Commercial Banks	Ensure working capital availability	Easy access to credit facilities and simplified loan procedures	2002
Credit Guarantee Fund for Micro	Ministry of Finance	Risk coverage for financial	Guarantee coverage for	2015

Scheme	Implementing Agency	Key Objectives	Benefits to Artisans	Year Introduced
Units		institutions lending to micro enterprises	loans to handicraft units	
Interest Subvention Scheme	Ministry of Textiles	Reduce financial burden on artisans	Interest subsidies on term loans and working capital	2010
Handicrafts Mega Cluster Mission (HMCM)	Ministry of Textiles	Create world-class infrastructure	Integrated handicraft parks with common facilities in Varanasi, Srinagar & Jodhpur	2008
Handicrafts Artisan Comprehensive Welfare Scheme	Office of Development Commissioner (Handicrafts)	Provide social security to artisans	Health insurance through Ayushman Bharat & life insurance coverage	2006 (Expanded in 2018)
Guru Shishya Parampara	Ministry of Culture & Ministry of Textiles	Preserve endangered crafts	Financial support to master craftspeople for training apprentices	2003
Human Resource Development Scheme	Office of Development Commissioner (Handicrafts)	Enhance technical skills	Training programs for existing and new artisans	2007 (Revised in 2021)
Ambedkar Hastshilp Vikas Yojana	Ministry of Textiles	Community-based approach to craft development	Formation of self-help groups, technology transfer and design inputs	2001 (Revised in 2016)
Infrastructure and Technology	Office of Development	Improve production	Funding for common	2007

Scheme	Implementing Agency	Key Objectives	Benefits to Artisans	Year Introduced
Development Scheme	Commissioner (Handicrafts)	infrastructure	facility centres, resource centres & design Banks	
Handicrafts Exhibition Scheme	Ministry of Textiles	Create direct marketing platforms	Organisation of Gandhi Shilp Bazaars and craft bazaars nationwide	2000
Comprehensive Handicrafts Cluster Development Scheme (CHCDS)	Ministry of Textiles	Holistic development of craft clusters	Addressing the entire value chain challenges in the identified clusters	2014
Deen Dayal Upadhyaya Hastakala Sankul	Ministry of Textiles	Create specialised trade facilitation centres	Exhibition space, common facility centre and raw material banks	2015
SFURTI (Scheme of Fund for Regeneration of Traditional Industries)	Ministry of MSME	Organise traditional industries into clusters	Infrastructure development, market promotion and skill training	2005 (Revised in 2016)
Research and Development Scheme	Office of Development Commissioner (Handicrafts)	Documentation and knowledge preservation	Surveys, studies, documentation of crafts and census of handicraft artisans	2006
Marketing and Sourcing Hubs in Major Cities	National Centre for Design and Product Development	Urban market linkages	Permanent display and sales centres in metropolitan cities	2012
National Award for Master Craftspeople	Ministry of Textiles	Recognition of excellence	Cash prizes, certificates and promotional	1965

Scheme	Implementing Agency	Key Objectives	Benefits to Artisans	Year Introduced
Shilp Guru Awards	Ministry of Textiles	Honour lifetime achievement	opportunities Recognition, financial reward and special status for master craftspeople	2002
GI Registration Assistance	Intellectual Property Rights Cell, Ministry of Textiles	Protect traditional crafts	Financial and technical assistance for obtaining GI tags	2005
e-Commerce Initiatives	Export Promotion Council for Handicrafts	Digital market access	Virtual exhibitions, Online marketplaces and e-commerce training	2018
Handicrafts and Carpet Sector Skill Council	National Skill Development Corporation	Skill standardization	Development of Qualification Packs and National Occupational Standards	2013
Prime Minister's Employment Generation Programme (PMEGP)	Khadi and Village Industries Commission	Self-employment opportunities	Margin money subsidy for setting up handicraft units	2008
Trade Infrastructure for Export Scheme	Ministry of Commerce & Industry	Export infrastructure	Funding for projects like craft design centres and testing facilities	2017

Sources: Compiled from Secondary data- Ministry of Textiles Annual Report 2022-23, Export Promotion Council for Handicrafts (EPCH) Annual Report 2021-22, National Centre for Design and Product Development Reports 2022, India Brand Equity Foundation Industry Reports 2023, Ministry of Tribal Affairs Annual Report 2022-23.

❖ Facilitating the Establishment of Bamboo and Cane Enterprises Through Training and Technology Transfer.

Bamboo and cane are highly eco-friendly, renewable and low-input alternatives to timber. However, these resources remain underutilised, especially when it comes to improving livelihoods through bamboo-based industries. To make bamboo and cane more useful, it is important to apply value-addition techniques such as mechanical processing and preservative treatment, which can significantly improve the finish and durability of these materials. This project aims to facilitate the establishment of bamboo and cane-based enterprises, providing better livelihoods for marginalised and socio-politically disadvantaged artisan communities. By transferring innovative technologies and conducting training for both traditional and non-traditional artisan clusters, this initiative will empower local communities and generate sustainable employment opportunities.

The project's key goal is to build replicable bamboo and cane-based business models. Through training, demonstration and technology transfer, these models will help entrepreneurs in various regions by showing them how to design and market bamboo and cane products. This will also increase the design capabilities of bamboo and cane products, allowing them to meet modern market needs in sectors such as furniture and handicrafts. Bamboo's role in eco-friendly construction and industrial products is expanding, which increases the market demand for well-designed bamboo and cane products.

Research and development (R&D) efforts will focus on improving preservation techniques, drying and mechanical processing to ensure dimensional accuracy and reduce energy consumption in production. This will reduce the manual labour traditionally associated with bamboo and cane processing while improving market acceptance for these products in multiple sectors. Additionally, these advancements will help boost the durability and commercial viability of bamboo and cane products. A major aspect of this initiative is the establishment of a Centre for Bamboo and Cane

Processing Training and Technology Transfer at the Kerala Forest Research Institute (KFRI). This centre will act as a regional hub for showcasing bamboo and cane utilisation techniques and will indirectly benefit marginalised and socially disadvantaged artisan communities. Also, by promoting solar-based energy systems to power bamboo processing equipment, the centre will help address the energy challenges associated with bamboo production.

Kerala's burgeoning eco-tourism and housing sectors present significant opportunities for creating bamboo and cane-based products. These products can be applied in domestic utilities, furniture and even as eco-friendly construction materials for housing. The project visualises the creation of sustainable bamboo and cane-based products that are both affordable and environmentally friendly, catering to the demands of modern eco-conscious consumers.

3.7 Grass-Based Handicraft Industries in Kerala

The grass-based handicraft industry constitutes an important area of heritage and sustainable economic advancement of Kerala. This theoretical framework analyses the foundation, evolution and current situation of grass-based handicrafts in Kerala, focusing on bamboo, cane, screw pine and other natural fiber materials. The framework locates these practices within their larger ecological, socio-economic and cultural contexts to give an all-inclusive description of their significance and possibilities of expansion in future.

3.8. Conceptual Understanding of Grass-Based Materials

3.8.1 Definition and Classification of Grass-Based Materials

Grasses are mostly of the Poaceae family, differentiated by round, hollow and narrow leaf-shaped leaves (Nyafu, 2009; Dourson & Dourson, 2019). Poaceae, comprised of over 10,000 species, forms one of the world's largest plant families. However, in the case of handicrafts, 'grass-based materials' cover a large group of plant fibers which

are functionally similar but which do not happen to be taxonomically homogeneous (Daka, 2025; Praveena et al., 2022).

Some of the important grass-based natural fibre materials used in Kerala handicraft industries are:

1. Bamboo (Poaceae family): Although it looks like a tree, bamboo is actually a botanical grass. Indian Forest (Amendment) Bill, 2017 removed bamboo from the definition of ‘tree’ under the Indian Forest Act, 1927 and acknowledged its special nature and growth (Ministry of Environment, Forest and Climate Change, 2017).
2. Reed Bamboo (Poaceae family): A lesser breed of bamboo that is normally used in mats, baskets and roofing materials.
3. Kora Grass (Cyperaceae family): Although not technically a grass, this sedge family plant grows into material that is good for mats, roofing and eco-friendly home crafts.
4. Rattan Cane (Arecaceae family): Though it is part of the palm family, cane is usefully comparable to grass-based products in craft use, especially for furniture making.
5. Screw Pine (Pandaceae family): Weaving with the help of screw pine leaves has officially been included under the Geographical Indications of Goods (Registration and Protection) Act, 1999, for Kerala as a traditional craft (GI Registry of India, 1999).

3.8.2 Ecological Significance of Grass-Based Materials

Grass-based materials provide an alternative to conventional materials in several ways from the ecological point of view.

1. Rapid Renewability: The bamboo can grow to as much as 91 cm a day and the fact makes them one of the fastest-growing plants on Earth (Lucas, 2024). This

shooting out cycle allows for the maintenance of harvesting without the depletion of its resources.

2. **Carbon Sequestration:** Grass-based plants usually capture more carbon than several tree species, which are involved in climate change mitigation (Kumhar, 2021).
3. **Low Input Requirements:** A lot of grass species have a low demand for maintenance, pesticides or fertilisers, which subsequently decreases the environmental footprint on the grass cultivation (Praveena et al., 2022).
4. **Soil Conservation:** The soils are protected from erosion, which helps to maintain healthy soil through grasses' enormous root systems (Zuazo et al., 2009).
5. **Biodiversity Support:** Grassland ecosystems provide a variety of flora and fauna for a certain ecosystem balance (Coupland, 1979).

3.9 Historical Context of Grass-Based Handicrafts in Kerala

3.9.1 Evolution of Traditional Craft Practices

Specific sources of the origins of grass-based handicrafts in Kerala are unknown but are traceable to the 2nd century CE (Dongre et. al, 2024). According to archaeological findings, indigenous groups in Kerala's coastal and midland areas used screw pine, bamboo and reed for making utilitarian items before any form of contact with the colonies (Koduveliparambil, 1997).

In Kerala, traditional craft practices evolved during certain ecological niches and in certain social contexts:

1. **Coastal Communities:** Techniques were developed for treating natural fibers to be resistant to humidity and a saline environment, which are especially pronounced in works in screw pine (Gunwant, 2024).

2. Tribal Communities: Bamboo and reed craft traditions evolved from forest resource exploitation and specialised techniques for water containers and fishing implements devised (Dongre et. al, 2024).
3. Agricultural Settlements: Seasonal craft practice developed according to the agricultural cycles using post-harvest grass and reed materials (Terry, 1999).

3.9.2 Colonial and Post-Colonial Transformations

The British colonial period (1795-1947) stayed west of much of Kerala's handicraft traditions in terms of:

1. Commercialisation: Introduction of production models based on the functionality of the market segment that changed customary craft functions and aesthetics (Risatti, 2009).
2. Material Substitutions: Synthetic dyes and preservatives came into replacement of indigenous natural treatments (Das, 2024).
3. Institutional Interventions: Craft training centres, which made the previously heterogeneous local practices standard (Dongre et al., 2024).

The post-independence developments further re-oriented craft practices in that;

1. Governmental Support: Initiation of undeveloped handicraft development corporations and support programs that formalised production systems (Kerala State Handicrafts Development Corporation, 2020).
2. Tourism Influence: Expansion of tourism gave rise to new markets for decorative and non-practical craft products (Teixeira, 2019).
3. Technological Adaptations: Introduction of mechanical processing tools, which changed the traditional procedures of production (Bamboo Technical Support Group, 2022).

3.10. Theoretical Perspectives on Grass-Based Handicrafts

3.10.1 Sustainable Livelihood Framework

The conceptual prism of the sustainable livelihood framework can be helpful in an investigation into grass-based handicrafts in Kerala. This framework, drawn up by Chambers and Conway in 1992 and modified by DFID in 1999, is based on five types of capital assets that its authors conceived of as constituting ‘livelihoods’.

1. Natural Capital: Kerala’s rich supply of grass-based resources, such as bamboo, cane and screw pine are renewable source of raw materials for handmade crafts (Delobel, 2014).
2. Human Capital: Organic knowledge, talents and techniques transferred from generation to generation constitute meaningful human capital investments (Dongre et. al, 2024)
3. Social Capital: Knowledge sharing, market access and collective production systems are provided by the networks, associations and collective production systems of craft communities (Manfredi, 2019).
4. Physical Capital: Tools, equipment and infrastructure for harvesting, processing and production of handicrafts form important physical capital (Bamboo Technical Support Group, 2022).
5. Financial Capital: Craft sales as a source of earning help to achieve economic stability, especially for women and disadvantaged groups (Kerala State Handicrafts Development Corporation 2020).

The framework can be used in explaining how grass-based handicrafts support sustainable rural livelihoods by leveraging local resources, traditional skills and social networks to create livelihoods while still maintaining ecological balance.

3.10.2 Value Chain Analysis

Value chain analysis provides yet another theoretical angle through which the grass-based handicraft industry can be understood. This approach, first pioneered by Porter (2008), but adapted for development contexts (Kaplinsky and Morris 2001), explores the entire spectrum of activities necessary to take a product from concept to end use.

The value chain of Kerala's grass-based handicrafts industry includes:

1. **Resource Procurement:** Harvesting or cultivation of bamboo, cane, screw pine and other grass materials (Van, 2018).
2. **Primary Processing:** Cleaning, splitting, drying and processing raw materials to prepare them for making (Bamboo Technical Support Group, 2022).
3. **Production:** The weaving, summarising and assembling of materials in finished products, by the use of crude practices (Dongre et al., 2024).
4. **Value Addition:** Treatment of finishing processes, dyes and ornaments to improve the value of products (Yadav & Pandey, 2024).
5. **Marketing and Distribution:** Direct selling, intermediary, e-commerce initiative between producers and consumers (Kerala State Handicrafts Development Corporation, 2020).

Value chain analysis identifies power relations, commodity trade routes, value addition points and strategic intervention points to improve crafts persons' livelihoods and product competitiveness.

3.10.3 Cultural Capital Theory

The notion of cultural capital joins another theoretical framework for explaining the importance of grass-based crafts, other than economic value. According to this perspective, there are three forms of cultural capital, viz:

1. Embodied Cultural Capital: The know-how, skills and tricks experienced by craft people most of the time come from a long period of apprenticeship and practice (Dongre et al., 2024).
2. Objectified Cultural Capital: The physical handicraft products which express cultural heritage and aesthetic traditions (Fu, 2023).
3. Institutionalised Cultural Capital: Attention in the form of awards, certifications and geographical indications that attest to craft tradition (GI Registry of India, 1999).

This framework explains how grass-based handicrafts ascribe cultural identity, heritage conservation and status in communities, contribute more than just economically.

3.11. Socio-Economic Context

3.11.1 Economic Significance of Grass-Based Handicrafts in Kerala

New research points towards the high economic impact of grass-based handicrafts on the economy of Kerala:

1. Employment Generation: The sector offers livelihood chances to about 200,000 artisans of Kerala, in which the women represent about 70% of the workforce (Kerala State Handicrafts Development Corporation, 2020).
2. Export Potential: Products using grass as raw material form around 15% of Kerala's exports of handicrafts worth ₹120 crores (Export Promotion Council for Handicrafts, 2023).
3. Tourism Linkages: The sale of handicrafts in the tourism of the state is said to add an estimated ₹45 crores to the state economy each year (Kerala Tourism Department, 2022).

4. Rural Income Diversification: For most households, handicraft production is an instrumental supplementary income during the off-seasons in agriculture (Dzitse, 2025).

3.11.2 Challenges Facing the Industry

Though possessed of economic importance, the handicraft industry based on grass in Kerala is fraught with many challenges:

1. Raw Material Scarcity: Reduced availability of quality input materials caused by land use change, urbanisation and the impacts of climate change (Deshmukh et al., 2024).
2. Competition from Synthetic Alternatives: Mass-produced plastic and synthetic goods displace traditional handicraft markets using competition on price (Guha, 2025).
3. Knowledge Erosion: Lower transmission of craft knowledge and skills from one generation to the other as the younger groups venture into alternative livelihoods (Dongre et. al, 2024).
4. Market Access Limitations: It is common for many of the artisans not to have direct access to lucrative markets and are still held up by the intermediaries (Kerala State Handicrafts Development Corporation, 2020).
5. Standardisation Pressures: The need of the market for standardised products clashes with traditional variety and creative instincts in the production of crafts (Chartrand, 1989).

3.11.3 Government and Institutional Interventions

Multiple programs on the part of governmental and non-governmental sources try to address these challenges:

1. National Bamboo Mission: Provides technical and financial support to the cultivation, processing and product development of bamboo (Ministry of Agriculture and Farmers Welfare, 2022).
2. Bamboo Technical Support Group (BTSG) South Zone: This initiative, provided by Kerala Forest Research Institute (KFRI), gives technical training as well as research support in bamboo cultivation and utilisation (Bamboo Technical Support Group, 2022).
3. Kerala State Handicrafts Development Corporation: Serves as a link between the market and artisans, provides skill development training and gives financial assistance to artisans (Kerala State Handicrafts Development Corporation, 2020).
4. Geographic Indication Protection: Indian legal standing to traditional crafts such as screw pine weaving under the GI registry (GI registry of India, 1999).
5. Design and Technical Support: Main institutions, such as the National Institute of Design, offer design interventions aimed at promoting the marketability of the products without the loss of traditional aesthetics (National Centre for Design and Product Development, 2021).

3.12 Technical Aspects of Grass-Based Handicraft Production

3.12.1 Material Properties and Processing Techniques

Technical properties of grass-based materials must be comprehended to analyse their craft applications:

1. Bamboo Processing: Various stages of bamboo processing include, but are not limited to, harvesting, cross-cutting, knot removal, preservation treatment, cleaning, polishing, radial splitting, sliver making, weaving, varnishing and drying (Bamboo Technical Support Group, 2022).

2. Cane Treatment: Special treatment methods to improve flexibility and durability are required for cane (soaking, chemical treatment and drying processes) (Yadav & Pandey, 2024).
3. Screw Pine Preparation: The screw pine is picked, the thorns removed, the leaves then allowed to dry in the sun, boiled in water with turmeric to ensure lasting quality and dried once more before weaving (Norton, 1990).
4. Dyeing and Colouration: Conventional natural dyes from fruits such as mango leaves, tamarind leaves and bhatar phen (boiled rice juice) are gradually being supplemented by synthetic colourants (Dongre et al., 2024).

3.12.2 Value Addition Techniques

Value addition processes greatly increase the marketable and economic value of grass-based commodities:

1. Mechanical Processing: New day-to-day equipment for cutting, splitting and shaping materials improves efficiency and consistency of products (Bamboo Technical Support Group, 2022).
2. Preservative Treatments: Use of natural and chemical preservatives prolongs the product's lifespan and prevents the spread of pests and the spread of decay (Sharif et al., 2017).
3. Finishing Techniques: Sanding and staining, painting and varnishing add aesthetic appeal and market value (Kumar & Pandey, 2021).
4. Product Diversification: Shaping of established crafts into modern goods such as furniture, home décor, fashion accessories and industrial parts (Sharif et al., 2017).

3.12.3 Tools and Equipment

The production process involves several special-purpose tools. These tools are commonly used for raw material procurement and the manufacturing of various products.

Table 3.5

Tools and Equipment

Category	Name of Tools	Description
Traditional Tools	Dao	Bill hook knife
	Jak	V-shaped wooden frame
	Bakai kol	Bending frame
	Narum	Sharp-pointed carving blade
Modern Tools	Mechanical splitters	Raw material processing
	Motorised polishers	Finishing work
	Precision cutting tools & electric dryers	Processing of materials
Weaving Implements	Taana	Octagonal warping frame
	Specialised combs	Designing
	Templates	For the uniform size of products

Source: Secondary data: Bamboo Technical Support Group, 2022 and Dongre et al., 2024

3.13 Sustainability and Eco-Friendly Dimensions

3.13.1 Environmental Sustainability

Offshoots of the handicraft trade are easy on the environment in the following ways:

1. **Renewable Resource Base:** High rates of growth by bamboo, cane and other grass materials facilitate the possibility of sustainable harvesting potential (Lucas, 2024).
2. **Carbon Footprint:** Research shows that products based on grass usually have less carbon footprint than alternatives from plastic, metals or wood (Correa, 2019).

3. **Biodegradability:** Natural fiber products degrade at the end of life, contrary to synthetic alternatives that exacerbate the problem of accumulated waste (Praveena et al., 2022).
4. **Ecosystem Services:** Grass-based material cultivation can stabilise soil and provide water filtration, habitat for varied species (Lucas, 2024).

3.13.2 Social Sustainability

The grass-based handicraft industry influences social sustainability as:

1. **Gender Empowerment:** In many grass-based craft traditions, women outnumber men in the workforce, especially those in screw pine weaving (Sharif et al., 2017).
2. **Traditional Knowledge Preservation:** Craft practices preserve indigenous knowledge systems that may be gone (Dongre et al., 2024).
3. **Rural Livelihood Support:** Handicraft production is a source of earning for people in places where there is little available employment (Kerala State Handicrafts Development Corporation 2020).
4. **Community Cohesion:** Craft production is frequently performed in communal environments that strengthen social as well as communal identities (Lucas, 2024).

3.13.3 Economic Sustainability

There are a variety of factors for long-term economic sustainability:

1. **Market Adaptation:** Novelty to transform traditional craft skills to suit the current market demands (Sharif et al., 2017).
2. **Value Chain Integration:** Improvement in equitable value chains for fair returns to primary producers (Kerala State Handicrafts Development Corporation, 2020).
3. **Product Innovation:** Ongoing development of new designs and new applications sustainable in the market (National Institute of Design, 2021).

4. Digital Marketing: Using e-commerce and social media to reach global markets (Export Promotion Council for Handicrafts, 2023).

3.14 Conclusion

This chapter provides a detailed global, Indian and Kerala outlook of the handicraft industry with relevant statistics. Administrative framework and supportive schemes for regulating and enriching such industries are discussed. This chapter also develops a historical, conceptual, theoretical, technical and socio-economic understanding of grass-based handicrafts in Kerala. This theoretical framework illustrates that the grass-based handicrafts in Kerala are much more than a set of traditional craft practices; it is a complex socio-ecological system with deep implications for the issue of sustainable development. This discussion provides an understanding of how these traditional practices influence environmental sustainability, contribute to rural development and the means of preserving culture.

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Chapter 4

RESULTS, INTERPRETATIONS AND DISCUSSIONS

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4.1 Introduction

This chapter explores the main focus of the research, where the data collected are logically analysed, interpreted and discussed in accordance with the objectives of the study. Statistical tools are applied to develop raw data into meaningful understandings for in-depth knowledge of the grass-based handicraft industry in Kerala and its importance. Various statistical techniques are used to convert collected data into significant information. Initially, the chapter explores the profile of the samples using frequency analysis to reveal the demographic and operational characteristics of grass-based handicraft units. Further, the chapter measures the association between various factors using the chi-squared test to identify the trend and relationship. The next part shows the analysis of data using various tools such as *t*-test, ANOVA, correlation and regression for interpreting the objectives of the study. Lastly, the findings are connected with previous studies and the conceptual framework for the progressive and environmental concerns of the grass-based handicraft sector.

The primary data was analysed with various analytical tools, statistical packages and software, such as Microsoft Excel and IBM SPSS. Both descriptive and inferential statistics constitute the analytical strategy of the study. Descriptive statistics covers comprehensive summary indicators, including measures of central tendency, frequency analysis, variability and characteristics of distributions of all the significant variables. Parametric tools are used for analytical purposes because the collected data are normally distributed. Normality testing was conducted with the use of skewness and kurtosis statistics to assess the distributional nature of the main study variables. Normality curves substantiate the characteristics observed through skewness and

kurtosis. Analytical tools such as independent *t*-tests were used in testing differences between two groups in continuous data, allowing mean comparisons in significant categorical differences (i.e., gender, business size or location of business). ANOVA was applied to determine whether there is a significant difference among three or more groups, which helped the investigation of the difference across several categories of independent variables. When a significant ANOVA was found, post-hoc tests were used to identify particular differences between groups and guarantee a credible results interpretation. The relations between categorical variables were studied by testing against the expected independence of a categorical variable by conducting chi-square tests of independence. Correlation analysis was used to measure the relationship between the variables of the study. The simple and multiple regression analyses served as the primary tool for testing multidirectional relationships in the study. It was used to examine the effects of several independent variables on the dependent variables, providing a comprehensive understanding of the factors influencing the organisational effectiveness of handicraft units.

4.2 Socio-Economic Profile of the Respondents

Through this section, the demographic and occupational characteristics of those employed in Kerala-based grass handicraft units were explained in detail. The analysis was conducted using frequency distribution, a very basic descriptive statistical tool that is applied to summarise categorical data by showing the number and percentage of times an event occurs in each category. Through frequency analysis, the study captures basic features, among other things, such as age, gender, educational qualifications, monthly income, location and years of business experience. This baseline understanding forms the foundation for subsequent statistical examinations and hypothesis testing presented in later sections.

Table 4.1*Socio-Economic Profile of the Respondents*

SL No	Variables	Category	Number of Respondents	Percentage
1	Age	18-25	4	1.4
		26-35	25	8.6
		36-45	67	23.0
		46-55	106	36.4
		56 and above	89	30.6
		Total	291	100
2	Gender	Male	139	47.8
		Female	152	52.2
		Total	291	100
3	Education	Illiterate	12	4.1
		High school or less	231	79.4
		Diploma	15	5.2
		Bachelor's degree or more	33	11.3
		Total	291	100
4	Monthly income (₹)	Up to 10000	88	30.2
		10000-25000	128	44.0
		25000-50000	41	14.1
		50000-100000	21	7.2
		Above 100000	13	4.5
		Total	291	100
5	Location	Rural area (Panchayath)	256	88.0
		Urban area (Municipality & Corporation)	35	12.0
		Total	291	100
6	Experience	0 to 5 years	20	6.9
		5 to 10 years	41	14.1
		10 to 20years	108	37.1
		More than 20 years	122	41.9
		Total	291	100

Source: Primary Data

Table 4.1 indicates the age profile of respondents engaging in grass-based handicraft activities. A total of 36.4% of the participants are between the ages of 46 to 55, followed by 30.6% aged 56 and above. The age group 36 to 45 has a proportion of 23%, which includes a large number of middle-aged artisans. The proportion of respondents aged 26 to 35 is only 8.6%, whereas the youngest age group of 18 to 25 years constitutes only 1.4%. This distribution indicates that the handicraft industry is largely owned and managed by aged, experienced individuals, with comparatively limited involvement by the younger age groups. This is due to generational sustainability issues.

This table further illustrates the gender-wise classification of the respondents. Among the total 291, 52.2% are women and 47.8% are men, reflecting a slight preponderance of women in the grass-based handicraft industry. This minor difference in gender underlines the important role that women have played in maintaining traditional artisan crafts in Kerala. The near-parity distribution also indicates that men and women are both actively participating in handicraft production, supporting the inclusive character of the industry. The presence of women could further indicate the sector's capability to support women entrepreneurship and improve rural livelihoods.

Again, Table 4.1 presents the educational attainment of the respondents. A huge majority (79.4%) are educated up to high school or below, implying that the grass-based handicraft industry consists largely of people with low formal education. Just 11.3% have a bachelor's degree or higher, whereas 5.2% are diploma holders. A small percentage (4.1%) is illiterate. This pattern indicates that the industry provides livelihood opportunities for less-educated people, highlighting its inclusive employment aspect. But the low percentage of above secondary education can also point towards the necessity of specific skill development and training interventions for increasing productivity and innovation.

This table illustrates the monthly income distribution among the respondents. The majority (44%) earn between ₹10,000 and ₹25,000, followed by 30.2% who earn up to ₹10,000, indicating that most artisans operate within the lower-income category. Only 14.1% fall in the ₹25,000 to ₹50,000 range, while 7.2% and 4.5% earn between

₹50,000 to ₹100,000 and above ₹100,000, respectively. This income pattern indicates the micro-enterprise nature of grass-based handicraft units, reflecting limited profitability and capital flow. The data indicate the importance of improving market linkages, pricing strategies and institutional support to enhance income levels and ensure sustainable livelihoods for artisans.

Table 4.1 reveals that a significant majority of grass-based handicraft units (88%) are located in rural areas governed by Panchayats, while only 12% operate in urban areas such as municipalities or corporations. This distribution highlights the rural-centric nature of the handicraft sector, rooted in traditional knowledge and locally available resources. It suggests that these enterprises are often community-based and dependent on the rural workforce and raw materials. The minimal urban presence may reflect limited commercial expansion, infrastructure constraints, or low institutional outreach, emphasising the need for targeted rural development and support for scaling up rural-based craft units.

Lastly, Table 4.1 shows the business experience of the respondents in the handicraft industry. Most artisans (41.9%) have more than 20 years of experience, followed by 37.1% with 10 to 20 years, signifying a well-established presence in the industry. A lesser percentage (14.1%) possess 5 to 10 years of experience, while just 6.9% are newcomers with less than 5 years. This distribution emphasises the ancient traditional character of the craft, maintained by veteran artisans. The low proportion of newer participants indicates restricted generational replacement, which can be a future sustainability issue if the younger artisans are not actively involved.

4.3. Operational Characteristics of the Handicraft Units

The features of grass-based handicraft units can be revealed through the discussion of data relating to the number of employees working, major products produced, nature of business activity, availability of storage facility, mode of acquisition of raw materials, training received, reason for doing handicraft business unit and type of raw material used. These data are shown with the help of a tabular presentation.

4.3.1 Employees of the Handicraft Units

Both Skilled and unskilled workers are employed in the unit for raw material extraction, product manufacturing and distribution. Skilled workers are primarily involved in the extraction and manufacturing activities. Family members provide the main source of labour. The workforce size in the units is categorised as follows.

Table 4.2

Employees Working in the Handicraft Units

Number of Employees	Frequency	Percent
0 to 5	160	55.0
5 to 10	54	18.6
10 to 20	51	17.5
More than 20	26	8.9
Total	291	100.0

Source: Primary Data

Table 4.2 shows the workforce size occupied in grass-based handicraft units. Most of the units (55%) hire 0 to 5 employees, showing the dominance of micro-scale operations. Another 18.6% employ 5 to 10 workers and 17.5% utilise 10 to 20 workers. A mere 8.9% of the units have more than 20 workers. The information highlights the small and family character of most units, which usually depend on family labour or a pool of artisans. The low employment size indicates limitations in capital, scale of production and demand, supporting the necessity for specific interventions to improve enterprise development and job generation.

4.3.2 Classification of Products

Grass-based units manufacture home utility, agricultural utility and decorative products. These are typically consumed by a specific class of consumers who prioritise eco-friendly and aesthetic preferences in their daily lives. The products of these units are mainly categorised as follows.

Table 4.3*Major Product Classification*

Sl. No	Items
1	Kitchen items
2	Office items
3	Decorative items
4	Furniture
5	Home utilities
6	Lamp shade
7	Jewellery items
8	Mats
9	Basket items
10	Miscellaneous (Pen, Rain Maker, Curtain, etc.)

Source: Primary Data

Table 4.3 classifies the categories of products produced by grass-based handicraft units in Kerala. The statistics attest to the rich diversity in production, a sign of both the versatility of natural materials and the flexibility of artisans to changing market needs. Kitchen utensils, office supplies and decorations form a significant proportion, emphasising functional and beautiful products. The presence of functional categories like furniture, mats, lamp shades and household utility items indicates that artisans are fulfilling domestic requirements using environmentally friendly substitutes. Products like jewellery and baskets contribute to cultural and traditional attractions, which incorporate both aesthetic sense and utilitarian appeal.

Notably, the presence of a ‘miscellaneous’ category (e.g., rain makers, curtains, pens) is an indicator of product experimentation and innovation in small-scale units. It reflects that artisans are not limited to traditional product lines but are experimenting with niche products to expand their market base. The classification also implies that artisans approach both export and local markets, with lifestyle and decorative products being likely to have greater demand in urban and tourist markets. Generally, this categorisation highlights the industry's capacity for growth, as long as artisans are

properly trained in areas of design creativity, branding and marketing to maximise varied consumer tastes.

4.3.3 Nature of Business Activity

The units are engaged in diverse activities in the value chain of grass-based products. The activities differ based on the skill of artisans, the nature of the products, the scale of operation, the availability of raw materials and the market demand. The number of units across various types of business activities is listed below.

Table 4.4

Nature of Business Activity

Nature of Activity	Frequency	Percent
Extraction of raw materials, manufacturing and distribution	162	55.7
Manufacturing only	32	11.0
Manufacturing and distribution	92	31.6
Extraction of raw materials and manufacturing	5	1.7
Total	291	100.0

Source: Primary Data

Table 4.4 describes the nature of business activities among the handicraft units surveyed. More than half of the respondents (55.7%) are in the entire value chain, raw material extraction, manufacturing and distribution, which represents a vertically integrated business structure. It will help to avoid over-exploitation by the middleman. Close to 31.6% are involved in manufacturing and distribution and 11% are involved in manufacturing only. A negligible 1.7% are in raw material extraction and manufacturing. This spread points to the majority of units requiring control over more than one stage of production for quality and cost-effectiveness. However, the low number of participants in manufacturing points to the reliance on intermediaries or insufficient access to raw materials.

4.3.4 Storage Facility of the Units

The availability of storage capacity directly influences the effectiveness of the business operations. Storage facilities are essential to keep raw materials, semi-

finished and finished goods. The quality of the products largely depends on these facilities.

Table 4.5

Availability of Storage Facility

Storage Facility	Frequency	Percent
Sufficient	55	18.9
Partially sufficient	75	25.8
Not sufficient	134	46.0
Not available	27	9.3
Total	291	100.0

Source: Primary Data

Table 4.5 shows the availability and sufficiency of storage facilities among handicraft units. Large numbers of respondents (46%) stated that their storage was not sufficient, while 25.8% stated that their facilities were barely adequate. Just 18.9% found their storage adequate, while 9.3% had no storage facility whatsoever. These findings represent a crucial infrastructural deficiency that can negatively impact raw material conservation, inventory control and general production efficiency. Poor storage can result in wastage of materials, deterioration of product quality and interference with production cycles. Tackling this challenge via enhanced infrastructure and support could greatly improve operational efficiency and loss reduction.

4.3.5 Acquisition of Raw Materials

Different methods are used for the procurement of raw materials in the handicraft units. The choice mode depends on convenience, cost, quality and available infrastructural facilities within the unit. Some units adopt a combination of modes for acquiring raw materials. The number of units using various modes is listed below.

Table 4.6*Mode of Acquisition of Raw Materials*

Mode of Acquisition	Frequency
Cultivation	27
Direct extraction	141
Direct purchase	108
Agent's purchase	158

Source: Primary Data

Table 4.6 outlines where raw materials are obtained by grass-based handicraft units. In this case, one business unit may choose more than one mode of acquisition for the raw material collection. Buying through agents (158 units) is the most prevalent, followed by extraction directly (141 units) and direct purchase (108 units). A small minority (27 units) use cultivation, but none use other sources. The prevalence of agent-based and extraction-based sourcing suggests the use of external supply chains and forest-based material. Most of the artisans used a composition of all modes of acquisition and they are availing the benefit of each mode. Limited use of cultivation suggests that artisans face challenges in getting land or connecting with farming. Encouraging self-sourcing through cultivation and group buying can help improve material availability, reduce costs and support a more sustainable supply chain.

4.3.6 Training and Assistance

Supporting agencies, such as DICs and NGOs, provide training through the Entrepreneurial Development Programme (EDP). The certificate of EDP is a determining factor for giving financial assistance to the units. The training module covers both technical skills and managerial skills enhancement.

Table 4.7*Training or Assistance Received in the Handicraft Units*

Availability of Training / Assistance	Frequency	Percent
Received	231	79.4
Not received	60	20.6
Total	291	100.0

Source: Primary Data

Table 4.7 shows that a vast majority (79.4%) of the respondents have been trained or supported in the handicraft sector, whereas 20.6% have not. This large percentage of training participation indicates that government and non-government efforts towards skill development and building capacity have penetrated far into the artisan base. The 20.6% who are not trained remain a potential focus for special intervention. Improving access to formal training, particularly for artistically trained individuals, would highly enhance the quality of products, management of business and innovation, thus boosting overall productivity and competitiveness of Kerala's grass-based handicraft industry.

4.3.7 Motivation for Starting Units

Grass-based units are started by artisans for multiple reasons, which influence the success of the units. The majority of the respondents answered more than two reasons. The following table shows the reasons behind unit initiation.

Table 4.8

Reasons or Interests Behind the Start of the Business

Reasons for Starting the Business	Frequency
To meet livelihood expenditure	284
To meet the needs of the locality	30
To make use of locally available raw materials profitably	167
To maintain hereditary occupation	154
Competition in the field attracted you	36
Personal interest in the area	273

Source: Primary Data

Table 4.8 demonstrates the drives that prompted artisans to venture into grass-based handicraft units. The overwhelming majority cited as a reason is meeting livelihood expenditure (284 responses), underscoring that economic need is a key impetus for activity in this sector. Strongly second is interest in the field at a personal level (273 responses), indicating that most artisans consider their craft a passion. A substantial percentage (167) began their ventures to make profitable use of readily available local

raw materials, which suggests a strong linkage between local resources and economic opportunity.

Preservation of hereditary occupation was the reason provided by 154 respondents, indicating the generational and traditional character of the craft. 30 respondents only mentioned satisfying the demands of the locality as the driving force and 36 were driven by an involvement in competition within the field. The latter of these responses indicates that although there are market-oriented or community-oriented artisans, most are driven by interest, necessity, or heritage. The majority of artisans responded that not only with a single reason but also with different reasons.

The evidence indicates that the industry combines aspects of survival entrepreneurship and intrinsic motivation with cultural conservation. Interventions by policymakers and development organisations should therefore take cognisance of this range of motivation, providing livelihood assistance to economically weak individuals, in addition to opportunities for growth to passion-driven entrepreneurs.

4.3.8 Nature of Raw Materials

The determining factors of raw materials are materials availability, intergenerational skill and market demand. Based on these factors, the number of respondents using various materials and their composition are shown in the following table.

Table 4.9

Types of Raw Materials Used

Types of Raw Materials	Frequency
Bamboo	193
Reed bamboo	187
Cane	50
Kora grass	16
Screw pine	34
Other grass items	11
Others	62

Source: Primary Data

Table 4.9 enumerates the different types of raw materials utilised by grass-based handicraft units in Kerala. The most frequently used materials are reed bamboo (187 respondents) and bamboo (193 respondents), noting their availability, hardness and applicability in artisanal production. 50 respondents use canes, possibly for furniture and utility products and screw pine (34) and kora grass (16) are used, but less, denoting their niche use or insufficient availability. Only 11 respondents reported using other grass items and 62 indicated other indefinite (other than grass items) materials, reflecting some diversity and experimentation in raw material sourcing.

Heavy use of bamboo products indicates a reliance on forest natural materials, potentially with sustainability concerns. The comparatively low level of use of some natural grasses indicates the possibility for revival programs or enhanced sourcing practices. The information also identifies scope for innovation in material application, particularly in underutilised but sustainable fibres.

4.3.9 Raw Material Extraction Skill

The material extraction skill is intergenerational, though modern tools are increasingly used for this purpose. Thus, the training is provided by both experienced artisans and skill supporting agency. Some of the units do not require this skill as they collected raw materials from other sources. The details of skilled artisanal units are presented below.

Table 4.10

Trained in Raw Material Extraction

Trained in Raw Material Extraction	Frequency	Percent
Fully trained	95	32.6
Partially trained	100	34.4
Not trained	96	33.0
Total	291	100.0

Source: Primary Data

Table 4.10 depicts the level of training among respondents in raw material harvesting. Out of 291 artisans covered in the survey, 34.4% are partially trained, 32.6% are

completely trained and 33% are untrained. This proportionate division indicates a major gap in overall skill-building. Whereas most of them have some training or other, one-third of them are untrained, which may affect the efficiency, quality and sustainability of procuring raw materials. Improvement of training programs, particularly for the untrained and partially trained, is likely to improve resource management, minimise wastage and foster sustainable harvesting practices critical to the development of the handicraft industry.

4.3.10 Intergenerational Skills

The use of intergenerational skills supports this industry in making indigenous products. Use of this skill preserves the culture and traditions of specific communities while assuring profitability. The following table presents the status of using intergenerational skills.

Table 4.11

Usage of Intergenerational Skills

Intergenerational Skills	Frequency	Percent
Used for complete production	11	3.78
Partially used for production	113	38.83
Not used for production (Modern technology used)	167	57.39
Total	291	100.0

Source: Primary Data

Table 4.11 shows the usage of traditional skills of the respondents in the grass-based handicraft industry. Most of the artisans were entirely using modern technology and 38.83% were using a combination of traditional and modern skills. On the other hand, only 3.78% fully use intergenerational skills. This indicates that the artisans are decreasing in the use of intergenerational skills in their production.

4.4. Association Between the Demographic Profile of the Samples

Under this section, the study has conducted a detailed cross-tabulation analysis with a chi-square test to find out the association between the categorical variables used for

the study; only the relevant results with the significant association were presented in this section for further discussion.

4.4.1 Nature of Business Activity and Gender

The following hypotheses were tested to identify the association between the nature of the business activity and the gender of the respondents.

H_{0.1}: There is no significant association between the gender and the nature of activity of the respondents.

H_{1.1}: There is a significant association between the gender and the nature of activity of the respondents.

Table 4.12

Association Between the Nature of Activity and Gender

Nature of Activity	Gender		Total	Chi-square Statistics		
	Male	Female		χ^2	<i>df</i>	<i>p</i>
Extraction of raw materials, manufacturing and distribution	98	64	162	32.292	3	<0.001***
Manufacturing only	3	29	32			
Manufacturing and distribution	36	56	92			
Extraction of raw materials and manufacturing	2	3	5			
Total	139	152	291			

Source: Compiled from Primary Data

(*** indicate highly significant)

Table 4.12 tests the relationship between gender and business activity nature based on a chi-square test, and the result obtained is highly significant at *p*-value (<0.001), which means *H_{0.1}* is rejected. This suggests a very strong relation between the respondent's gender and the activity their handicraft unit engages in. Most male respondents (98 of 139) are involved in the whole value chain, extraction, manufacturing and distribution, whereas 64 are female in the same category. On the contrary, much larger percentages of women (29 of 32) are involved in manufacturing

alone and more women are also involved in manufacturing and distribution than men (56 vs. 36).

These results imply that male artisans are likely to be more involved in labour-intensive, resource-based and integrated business strategies, whereas female artisans would be inclined towards processing and distribution themes, perhaps influenced by access, mobility, or socio-cultural reasons. Support strategies must be designed according to these gendered operation patterns to support balanced enterprise development.

4.4.2 Nature of Activity and Business Location

Here, the following hypotheses were tested to identify the association between the nature of the activity and the location of the business.

$H_{0.2}$: There is no significant association between the location of the business and the nature of activity of the respondents.

$H_{1.2}$: There is a significant association between the location of the business and the nature of the activity of the respondents.

Table 4.13

Association Between the Nature of Activity and the Location of Business

Nature of Activity	Location		Total	Chi-square Statistics		
	Rural Area (Panchayath)	Urban Area (Municipality)		χ^2	df	p
Extraction of raw materials, manufacturing and distribution	150	12	162	12.365	3	0.006**
Manufacturing only	29	3	32			
Manufacturing and distribution	72	20	92			
Extraction of raw materials and manufacturing	5	0	5			
Total	256	35	291			

Source: Compiled from Primary Data

(** indicates very significant)

Table 4.13 examines the correspondence between the business location and activity nature by a chi-square test, which finds a statistically significant correspondence ($p=0.006$) associated with the Monte Carlo test, which means $H_{0.2}$ is rejected. The analysis reveals that the nature of business activity in handicraft units varies strongly by geographical location. In the case of respondents based in rural locations, most of them (150 out of 256) are involved in extraction, manufacturing and distribution, reflecting the availability of natural raw materials and space-dependent processes. In contrast, urban units are more concentrated in manufacturing and distribution (20 out of 35), with fewer involved in extraction.

The evidence points to rural reliance on raw material supply and full production processes, whereas urban units are apt to be limited by space, access to resources, or control constraints and therefore specialise in downstream operations. The findings confirm the need for adjusting support services like raw material depots in urban regions and distribution support in rural regions to complement the grass-based handicraft enterprise location-specific requirements.

4.4.3 Types of Raw Materials Used and Nature of Activity

Here, the given hypotheses were tested to identify the association between the nature of activity and types of raw material used.

$H_{0.3}$: There is no significant association between the types of raw material used and the nature of activity of the respondents.

$H_{1.3}$: There is a significant association between the types of raw material used and the nature of the activity of the respondents.

Table 4.14

Association Between the Nature of Activity and Different Types of Raw Material Used by the Units

Nature of Activity	Types of Raw Material		Total	Chi-square Statistics		
	Grass Items	Both Grass and Non-grass Items		χ^2	df	p
Extraction of raw materials, manufacturing and distribution	104	58	162	19.622	3	<0.001***
Manufacturing only	29	3	32			
Manufacturing and distribution	79	13	92			
Extraction of raw materials and manufacturing	4	1	5			
Total	216	75	291			

Source: Compiled from Primary Data

(*** indicate highly significant)

Table 4.14 shows a chi-square test of the relationship between the type of raw material used and the nature of business activity. The test statistic is very significant ($p < 0.001$), showing a strong association between the variables, which means $H_{0.3}$ is rejected. Out of 162 respondents engaged in extraction, manufacturing and distribution, 104 used only grass items and 58 used both grass and non-grass items. Similarly, in the group of manufacturing and distribution, most of them also employ grass-based inputs.

Interestingly, exclusively manufacturing units predominantly depend on grass products (29 out of 32), perhaps because they are widely available and traditional. Mixed-material usage may be less due to restricted processing capacity or lesser exposure to other inputs.

These results underscore that highly integrated units will diversify their material base, perhaps in order to increase product range or cater to wider market needs. Assistance in material innovation and sustainable supply may further enhance the industry's flexibility and competitiveness.

4.4.4 Nature of Activity and Monthly Income

Now, the given hypotheses were tested to identify the association between the nature of activity and the monthly income of the respondent.

$H_{0.4}$: There is no significant association between the monthly income and the nature of activity of the respondents.

$H_{1.4}$: There is a significant association between the monthly income and the nature of activity of the respondents.

Table 4.15

Association Between the Nature of Activity and the Monthly Income of the Respondent

Nature of Activity	Monthly Income (₹) of the Respondent					Total	Chi-square Statistics		
	Up to 10000	10000-25000	25000-50000	50000-100000	Above 100000		χ^2	df	p
Extraction of raw materials, manufacturing and distribution	46	71	26	10	9	162	26.576	12	0.009**
Manufacturing only	21	8	2	1	0	32			
Manufacturing and distribution	20	47	12	9	4	92			
Extraction of raw materials and manufacturing	1	2	1	1	0	5			
Total	88	128	41	21	13	291			

Source: Compiled from Primary Data

(** indicates very significant)

Table 4.15 examines the relationship between the business nature of activity and respondents' monthly income, and it was found to be statistically significant ($p=0.009$), associated with the Monte Carlo test, which means $H_{0.4}$ is rejected. The findings show that the level of income is quite diverse depending on the nature of business engagement. Among the extraction, manufacturing and distribution participants, the income distribution is relatively even across different groups, with

significant presence even in higher groups (₹50,000 to ₹100,000 and over ₹100,000), indicating higher earnings from complete participation in the value chain.

Conversely, manufacturing-only establishments depict concentration in lower income groups, where 21 of 32 respondents earned up to ₹10,000 and none more than ₹50,000. In the same aspect, those in manufacturing and distribution depict an average level of concentration of income, with some coverage in upper income classes.

This trend suggests that business operations crossing the entire supply chain, from raw material to distribution, are more likely to generate better financial rewards. It highlights the economic benefit of value chain integration in the handicraft industry.

4.4.5 Nature of Activity and Business Experience

Next, the given hypotheses were tested to identify the association between the nature of activity and the business experience (in years) of the respondent.

$H_{0.5}$: There is no significant association between the business experience and the nature of activity of the respondents.

$H_{1.5}$: There is a significant association between the business experience and the nature of activity of the respondents.

Table 4.16

Association Between Nature of Activity and Business Experience (in years)

Nature of Activity	Business Experience (in years)				Total	Chi-square Statistics		
	0-5	5-10	10-20	More than 20		χ^2	df	p
Extraction of raw materials, manufacturing and distribution	15	25	62	60	162	24.263	9	0.004**
Manufacturing only	1	7	18	6	32			
Manufacturing and distribution	4	9	25	54	92			
Extraction of raw materials and manufacturing	0	0	3	2	5			
Total	20	41	108	122	291			

Source: Compiled from Primary Data

(** indicate very significant)

Table 4.16 looks at the relationship between the type of business activity and experience (years) in the handicraft industry, and finds a statistically significant chi-square outcome ($p = 0.004$) associated with the Monte Carlo test, which means $H_{0.5}$ is rejected. The evidence indicates a significant correlation between the nature of activity being carried out and the respondent's level of experience. Of those who are involved in extraction, manufacturing and distribution, a significant proportion have more than 10 years of experience (62 with 10 to 20 years, 60 with over 20 years), reflecting that the full range of activity in the handicraft value chain is prevalent among experienced artisans.

On the other hand, the manufacturing-only operations are distributed more uniformly in terms of experience but reveal a stronger presence in the 10 to 20 years group. The distribution and manufacturing group also contains a significant proportion of over 20 years of experience (54), which indicates that an increase in distribution usually comes with experience and time.

These findings reinforce that broader business engagement is strongly associated with accumulated industry experience, highlighting the importance of long-term skill development and exposure in shaping enterprise activities.

4.4.6 Training Received and Gender

Here, the following hypotheses were tested to identify the association between gender and training/assistance received in the handicraft business

$H_{0.6}$: There is no significant association between gender and training/assistance received in the handicraft business.

$H_{1.6}$: There is a significant association between gender and training/assistance received in the handicraft business.

Table 4.17*Association Between Gender and Training or Assistance Received in the Units*

Training or Assistance Received in the Handicraft Business	Gender		Total	Chi-square Statistics		
	Male	Female		χ^2	df	p
Received	104	127	231	3.383	1	0.045*
Not received	35	25	60			
Total	139	152	291			

Source: Compiled from Primary Data

(* indicates significant)

Table 4.17 examines the gender versus receipt of training or support in the handicraft industry and finds a statistically significant association ($p = 0.045$), which means $H_{0.6}$ is rejected. Of the 291 respondents, 127 of 152 women (83.6%) have received training or support compared to 104 of 139 men (74.8%). This means that women are even more likely to receive or engage in support programs than men.

The greater proportion of training by women artisans could be due to successful outreach efforts by the government or non-governmental organisations to empower women through skills development. It could also indicate a higher willingness or availability among women to take up capacity building. The comparatively lower access to training by men indicates an area for more inclusive program design.

These findings highlight the necessity for gender-responsive training programs that promote balanced opportunities and respond to specific obstacles encountered by both male and female artisans within the industry.

4.4.7 Training Received and Education

Here, the following hypotheses were tested to identify the association between the educational qualification and the training/assistance received in the handicraft business

$H_{0.7}$: There is no significant association between the educational qualification and training/assistance received in the handicraft business

H_{1.7}: There is a significant association between the educational qualification and the training/assistance received in the handicraft business.

Table 4.18

Association Between Educational Qualification and Training or Assistance Received in the Units

Training/ Assistance Received in the Handicraft Business	Educational Qualification				Total	Chi-square Statistics		
	Illiterate	High school or less	Diploma	Bachelor's degree or more		χ^2	<i>df</i>	<i>p</i>
Received	4	188	12	27	231	16.236	3	0.001**
Not received	8	43	3	6	60			
Total	12	231	15	33	291			

Source: Compiled from Primary Data

(** indicates very significant)

Table 4.18 examines the association between education level and receipt of training or support and finds a statistically significant relationship ($P = 0.001$), which means $H_{0.7}$ is rejected. Among the less educated with just high school or lower, an overwhelming majority (188 out of 231) received training, showing the effective reach of skill development programs to less educated artisans. Like that, 27 of the 33 respondents with a bachelor's degree and above also experienced training, an indication that higher learning individuals actively look for or are given precedence in training programs.

The illiterate group, however, indicates the highest percentage without training (8 out of 12), an indication of possible impediments in accessibility, publicity, or qualifications. Those with a diploma indicate modest training coverage (12 out of 15).

These findings highlight the importance of inclusive training mechanisms that address learning gaps. Particular attention must be paid to extending training to illiterate or poorly educated artisans to ensure that skill development efforts reach everyone and are communicated effectively.

4.4.8 Training Received and Number of Employees

Here, the following hypotheses were tested to identify the association between the number of employees working and the training/assistance received in the handicraft business

$H_{0.8}$: There is no significant association between the number of employees working and the training/assistance received in the handicraft business.

$H_{1.8}$: There is a significant association between the number of employees working and the training/assistance received in the handicraft business.

Table 4.19

Association Between the Number of Employees Working and Training or Assistance Received in the Handicraft Units

Training or Assistance Received	Number of Employees Working				Total	Chi-square Statistics		
	0-5	5-10	10-20	More than 20		χ^2	df	p
Received	117	43	46	25	231	11.942	3	0.008*
Not received	43	11	5	1	60			
Total	160	54	51	26	291			

Source: Compiled from Primary Data

(** indicate very significant)

Table 4.19. tests the association between workforce size and whether the firm was trained or helped, with the statistically significant chi-square outcome ($p=0.008$), which means $H_{0.8}$ is rejected. The statistics indicate a strong trend; firms with more employees are more likely to have received training or support. Among the units having over 20 employees, 25 out of 26 received training. Also, high training participation rates occur among units with 10 to 20 employees (46 out of 51) and 5 to 10 employees (43 out of 54). Conversely, micro units of 0 to 5 employees have a significantly lower rate of training recipients (117 among 160).

These results indicate greater exposure of larger units to institutional support systems, perhaps because of superior access to resources, administrative capabilities, or greater visibility to training agencies. In contrast, micro-units might experience difficulties

accessing or leveraging such opportunities and, therefore, need targeted outreach programs for smaller-scale operators.

4.4.9 Training Received and Business Experience

Here, the following hypotheses were tested to identify the association between the business experience of the respondents and the training/assistance received in the handicraft business.

$H_{0.9}$: There is no significant association between the business experience of the respondents and the training/assistance received in the handicraft business.

$H_{1.9}$: There is a significant association between the business experience of the respondents and the training/assistance received in the handicraft business.

Table 4.20

Association Between Business Experience and Training or Assistance Received in the Handicraft Units

Training or Assistance received	Business Experience (in years)				Total	Chi-square Statistics		
	0-5	5-10	10-20	More than 20		χ^2	df	p
Received	19	37	88	87	231	11.082	3	0.011*
Not Received	1	4	20	35	60			
Total	20	41	108	122	291			

Source: Compiled from Primary Data

(* indicates significant)

Table 4.20. measures the association between years of experience in the handicraft industry and having received training or support, with a statistically significant chi-square value ($p = 0.011$), which means $H_{0.9}$ is rejected. According to the data, artisans with longer durations of experience (10 to 20 years and over 20 years) are more likely to have benefited from training, 88 out of 108 and 87 out of 122, respectively. This implies a strong association between cumulative experience and participation in institutional support mechanisms.

In contrast, the group without training is also largely in the upper experience groups, especially among those with over 20 years of experience (35 out of 60). This shows

that many experienced artisans have not been exposed to or have not chosen to attend training programs. There is high training coverage for the 0 to 5 year group (19 out of 20), likely due to the effects of government or NGO programs aimed at new entrants.

In general, the evidence suggests that training outreach works both with new entrants and middle-career craftspeople, but that it is still necessary to re-engage long-standing craftspeople who might have been marginalised from support.

4.4.10 Age and Intergenerational Skills

The following hypotheses were tested to identify the association between the usage of intergenerational skills and the age of the respondents.

$H_{0.10}$: There is no significant association between the usage of intergenerational skills and the age of the respondents.

$H_{1.10}$: There is a significant association between the usage of intergenerational skills and the age of the respondents.

Table 4.21

Association Between Usage of Intergenerational Skills and the Age of Respondents

Usage of Intergenerational Skills	Age					Total	Chi-square Statistics		
	18- 25	26- 35	36- 45	46- 55	56 and above		χ^2	df	p
Used for complete production	1	1	2	3	4	11	41.31	8	0.001***
Partially used for production	1	6	9	46	51	113			
Not used for production (modern technology used)	2	18	56	57	34	167			
Total	4	25	67	106	89	291			

Source: Compiled from Primary Data

(*** indicate Highly significant)

Table 4.21 measures the association between the usage of intergenerational skills and the age of respondents by a chi-square test, which finds a statistically significant relationship ($p < 0.001$), which means $H_{0.10}$ is rejected. The analysis reveals that the younger artisans are reluctant to use intergenerational skills for making various products. In contrast, older artisans (above 45 years) are using traditional skills due to the lack of knowledge about innovative technology. Making innovative products along with the conservation of intergenerational skills leads to the success of the units.

The domination of older artisans and decreasing dependence on intergenerational skills are threats to the continuity of indigenous craftsmanship. If the youth do not learn and practice traditional skills, the knowledge may gradually be lost as the older generation retires from the sector. This problem of intergenerational transmission is key to the existence of traditional handicrafts.

Overall, the chi-square analysis in this chapter reveals significant associations between various demographic and business-related factors and key operational aspects of grass-based handicraft units. Variables such as gender, location, education, income, nature of business activity and intergenerational skills showed meaningful relationships with business experience, training participation, raw material usage and age of respondents. These results highlight the influence of socio-economic and operational contexts on enterprise functioning. While some patterns reflect expected outcomes, others underscore gaps in training, outreach and institutional support. Overall, the findings emphasise the need for targeted, inclusive interventions to bridge disparities and strengthen the foundational and intergenerational capabilities of micro-enterprises in the handicraft sector.

4.5. Data Analysis and Interpretations for the Study Objectives

In this section, the study has presented the data analysis and interpretations for the six major objectives of this investigation. For that purpose, the study has used descriptive statistics, independent sample t -test, ANOVA with post hoc test, correlation, simple and multiple regression analysis. All-important results are presented in a well-structured manner with detailed interpretations of the set hypotheses under each objective of the study.

4.5.1 Role of Grass-Based Handicraft Units in Kerala for Maintaining Environmental Sustainability

This section aims to evaluate the extent to which grass-based handicraft units in Kerala adopt and implement environmentally sustainable practices. The analysis is based on responses to multiple items measuring eco-friendly production methods, waste management, regulatory compliance and support received from institutional agencies. To comprehensively understand variations in sustainability practices, the study employs descriptive statistics to assess overall trends and independent sample *t*-tests and ANOVA to examine perception differences across demographic and operational groups. This multi-method approach facilitates a detailed understanding of sustainability adoption within the sector and its influencing factors.

Table 4.22

Descriptive Statistics: Environmentally Sustainable Practices

Statements	Mean	SD
1. The handicraft unit has policies and practices to reduce waste	3.98	0.538
2. The policies and practices of the unit ensure the conservation of natural resources	3.65	0.675
3. Businesses are using environmentally friendly ancillary materials in the production processes.	3.98	1.167
4. The unit uses renewable energy sources (solar or wind power) to power its operations.	1.05	0.294
5. The business receives government support for improving my unit's environmental sustainability	1.31	0.888
6. The business receives non-governmental support for improving my unit's environmental sustainability	1.27	0.786
7. Businesses evaluate the impact of wastes like dust, waste, chemicals, etc.	3.04	1.093
8. The unit always ensures compliance with environmental laws and regulations	3.01	0.643

Statements	Mean	SD
9. Businesses always try to ensure the quality of their products	4.10	0.759
10. Due to the high cost of production and regulations of the Government, businesses could not maintain environmental sustainability.	1.58	0.955
11. The business unit is in a position to treat all wastes properly.	3.96	0.645
N =291, Minimum 1, Maximum 5		

Source: Primary Data

The descriptive statistics for objective one provide an overview of how environmental sustainability is conceived and implemented in the handicraft units covered in the survey. The analysis from 291 valid responses captures artisans' knowledge, institutional support utilised and the ability to adopt environmentally friendly business behaviour.

The statement 'The handicraft unit has practices and policies for minimising waste' obtained a mean of 3.98 with a low standard deviation of 0.538, which means the majority of respondents strongly agree their units do have waste-minimising practices. The same was true for the use of eco-friendly ancillary materials, which obtained a high mean rating of 3.98 but with a relatively higher standard deviation of 1.167, implying wider variation in practice or availability of materials.

There was a firm belief in product quality and the higher mean score of 4.10 justified that artisans believe quality is part of sustainability. Similarly, the sentence 'The unit is in a position to treat all wastes properly' had a high mean of 3.96, suggesting that there are waste management practices in most units.

On the other hand, some of the items indicate the presence of major challenges. The most notable among these is the low mean score of 1.05 for the use of renewable energy, with a low standard deviation (0.294). This simply shows that the use of solar or wind energy is nearly absent among the entire group. Therefore, it suggests

infrastructural or financial constraints that discourage small businesses from embracing sustainable energy solutions.

The second important finding is low institutional support. Government assistance received a mean of 1.31 and non-governmental assistance a mean of 1.27, both with fairly constricted standard deviations. These figures indicate an almost uniform absence of external help, which presents a significant impediment to the wider application of environmental best practices. Furthermore, the item regarding inability to maintain sustainability due to production cost and government regulations received a low mean of 1.58. This suggests that respondents disagree with the statement, likely because they see government regulations as minimal or not a major barrier to their operations.

The average level of remarks is obtained in the waste impact assessment items (mean = 3.04) and environmental law compliance (mean = 3.01). The average level suggests that an awareness and attempt at sustainability compliance exist, yet implementation might lack consistency or be limited in scope to all units.

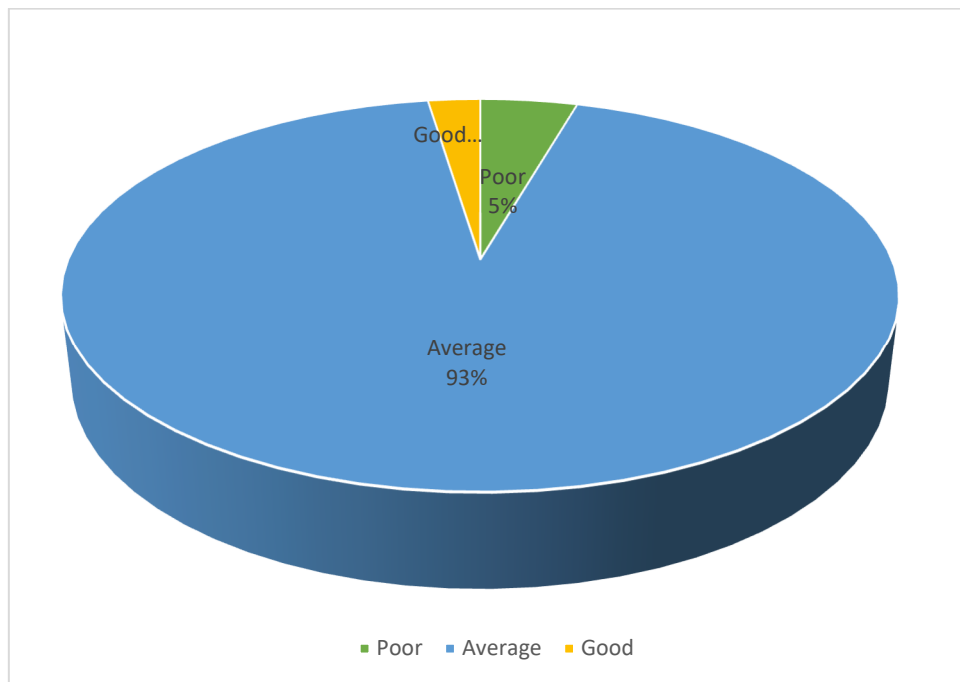
Interestingly, the question relating to conserving natural resources had a comparatively high mean of 3.65, which corresponds to the overarching sustainable culture of artisans closely collaborating with nature-based materials. This indicates that artisans might gradually adopt some sustainable methods despite the lack of policy or external incentives.

Generally, the results show a high level of internal commitment to environmental sustainability among artisans on issues of reducing waste, material selection and product quality. There are, however, wide gaps in renewable energy utilisation and institutional assistance, indicating crucial areas for policy intervention. Improving access to sustainable technology, incentives for clean energy and focused training initiatives can greatly improve Kerala's grass-based handicrafts industry's environmental performance.

Table 4.23*Level of Environmental Sustainability Practices*

Category	Frequency	Percentage
Poor	13	4.47
Average	271	93.13
Good	7	2.41
Total	291	100

Source: Compiled from Primary Data

Figure 4.1*Level of Environmental Sustainability Practices*

Source: Compiled from Primary Data

The results presented in Table 4.23 reveal a noteworthy distribution of environmental sustainability practices among the respondents engaged in grass-based handicraft units. A majority of the participants (93.13%) fall under the 'Average' category, indicating a moderate level of environmental sustainability practices being adopted, based on the suggestion by previous literature (Best & Kahn, 2016). This dominant representation suggests that while most units are aware of and engage in

sustainability-related activities to some extent, these practices may not be institutionalised or implemented in a highly structured or impactful manner.

On the other end of the spectrum (Figure 4.1), a very small proportion of the respondents (2.41%) are categorised under the 'Good' level. This indicates that only a few units demonstrate a high degree of environmentally responsible practices. These may be the units that have either better awareness, access to training, or exposure to eco-friendly technologies and standards. Their presence, though limited, reflects the potential within the sector for benchmarking and replication of best practices.

Conversely, 4.47% of the respondents fall into the 'Poor' category, indicating minimal or negligible adoption of sustainability practices. This segment reflects either a lack of awareness, resource constraints, or insufficient institutional support to promote such initiatives. The existence of this group also points to gaps in policy reach or the effectiveness of awareness and training programs.

Overall, the data imply that although the sector has moved towards recognising the importance of environmental sustainability, the degree of implementation is mostly moderate. There is an urgent need for policy interventions, targeted training and support mechanisms to uplift those in the 'Poor' category and encourage those in the 'Average' group to strive towards adopting more comprehensive and impactful sustainability practices. Enhancing sustainability practices would not only align the industry with global environmental standards but also improve marketability and consumer trust.

4.5.1.1 Perception Differences on Eco-Friendly Practices

The study has conducted the perception differences among the grass-based handicraft unit owners regarding the environmental sustainability practices using an independent sample *t*-test and Analysis of Variance (ANOVA). The following hypotheses were tested and commented in this report using the said statistical analysis.

H_{0.11}: There is no significant perception difference between the age groups on the environmental sustainability practices.

H_{1.11}: There is a significant perception difference between the age groups on the environmental sustainability practices.

H_{0.12}: There is no significant perception difference between the gender groups on the environmental sustainability practices.

H_{1.12}: There is a significant perception difference between the gender groups on the environmental sustainability practices.

H_{0.13}: There is no significant perception difference between the education groups on the environmental sustainability practices.

H_{1.13}: There is a significant perception difference between the education groups on the environmental sustainability practices.

H_{0.14}: There is no significant perception difference between the monthly income groups on the environmental sustainability practices.

H_{1.14}: There is a significant perception difference between the monthly income groups on the environmental sustainability practices.

H_{0.15}: There is no significant perception difference between the business experience groups on the environmental sustainability practices.

H_{1.15}: There is a significant perception difference between the business experience groups on the environmental sustainability practices.

H_{0.16}: There is no significant perception difference between the nature of business activity on the environmental sustainability practices.

H_{1.16}: There is a significant perception difference between the nature of business activity on environmental sustainability practices.

H_{0.17}: There is no significant perception difference between the training or assistance received groups on the environmental sustainability practices.

H_{1.17}: There is a significant perception difference between the training or assistance received groups on the environmental sustainability practices.

Table 4.24*Result of t-test: Perception towards Environmental Sustainability Practices*

Factors	Groups	Frequency	Mean	SD	<i>t</i>	<i>p</i>
Gender	Male	139	2.8470	.38586	1.237	0.217
	Female	152	2.7925	.36565		
Business location	Rural area (Panchayath)	256	2.8189	.39045	0.068	0.946
	Urban area (Municipality & Corporation)	35	2.8156	.24699		
Training or Assistance	Received	231	2.8264	.39704	0.865	0.389
	Not received	60	2.7879	.27991		

Source: Compiled from Primary Data

Table 4.25*Result of ANOVA: Perception Towards Environmental Sustainability Practices*

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Age	18 to 25	4	3.087	0.016*
	26 to 35	25		
	36 to 45	67		
	46 to 55	106		
	56 and above	89		
Education	Illiterate	12	7.632	<0.001***
	High school or less	231		
	Diploma	15		
	Bachelor's degree or more	33		
Monthly income (₹)	Up to 10000	88	9.610	<0.001***
	10000 to 25000	128		
	25000 to 50000	41		
	50000 to 100000	21		
	Above 100000	13		

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Business experience	0 to 5 years	20	1.336	0.263
	5 to 10 years	41		
	10 to 20 years	108		
	More than 20	122		
Nature of business activity	Extraction of raw materials, manufacturing and distribution	162	2.135	0.096
	Manufacturing only	32		
	Manufacturing and distribution	92		
	Extraction of raw materials and manufacturing	5		

Source: Compiled from Primary Data (* indicate significant & *** indicate highly significant)

Tables 4.24 and 4.25 present the perception differences analysis in environmental sustainability practice across different demographic and business groups is significant in understanding how artisans in the Kerala grass-based handicraft industry view environmentally friendly practices. Through independent sample *t*-tests and one-way ANOVA, the study assessed whether perceptions among artisans varied significantly by age, gender, education level, income level, experience level, business activity and availability of training or support.

There was a statistically significant difference between the various age categories ($p=0.016$), which shows that environmental sustainability perception is age dependent. This finding results in the verification of hypothesis $H_{0.11}$. Artisans belonging to older age groups are likely to exhibit awareness and involvement in sustainable practices due to gained experience, a stronger sense of ties with traditional craft ethics, or greater sensitivity towards environmental deterioration. Younger craftsmen, especially those under 35, are less likely to participate in strategic decisions or be subject to sustainability discourses and therefore, are relatively less aligned with such practices.

Conversely, in comparing male and female respondents' differences in perception, no statistically significant outcome was established ($p=0.217$). Thus, hypothesis $H_{0.12}$ could not be rejected. This implies that both genders perceive and participate equally in sustainability, further suggesting that eco-awareness is a value that transcends gender within this craft-oriented community. This gender-neutral finding affirms the applicability of cohesive sustainability training and outreach programs without having to customise by gender.

The analysis revealed a very significant difference in perception between various groups based on educational qualifications ($p<0.001$), leading to the rejection of hypothesis $H_{0.13}$. More educated artisans, especially those who hold diplomas or bachelor's degrees, indicated a higher congruence with sustainable production and compliance with regulations. These people are more likely to realise the long-term advantages of environmental operations and gain access to the information or contacts that enhance this kind of practice. On the other hand, individuals with little or no formal education can fail to gain access, read, or efficiently use sustainability guidelines, necessitating inclusive and accessible knowledge sharing.

Monthly income also proved to be a statistically significant determinant of perception ($p<0.001$), affirming the rejection of hypothesis $H_{0.14}$. Higher-income artisans were more oriented toward sustainability, possibly because they could better afford cleaner materials, investment in waste treatment, or participation in sustainability-oriented networks. Lower-income individuals, by contrast, under tighter budget constraints, may prioritise short-term cost reduction over sustainability. This validates the economic aspect of sustainability adoption, calling for subsidised eco-technology and support based on incentives for lower-income craftspeople.

About the number of years of business experience, no differences in perception were significant ($p=0.263$) and hence, hypothesis $H_{0.15}$ could not be rejected. This suggests that new entrants and veteran craftspeople have similarly broad perceptions regarding environmental practices. It could be an indication of the cultural tradition in the industry, where time-tested eco-sensitive methods have been handed down regardless

of tenure in the business, or it could represent an across-the-board necessity for retooling and further developing sustainability literacy at all levels of experience.

In terms of the type of business activity, whether artisans work in extraction, manufacturing, distribution, or some mix thereof, there were no differences noted ($p=0.096$). Hence, hypothesis $H_{0.16}$ fails to reject. This indicates that the perception of sustainability is not based heavily on production chain roles. Artisans, irrespective of roles, seem to face similar problems and perceptions, which reflect on the necessity for holistic sustainability interventions that can be applied to all types of activities, in contrast to developing programs based on roles.

Lastly, no significant difference was found by the analysis between those receiving training or support and those not receiving any training ($p=0.389$), leading to the failure to reject hypothesis $H_{0.17}$. This comes as a surprise, casting doubt on the effectiveness of the current support mechanisms. Although many artisans indicated attending training sessions, the lack of perceptual differences indicates that such training might not prioritise environmental issues, or that they do not lead to significant behavioural change. This puts a premium on the need to update content and delivery of such programs to focus on ensuring that they provide adequate integration of sustainability education that is context-relevant.

4.5.1.2 Intergroup Differences in Eco-Friendly Practices

The post-hoc analysis of environmental sustainability practices among grass-based handicraft units reveals important demographic and operational variations.

Table 4.26

Tukey HSD Post-Hoc Test Result: Environment Sustainability Practices

Factors	Comparison Groups		Mean Difference	p
	Group 1	Group 2		
Age	18 to 25	56 and above	.42799	0.161
	26 to 35	56 and above	.24253*	0.033
	36 to 45	26 to 35	-.17275	0.274
	46 to 55	26 to 35	-.18247	0.177

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Education	Illiterate	Bachelor's degree or more	-.27066	0.123
	High school or less	Bachelor's degree or more	-.26210*	0.001**
	Diploma	High school or less	.29902*	0.012*
Monthly income(₹)	Up to 10000	Above 100000	-.48776*	<0.001***
	10000 to 25000	Up to 10000	.17116*	0.005**
	25000 to 50000	Up to 10000	.32095*	<0.001***
	50000 to 100000	Up to 10000	.23701*	0.050

Source: Compiled from Primary Data (*significant, ** very significant & *** highly significant)

Table 4.26 shows the results of post-hoc analysis on various intergroup comparison and their results. It indicates that aged (above 56), educated (above high school level) and higher-income groups (more than Rs. 25000 per month) follow stronger adoption of eco-friendly practices. Significant differences in perception were found among age groups ($F = 3.087$, $p = 0.016$), indicating that attitudes toward sustainability vary meaningfully across age groups. This could be due to generational differences in awareness and attitudes toward ecological issues, with younger or older artisans possibly being more receptive to sustainability-based initiatives. Education level also showed a highly significant difference ($F = 7.632$, $p < 0.001$), suggesting that more educated artisans are more likely to value or implement environmental practices. This aligns with the broader assumption that education equips individuals with awareness of global environmental concerns and technical know-how for sustainable production methods. Similarly, income levels significantly influenced perceptions ($F = 9.610$, $p < 0.001$), with higher income groups showing more favourable views, likely due to their greater capacity to adopt green practices like renewable energy, waste management, or eco-friendly raw materials. These differences highlight the role of financial strength in facilitating environmentally sustainable behaviour.

However, no statistically significant variation was found across gender ($p = 0.217$), business location ($p = 0.946$), business experience ($p = 0.263$), nature of business activity ($p = 0.096$), or whether artisans received training ($p = 0.389$). These results

suggest that while education and economic status are strong drivers of environmental practice adoption, systemic training programs and support mechanisms are yet to make a measurable impact and operational variables like location or years of experience do not automatically lead to higher environmental commitment. These findings stress the need for targeted awareness, incentives and education-oriented interventions to enhance sustainability adoption.

In summary, the results indicate that artisans' understanding of environmental sustainability is appreciably determined by age, education and income, whereas gender, experience, type of business activity and access to training do not have significant differences. This suggests the potential impacts of socio-economic variables on influences for sustainability practices and emphasises the necessity of inclusive, economically sensitive and education-based interventions. Policies to green the handicraft industry should target to close learning and income gaps as well as to reinforce the environmental emphasis of assistance and training.

4.5.2 Organisational Effectiveness of Grass-Based Handicraft Units

To address the second objective, to analyse the organisational effectiveness of grass-based handicraft units, the study employed a combination of descriptive statistics, an independent sample *t*-test and ANOVA. These methods facilitated a comprehensive understanding of how artisans perceive their business units' performance across key organisational dimensions such as productivity, innovation, adaptability and resource utilisation. Descriptive statistics helped summarise the central tendencies and variation in responses, while inferential tests were used to determine whether significant differences exist among demographic and operational subgroups. This multifaceted analysis aimed to uncover patterns and disparities that could inform targeted policy and capacity-building interventions within the handicraft sector.

Table 4.27*Descriptive Statistics: Organisational Effectiveness*

Statements	Mean	SD
1. All raw materials brought into the unit are converted into finished goods	3.75	1.243
2. The unit always upgrades advanced technologies to improve efficiency.	2.02	1.308
3. Businesses face many constraints in the production process of handicrafts.	1.47	0.534
4. Presently, the business unit has a suitable system to ensure the quality of raw materials.	3.72	1.032
5. The unit can manage overhead costs like rent, utilities, electricity, etc.	3.09	0.878
6. The business always tries to reduce costs without affecting quality	3.14	1.067
7. The business unit effectively manages the cost of raw materials	3.03	1.231
8. The business unit can manage the cost of labour, such as wages, salaries, commissions, etc	3.06	0.757
9. The business has an effective inventory management system	3.17	1.131
10. There is an effective logistics management system to deliver goods from the unit	3.67	0.794
11. The business unit follows good vendor relationships (raw materials, other supplies)	3.85	0.652
12. The business unit ensures participation in the training (EDP) conducted by the supporting agency	1.91	1.268
13. The Business unit always considers product quality	4.06	0.719
14. The business recruits and trains employees to improve productivity and efficiency	3.23	0.672
15. Skilled workers are retained in the unit with high salaries and incentives	3.12	0.784
16. The business has proper skill evaluation techniques.	3.04	0.914
17. The overall financial performance of the business is good in the unit	2.34	1.197
18. The business identifies the areas where it can improve profitability	3.32	1.107

Statements	Mean	SD
19. The business unit is taking measures to increase revenue	2.59	1.148
20. The business ensures the availability of low-interest-rate loans	1.65	1.120
N =291, Minimum 1, Maximum 5		

Source: Primary Data

The descriptive statistics are shown in Table 4.27. present a multi-faceted description of the perceived organisational effectiveness of 291 respondents engaged in grass-based handicraft ventures in Kerala. The average scores for the 20 indicators demonstrate a moderately positive perception of several areas of organisational functioning, while at the same time laying bare serious gaps in technology adoption, access to finance and institutional support.

A high indication of production effectiveness is seen with the item being ‘All raw materials brought into the unit are converted into finished goods’ ($M = 3.75$, $SD = 1.243$), indicating that most artisans view their utilisation of resources to be effective. Similarly, the unit’s quality commitment is highlighted through large mean scores for ‘The unit always considers product quality’ ($M = 4.06$, $SD = 0.719$) and ‘The unit follows good vendor relationships’ ($M = 3.85$, $SD = 0.652$), indicating a high emphasis on output standards and supply chain management.

On the other hand, technology integration seems to be a major weakness, as evidenced by ‘The unit always upgrades advanced technologies to improve efficiency’ ($M = 2.02$, $SD = 1.308$), which is one of the lowest items. It reflects a technological lag, perhaps because of budgetary or competency-based constraints. Likewise, involvement in training or entrepreneurship development programmes (EDPs) is weak ($M = 1.91$, $SD = 1.268$), which reflects that institutional participation is still weak. This is in keeping with previous observations regarding training and support, where differences in perception were slight, perhaps as a result of the poor relevance or scope of these initiatives.

Managing costs leads to a more complex scenario. Though respondents indicate moderate confidence in controlling overheads ($M = 3.09$), raw material prices ($M =$

3.03) and labour costs ($M = 3.06$), the mean scores are around the average point, indicating scope for improvement in cost control in operations. Attempts at cost reduction with no sacrifice in quality ($M = 3.14$) also clearly indicate this watchful balancing performance. But when the financial well-being of the business is considered, the mean rating for 'Overall financial performance of our business is good' is quite low ($M = 2.34$, $SD = 1.197$) and 'The unit ensures the availability of low-interest rate loans' rates are even lower ($M = 1.65$, $SD = 1.120$). These results reveal vulnerabilities in financial planning and the availability of low-cost credit, two enablers of the sustainable performance of the enterprise.

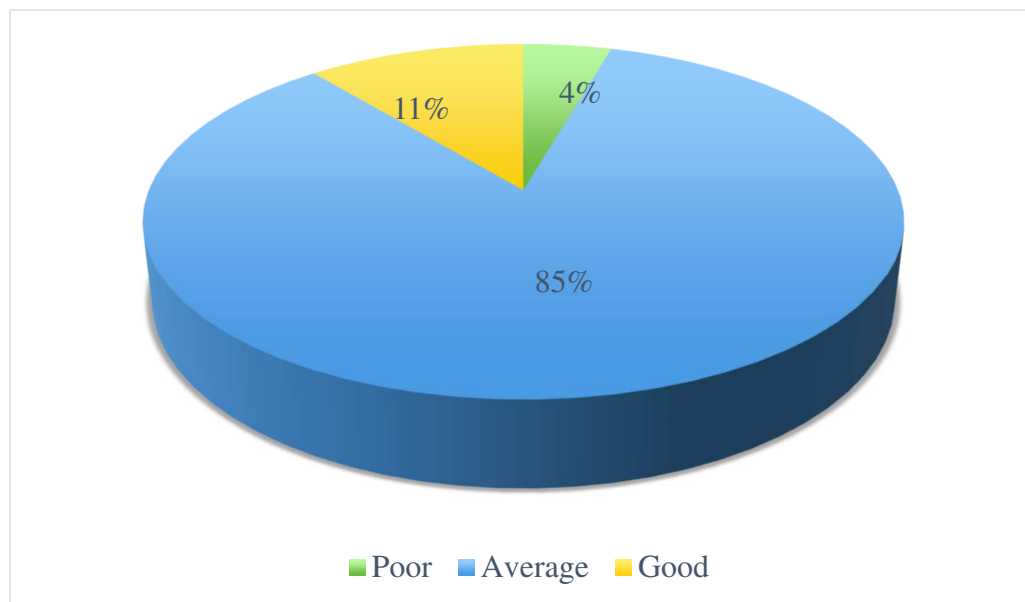
Another significant dimension is labour management and human resource practices. Ratings of 'Skilled workers retained with high salaries and incentives' ($M = 3.12$), 'Employee recruitment and training' ($M = 3.23$) and 'Proper skill evaluation techniques' ($M = 3.04$) reflect a moderate level of commitment to human capital development. While awareness of these needs exists, the comparatively average ratings suggest that resource constraints or work practices without formality might limit more formal practices in this regard.

The research also shows that the majority of respondents identify areas for profitability improvement ($M = 3.32$) but rate proactive revenue-growth strategies lower ($M = 2.59$). This difference indicates a need for more strategic planning and market-driven initiatives. In general, the information indicates that though most units uphold acceptable production and quality levels, wide gaps exist in technology, access to finance, skill development and institutional connections, key areas that need to be bridged to support organisational efficiency and long-term sustainability in the grass-based handicraft industry.

Table 4.28*Potential of Organisational Effectiveness of Grass-Based Handicraft Units*

Category	Frequency	Percentage
Poor	13	4.47
Average	246	84.53
Good	32	11
Total	291	100

Source: Compiled from Primary Data

Figure 4.2*Potential of Organisational Effectiveness of Grass-Based Handicraft Units*

Source: Compiled from Primary Data

Table 4.28 provides an overview of the perceived potential for organisational effectiveness among grass-based handicraft units. The data shows that a significant majority of respondents (84.53%) fall into the 'Average' category, suggesting that while most units possess a reasonable level of internal functioning and structure, there is still room for improvement in achieving higher organisational standards. This middle-tier performance may reflect moderate capabilities in areas such as planning, leadership, coordination and resource utilisation, but not yet the strategic clarity or systemic efficiency that characterises high-performing organisations.

Notably, 11% of the respondents report a 'Good' level of organisational effectiveness (Figure 4.2) based on the suggestion by previous literature (Best & Kahn, 2016). This subset reflects units that are likely more professionally managed, better resourced and more proactive in responding to market and operational challenges. These units may serve as exemplars within the sector, demonstrating the impact of good governance, innovation and strategic planning. Their presence is encouraging, as they showcase the potential for growth and institutional maturity within this largely informal and grass-based handicraft industry.

At the lower end, 4.47% of respondents are categorised under 'Poor' organisational effectiveness. This small group may be facing significant challenges such as limited managerial capacity, resource constraints, poor communication structures, or a lack of clear vision and direction. The presence of this group indicates the necessity for targeted interventions, including capacity building, managerial training and access to support services to strengthen their organisational functioning.

In summary, the table highlights a predominance of moderate organisational capability in the sector, with a small proportion at both extremes. This distribution calls for strategic efforts to elevate the overall effectiveness of these units, leveraging the best practices of the high performers while addressing the bottlenecks faced by weaker ones. Strengthening organisational capacity is vital to improving overall productivity, resilience and sustainability within the handicraft sector.

4.5.2.1 Perception Differences on Organisational Effectiveness

The study has conducted the perception differences among the grass-based handicraft unit owners regarding the organisational Effectiveness using an independent sample *t*-test and Analysis of Variance (ANOVA). The following hypotheses were tested and commented in this report using the said statistical analysis.

H_{0.18}: There is no significant perception difference between the age groups on organisational effectiveness.

H_{1.18}: There is a significant perception difference between the age groups on organisational effectiveness.

H_{0.19}: There is no significant perception difference between the gender groups on organisational effectiveness.

H_{1.19}: There is a significant perception difference between the gender groups on organisational effectiveness.

H_{0.20}: There is no significant perception difference between the education groups on organisational effectiveness.

H_{1.20}: There is a significant perception difference between the education groups on organisational effectiveness.

H_{0.21}: There is no significant perception difference between the monthly income groups on organisational effectiveness.

H_{1.21}: There is a significant perception difference between the monthly income groups on organisational effectiveness.

H_{0.22}: There is no significant perception difference between the business experience groups on organisational effectiveness.

H_{1.22}: There is a significant perception difference between the business experience groups on organisational effectiveness.

H_{0.23}: There is no significant perception difference between the nature of business activity on organisational effectiveness.

H_{1.23}: There is a significant perception difference between the nature of business activity on organisational effectiveness.

H_{0.24}: There is no significant perception difference between the training or assistance received groups on organisational effectiveness.

H_{1.24}: There is a significant perception difference between the training or assistance received groups on organisational effectiveness.

Table 4.29*Result of the t-test: Perception Towards the Organisational Effectiveness*

Factors	Groups	Frequency	Mean	SD	<i>t</i>	<i>p</i>
Gender	Male	139	3.1594	.54139	1.801	0.073
	Female	152	3.0520	.46883		
Business location	Rural area (Panchayath)	256	3.1045	.51877	0.132	0.895
	Urban area (Municipality & Corporation)	35	3.0943	.41458		
Training or Assistance	Received	231	3.1494	.50797	3.254	0.002
	Not received	60	2.9258	.46482		

Source: Compiled from Primary Data

Table 4.30*ANOVA Result: Perception Towards the Organisational Effectiveness*

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Age	18 to 25	4	2.847	0.024*
	26 to 35	25		
	36 to 45	67		
	46 to 55	106		
	56 and above	89		
Education	Illiterate	12	4.958	0.002*
	High school or less	231		
	Diploma	15		
	Bachelor's degree or more	33		
Monthly income(₹)	Up to 10000	88	13.676	<0.001***
	10000 to 25000	128		
	25000 to 50000	41		
	50000 to 100000	21		
	Above 100000	13		

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Business experience	0 to 5 years	20	2.491	0.060
	5 to 10 years	41		
	10 to 20 years	108		
	More than 20	122		
Nature of business activity	Extraction of raw materials, manufacturing and distribution	162	2.409	0.067
	Manufacturing only	32		
	Manufacturing and distribution	92		
	Extraction of raw materials and manufacturing	5		

Source: Compiled from Primary Data (* indicate significant & *** indicate highly significant)

Tables 4.29 and 4.30 show the results of the *t*-test and ANOVA to identify the significant factors of organisational performance. This perception difference analysis regarding organisational effectiveness illustrates several key patterns between diverse demographic and operational variables in the handicraft industry of Kerala. These findings are essential for the determination of which groups view organisational performance differently and for developing interventions accordingly.

The perception was found to be significantly different across different ages ($p=0.024$), confirming the rejection of hypothesis $H_{0.18}$. This means that age has a significant bearing on how craftsmen assess the effectiveness of their units. Older respondents might have a better sense of operational challenges and long-term performance because of their longer exposure, whereas younger artisans could evaluate effectiveness in terms of more recent innovations or resource limits. This perceptual disparity by age indicates that policy and support interventions should be age sensitive, acknowledging the varying expectations and experiential knowledge of diverse generations in the sector.

Comparing male and female respondents' perceptions of organisational effectiveness, the outcome was found to be not statistically significant ($p=0.073$). Therefore, hypothesis $H_{0.19}$ could not be rejected. This shows that gender does not result in

significant variations in the perception of artisans about the performance and functioning of their business units. Male and female artisans both appear to have identical operating roles and results in the handicraft sector, thereby yielding a cohesive perception of organisational effectiveness. This equity is reassuring from an equity perspective and supports the thought that each gender is capable of running and evaluating business efficiency with equal ability.

Education level continued to have a statistically significant influence on perception ($p = 0.002$), allowing for hypothesis $H_{0.20}$ to be rejected. Those artisans with higher educational levels indicated better or better-informed perceptions of how effectively their units were running. Educated craftsmen can better establish performance targets, handle operations statistics, or determine gaps, all of which affect their assessment of organisational success. Conversely, low or uneducated craftsmen may use more experiential or intuitive signs in their judging than formally established indicators. This underscores the necessity of business management capacity-building courses, especially for low-educated entrepreneurs.

Monthly earnings also had a significant effect on perception ($p < 0.001$) and it is with this finding that hypothesis $H_{0.21}$ is rejected. Artisans with higher income levels are likely to rate stronger organisational performance, perhaps having greater access to capital, equipment, marketing support and skilled resources. Conversely, lower-income artisans could be overwhelmed by operating constraints that hindered performance, thus creating fewer desirable perceptions. These results indicate that financial empowerment has an important role to play in determining the perception of artisans regarding the success and productivity of their businesses, calling for the necessity of specific credit facilities and schemes for income augmentation of small units.

There was no substantial difference between artisans with different business experience ($p = 0.060$), though the p -value is just below the threshold. Therefore, hypothesis $H_{0.22}$ could not be rejected. This finding implies that the entrepreneurial

experience of the length of time in the handicraft business does not necessarily imply a varied sense of organisational effectiveness. This could be because effectiveness is considered in relation to current operational problems and market conditions and not necessarily years of experience. Irrespective of the number of years artisans have been operating, many may confront equivalent structural limitations, diminishing variation in experienced effectiveness across experience categories.

Likewise, the business activity type, such as whether artisans perform extraction, manufacturing, distribution, or a mix, did not influence their perception ($p=0.067$), which fails to reject hypothesis $H_{0,23}$. This implies that organisational effectiveness perceptions are not determined by particular operating functions but perhaps arise from more pervasive contextual or institutional influences affecting all units similarly. This homogeneity within business models highlights the common challenges and operational standards within the industry, calling for sector-wide efforts to improve productivity and creativity.

A strong perception disparity was, however, evidenced between trained or supported artisans and non-trained artisans ($p = 0.002$). Hence, hypothesis $H_{0,24}$ is rejected. This implies that training and support initiatives positively affect artisans' assessments of their organisational efficiency. Trained craftsmen are most likely to have improved managerial capabilities, resource planning and exposure to external networks, all of which enhance bottom-line outcomes. The finding points to the effect of well-devised training interventions in enhancing internal perceptions of performance and business success. It also suggests the utility of increasing access to such programs for understated or resource-controlled artisans.

4.5.2.2 Intergroup Differences in Organisational Effectiveness

The post-hoc analysis of organisational effectiveness perceptions across various demographic and business-related factors reveals notable differences.

Table 4.31*Tukey HSD Post-Hoc Test Result: Organisational Effectiveness*

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Age	18 to 25	56 and above	.36362	0.614
	26 to 35	56 and above	.31912*	0.041
	36 to 45	56 and above	.18247	0.163
	46 to 55	26 to 35	-.23687	0.211
Education	Illiterate	Bachelor's degree or more	-.44924*	0.038*
	High school or less	Bachelor's degree or more	-.29459*	0.009**
	Diploma	Illiterate	.41167	0.143
Monthly Income(₹)	Up to 10000	Above 100000	-.83483*	<0.001***
	10000 to 25000	Above 100000	-.71310*	<0.001***
	25000 to 50000	Up to 10000	.41964*	<0.001***
	50000 to 100000	Up to 10000	.36853*	0.011

Source: Compiled from Primary Data (*significant, ** very significant & ***highly significant)

Table 4.31 presents the results of post-hoc analysis on various intergroup comparison and their results. It reveals that aged (above 56years), better-educated (Above high school level) and higher-income groups (more than Rs. 25000 per month) report stronger confidence in organisational functioning. Statistically significant variation was found across age groups ($F = 2.847$, $p = 0.024$), indicating that perceptions of how effectively the organisation operates differ by age. This could suggest that older artisans, with more exposure and maturity in managing business systems, perceive organisational functions more critically or confidently than their younger counterparts. Similarly, education level showed a significant impact ($F = 4.958$, $p=0.002$), implying that more educated artisans are better equipped to assess internal processes, strategic decisions and outcomes related to organisational effectiveness. A particularly strong result was noted for monthly income levels ($F=13.676$, $p<0.001$), demonstrating that higher-income groups perceive greater organisational

effectiveness. This may be attributed to their better access to resources, streamlined systems and the ability to invest in productivity-enhancing tools or practices.

Table 4.29 provides the possibility of intergroup comparison using the mean value of each group. Training or assistance received was a significant factor of organisational effectiveness ($t = 3.254, p = 0.002$). The mean value of training received is 2.826 and not received is 2.787, indicating that artisans who had formal exposure to training or support programs were more confident in their organisational functioning, possibly due to improved planning, governance, or operations.

Conversely, gender differences in perception were not statistically significant ($p=0.073$), although they approached marginal levels. Similarly, business experience ($p=0.060$) and nature of business activity ($p=0.067$) were near the threshold of significance but did not meet the conventional 0.05 level. Business location showed no significant variation ($p = 0.895$), implying a uniform perception of organisational functioning across rural and urban settings. These results suggest that educational and economic empowerment, along with targeted support and training, play a more pivotal role in shaping artisans' confidence in the efficiency and effectiveness of their enterprises than structural or demographic characteristics alone.

In conclusion, these analyses affirm that age, education, income and training exposure have significant impacts on artisans' views regarding organisational effectiveness, but gender, experience and business activity type do not have a significant influence. These results reiterate the need to develop inclusive, education-oriented and economically supportive programs that improve handicraft units' actual and perceived performance. More importantly, the significance of training indicates that continued investment in capacity building and skills development can have a substantial impact on artisan confidence and enterprise viability.

4.5.3 Marketing Efficiency of Grass-Based Handicraft Units

To examine the third objective, to analyse the marketing efficiency of grass-based handicraft units in Kerala, the study employed descriptive statistics, independent sample t -tests and ANOVA. This approach enabled the researcher to understand the

artisans' ability to promote, distribute and sell their products effectively in both local and extended markets. Marketing efficiency encompasses factors such as branding, customer outreach, logistics and market access. By analysing the perceptions of artisans from various demographic and business backgrounds, this section aims to uncover gaps, strengths and disparities in marketing practices, offering insights that can inform policy support and capacity-building efforts for the sector.

Table 4.32

Descriptive Statistics: Marketing Efficiency

Statements	Mean	SD
1. The marketing efforts resulted in increased sales	2.77	1.120
2. The marketing efforts of the business unit have resulted in increased customer acquisition	3.51	0.930
3. The unit aims to build a long-term relationship with the customer	3.70	0.995
4. The unit effectively utilises social media platforms to reach its target market	2.01	1.372
5. The unit ensures the usage of peculiar slogans to reveal product value	2.67	1.295
6. The unit effectively utilises paid advertising to reach its target market	1.10	0.480
7. The unit effectively communicates the value of products in its target market	3.48	1.074
8. The business unit always considers the target customer's needs and preferences	3.55	1.154
9. The marketing channels used in the units are cost-effective	2.97	1.168
10. The business is well aware of the brand value of grass-based products	3.15	1.181
11. The effectiveness of the marketing is evaluated from time to time	2.71	1.107

N=291, Minimum 1, Maximum 5

Source: Primary Data

The descriptive statistics presented in Table 4.32 reveal the artisans' views regarding the efficiency of marketing in grass-based handicraft units in Kerala. Several vital

observations can be collected from the analysis. Phrases like ‘The marketing activities led to higher sales ’ (mean = 2.77) and ‘Marketing effectiveness is analysed from time to time’ (mean = 2.71) are moderately agreeing, indicating that although there is some recognition of marketing success among artisans, evaluation and performance monitoring at regular intervals is not practised across the board.

Surprisingly, social media use, one of the important methods of modern marketing, has a pretty low mean of 2.01, suggesting underuse, perhaps because of digital illiteracy or inadequate training. More surprisingly, the use of paid advertising (mean=1.10) is negligible, suggesting fiscal limitations or minimal realisation of its utility. Likewise, the use of slogans to convey product value is moderately rated (mean = 2.67), suggesting that guidance on branding is needed.

High mean score statements like ‘Customer preferences are considered’ (mean= 3.55), ‘Customer acquisition has increased’ (mean = 3.51) and ‘Long-term relationships are sustained’ (mean = 3.70) indicate that artisans are customer-focused, yet possess underdeveloped strategic marketing capability. In all, the results highlight the need for focused interventions to enhance digital reach, affordable promotions and marketing literacy across the industry.

Table 4.33

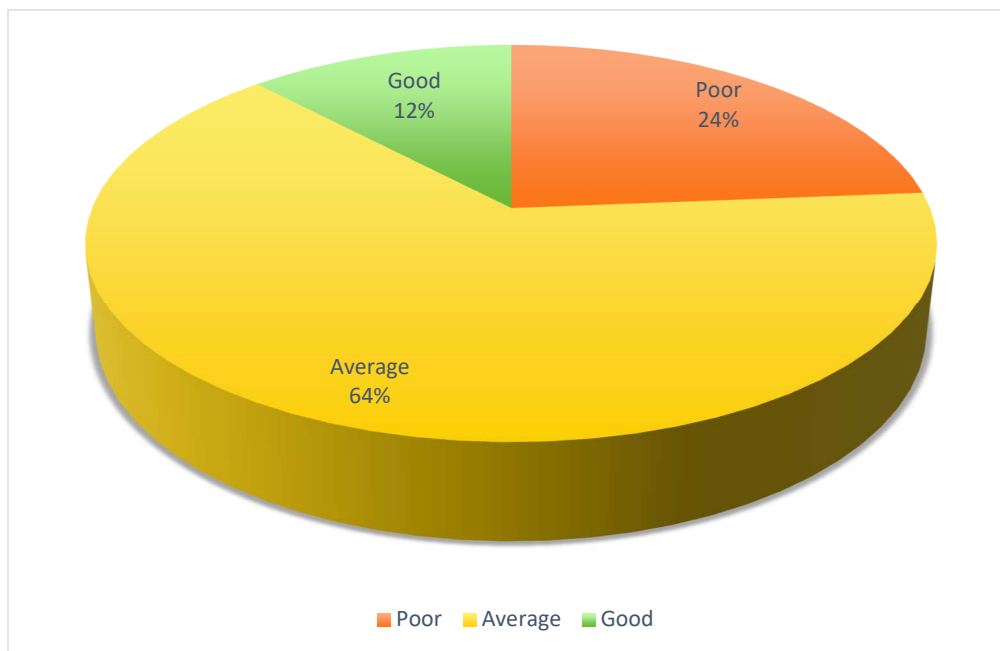
Status of Marketing Efficiency of Grass-Based Handicraft Units

Category	Frequency	Percentage
Poor	69	23.71
Average	187	64.26
Good	35	12.03
Total	291	100

Source: Compiled from Primary Data

Figure 4.3

Status of Marketing Efficiency of Grass-Based Handicraft Units



Source: Compiled from Primary Data

Table 4.33 presents the status of marketing efficiency among grass-based handicraft units, reflecting their capacity to reach markets, promote their products and convert efforts into sustainable demand and revenue. The findings show that the majority of units (64.26%) fall under the ‘Average’ category based on the suggestion by previous literature (Best & Kahn, 2016). This suggests that while many handicraft producers have a basic understanding of marketing tools and outreach mechanisms, they may lack the advanced strategies, branding skills, or market linkages necessary to maximise their sales potential. This average performance likely reflects limited exposure to modern marketing platforms such as e-commerce, digital branding and targeted promotions.

A more concerning insight is that 23.71% of the units are classified under ‘Poor’ marketing efficiency (Figure 4.3). This sizable segment highlights a critical area of vulnerability within the sector. These units may struggle with inadequate market access, dependence on middlemen, weak packaging and presentation, or the absence of customer engagement practices. Such inefficiencies limit their competitiveness and

profitability, potentially threatening the sustainability of their operations. Addressing this gap requires focused interventions, including training in marketing techniques, assistance with digital presence and participation in trade fairs and exhibitions.

Conversely, only 12.03% of the units demonstrate ‘Good’ marketing efficiency, indicating that a small group has successfully adopted effective marketing practices. These units likely benefit from better product positioning, use of online and offline platforms and established customer bases. They serve as models that can be emulated through peer learning, cluster-based promotion strategies and institutional support.

Overall, the table underscores the urgent need to enhance marketing capacities within the handicraft sector. Improving visibility, demand creation and market responsiveness will be key to ensuring the economic viability of these enterprises. Tailored support systems from government, NGOs and marketing professionals can play a transformative role.

4.5.3.1 Perception Differences on Marketing Efficiency

The study conducted perception differences among the grass-based handicraft unit owners regarding marketing efficiency using an independent sample *t*-test and Analysis of Variance. The following hypotheses were tested and commented on in this report using the said statistical analysis.

H_{0.25}: There is no significant perception difference between the age groups on the marketing efficiency

H_{1.25}: There is a significant perception difference between the age groups on the marketing efficiency

H_{0.26}: There is no significant perception difference between the gender groups on the marketing efficiency

H_{1.26}: There is a significant perception difference between the gender groups on the marketing efficiency

$H_{0.27}$: There is no significant perception difference between the education levels on the marketing efficiency

$H_{1.27}$: There is a significant perception difference between the education levels on the marketing efficiency

$H_{0.28}$: There is no significant perception difference between the monthly income groups on the marketing efficiency

$H_{1.28}$: There is a significant perception difference between the monthly income groups on the marketing efficiency

$H_{0.29}$: There is no significant perception difference between the business experience groups on the marketing efficiency

$H_{1.29}$: There is a significant perception difference between the business experience groups on the marketing efficiency

$H_{0.30}$: There is no significant perception difference between the nature of business activity on the marketing efficiency

$H_{1.30}$: There is a significant perception difference reported between the nature of business activity on the marketing efficiency

$H_{0.31}$: There is no significant perception difference between the training or assistance received groups on the marketing efficiency.

$H_{1.31}$: There is a significant perception difference between the training or assistance received groups on the Marketing Efficiency.

Table 4.34*Result of Independent Sample t-test: Perception Towards Marketing Efficiency*

Factors	Groups	Frequency	Mean	SD	<i>t</i>	<i>p</i>
Gender	Male	139	2.9738	.77883	2.151	0.032
	Female	152	2.7913	.65688		
Business location	Rural area (Panchayath)	256	2.8601	.73211	-1.303	0.199
	Urban area (Municipality & Corporation)	35	3.0130	.63909		
Training or Assistance	Received	231	2.9020	.71959	1.080	0.283
	Not received	60	2.7879	.73143		

Source: Compiled from Primary Data

Table 4.35*ANOVA Result: Perception Towards Marketing Efficiency*

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Age	18 to 25	4	1.365	0.246
	26 to 35	25		
	36 to 45	67		
	46 to 55	106		
	56 and above	89		
Education	Illiterate	12	6.878	<0.001***
	High school or less	231		
	Diploma	15		
	Bachelor's degree or more	33		
Monthly income(₹)	Up to 10000	88	13.962	<0.001***
	10000 to 25000	128		
	25000 to 50000	41		
	50000 to 100000	21		
	Above 100000	13		
Business experience	0 to 5 years	20	1.439	0.231
	5 to 10 years	41		
	10 to 20 years	108		
	More than 20	122		

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Nature of business activity	Extraction of raw materials, manufacturing and distribution	162	2.347	0.073
	Manufacturing only	32		
	Manufacturing and distribution	92		
	Extraction of raw materials and manufacturing	5		

Source: Compiled from Primary Data

(***) indicate highly significant)

Tables 4.34 and 4.35 describe the results of the *t*-test and ANOVA to determine the influencing factors on marketing efficiency. The examination of perception differences in marketing efficiency sheds light on how factors across demographics and operations affect the perceptions of artisans concerning their potential to access markets effectively. The results of the *t*-tests and ANOVA assist in revealing which particular groups have differences in marketing efficiency perception and which do not influence the marketing efficiency.

Starting with the age groups, the statistical test produced a non-significant *p*-value of 0.246, showing no significant difference in perception among age groups. Therefore, hypothesis *H*_{0.25} fails to reject. This indicates that artists across all ages have similar experiences and difficulties when marketing their handicraft products. Marketing effectiveness, as more reliant on outside infrastructure, technology availability and distribution channels, seems to be universally understood by all demographic groups, suggesting shared limitations rather than age-related wisdom.

Yet, a statistically significant difference was observed between female and male respondents (*p* = 0.032), which allowed for the rejection of hypothesis *H*_{0.26}. This finding suggests that gender does make a difference in terms of how marketing effectiveness is understood. Women artisans can find it harder to reach markets because of social mobility limitations, issues of safety, or less exposure to online marketing means. Male artisans, perhaps more engaged in the supply chain and outside transactions, might register comparatively better results in marketing. This gender disparity requires gender sensitive marketing support interventions,

particularly those that enable women to use mobile marketing tools and provide safer access to trade channels.

Upon analysis according to educational level, huge percept differences were witnessed ($p < 0.001$), validating the rejection of hypothesis $H_{0.27}$. More educated artisans showed more positive perceptions of marketing effectiveness. This could be due to their higher level of competence in their comprehension of market dynamics, utilisation of digital tools and efficient communication with customers. Low literacy and non-formally educated workers may be less able to grasp marketing because of limited exposure to strategic branding, online outreach and formal business communication. This reinforces the need to present condensed yet effective marketing training, particularly for low-literacy artisan groups.

The statistics also disclosed a statistically significant difference in perception by group according to monthly earnings ($p < 0.001$), as it supported the rejection of hypothesis $H_{0.28}$. More affluent artisans reported more positive perceptions of marketing effectiveness, as they have more means to invest in advertising, packaging, shipping and access to markets. Conversely, poorer artisans might be limited to local or seasonal markets, experience transportation problems, or be without wholesale or export options. This economic imbalance is calling for financial support frameworks and market linkage forums that facilitate the low-income artisans to expand their outreach.

Business experience surprisingly did not provide a statistically significant difference ($p = 0.231$), failing to reject the hypothesis $H_{0.29}$. It suggests that marketing issues are enduring regardless of experience levels; new entrants and experienced artisans alike face similar problems with access to markets. This supports the conclusion that there are systemic deficiencies in the marketing infrastructure for handicrafts and not based on differences in individual know-how developed through years of experience.

Likewise, no notable perception variation was found based on the type of business activity ($p = 0.073$), failing in the rejection of hypothesis $H_{0.30}$. Whether artisans are involved in extraction, manufacturing, or distribution, their marketing efficiency experiences are more or less the same. This indicates that marketing issues are

common throughout the value chain and adds further justification for integrated marketing actions and joint branding efforts applying to all businesses within the handicraft industry.

Lastly, the research did not establish a significant difference in perception depending on whether the respondent had been trained or helped ($p=0.283$), failing to reject the hypothesis $H_{0.31}$. This result is disconcerting as it indicates that existing training or support programs are possibly not adequately responding to the marketing elements of business processes. The content might either not have a clear marketing emphasis or it may not be converted into tangible advantages. This necessitates a proper re-examination and realignment of support programs with a greater emphasis on hands-on marketing instruction, online platform usage and customer interaction techniques.

4.5.3.2 Intergroup Differences in Marketing Efficiency

The post-hoc test results for perceptions of marketing efficiency among artisans involved in grass-based handicrafts show clear demographic influences.

Table 4.36

Tukey HSD Post-Hoc Test Result: Marketing Efficiency

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Education	Illiterate	Bachelor's degree or more	-.85606*	0.002**
	High school or less	Bachelor's degree or more	-.53916*	<0.001***
	Diploma	Illiterate	-.42424	0.213
Monthly income(₹)	Up to 10000	Above 100000	-1.24158*	<0.001***
	10000 to 25000	Above 100000	-1.03568*	<0.001***
	25000 to 50000	Up to 10000	.58133*	<0.001***
	50000 to 100000	Up to 10000	.53994*	0.008**

Source: Compiled from Primary Data

(** very significant & ***highly significant)

Table 4.36 discloses the result of post-hoc analysis shows that better-educated and higher-income groups demonstrate better marketing efficiency. A very significant

impact was observed for education level ($F = 6.878, p < 0.001$), affirming that artisans with higher education are more likely to understand, utilise, or even evaluate marketing strategies effectively. Higher education levels may contribute to better comprehension of digital marketing, branding and customer communication, resulting in more optimistic evaluations of marketing effectiveness. Monthly income also showed a strong influence on perception ($F = 13.962, p < 0.001$), with higher income artisans likely having greater access to and usage of formal marketing tools, including e-commerce platforms, professional packaging and promotional events.

Table 4.34 provides the possibility of intergroup comparison using the mean value of each gender. Gender was found to be a statistically significant factor ($t = 2.151, p = 0.032$), indicating that male (mean=2.97) and female (mean=2.79) artisans differ in their perceptions of how well marketing efforts support their business. This difference could stem from unequal exposure to marketing channels or digital tools, where men may have had more access historically.

In summary, the evidence reveals that gender, education and income have a highly significant impact on artisans' views of marketing efficiency, whereas age, experience in running a business, type of activity and training do not. These results highlight the need for careful design of marketing interventions to be sensitive to gender differences, educational deficits and economic constraints. In addition, the inefficacy of training programs in changing marketing perceptions reflects the acute need to re-engineer such efforts to be outcome-based and context-oriented. Lack of knowledge about digital marketing and increasing competition from online platforms further weakens the marketing capacity of artisans, who often lack the tools and training to compete in a digital economy. Limited use of cultivation and self-sourcing also restricts supply control and cost efficiency, impacting product pricing and market adaptability. With the reinforcement of marketing capabilities along these critical demographic axes, the industry can be made more competitive and resilient in local and international markets, enabling artisans to better reach target audiences, adapt to market trends and sustain growth despite structural challenges.

4.5.4 Prospects and Challenges of Grass-Based Handicrafts Units

To fulfil this objective, the study initially employed descriptive statistical analysis supported by visual charts. This approach enabled a clear and structured understanding of the opportunities available to artisans, such as access to local resources and growing demand, alongside critical obstacles, including raw material scarcity, marketing limitations and lack of institutional support. By summarising stakeholder perceptions through mean scores and visual representations, this section offers valuable insights into both enabling and inhibiting factors that shape the sustainability and growth potential of these micro enterprises. After that, the study used an independent sample *t*-test and ANOVA to analyse the perception of handicraft unit owners towards their overall business prospects and challenges.

Table 4.37

Prospects of Micro Enterprises in the Production and Marketing of Grass-Based Handicrafts

Statements	Mean	SD
1. Capacity to meet the challenges of market demand	2.75	1.115
2. Adequate export opportunities	1.28	0.815
3. The capability of exploring digital marketing	1.20	0.664
4. Availability of distribution networks	2.77	1.266
5. Availability of source of finance	1.66	1.072
6. Influence on Social Status	3.87	0.882
7. Policies and regulations supported by the Government.	2.78	1.241
N =291, Minimum 1, Maximum 5		

Source: Primary Data

Table 4.37. summarises the descriptive statistics about the perceived opportunities of micro-enterprises that produce and sell grass-based handicrafts. From the data, there is a combination of optimism and limitation reflected, where artisans are aware of some growth opportunities, but there are enablers that are underdeveloped or inaccessible.

The most favourably perceived future aspect is the impact of handicraft activity on social status, which registered the highest mean value of 3.87 and indicating that engaging in this traditional sector is regarded as a symbol of social pride and identity. This social value may be tapped to encourage the younger generation to pursue the trade and maintain indigenous capability.

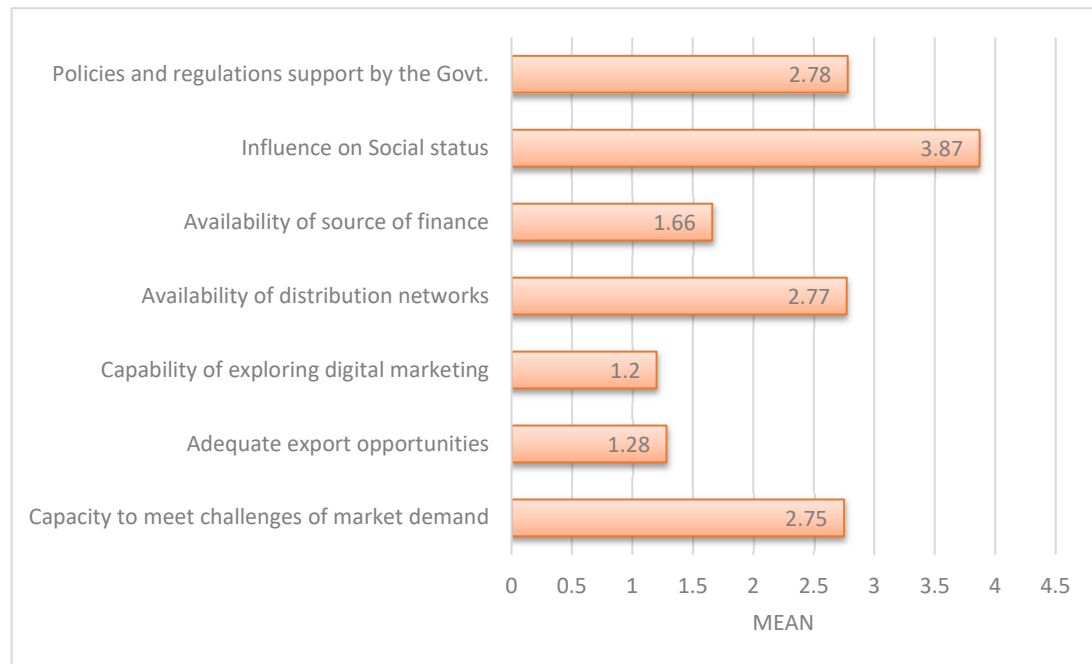
On the other hand, the capability to venture into digital marketing (mean = 1.20) and sufficient export opportunities (mean = 1.28) scored low, indicating a wide perception gap. The findings indicate that artisans might have some general knowledge about the potential of digital means and foreign markets, but do not possess the capacity, access, or information to effectively utilise them.

Availability of a source of finance was also poor (mean = 1.66), signifying the commonality of financial exclusion. This is consistent with overall MSME issues in India, where numerous micro-enterprises are unable to obtain credit as a result of insufficient collateral or formal registration (Mund, 2020). Correspondingly, availability of distribution channels (mean = 2.77) and government policy support (mean = 2.78) also reflect average perceptions, suggesting more organised institutional support and marketing infrastructure.

The comparatively high score for ability to meet demand in the market (mean = 2.75) is indicative of both production capability confidence and scalability concern. In conclusion, although the social esteem of the craft is established, micro-enterprises are held back by poor digital preparedness, restricted access to markets, inadequate financing and policy gaps in implementation, identifying key points of strategic intervention.

Figure 4.4

Key Prospects of Micro-Enterprises in the Production and Marketing of Grass-Based Handicraft Units



Source: Primary Data

Figure 4.4 graphically shows the mean perception scores of artisans towards different prospects that affect the development of grass-based handicraft micro-enterprises. The highest rated prospect is the effect on social standing (mean = 3.87), as it suggests that working in the handicraft industry is respectable and empowering, socially. Such cultural capital could be exploited to preserve the traditional craft and bring young artisans into the industry.

The high perception score for social standing indicates that artisans view their engagement in the handicraft sector as a source of pride, identity and community respect, which goes beyond mere economic benefit. This intrinsic motivation, rooted in cultural heritage and societal recognition, often drives artisans, especially from rural areas, to continue and preserve traditional craft practices, even in the face of financial and infrastructural challenges.

Yet, some of the key growth-enabling factors are viewed as insufficient. The ability to venture into digital marketing (mean = 1.20) and sufficient export opportunities (mean = 1.28) are scored lowest, indicating critical limitations in market growth and technological adoption. Access to finance (mean = 1.66) also indicates considerable dissatisfaction, referencing the continuing credit availability problems that affected micro-enterprises.

Other factors, such as access to distribution networks (mean = 2.77), ability to satisfy market demand (mean = 2.75) and policy support (mean = 2.78), are rated moderately, indicating an awareness of their potential but unhappiness with their current accessibility or functionality.

Generally, artisans appreciate the social contribution of their craft but are confronted by significant impediments in marketing, funding and institutional support, emphasising the urgency of focused digital, financial and policy interventions.

Table 4.38

Challenges of Micro-Enterprises in the Production and Marketing of Grass-Based Handicrafts

Statements	Mean	SD
1. Challenges in sourcing quality raw materials	3.59	1.520
2. Difficult to find sufficiently skilled human resources	3.57	1.135
3. Lack of innovative products	3.43	1.413
4. Difficulty in establishing a brand	3.43	1.312
5. Lack of technological advancement	3.77	1.482
6. Higher level of competition	2.88	1.538
7. Competition from online platform businesses	2.67	1.324
N =291, Minimum 1, Maximum -5		

Source: Primary Data

Table 4.38. also shows the descriptive statistics capturing the main challenges that micro-enterprises engage in the production and marketing of grass-based handicrafts.

From the responses, the artisans face significant barriers that hamper the competitiveness and sustainability of their enterprises.

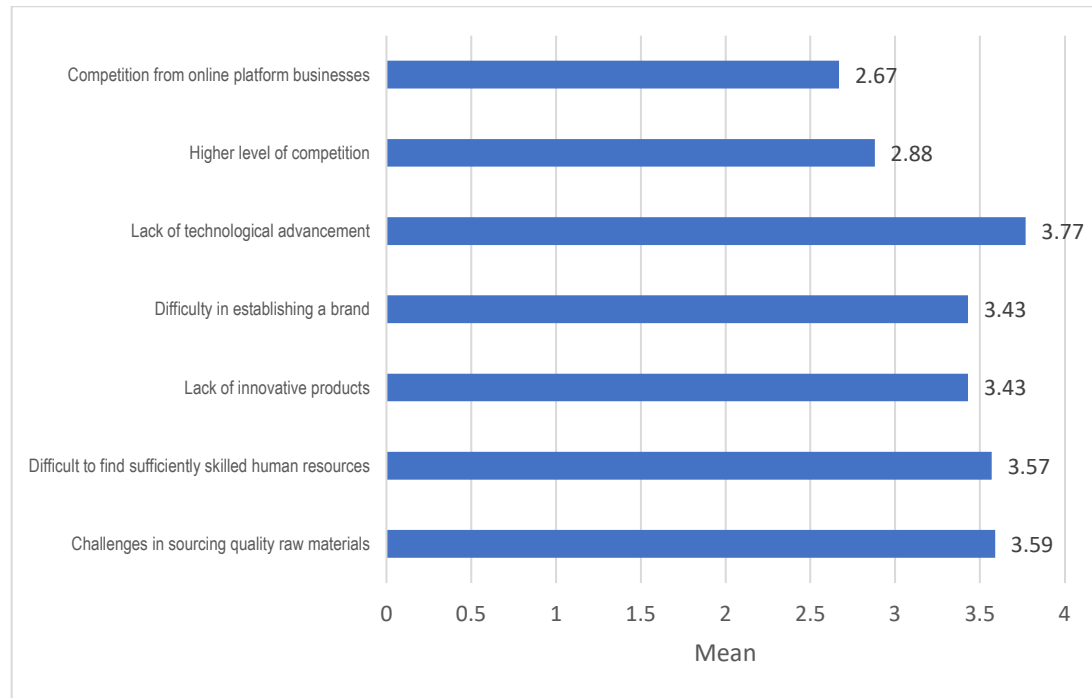
The most critical challenge they identified is the absence of technological advancement, with a high mean score of 3.77, reflecting the industry's backwardness in embracing cutting-edge tools, machinery and production methods. The technology gap hinders productivity, innovation and cost effectiveness, integral components for competitiveness in the market.

Closely following are difficulties in sourcing quality raw materials (mean = 3.59) and the shortage of skilled human resources (mean = 3.57), both of which directly impact product quality and scalability. The dependence on specific natural materials and skilled craftsmanship makes these challenges particularly acute for rural, resource-constrained units.

Product innovation and brand issues are also reflective (mean = 3.43 each), which indicates the industry's difficulty in differentiation and market identity. Without effective designs and robust brand positioning, artisans cannot enter larger or niche markets.

Moderate concern is noted for competition in local businesses (mean = 2.88) and online marketplaces (mean = 2.67). Although lower, these measures still reflect increasing recognition of competitive threats posed by digital marketplaces and mass producers.

In conclusion, the findings demonstrate that the challenges of the sector are diverse, ranging from input limitations, personnel shortages, innovation gaps and competition threats, requiring integrated interventions in technology, training, branding and supply chain development.

Figure 4.5*Key Challenges of Micro Enterprises in the Production and Marketing of Grass-Based Handicrafts*

Source: Primary Data

Figure 4.5 illustrates the key challenges faced by micro-enterprises in the production and marketing of grass-based handicrafts, based on mean perception scores. The highest-rated challenge is the lack of technological advancement (Mean = 3.77), followed by difficulties in sourcing quality raw materials (M = 3.59) and finding skilled human resources (M = 3.57), indicating strong agreement among artisans. Issues like a lack of product innovation and brand establishment also rank high. Comparatively, competition from online platforms (M = 2.67) and general market competition (M = 2.87) are perceived as slightly less severe. Overall, the findings highlight critical internal capacity gaps limiting sector growth.

4.5.4.1 Perception Differences on the Factors of Prospects and Challenges of the Units

The research has analysed the perception of handicraft entrepreneurs on the factors of prospects and challenges faced by micro-enterprises in the production and marketing of grass-based handicrafts. The following are the hypotheses related to these tests, their results and interpretations.

H_{0.32}: There is no significant perception difference between the age groups on the business prospects.

H_{1.32}: There is a significant perception difference between the age groups on the business prospects.

H_{0.33}: There is no significant perception difference between the gender groups on the business prospects.

H_{1.33}: There is a significant perception difference between the gender groups on the business prospects.

H_{0.34}: There is no significant perception difference between the education groups on the business prospects.

H_{1.34}: There is a significant perception difference between the education groups on the business prospects.

H_{0.35}: There is no significant perception difference between the monthly income groups on the business prospects.

H_{1.35}: There is a significant perception difference between the monthly income groups on the business prospects.

H_{0.36}: There is no significant perception difference between the business experience groups on the business prospects.

H_{1.36}: There is a significant perception difference between the business experience groups on the business prospects.

H_{0.37}: There is no significant perception difference between the nature of business activity on the business prospects.

H_{1.37}: There is a significant perception difference between the nature of business activity on the business prospects.

H_{0.38}: There is no significant perception difference between the training or assistance received groups on the business prospects.

H_{1.38}: There is a significant perception difference between the training or assistance received groups on the business prospects.

Again, hypotheses related to the challenges are,

H_{0.39}: There is no significant perception difference between the age groups on the business challenges.

H_{1.39}: There is a significant perception difference between the age groups on the business challenges.

H_{0.40}: There is no significant perception difference between the gender groups on the business challenges.

H_{1.40}: There is a significant perception difference between the gender groups on the business challenges.

H_{0.41}: There is no significant perception difference between the education groups on the business challenges.

H_{1.41}: There is a significant perception difference between the education groups on the business challenges.

H_{0.42}: There is no significant perception difference between the monthly income groups on the business challenges.

H_{1.42}: There is a significant perception difference between the monthly income groups on the business challenges.

$H_{0.43}$: There is no significant perception difference between the business experience groups on the business challenges.

$H_{1.43}$: There is a significant perception difference between the business experience groups on the business challenges.

$H_{0.44}$: There is no significant perception difference between the nature of business activity on the business challenges.

$H_{1.44}$: There is a significant perception difference between the nature of business activity on the business challenges.

$H_{0.44}$: There is no significant perception difference between the training or assistance received groups on the business challenges.

$H_{1.44}$: There is a significant perception difference between the training or assistance received groups on the business challenges.

Table 4.39

Result of t-test: Perception Towards the factors of Business Prospects & Challenges of Grass-Based Handicraft Units

Factors	Groups	Frequency	Prospects				Challenges			
			Mean	SD	<i>t</i>	<i>p</i>	Mean	SD	<i>t</i>	<i>p</i>
Gender	Male	139	2.343	.5599	0.384	0.701	3.346	.8065	0.155	0.877
	Female	152	2.321	.4503			3.331	.7961		
Location	Rural area	256	2.319	.5038	-1.154	0.255	3.310	.8114	-1.877	0.067
	Urban area	35	2.425	.5098			3.547	.6829		
Training	Received	231	2.341	.5151	0.660	0.511	3.327	.8048	-0.518	0.606
	Not received	60	2.295	.4652			3.386	.7848		

Source: Compiled from Primary Data

Table 4.40

ANOVA Result: Perception Towards the Business Prospects & Challenges of Grass-Based Handicraft Units

Factor	Groups	Frequency	Prospects		Challenges	
			<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Age	18 to 25	4	3.464	0.009*	1.408	0.231
	26 to 35	25				
	36 to 45	67				
	46 to 55	106				
	56 and above	89				
Education	Illiterate	12	2.987	0.032*	1.231	0.299
	High school or less	231				
	Diploma	15				
	Bachelor's degree or more	33				
Monthly income (₹)	Up to 10000	88	9.17	<0.001***	5.004	0.001**
	10000 to 25000	128				
	25000 to 50000	41				
	50000 to 100000	21				
	Above 100000	13				
Business experience	0 to 5 years	20	1.475	0.222	2.902	0.035*
	5 to 10 years	41				
	10 to 20 years	108				
	More than 20	122				
Nature of business activity	Extraction of raw materials, manufacturing and distribution	162	2.677	0.047*	4.249	0.006**
	Manufacturing only	32				
	Manufacturing and distribution	92				
	Extraction of raw materials and manufacturing	5				

Source: Compiled from Primary Data (* significant, ** very significant & ***highly significant)

Tables 4.39 and 4.40 reveal the analysis results of the independent sample t-test and ANOVA to identify the significant factors on prospects and challenges of grass-based units. The research discussed the perceptions of artisans regarding the business opportunities and issues of micro-enterprises in grass-based handicraft production and marketing in Kerala. This was examined by statistical testing of hypotheses based on different demographic and business-related factors like age, gender, education, income, business experience, type of business activity and training received. The results offer insight into the differences in perception among different artisan groups and the structural issues influencing those perceptions.

Starting with business prospects, hypothesis $H_{0.32}$ suggested that there would not be significant differences across age groups. With an F -ratio of 3.464 and a p -value of 0.009, this result is statistically significant, leading to the rejection of $H_{0.32}$. It suggests that business prospects are viewed differently by age groups meaningfully, perhaps because older craftspeople have more experience, exposure, or stability in their activity, whereas younger craftspeople see greater uncertainty or lack of clarity about prospects. This underscores a requirement for age-sensitive support measures.

Conversely, hypothesis $H_{0.33}$ examined gender differences in perceptions of prospects. With a t -value of 0.384 and a p -value of 0.701, this is not statistically significant. Hence, $H_{0.33}$ could not be rejected. This means that male and female artisans tend to have similar perceptions about business opportunities, implying that opportunity perception is not gender driven in this industry. This finding is significant, as it indicates that there might be gender equality in the perception of opportunity, despite structural inequalities elsewhere.

For hypothesis $H_{0.34}$, which tested whether education influences perception, the test was statistically significant ($F = 2.987$, $p = 0.032$), in favour of the rejection of $H_{0.34}$. This indicates that artisans with better education levels are more inclined to believe in stronger business opportunities. Education is likely to facilitate access to information, new techniques and institutional resources. It underscores the need to enhance education access and training to uplift those with lower levels of education.

Hypothesis $H_{0.35}$ examined differences between monthly income groups and it was significant ($F = 9.17, p < 0.001$). Thus, $H_{0.35}$ is rejected. More affluent artisans have a more positive perception of business prospects, probably because they can invest in production, marketing and technology. The poor artisans may be constrained by a lack of capital, which prevents them from expanding their view of prospects. This highlights the significance of specific financial interventions and universal access to capital.

Hypothesis $H_{0.36}$ tested whether business experience affected the perception of prospects. The outcome ($F = 1.475, p = 0.222$) was not statistically significant, so $H_{0.36}$ could not be rejected. This indicates that whether it is an artisan with little experience or one with many years of experience, their view of future business potential does not differ much, which can lead to the inference that structural influences like market demand or policy assistance play a more significant role than experience itself.

Hypothesis $H_{0.37}$, which examined the nature of business activity, had a significant outcome ($F = 2.677, p = 0.047$), making its rejection possible. Artisans who undertook end-to-end activities (from raw material production to distribution of goods) viewed improved business opportunities compared to artisans working only in manufacturing. This would probably be because they have greater control over the supply chain, are exposed to markets and possess more business autonomy.

Hypothesis $H_{0.38}$ examined whether training or assistance received influenced perception of prospects. The t -value was 0.66 and the p -value was 0.511, meaning the finding was not statistically significant and therefore $H_{0.38}$ could not be rejected. This means current training programs are probably not effectively impacting artisans' confidence or vision for development. It implies a requirement for additional practical, pertinent and motivational training that enables artisans to identify and pursue opportunities.

Looking at the **challenges**, Hypothesis $H_{0.39}$ tested age-wise differences. With a p -value of 0.231, the differences were not found to be significant and hence $H_{0.39}$ could not be rejected. This suggests that artisans across all age segments encounter the same

challenges, for example, lack of market access or technology, implying that these are pervasive, systemic problems.

For hypothesis $H_{0.40}$, no significant difference was found between male and female artisans ($p = 0.877$) in the analysis, hence it failed to reject $H_{0.40}$. Both men and women face equal challenges, including insufficient branding, low innovation and difficulty finding skilled labour, further supporting the fact that systemic barriers affect artisans equally across gender lines.

Hypothesis $H_{0.41}$ evaluated whether education influenced perceptions of difficulties. The p -value was 0.299 and the outcome was not significant; $H_{0.41}$ could not be rejected. This implies that even individuals with more advanced education levels face the identical structural challenges, including bad infrastructure, poor government assistance and raw material shortages.

Hypothesis $H_{0.42}$ for differences based on income produced significant findings ($F=5.004$, $p = 0.001$), leading to rejection of $H_{0.42}$. More affluent artisans are likely to be less stressed due to improved market access, availability of resources and connections. Low-income artisans, in contrast, are exposed to supply chain blockades, invisibility and a lack of money.

In the case of hypothesis $H_{0.43}$, based on business experience, the outcome was also significant ($F = 2.902$, $p = 0.035$) and thus $H_{0.43}$ is rejected. This indicates that long-time artisans could be more capable of coping with market fluctuations and operating difficulties, whereas start-ups may have problems managing a business, acquiring customers or ensuring compliance.

Hypothesis $H_{0.44}$ tested whether the nature of business activity influenced challenge perception. The outcome was significant ($F = 4.249$, $p = 0.006$), which supports rejection of $H_{0.44}$. Artisans controlling the entire value chain experience different and quite possibly more complicated challenges than those dealing with just one or two phases of production. These could be raw material extraction challenges, supply chain coordination and a greater regulatory burden.

Lastly, hypothesis $H_{0.45}$, considering differences between those who received training or aid and those who did not, yielded a non-significant value ($p = 0.606$), failing

rejection of $H_{0.45}$. Once more, there is the question, whether support programs are working effectively. Unless training equates to fewer challenges, then perhaps it is not meeting the real needs of artisans, or perhaps the quality and mode of delivery are inappropriate.

4.5.4.2 Intergroup Differences in Business Prospects

The post-hoc test results for perceptions of business prospects among grass-based handicraft units show clear demographic influences.

Table 4.41

Tukey HSD Post-Hoc Test Result: Business Prospects

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Age	18 to 25	26 to 35	-.29000	0.814
	26 to 35	56 and above	.37226*	0.009
	36 to 45	56 and above	.17875	0.173
	46 to 55	26 to 35	-.32302*	0.030
Education	Illiterate	Bachelor's degree & more	-.30519	0.270
	High school or less	Bachelor's degree & more	-.27025*	0.020
	Diploma	Bachelor's degree & more	-.16710	0.706
Monthly income (₹)	Up to 10000	Above 100000	-.66933*	<0.001***
	10000 to 25000	25000 to 50000	-.31125*	0.003**
	25000 to 50000	Up to 10000	.34717*	0.001**
	50000 to 100000	Up to 10000	.22140	0.317
Nature of business activity	Extraction of raw materials, manufacturing and distribution	Manufacturing and distribution	.17397*	0.041
	Manufacturing only	Manufacturing and distribution	.19216	0.243
	Extraction of raw materials and manufacturing	Manufacturing and distribution	.21894	0.776

Source: Compiled from Primary Data (* significant, ** very significant & ***highly significant)

Table 4.41 presents the post-hoc test results for business prospects; significant perception differences emerged across age, education, monthly income and nature of business activity. The post-hoc analysis shows that older and higher-income artisans report greater optimism, while younger and less educated groups show lower confidence. Younger artisans (18 to 25) showed distinctly lower optimism about business prospects compared to older groups, indicating that experience and exposure contribute positively to entrepreneurial confidence. Education also played a critical role, as artisans with higher qualifications (diploma and graduation) demonstrated significantly more positive outlooks than their less educated counterparts. These artisans likely benefit from better awareness, digital engagement and access to support systems. Furthermore, income emerged as a strong determinant; higher-income groups perceived greater business prospects, highlighting how financial stability enhances opportunity recognition and risk tolerance. Lastly, artisans engaged in integrated business models (involving raw material extraction, manufacturing and distribution) expressed more optimistic views than those limited to single-phase production, indicating the perceived value of autonomy and full supply chain control.

4.5.4.3 Intergroup Differences in Business Challenges

The post-hoc test results of business challenges among grass-based units present a detailed intergroup comparison.

Table 4.42

Tukey HSD Post-Hoc Test Result: Business Challenges

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Monthly income (₹)	Up to 10000	Above 100000	.52712*	0.004**
	10000 to 25000	25000 to 50000	.37919	0.054
	50000 to 100000	Up to 10000	-.33001	0.408
	Above 100000	Up to 10000	-.72090*	0.017

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Nature of business activity	Extraction of raw materials, manufacturing and distribution	Manufacturing and distribution	.17397*	0.041*
	Manufacturing only	Manufacturing and distribution	.19216	0.243
	Extraction of raw materials and manufacturing	Manufacturing and distribution	.21894	0.776
Business experience	0 to 5 years	10 to 20 years	.18492	0.773
	5 to 10 years	More than 20 years	-.21420	0.440
	10 to 20 years	More than 20 years	-.30295*	0.021

Source: Compiled from Primary Data

(* significant & ** very significant)

Table 4.42 shows the result of post-hoc analysis for business challenges; significant differences were evident based on income, experience and the nature of business activity. It depicts the lower-income groups, low-experienced groups and artisans managing the entire value chain face greater challenges. Artisans with lower incomes reported more intense challenges, such as a lack of access to capital, markets and technology, common barriers to grass-based handicraft units. Post-hoc analysis also revealed that those with limited business experience (0 to 5 years) encountered greater perceived challenges than seasoned artisans, who have likely developed resilience and coping mechanisms over time. Additionally, artisans involved in full-spectrum business activities (raw material sourcing to distribution) reported facing more complex and compounded challenges compared to those specialising in manufacturing alone. These findings suggest that while expanded operations provide greater control and market reach, they also increase exposure to logistical, financial and regulatory pressures, necessitating tailored support based on activity scope and business maturity.

The findings underscore marked variations in the perceptions that artisans have of business opportunities and challenges, and specifically along dimensions of income, education, business activity type and experience. Yet the impact of variables such as gender and age on these perceptions is restricted. The research points to the imperative of better, targeted training and support systems, taking into account these differentiators and tackling the shared structural issues affecting the sector uniformly.

4.5.5 Role of Supporting Agencies in the Promotion of Grass-Based Handicraft Units

To achieve objective five, the study primarily employed descriptive statistical analysis and visual charts to examine artisan perceptions. This objective focuses on assessing the accessibility, adequacy and impact of various forms of institutional support, such as training, funding, marketing assistance and infrastructure development. By using mean scores and graphical representations, the analysis offers a clear view of the extent to which support from government and non-governmental organisations reaches micro-enterprises and contributes to their growth. The findings help identify critical gaps for policy and programmatic improvement. After that, the study used an independent sample *t*-test and ANOVA for analysing the perception of handicraft unit owners towards their overall business prospects and challenges.

Table 4.43

Descriptive Statistics: Support from Government & NGOs

Statements	Mean	SD
1. Knowledge about the government schemes for supporting the handicraft sector.	1.40	.796
2. The government is providing sufficient funds for the promotion of units.	1.80	1.187
3. Government or supporting agencies offer training to improve the quality of handicraft products.	3.11	1.332
4. Government or supporting agencies offer training to develop a skilled workforce, which enhances productivity.	2.41	1.210
5. The marketing and promotional efforts of supporting agencies (Government and NGOs) are beneficial for operations.	3.07	1.210

Statements	Mean	SD
6. The Unit assesses the available support mechanisms to promote and foster the handicraft sector's development.	2.00	1.119
7. The unit made every effort to receive assistance from supporting agencies.	1.27	.690
8. The artisans seek agencies to market products domestically and internationally	1.31	.762
9. Artisans are satisfied with the support provided by the Government and non-government agencies for my enterprise.	1.55	.894
10. There is adequate infrastructure provided by the Government and non-government agencies for my unit.	1.36	.926

N = 291, Minimum 1, Maximum 5

Source: Primary Data

Table 4.43. indicates the artisans' views on the extent and efficiency of the support given by government and non-government bodies to grass-based handicraft units in Kerala. The overall impression is one of dissatisfaction with institutional aid, as the majority of mean scores range towards the lower half of the scale.

The lowest mean score of 1.27 is obtained for the question 'The unit makes every attempt to get help from supporting agencies', which implies that artisans try to access support systems but with little success. Analogously, very poor scores are obtained for marketing assistance (mean = 1.31) and provision of infrastructure facilities (mean = 1.36), implying huge gaps in facilitating physical and promotional inputs for artisans.

Though artisans seem to be aware of government schemes (mean = 1.40), such awareness does not translate into effective or sufficient support. Perceived funding adequacy continues to be low (mean = 1.80) and general satisfaction with support is also low (mean = 1.55), highlighting systemic problems in access, implementation and outreach.

Support for training is more of a mixed picture. Quality improvement training has a mean score of 3.11 and that for enhancing productivity is 2.41, which indicates average success in skill-building activities. Likewise, agencies' marketing and promotional activities were scored at 3.07 by the managers, indicating perceived usefulness but still lagging far behind satisfaction.

Overall, the artisans realise schemes exist and even benefit at times from training, yet all the same, there is low satisfaction with infrastructure, financial assistance and marketing support. The results necessitate more rigorous policy implementation, base-level outreach and streamlined access mechanisms to ensure institutional support really works for micro-enterprises within the handicraft industry.

Table 4.44

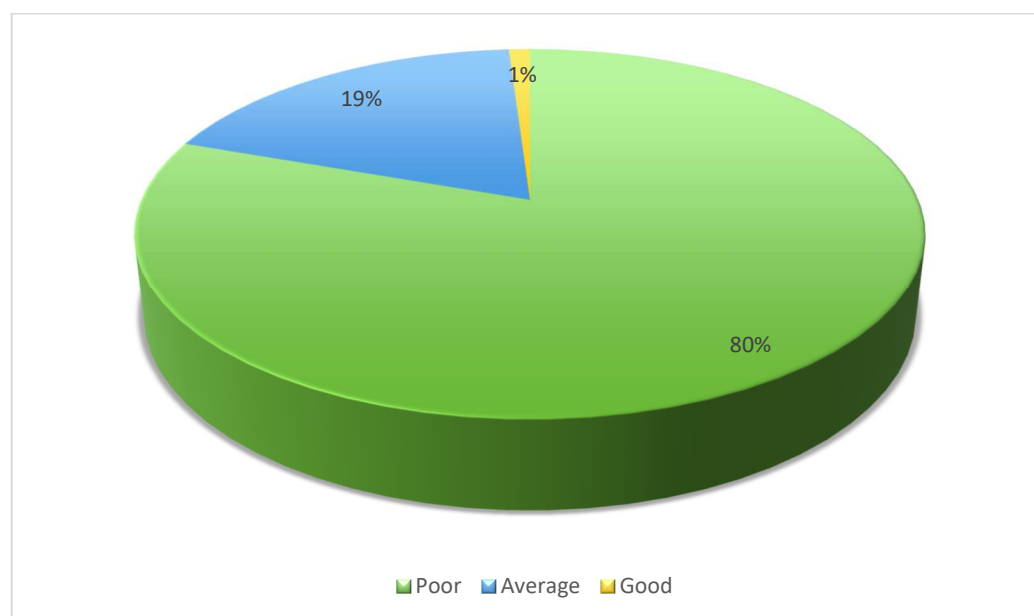
Status of Govt. & NGO Scheme Support for the Business of Grass-Based Handicraft Units

Category	Frequency	Percentage
Poor	234	80.41
Average	54	18.56
Good	3	1.03
Total	291	100

Source: Compiled from Primary Data

Figure 4.6

Status of Govt & NGO Scheme Support for the Business of Grass-Based Handicraft Units



Source: Compiled from Primary Data

Table 4.44 and Figure 4.6 show the status of government and non-governmental organisation (NGO) scheme support for grass-based handicraft units. The findings reveal a stark reality: a substantial 80.41% of respondents fall under the ‘Poor’ category based on the suggestion by previous literature (Best & Kahn, 2016), indicating that the vast majority of artisans and entrepreneurs perceive minimal or no tangible support from existing institutional frameworks. This could be due to multiple systemic challenges, such as a lack of awareness about schemes, complicated procedures, bureaucratic red tape, or limited outreach by implementing agencies. Such an overwhelming deficit in effective support highlights the urgent need to reform communication channels, simplify access processes and enhance on-ground implementation strategies.

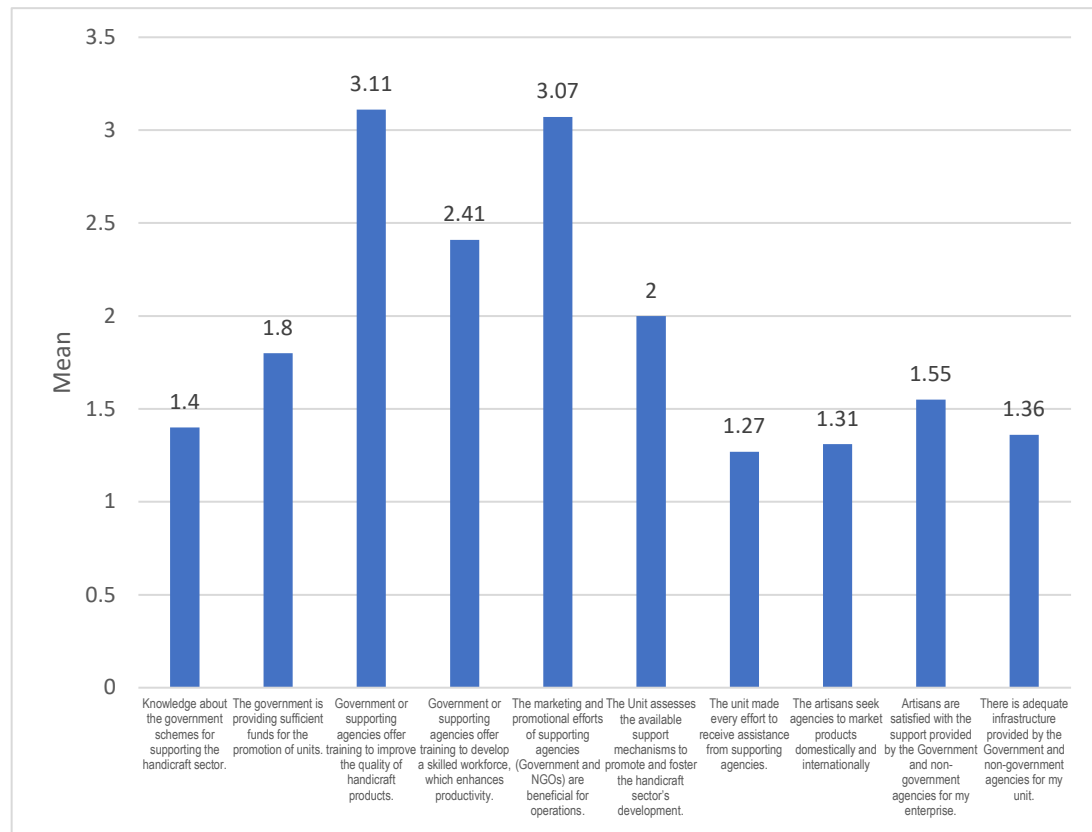
Only 18.56% of the respondents rated the support as ‘Average’, suggesting a limited segment has experienced partial access to schemes, possibly in the form of one-time grants, basic training, or short-term exposure to market platforms. However, even this middle category points to inadequacies in follow-up support, continuity, or impact-driven interventions.

Most notably, just 1.03% of the sample reported ‘Good’ support from government or NGOs, underlining the rarity of comprehensive, sustained and impactful institutional assistance. These few cases may represent artisans with better education, social capital, or geographical advantage, allowing them to navigate the system more effectively.

The results emphasise a critical policy gap in promoting and sustaining handicraft-based livelihoods through institutional support. If grass-based industries are to survive and scale up, robust, inclusive and responsive support mechanisms must be established. This includes simplifying access, conducting localised awareness drives, building institutional partnerships with artisan clusters and incorporating feedback loops to ensure the schemes meet the real-time needs of the artisans. Without meaningful engagement from both government and NGOs, the sector’s potential will remain severely underutilised.

Figure 4.7

Level of Government and Non-Government Agencies' Support in the Promotion of Handicraft Units



Source: Primary Data

Figure 4.7 also illustrates artisans' satisfaction with government and non-government assistance in the development of handicraft units. The most highly rated assistance is training for enhancing product quality (mean = 3.11) and promotional activities by support agencies (mean = 3.07), with evidence of moderate satisfaction in these areas. Nevertheless, most of the areas were low, especially the awareness of government schemes (mean = 1.40), the development of infrastructure (mean = 1.36) and receiving assistance (mean = 1.27), showing widespread dissatisfaction. The low mean scores indicate poor outreach, poor accessibility and poor implementation of support mechanisms. In total, the chart portrays the necessity of better policy communication, infrastructure and funding to empower the sector efficiently.

4.5.5.1 Perception Differences on the Supportive Schemes

The research has analysed the perception of Government and non-government agencies' support in the promotion of handicraft units. The following are the hypotheses related to these tests, their results and interpretations.

H_{0.46}: There is no significant perception difference between the age groups on the Government and non-government agencies' support in the business.

H_{1.46}: There is a significant perception difference between the age groups on the Government and non-government agencies' support in the business.

H_{0.47}: There is no significant perception difference between the gender groups on the Government and non-government agencies' support in the business.

H_{1.47}: There is a significant perception difference between the gender groups on the Government and non-government agencies' support in the business.

H_{0.48}: There is no significant perception difference between the education groups on the Government and non-government agencies' support in the business.

H_{1.48}: There is a significant perception difference between the education groups on the Government and non-government agencies' support in the business.

H_{0.49}: There is no significant perception difference between the monthly income groups on the Government and non-government agencies' support in the business.

H_{1.49}: There is a significant perception difference between the monthly income groups on the Government and non-government agencies' support in the business.

H_{0.50}: There is no significant perception difference between the business experience groups on the Government and non-government agencies' support in the business.

H_{1.50}: There is a significant perception difference between the business experience groups on the Government and non-government agencies' support for the business.

H_{0.51}: There is no significant perception difference between the nature of business activity on the Government and non-government agencies' support for the business.

H_{1.51}: There is a significant perception difference between the nature of business activity' on the Government and non-government agencies' support in the business.

H_{0.52}: There is no significant perception difference between the training or assistance received groups on the Government and non-government agencies' support in the business.

H_{1.52}: There is a significant perception difference between the training or assistance received groups on the Government and non-government agencies' support in the Business.

Table 4.45

Independent Sample t-test: Perception Towards the Government and Non-Government Agencies' Support in the Promotion of Handicraft Units

Factors	Groups	Frequency	Mean	SD	t	p
Gender	Male	139	1.9086	.61520	-0.411	0.681
	Female	152	1.9382	.60898		
Business location	Rural area (Panchayath)	256	1.9180	.62371	-0.531	0.598
	Urban area (Municipality & Corporation)	35	1.9686	.51494		
Training or Assistance	Received	231	2.0325	.59310	7.065	<0.001**
	Not received	60	1.5067	.49089		

Source: Compiled from Primary Data

(** indicate very significant)

Table 4.46

ANOVA Result: Perception Towards the Government and Non-Government Agencies' Support in the Promotion of Handicraft Units

Factors	Groups	Frequency	<i>F</i>	<i>p</i>
Age	18 to 25	4	2.069	0.085
	26 to 35	25		
	36 to 45	67		
	46 to 55	106		
	56 and above	89		
Education	Illiterate	12	3.592	0.014*
	High school or less	231		
	Diploma	15		
	Bachelor's degree or more	33		
Monthly income (₹)	Up to 10000	88	6.389	<0.001***
	10000 to 25000	128		
	25000 to 50000	41		
	50000 to 100000	21		
	Above 100000	13		
Business experience	0 to 5 years	20	6.786	<0.001***
	5 to 10 years	41		
	10 to 20 years	108		
	More than 20	122		
Nature of business activity	Extraction of raw materials, manufacturing and distribution	162	4.563	0.004**
	Manufacturing only	32		
	Manufacturing and distribution	92		
	Extraction of raw materials and manufacturing	5		

Source: Compiled from Primary Data (* significant, ** very significant & *** highly significant)

Tables 4.45 and 4.46 present the test results of the *t*-test and ANOVA to reveal the importance of institutional supports. The government and non-government agency assistance analysis regarding the promotion of grass-based handicraft units in Kerala offers significant knowledge on how artisans view institutional help in the light of their demographic and operational traits. The findings show that perceptions differ considerably based on several vital determinants, supporting some hypotheses while countering others.

The analysis initially tested age group differences in perception and although the *F*-ratio was 2.069, the *p*-value was 0.085, meaning that the finding was not statistically significant at the 0.05 level. Thus, *H_{0.46}* could not be rejected. This implies that among different age groups, artisans tend to share a common perception of the extent to which government and non-governmental institutions support them. This might be an indication of a universally low or disillusioned perception of institutional outreach, regardless of age.

In terms of gender, the *t*-value was -0.411 and the *p*-value was 0.681, which is not significant. Therefore, *H_{0.47}* could not be rejected and suggesting that male and female artisans equally perceive the quality and availability of outside assistance. This congruence might be a result of the common rural and micro-enterprise environment in which a majority of the artisans work, irrespective of gender.

Nonetheless, the level of education was also found to have a great impact on perceptions of institutional support, with a *p*-value of 0.014 and an *F*-ratio of 3.592. *H_{0.48}* is hence rejected. This implies that better-educated artisans are probably better informed about scams, better placed to deal with bureaucracy, or better able to access and use available support services. Less educated artisans might lack access to information, experience difficulties in filing documents, or even comprehend eligibility criteria.

A very strong difference was discovered among monthly income groups, with a *p*-value of <0.001 and an *F*-ratio of 6.389. *H_{0.49}* is thus rejected. Wealthier artisans could have greater access to government or NGO support, perhaps due to superior networks, registered status, or proactive seeking. Poorer artisans might be less plugged into formal systems and thus feel less supported.

The experience of artisans in business also statistically affected their belief in institutional support, with an F -ratio of 6.786 and a p -value <0.001 . It results in the rejection of $H_{0.50}$. More experienced business people are presumed to have improved exposure to schemes and networks developed over time, and those who are new to the business can find it difficult to interact with institutional mechanisms. This indicates that business operation duration facilitates easier access to information and support.

Business activity nature was also found to have a significant impact on perception, with a p -value of 0.004 and an F -ratio of 4.563, leading to rejection of $H_{0.51}$. Units engaged in complete end-to-end operations like raw material extraction, manufacturing and distribution are likely to have greater institutional visibility and intervention, and therefore greater interaction with support services. However, units engaged only in manufacturing may not receive as much attention and support.

Training or assistance gained had a very significant impact on perception, with a p -value <0.001 and t -ratio of 7.065, rejecting $H_{0.52}$. This finding is in affirmation that individuals who have undergone training or assistance programs are more likely to indicate positive perceptions, possibly because they have greater exposure, knowledge and access to institutional systems.

4.5.5.2 Intergroup Differences in Supportive Schemes

The post-hoc analysis of supportive schemes among grass-based handicraft units reveals important demographic and operational variations.

Table 4.47

Tukey HSD Post-Hoc Test Result: Supportive Schemes

Factors	Comparison Groups		Mean Difference	p
	Group 1	Group 2		
Monthly income (₹)	Up to 10000	25000 to 50000	-.50028*	$<0.001^{***}$
	10000 to 25000	25000 to 50000	-.40589*	.001
	50000 to 100000	Up to 10000	.38193	.061
	Above 100000	Up to 10000	.31416	.379

Factors	Comparison Groups		Mean Difference	<i>p</i>
	Group 1	Group 2		
Nature of business activity	Extraction of raw materials, manufacturing and distribution	Manufacturing and distribution	.22419*	0.023*
	Manufacturing only	Manufacturing and distribution	.39769*	0.008**
	Extraction of raw materials and manufacturing	Manufacturing only	-.39313	0.524
Business experience	0 to 5 years	More than 20 years	.23082	0.373
	5 to 10 years	More than 20 years	.20448	0.227
	10 to 20 years	More than 20 years	.35082*	<0.001***

Source: Compiled from Primary Data (* significant, ** very significant & *** highly significant)

Table 4.47 describes the result of post-hoc analysis and it reveals significant differences in artisans' perception of government and non-government agency support across multiple demographic and business-related categories. The higher-income and experienced artisans (more than 20 years) view institutional support more positively, likely due to better access to information and schemes. Artisans' educational level significantly influenced their perception of institutional support ($F = 3.592$, $p=0.014$). Post-hoc comparisons would likely show that those with higher education, particularly diploma holders and graduates, had a more favourable view of the support they received compared to those with only basic schooling. This may be attributed to their better capacity to access information, apply for schemes, or engage bureaucratically.

Income level was another significant differentiator ($p<0.001$). Post-hoc tests would reveal that higher-income artisans perceived more substantial support than lower-income groups. This suggests that wealthier artisans may be more integrated into formal networks and have better access to institutional channels. Similarly, business experience showed statistically significant differences ($F = 6.786$, $p<0.001$), with more experienced artisans perceiving greater support, possibly due to longstanding relationships with agencies or accumulated procedural know-how. Furthermore, artisans involved in full-spectrum business activities (extraction, manufacturing and

distribution) expressed stronger positive perceptions of support ($F = 4.563, p = 0.004$) than those involved only in manufacturing or partial processes. These enterprises may receive more institutional visibility or diverse types of assistance.

Table 4.45 provides the possibility of intergroup comparison using the mean value of training received and not. Artisans who had received training or assistance had significantly better perceptions than those who had not ($t = 7.065, p < 0.001$). The mean value of training received is 2.033 and not received is 1.507. It confirms the positive impact of outreach programs and skill-building interventions on artisans' trust in institutional support.

In brief, the analysis shows that attitudes towards government and non-government assistance differ remarkably according to education, earnings, experience in business, type of business activity and whether or not artisans have been given previous training or help. Yet age, gender and location of business have no great effect on these attitudes. These results underscore the importance of more inclusive and equitable contact by support agencies, particularly with underrepresented and marginalised groups like lower-income, less well-educated and less experienced artisans.

4.5.6 Multi-Directional Influence of Key Variables

To address objective six, the study employed correlation, simple regression and multiple regression analysis. Correlation analysis measures the degree of relationship between variables. Simple regression analysis was used to assess the individual impact of independent variables on environmental sustainability practices and marketing efficiency. Multiple regression analysis was used to assess the collective and individual impact of multiple independent variables on organisational effectiveness, which served as the dependent variable. By quantifying the strength and direction of relationships, the analysis provides valuable insights into which factors most significantly influence the operational success of grass-based handicraft units. The findings offer a data-driven basis for targeted interventions to improve enterprise sustainability and performance.

Table 4.48*Correlation Matrix (Pearson r , $p < .001$)*

Variables	Organizational Effectiveness	Environmental Sustainability Practices	Marketing Efficiency	Govt. Scheme Support	Opportunities
Environmental Sustainability Practices	0.639				
Marketing Efficiency	0.749	0.543			
Govt. Scheme Support	0.540	0.490	0.461		
Opportunities	0.628	0.412	0.671	0.444	
Challenges	-0.574	-0.430	-0.610	-0.374	-0.491

Table 4.48 highlights the relationships between key variables associated with the performance of grass-based handicraft units using correlation analysis. Most notably, organisational effectiveness shows strong positive correlations with marketing efficiency ($r = 0.749$), environmental sustainability Practices ($r = 0.639$), Opportunities ($r = 0.628$) and government scheme support ($r = 0.540$), all statistically significant at the 0.01 level. This indicates that as these supportive and developmental factors improve, so does the effectiveness of the organisations. In particular, the highest correlation is with marketing efficiency, suggesting that access to markets, customer outreach and product visibility are crucial drivers of organisational performance.

Conversely, challenges exhibit significant negative correlations with all the variables, especially with marketing efficiency ($r = -0.610$) and organisational effectiveness ($r = -0.574$), implying that operational, infrastructural, or systemic barriers undermine the overall development and efficiency of these units.

Other strong inter-variable relationships include marketing efficiency and opportunities ($r = 0.671$), suggesting that improved marketing capabilities open more avenues for artisans. Environmental sustainability practices also positively correlate

with all other factors, though to a moderate degree, emphasising their supportive but not sole role in overall effectiveness.

The results are statistically significant ($p < 0.001$), reinforcing that these relationships are not due to chance. Overall, the matrix underscores that policy and practice interventions aimed at improving marketing systems, ensuring government and NGO support, and reducing operational challenges are central to enhancing the viability and growth of handicraft enterprises.

4.5.6.1 Role of Institutional Support on Eco-Friendly Practices

The following hypotheses were developed and tested through the simple regression analysis and the impact was measured and interpreted as part of this study objective. Here, ascertains the role of supportive schemes on the eco-friendly practices of the grass-based units in Kerala.

$H_{0.53}$: Supportive schemes do not significantly and positively impact environmental sustainability practices in the grass-based handicraft units.

$H_{1.53}$: Supportive schemes significantly and positively impact environmental sustainability practices in the grass-based handicraft units.

Table 4.49

Role of Institutional Support on the Environmental Sustainability Practices

Model summary		ANOVA (Model Fitness)			Coefficient Output	
Variables		Adjusted R²	F	p	Beta coefficient	p
Independent	Institutional support					
Dependent	Environmental sustainability practices	0.237	91.274	<0.001***	0.49	<0.001***

Source: Compiled from Primary Data

(*** indicate highly significant)

Table 4.49 shows the result of simple regression analysis to disclose the impact of supportive schemes on environmental sustainability practices in the grass-based

handicraft units in Kerala. The results depict that the relationship between the variables is statistically significant and reject $H_{0.53}$. The model shows an Adjusted $R^2 = 0.237$, showing that supportive schemes describe 23.7% of the variation in environmental sustainability practices. Hence, this recommends a moderate predictability and it results in sustainability outcomes. The result of ANOVA confirms the fitness of the model ($F = 91.274$, $p < 0.001$), emphasising the significance of this model. In addition to that, it has a positive and significant beta value ($\beta = 0.49$, $p < 0.001$). Thus, the enhancement of supportive schemes results in to improvement in environmental sustainability practices.

4.5.6.2 Influence of Eco-Friendly Practices on Marketing Efficiency

The following hypotheses were developed and tested through the simple regression analysis and the impact was measured and interpreted as part of the study objective. Here, ascertains the influence of environmental sustainability practices on the marketing efficiency of the handicraft units.

$H_{0.54}$: Environmental sustainability practices do not significantly and positively impact the marketing efficiency of the grass-based handicraft units.

$H_{1.54}$: Environmental sustainability practices significantly and positively impact the marketing efficiency of the grass-based handicraft units.

Table 4.50

Role of Environmental Sustainability Practices on the Marketing Efficiency

Model summary		ANOVA (Model Fitness)		Coefficient Output		
Variables	Adjusted R ²	<i>F</i>	<i>p</i>	Beta Coefficient	<i>p</i>	
Independent	Environmental sustainability practices	0.292	120.706	<0.001***	0.543	<0.001***
Dependent	Marketing efficiency					

Source: Compiled from Primary Data

(*** indicate highly significant)

Table 4.50 shows the result of simple regression analysis to present the influence of environmental sustainability practices on marketing efficiency in the grass-based handicraft units in Kerala. The results depict that the relationship between the variables is statistically significant and reject $H_{0.54}$. The model shows an Adjusted $R^2 = 0.292$, showing that environmental sustainability practices explain 29.2% of the variation in marketing efficiency. Hence, this recommends a moderate predictability and it results in marketing efficiency. The result of ANOVA confirms the fitness of the model ($F = 120.706, p < 0.001$), establishing the significance of this model. In addition to that, it has a positive and significant beta value ($\beta = 0.543, p < 0.001$). In short, the positive change in environmental sustainability practices is reflected in the enhancement of marketing efficiency.

4.5.6.3 Role of Institutional Support on Marketing Efficiency

The following hypotheses were developed and tested through the simple regression analysis and the impact was measured and interpreted as part of the study objective. Here, ascertains the role of supportive schemes on the marketing efficiency of the grass-based units.

$H_{0.55}$: Supportive schemes do not significantly and positively impact marketing efficiency in the grass-based handicraft units.

$H_{1.55}$: Supportive schemes significantly and positively impact marketing efficiency in the grass-based handicraft sector.

Table 4.51

Role of Supportive Schemes on the Marketing Efficiency

Model summary		ANOVA (Model Fitness)		Coefficient Output	
Variables	Adjusted R^2	F	p	Beta Coefficient	p
Independent	Institutional support	0.21	77.872	0.001***	0.461
Dependent	Marketing efficiency				

Source: Compiled from Primary Data

(*** indicate highly significant)

Table 4.51 shows the result of simple regression analysis to reveal the impact of supportive schemes on marketing efficiency in the grass-based handicraft units in Kerala. The results indicate that the relationship between the variables is statistically significant and reject $H_{0.55}$. The model shows an Adjusted $R^2 = 0.21$, showing that supportive schemes explain 21% of the variation in marketing efficiency. Hence, this recommends a moderate predictability and it is reflected in marketing efficiency. The result of ANOVA confirms the fitness of the model ($F = 77.872$, $p < 0.001$), establishing the significance of this model. In addition to that, it has a positive and significant beta value ($\beta = 0.461$, $p < 0.001$). In short, the positive change in the implementation of supportive schemes is reflected in the improvement of marketing efficiency.

4.5.6.4 Multiple Regression Model

The combined effect of variables was measured through the following multiple regression model.

Dependent Variable: Organisational Effectiveness (OE)

This variable measures how efficiently and productively the handicraft units operate. It includes items related to: Production processes (e.g., raw material conversion, cost control), Operational systems (inventory, logistics, vendor relationships), Workforce management (training, retention, skill evaluation), Financial outcomes (profitability, loan availability).

Independent Variables:

- a. Environmental Sustainability Practices (ESP): Assesses eco-conscious behaviour in business operations. Includes: waste reduction and renewable energy use, use of eco-friendly materials, compliance with environmental regulations and Government/NGO support for sustainability.
- b. Marketing Efficiency (ME): It explains how well the unit reaches and retains customers. Includes: sales growth, branding, social media use, paid advertising, customer relationship management, marketing channel effectiveness and awareness of brand value and customer feedback.

- c. Government Scheme Support (GSS): Measures the perceived effectiveness of Government and NGO support. Includes: awareness and access to schemes, funds for promotion and training, marketing assistance and infrastructure support
- d. Business Opportunities (O): Focuses on growth enablers. Includes: export opportunities, digital marketing access and supportive government policies
- e. Business Challenges (C): Highlights operational constraints. Includes: raw material shortages, labour skill gaps, competition (including online platforms), technological and branding issues.

Model Specification:

$$OE = \beta_0 + \beta_1 * ESP + \beta_2 * ME + \beta_3 * GSS + \beta_4 * O - \beta_5 * C + \varepsilon$$

Where:

OE: Organisational Effectiveness (Dependent Variables)

ESP, ME, GSS, O, C: Independent Variables

β_0 : Intercept

β_1 – β_5 : Coefficients estimating the influence of each IV

ε : Error term

4.5.6.5 Influence of Key Variables on Organisational Effectiveness

As part of this study objective, the following hypotheses were developed and tested through the empirical process and commented on, under the interpretations part. Here, measures the role of supportive schemes, sustainability practices, marketing performance, prospects and challenges on organisational effectiveness of the units.

H_{0.56}: Environmental sustainability practices do not significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{1.56}: Environmental sustainability practices significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{0.57}: Marketing efficiency does not significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{1.57}: Marketing efficiency significantly and positively impacts organisational effectiveness in the grass-based handicraft units.

H_{0.58}: Government support schemes do not significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{1.58}: Government support schemes significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{0.59}: Business opportunities do not significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{1.59}: Business opportunities significantly and positively impact organisational effectiveness in the grass-based handicraft units.

H_{0.60}: Business challenges do not significantly and positively impact organisational effectiveness in the grass-based handicraft sector.

H_{1.60}: Business challenges significantly and positively impact organisational effectiveness in the grass-based handicraft sector.

Table 4.52

Multiple Regression Analysis Output

Predictors	Unstandardised Coefficient (B)	Standard Error	Standardised Coefficient (Beta)	<i>t</i>	<i>p</i> (Sig.)	VIF
Environmental Sustainability Practices	0.351	0.057	0.260	6.133	<0.001***	1.602
Marketing Efficiency	0.266	0.037	0.379	7.137	<0.001***	2.502
Government Scheme Support	0.107	0.034	0.129	3.154	.002**	1.476
Opportunities	0.157	0.047	0.157	3.366	.001**	1.926
Challenges	-0.067	0.027	-0.106	-2.451	.015*	1.664
Model Summary	R = 0.824	R ² = 0.679	Adj. R ² = 0.673	SE = 0.28958	<i>F</i> = 120.625, Sig. = <0.001	Durbin-Watson = 1.675

Source: Compiled from Primary Data (* significant, ** very significant & *** highly significant)

Regression equation formed,

Organisational Effectiveness (OE)=

$$1.001+0.26*ESP+0.379*ME+0.129*GSS+0.157*O-0.106*C+.213$$

Table 4.52 shows the outcomes of multiple regression analysis, the factors influencing organisational efficiency in the grass-based handicraft industry. The multiple regression analysis yields considerable empirical support that some internal and external variables greatly influence enterprise performance. The model includes five predictors: environmental sustainability practices, marketing efficiency, government scheme support, perceived business opportunities and perceived business challenges. The regression findings show valuable patterns and are used to support or reject hypotheses from $H_{0.52}$ to $H_{1.54}$ according to statistical significance, direction of the coefficient and beta value.

$H_{.56}$, which predicts that environmental sustainability practices have a significant and positive impact on organisational efficiency, is strongly supported. The regression coefficient for this item is 0.351 with a standardised beta of 0.260 and a highly significant p -value <0.001 . This implies that firms that actively pursue sustainability practices, e.g., the use of green materials, minimisation of waste and compliance with regulations, are more likely to operate effectively. These practices are likely to encourage improved management of operations, greater product quality and improved market reputation. Therefore, $H_{0.56}$ is rejected, establishing that environmental responsibility is not an isolable compliance but a driver of performance.

$H_{.57}$, which connects to the contribution of marketing efficiency, also provides strong support. Having a beta of 0.379, the highest across all the predictors and a p -value <0.001 , marketing efficiency is seen as the greatest determinant of organisational performance. This is further supported by the positive unstandardised coefficient (0.266) and the significant t -value (7.137). Artisans who put money into successful marketing, digital outreach, customer relationship building and value communication are likely to enjoy improved revenue streams and customer retention. Therefore, $H_{0.57}$

is rejected, highlighting the importance of market connectivity and strategic communication to small business success.

H.58 investigates whether government scheme support affects organisational efficiency. The findings indicate a positive unstandardized coefficient of 0.107, a standardised beta of 0.129 and a *p*-value of 0.002, well within the acceptable limit. This result supports that consciousness and the use of government schemes like funding, training and infrastructure assistance immensely benefit the operational capability of handicraft units. While the beta value is lower than that of other predictors, the significance implies that institutional interaction does yield quantifiable gains for enterprises. Thus, *H*_{0.58} is rejected, affirming the role of policy-level intervention in the support of traditional sectors.

H.59 relates to the perceived business opportunities positively and significantly impacts organisational effectiveness, which is also supported by *H*_{1.59}. The coefficient is 0.157 when unstandardised, 0.157 when the beta, and 0.001 when the *p*-value, which shows a statistically significant relationship. Craftsmen who are aware of market trends, consumers' likes and innovation prospects in products are likely to react with adaptive business practices and thus enhance efficiency. This result suggests that opportunity awareness is a psychological and strategic enabler that triggers proactive action. Therefore, *H*_{0.59} is rejected, supporting the importance of an entrepreneurial mindset and forward-looking orientation in organisational performance.

However, *H*.60 is significantly and positively associated with business challenges and positively influences organisational efficiency. Indeed, the regression coefficient is negative (-0.067), the beta is -0.106 and the *p*-value is 0.015. While the relationship is significant, the direction is contrary to the hypothesis. This finding supports that greater challenges, such as a shortage of skilled labour, technological constraints, competition and brand limitations, are negatively impacting enterprise efficiency. Far from unleashing innovation or resilience, these challenges are hindrances, diminishing the ability of units to perform. Thus, the null hypothesis (*H*_{0.60}), which states that there is no significant relationship between business challenges and

organisational effectiveness, is rejected, as the p -value (0.015) is below the 0.05 threshold for statistical significance. However, the beta coefficient is negative(-0.106), indicating that business challenges have a significant negative impact on organisational effectiveness. Since the alternative hypothesis originally proposed a positive relationship, this result does not support $H_{1.60}$. Instead, the evidence reveals a significant relationship in the opposite direction, suggesting that as business challenges increase, organisational effectiveness tends to decrease, contradicting the hypothesised direction.

From a model point of view, the regression output displays a high R^2 of 0.679, that is, about 68% of organisational efficiency variance is explained by the five predictors. The adjusted R^2 of 0.673 validates the stability of the model. The F -statistic of 120.625 ($p < 0.001$) represents the overall significance of the model and the Durbin-Watson value of 1.675 indicates acceptable autocorrelation levels. These measures in aggregate establish the soundness of the model and the soundness of the inferences derived.

Finally, the analysis verifies that environmental sustainability practices ($H_{.56}$), marketing efficiency ($H_{.57}$), support for government schemes ($H_{.58}$) and perceived business opportunities ($H_{.59}$) are all significantly and positively related to the organisational efficiency of grass-based handicraft units. Of these, marketing efficiency stands out as the strongest factor. Conversely, $H_{.60}$ is rejected, since business difficulties show a harmful effect, confirming that unsolved obstacles stifle performance. The results call for specific interventions, particularly in marketing assistance, sustainability consciousness and opportunity mapping, along with fixing systemic limitations like skill deficiencies and technological backwardness. These findings serve to strengthen the hand of policymakers, development institutions and artisan associations seeking to construct high-performing and resilient grass-based handicraft businesses.

The analysis of grass-based handicraft units in Kerala reveals a sector in a critical condition, with potential for growth amidst systemic constraints impacting efficiency and expansion. With 291 respondents quantitatively investigated and six main

objectives, the research concludes that although artisans exhibit the natural propensity to engage in environmental sustainability measures and preserve their cultural integrity, the major weakness affecting the organisational performance and competitiveness is the poor level of efficiency in organisational marketing, technology leverage, access to finances and institutional support. The results of the research signify that more educated, older and higher-earning artisans across the board performed better, thus showing that socioeconomic gap essentially determines the access to opportunities and resources, with the chief gender difference being the efficiency of marketing and implying the necessity of specific intervention on the part of women artisans due to the lack of mobility and exposure to security threats. In the face of the awareness of government schemes, the study recognizes a considerable implementation gap in the area of inadequate support delivery through infrastructure, financial and marketing aspects and the field information indicates another issue which is the lack of raw materials, animal attack by the wild animals, aversion of young people to join the sector and the non-willingness of the banks for financial support.

4.6 Results and Discussions

The business and demographic characteristics of Kerala's grass-based handicraft artisans capture an unintended interplay of tradition, socio-economic realities and changing market forces. Dominance by middle-aged and aged artisans, as well as a strong female presence, identifies the sector's heavy dependence on traditional knowledge and skills transmitted generationally. This trend parallels national observations, wherein women make up a large percentage of the handicraft sector workers, frequently tricking domestic duties with artisanal production (Nguyen et al., 2016).

Educational levels of these artisans are typically low, with most having just basic literacy skills. Such an education profile may constrain their capacity to adopt contemporary business methods, avail themselves of formal financial services or gain access to online marketing platforms. This has also been noted by the Ministry of Textiles' 2023-2024 Annual Report, which points out that a large percentage of

artisans throughout India have limited formal education, which may hinder their capacity to evolve with shifting market needs.

Economically, the industry is marked by limited earning capacity, where most artisans earn less than the national average. This cost constraint is further intensified by inhibited access to credit facilities and market linkages necessary for economies of scale and profitability. The Kerala State Planning Board's Economic Review 2024 stresses the necessity of specialised interventions for improving the economic resilience of traditional industries such as handicrafts through enhanced access to finance and market development programs.

From an enterprise standpoint, the majority of handicraft units are found in rural locations and are organised as micro-enterprises and the family members are involved in the production process. The units normally carry out the whole value chain from raw material sourcing to distribution of products, a comprehensive approach to handicraft. Still, infrastructural limitations like poor storage facilities and inadequate access to advanced tools remain a major setback to efficiency and product quality. The National Bank for Agriculture and Rural Development (NABARD) has found similar challenges in its evaluations and promoted infrastructure development and capacity development programs to assist rural artisans.

The result of earlier studies states that the sustainability of traditional crafts is at risk as youth are migrating towards alternative employment and economic benefit (Dharia & Juyal, 2025). The youth may quit using traditional skills if there is no targeted intervention (Chatterjee, 2020).

Briefly, the grass-based handicraft industry in Kerala is a traditional sector deep-rooted in age-old practices, primarily sustained by women artisans from economically and educationally disadvantaged backgrounds. The challenges of these artisans must be confronted through an array of policy approaches, including education, financial inclusion, infrastructural development and access to markets, to make the industry sustainable and grow.

The results of **Objective One**, which examined the capacity of handicraft units in Kerala to ensure environmental sustainability, bring to light an elaborate combination between customary practices and contemporary sustainability concerns. Even though artisans have a firm commitment to sustainable processes, various systemic obstacles hamper the complete achievement of sustainable practices.

The research showed that artisans consistently practice environmentalism, including turning all raw materials into finished products and following waste reduction policies. These reflect the typical practice of the past, which was focused on minimal wastage and effective use of resources. Adoption of high-tech innovations to increase efficiency is still low, reflecting a lag in bridging traditional practice with contemporary sustainability needs. This is further deepened by inadequate support from government and non-governmental institutions. According to the study, artisans lack access to capacity-building programs and training in areas of sustainability practices (Subrahmanyam, 2025). This institutional weakness is a limiting factor for artisans to embrace new practices and technologies that can further enhance environmental sustainability.

Additionally, the study revealed clear differences in the application of sustainability practices by age, education level and income. Younger, more educated and better-income artisans are more inclined to embrace sustainable practices and therefore, specific interventions are required to serve older, less educated and poorer artisans. These results clearly point towards the imperative for holistically framed policies and programs offering training, financial support and exposure to technology for artisans (Sehnm et al.,2020). Through the removal of these systemic obstacles, any business owner can promote the environmental sustainability of Kerala handicraft units and sustain the traditional processes that have long practiced sustainable development.

Objective two, the organisational effectiveness analysis of grass-based handicraft units in Kerala, uncovers a complex matrix of operational strengths and areas for strategic action. The research shows that, though artisans have an excellent work ethic with regard to quality and usage of resources, technology adoption, financial management and skill building remain areas of concern.

Artisans proved skilled at transforming raw materials into finished products and quality control, indicating traditional approaches that focus on resource productivity and craftsmanship (Yair et al., 2001). A reluctance or inability to apply advanced tools and processes, indicated by the low mean score for adopting modern technology, would undermine productivity and restrict the competitiveness of these units in wider markets.

Financial management was also another key area where artisans complained about being unable to handle overhead expenses and acquire low-interest loans. Financial ignorance and restricted availability of credit facilities may hinder the development and sustainability of such businesses (Sindhu, 2020). In addition, the research identified the fact that most units fail to manage inventory and logistics appropriately, which are key elements for an efficient supply chain.

The development of skills and the management of the workforce also pose difficulties (Ghouse, 2012). Although artisans appreciate the significance of training and holding on to experienced workers, there exists a lack of formal skill assessment methods and planned training schemes. It may result in variations in the quality of products and hamper attempts to increase operations.

The research also established noteworthy differences in organisational effectiveness according to age, education, income level and training accessibility. More educated younger artisans belonging to higher-income levels and having training programs are more likely to register higher organisational effectiveness. This result highlights the need for interventions that specifically address education and capacity development to improve the overall performance of handicraft units (Venugopalan et al., 2021).

Finally, though grass-based handicraft units based on grass in Kerala have inherent strengths embedded in customary practice and quality orientation, it is equally important to address the challenges identified under technology adoption, financial management and skill development. The right strategic intervention in these respects can greatly improve the organisational effectiveness and viability of these units.

Regarding *Objective three*, which measured the extent of marketing efficiency at grass-based handicraft units of Kerala, it exposes several crucial facts about existing marketing practices and their shortcomings in the sector. The outcome indicates a mixed state of efficiency, with indigenous knowledge and customer contacts being comparatively robust and strategic, as well as online marketing activities being grossly inadequate.

The research indicates that artisans enjoy moderate levels of success in customer acquisition and long-term relationships, signifying their dependence on interpersonal relations and repeat buyers. This correlates with previous findings, which observed that micro-enterprises in traditional industries tend to be heavily reliant on relational marketing and word-of-mouth advertising instead of formal marketing strategies (Hollen, 2018). Yet, other variables like social media usage and paid promotion reported quite poorly, with mean scores of 2.01 and 1.10, respectively. These scores reflect an enormous digital outreach deficit and imply that the artisans are either unaware or untrained in harnessing online channels, a vital limitation in today's consumer market, ever more dominated by e-commerce.

The lack of brand value awareness and utilisation of innovative slogans equally reinforces the point that strategic branding is still in the process of being formulated in these units. The small-scale traditional industries tend to lack brand identity because they have had minimal exposure to formal marketing training and little financial backing for promotional purposes (Parappurathu et al., 2023). These loopholes hamper product visibility and lower competitiveness within bigger markets, particularly against mass-produced and digitally marketed options.

Despite these deficiencies, the artisans reflected a reasonable level of consumer understanding and fairly efficient cost management in retail channels. This suggests a core that can be developed with specific training and policy intervention. Tailor-made training programs and micro-marketing support schemes can make a considerable difference in the market performance of micro-enterprises if coordinated with local skills and market requirements (Sinaini et al., 2023).

The research also highlights the importance of regular evaluation of marketing performance, which was registered at a low level. Lacking systematic monitoring, it is challenging for companies to evolve in response to shifting consumer trends or assess the success of their campaigns. The significance of feedback loops and marketing audits for enhancing efficiency, particularly for micro and small businesses in volatile markets (Bradford, 2024).

Overall, the marketing effectiveness of grass-based handicraft units in Kerala is still underdeveloped, especially for those needing to adopt modern and digital approaches. Although there is a robust base of consumer interaction and market awareness, no brand building, limited utilisation of digital technology and scarcity of training are major limitations. Training in digital marketing and policy-level interventions, along with branding workshops, would go a long way in raising such enterprises' visibility.

The *fourth objective* of the study was to examine the prospects and challenges confronting micro-enterprises dealing in the production and marketing of grass-based handicrafts in Kerala. The results based on descriptive statistics and accompanying visual presentations clearly highlight both the potential of the grass-based handicraft sector and the major challenges that hinder its sustainable development. These findings reflect a dual reality, where there are visible opportunities for growth, innovation and social upliftment; but persistent issues, such as a lack of infrastructure, limited institutional support and technological gaps, continue to obstruct progress.

On the positive side, entrepreneurs expressed a moderately positive perception of their ability to satisfy market needs ($M = 2.75$), distribution networks' availability ($M = 2.77$) and social status influence ($M = 3.87$). These findings show that most units have core strength in product acceptance and receive some level of respect within communities. Handicraft enterprises are not only of economic livelihood value but also for socio-cultural identity to local societies (Dhar, 2025). Despite these inherent advantages, the entrepreneurs had a pessimistic view regarding important facilitators like export possibilities ($M = 1.28$), online marketing skills ($M = 1.20$) and finance access ($M = 1.66$). These low mean scores underscore the lack of institutional backing and

exposure to technology. Conventional craft industries tend to exist in financial isolation and digital anonymity (Kofler & Walder, 2024).

The reported issues are more entrenched and uniformly severe. The greatest challenge is the absence of technological development ($M = 3.77$), then coming second is the inability to find quality raw materials ($M = 3.59$) and access competent human capital ($M = 3.57$). The deficit of innovation ($M = 3.43$) and brand setup issues ($M = 3.43$) compound the challenges of staying competitive, particularly in a market being dominated by mechanisation and quick product development. Without innovation and technology infusion, the sustainability of handicraft sectors is at risk, particularly in an economy leaning heavily towards digital platforms and scalable production (Yadav et al., 2023).

Moreover, competition from organised retail and digital platforms ($M = 2.67$) indicates the intensifying threat of commercial options that provide convenience and aggressive promotion, pushing artisanal products to the periphery. The traditional craft enterprises are usually ill-positioned to deal with e-commerce giants' competition, primarily because of limited digital awareness and minimal marketing effort (Sharma, 2023).

In conclusion, though the grass-based handicraft industry of Kerala has socio-economic potential, both in terms of market demand and cultural importance, it is plagued with serious operational and strategic limitations. The deficiency of financial access, limited technological integration, limited training in innovation and weak brand strategies all combined hamper the scalability as well as global reach of the sector. Mitigating these issues through organised government policies, training modules, technology incubation and enhanced access to finance can significantly increase the long-term sustainability of the sector.

The findings of the analysis of perceptions of prospects and challenges indicated that some demographic and business factors had a significant effect on how artisans perceived their business environment. Importantly, education level and monthly income were the most significant factors. Artisans with higher education and earning levels saw greater opportunities and fewer obstacles, suggesting that higher access to

resources and knowledge leads to entrepreneurial optimism. Likewise, the type of business operation, especially those involved in full-cycle operations, was linked to more positive perceptions, implying that a wider operational scope leads to more exposure to market potential as well as institutional networks. On the other hand, makers with more limited roles or less business experience were more worried about the pressures of competition, access to raw materials and visibility of their brands. Remarkably, gender and training received did not reveal considerable variation in perception, suggesting that structural issues like competition, absence of innovation and infrastructure limitations are equally faced independent of gender or exposure to restricted training programs.

The *fifth objective* of this research was to assess the extent of the support provided by governments and non-governmental agencies in facilitating grass-based handicraft units in Kerala. Through descriptive statistics and graphical illustrations, the outcomes provide a broad view of the mechanisms of institutional support perceived by micro-entrepreneurs.

The findings depict an overall low extent of government and NGO support satisfaction and awareness. For example, though a moderate mean score of 3.11 was indicated on the statement that ‘government or supporting agencies provide training to enhance product quality’, all other indicators reflect poor performance. Entrepreneurs indicated low knowledge of government schemes ($M = 1.40$), insufficient fund provisions ($M = 1.80$) and limited infrastructure support ($M = 1.36$). A notable low mean score of 1.27 was registered for entrepreneurs' effort to access help, representing either disaffection or systemic inhibition in accessing help. These observations are consistent with the previous literature; the lack of proper information dissemination greatly hampers the coverage and success of government schemes in the handicraft sector (Majeed et al., 2023).

In addition, the average for the composite variable ‘Govt & NGO Scheme Support’ was determined to be 1.92, which is consistent with a generally low perception of effective institutional support. Entrepreneurs also expressed poor support in domestic and foreign marketing activities ($M = 1.31$), which is vital since increased global

market integration is increasingly important to the support of micro-enterprises. The absence of systematic marketing and export promotion systems for traditional crafts immensely impedes the industry's ability to grow (Datta & Bhattacharyya, 2016).

Apart from inadequate financial and infrastructural support, findings also indicate a mismatch in training and capacity development. Although certain training programs are available, mainly product quality-oriented, fewer initiatives can be seen for training in digital marketing, branding and innovation, all of which are central to ensuring long-term competitiveness. There is a necessity for specialised training programs that go beyond improving primary skills to encompass contemporary marketing and management strategies (Blanchard & Thacker, 2023).

Additionally, the dissatisfaction with existing support mechanisms ($M = 2.00$) and the minimal pursuit of such support by entrepreneurs indicate a possible decline in trust between micro-enterprises and institutional players. This underlines the imperative need for streamlining both the accessibility and efficacy of government and NGO interventions through simplified procedures, open communication and frequent outreach.

Finally, the research highlights an alarming discrepancy between the intended support infrastructure and the real experiences of grass-based handicraft entrepreneurs. Although a few initiatives, like product quality training, exhibit modest participation, the overall scenario depicts poor institutional engagement. Policy changes that raise awareness, ease access and align interventions with the actual problems of grass-based micro-enterprises are critical for revitalising this ancient sector (Mbandua, 2024).

The results on perceptions of government and non-government agency assistance revealed considerable differences among artisans depending on several relevant variables. The research identified that education, earnings, experience in business and the nature of business activity all had considerable impacts on how institutional support was perceived by artisans. Educated and experienced artisans had greater perceptions of support and this can be attributed to their being more familiar with administrative systems and having more professional connections. In parallel, individuals engaged in full business processes, ranging from extraction to

manufacturing to distribution, were more apt to see access to assistance, perhaps from greater visibility and formal listing. The greatest disparity was found among prior recipients of training or support, indicating that direct exposure to the program influences confidence and satisfaction within institutional settings. Yet age, gender and business location did not influence perception significantly, suggesting general uniformity, perhaps an indication of systemic shortcomings or non-differentiated outreach by supporting agencies along these segments. These trends imply that although some artisans are well-integrated into the support system, others remain isolated through educational, informational, or structural constraints.

The *sixth objective* of this research was to analyse the multi-directional influence of key variables. Simple and multiple regression analysis was carried out to identify the role played by these variables and some statistically significant associations were found. Sustainability practices and marketing efficiency are strongly influenced by institutional support. Eco-friendly practices emerge as the most significant predictor of marketing efficiency.

The model had a good overall fit, with an R^2 of 0.679, which meant that about 68% of organisational effectiveness variance was accounted for by the five predictors. This emphasises the multifactorial nature of handicraft sector organisational performance. Environmental sustainability practice positively, statistically and significantly influenced organisational effectiveness ($\beta = 0.260$, $p < 0.001$). Previous literature confirms that the incorporation of eco-friendly practices enhances organisational performance and consumer confidence, ultimately leading to organisational performance (Pusparini, 2020).

Marketing efficiency was the most significant factor ($\beta = 0.379$, $p < 0.001$). This highlights the key role played by strategic marketing for the delivery of improved reach, enhanced sales and enhanced brand positioning. This outcome is aligned with previous literature, which pointed out that the efficient deployment of digital platforms and customer-oriented communication tremendously enhances performance in craft-based micro enterprises (Daminato, 2016).

Government scheme assistance also had a positive and significant impact ($\beta = 0.129$, $p=0.002$), though its relative magnitude was smaller. This indicates that institutional assistance is good, but its potential could be lessened by accessibility and awareness problems. The previous literature confirms this consideration; most grass-based entrepreneurs do not fully use government schemes due to poor information sharing and complicated official procedures (Pansera & Sarkar, 2016).

Perceived market opportunity also positively affected organisational effectiveness ($\beta=0.157$, $p = 0.001$), indicating that companies that see growth prospects and external demand tend to innovate and operate efficiently. This supports the entrepreneurial optimism model in which opportunity perception serves as a performance motivational driver (Poblete et al., 2019).

Conversely, challenges had a statistically significant and negative influence on organisational effectiveness ($\beta = -0.106$, $p = 0.015$). This suggests that issues like accessing materials, shortage of trained labour and rivalry from contemporary retail outlets hamper productivity and profitability. These issues were also noted in earlier research, the competition burden, particularly from online sales platforms, on conventional artisans (Du, 2017).

The regression model not only underscores the relevance of these factors but also emphasises the need for integrated interventions. These should promote environmental responsibility, enhance marketing capabilities, ensure responsive governance and expand access to opportunities. Together, such coordinated efforts are essential to building a more resilient and high-performing grass-based handicraft sector.

The evidence has shown a complicated environment in which the grass-based handicraft units of Kerala indicate high adherence to traditional values and environmentally aware attitude, as well as high modern pressures in terms of technology absorptions, market access and institutional support. The internal motivation towards sustainability and quality is present, with the external enablers, such as access to finance, digital literacy, marketing infrastructure and policy implementation, needing improvement. The future sustainability of the sector is

related to region-wise planning of the existing gaps in the sector by maintaining the cultural and environmental grounds were traditional handicraft production. The practice of specific interventions aimed at stimulating marketing, environmental awareness, opportunity identification and challenge route solving becomes the most severe strategic priority to create highly efficient and sustainable grass-based handicraft businesses.

The overall post-hoc test results underscore the critical role of structural enablers, particularly education, income and business experience, in shaping perception of artisans across core areas like sustainability, marketing, business prospects and institutional support. Artisans with higher education consistently reported more favourable views, reflecting how education enhances awareness, critical thinking and the ability to engage with developmental schemes and market mechanisms (Murzyn-Kupisz & Hołuj, 2021). Similarly, income played a decisive role; those with higher earnings had access to better tools, platforms and market reach, improving their perception of business viability and efficiency (Owusu-Ankomah, 2024). Business experience also positively influenced perceptions, particularly regarding institutional support, suggesting that exposure over time equips artisans with the knowledge and networks needed to navigate support systems (Kiptoo et al., 2024). In contrast, gender, business location and training did not show significant differences, indicating possible limitations in outreach quality or inclusivity. These patterns expose the underlying structural disparities and stress the importance of customised interventions, such as tiered training programs, knowledge hubs and inclusive credit schemes, that prioritise the marginalised segments of the artisan population. Addressing these inequalities is essential to building a resilient and thriving grass-based handicraft sector.

4.7 Conclusion

In short, this chapter has delivered an elaborate clarification of the analysed data, revealing the important relationship within the sector. The analysis explored the variables such as education, age and experience have a notable impact on the effectiveness of the craft units. The study identified the importance of supportive schemes for ensuring the sustainability practices, technological advancement,

marketing promotion and livelihood of rural artisans. Descriptive and inferential statistical tools established the relationships between the sample profile and business results. These results ensure the achievement of the objectives of the study, provide experimental proof for reinforcing policy measures, skill enhancement and eco-friendly practices. These observations provide the foundation for findings and recommendations of the study to lead the future development of grass-based handicraft sector.

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Chapter 5

FINDINGS OF THE STUDY

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5.1 Introduction

This chapter describes the major findings of the study, derived from the data analysis and interpretation. These findings disclose the opportunities and challenges of the grass-based handicraft units in Kerala. The outcome of the study indicates important approaches in the understanding of environmental sustainability practices, organisational effectiveness, marketing efficiency and supportive schemes. It describes responses to the research objectives and the basis for developing recommendations of the study. Major insights are useful to the entrepreneurs and supporting agencies for framing operational and supportive policies.

5.2 Findings of the Study

The following sections delineate the key findings of the study in detail.

5.2.1 Findings Based on Demographic Variables of the Study

- **Limited Youth Participation:** The grass-based handicraft sector is dominated by aged and experienced individuals pursuing traditional and inherited occupations. 67.4% of the respondents belong to the age groups above 46 years, and only 10% belong to the 18 to 25 years. It indicates that youth are not targeting this sector for their livelihood.
- **Prominent Role of Women Entrepreneurs:** Majority of the handicraft units (52.2%) are owned and managed by women entrepreneurs. It confirms the findings of the previous literature that the handicraft sector contributes to women's empowerment

- **Low Level of Education:** Most of the entrepreneurs (79.4%) in the sector are less educated. The sector is dominated by artisans with up to a high school level of education, and only 11.3% possessed a bachelor's degree or above. Thus, less educated people depend more on traditional skills and knowledge than on educational training.
- **Turnover of the Respondents:** The majority of the units (70%) belong to the lower income category (below ₹ 25,000). Only a minute fraction (4.5%) had a monthly sales revenue above ₹1,00,000. It indicates that this sector is not financially attractive or not utilised properly for income generation.
- **Wider Scope in Rural Area:** Majority of the respondents (88%) had their business units in rural areas, underlining the traditional and community-oriented character of grass-based handicrafts. This finding is consistent with earlier studies that the handicraft sector plays an important role in the development of rural areas and the growth of these crafts in urban settings is limited.
- **Limited Entrance of New Entrepreneurs:** Grass-based handicraft units are established and led by people with long periods of experience. The majority of the respondents (79%) had over 10 years of business experience, and only 6.9% had less than 5 years of experience. It indicates that new entrepreneurs are not motivated towards the sector.
- **Low Labour Force:** Handicraft businesses are micro-units working with little human resource backup. The majority of the units (55%) utilised a small labour force (0 to 5 workers) and just 8.9% utilised over 20 employees. The outcome aligns with the findings of the previous literature that handicraft businesses are micro-units working with little human resources.
- **Manufacturing of Diversified and Unique Crafts:** Each unit is making a variety and innovative products to meet the functional and aesthetic needs of consumers. This uniqueness is the success behind this sector. The product categories of this sector were items for use in the kitchen, office utilities, decorative items, baskets, mats and lamp shades.

- **Participation in the Value Chain of Craft Business:** Regarding the nature of business activity, most of the grass-based units (55.7%) were engaged in the entire value chain: raw material extraction, manufacturing and distribution. This was followed by 31.6% engaged only in manufacturing and distribution. Thus, the role of intermediary is comparatively less compared to other sectors.
- **Poor Inventory Management:** Only a limited number of entrepreneurs (19%) have sufficient storage facilities and others face the issue of storage of raw materials and products. Poor storage leads to wastage of materials, deterioration of product quality and interference with production cycles.
- **Lacking Land for Raw Material Cultivation:** A small minority (27 units) cultivates raw materials because of the unavailability of land. The majority (141 units) are directly extracted from the forest.
- **Active Participation in Training:** Most of the respondents (79.4%) participated in training or support offered by the supporting agency. Artisans are willing to participate in training offered by the government and NGO, because they are searching for financial and non-financial support offered by these agencies.
- **Means of Livelihood:** The majority of artisans started the unit for livelihood purposes and personal interest.
- **Limited Skill for Gathering Raw Materials:** The majority of the units (67.4%) were not properly trained in raw material gathering. Specialised skills are required for the collection of raw materials, particularly bamboo.
- **The Least Engagement of Traditional Skills for Making Innovative Products:** The artisans are not much dependent on their intergenerational skills in the manufacturing process because the traditional skills are not capable of making innovative and diversified products.
- **Issue of Urban-rural Digital Divide Among Artisans:** Urban-rural technological gap denies the growth of the handicraft sector.

- **Regional Uniqueness in Craft Practices:** Palakkad and Wayanad districts focus on the manufacturing of tribal crafts using bamboo, kora grass and reed bamboo. Screw pine crafts are mainly manufactured in Kottayam and Idukki. Kasargod district focused on cane craft.
- **Reason for Craft Diversity:** Local resources, traditional skills and cultural identity are the reasons for grass-based craft diversity in Kerala.
- **Association Between Gender and Nature of Business Activity:** The gender and nature of business activity indicated a highly significant association. Males had greater participation in the entire range of activities, from raw material extraction to manufacture and distribution, while females were more specialised in manufacture alone. This implies a gendered labour split in the handicraft industry, with men being more involved in resource-intensive activities and women doing less physically demanding activities.
- **Association Between Location and Nature of Business Activity:** There was a significant association between business location and activity type. Rural units were most likely to participate in the whole value chain, from raw material extraction to the distribution of products. On the other hand, urban units engaged more in manufacturing and distribution.
- **Significant Association Between the Nature of Business Activity and Type of Raw Materials Used:** Both grass and non-grass materials are utilised only by those units engaged in full chain business activities. For other units, mixed-material usage is difficult due to restricted processing capacity or lesser exposure to other inputs.
- **Significant Association Between the Monthly Income and the Nature of Business Activities:** Income level is higher in the case of units involved in end-to-end activities (from extraction to distribution) than those that only participated in manufacturing because of lower intermediary expenses and increased value addition. This supports the evidence presented in previous studies.
- **Association Between the Business Experience and the Nature of Business Activities:** There was a significant association between business experience and

the type of business activity. Highly experienced artisans (over 20 years) were found to be mainly engaged in end-to-end production cycles, whereas those who were less experienced were found to be in limited activities. This indicates that experience promotes vertical integration through acquired skills, resources and assurance in handling multifaceted operations.

- **Significant Association Between Gender and Access to Training:** Female respondents indicated marginally greater access to training programs, possibly the result of government or NGO initiatives aimed at empowering women entrepreneurs in rural handicraft industries.
- **Association Between Level of Education and Access to Training:** There was a significant association between level of education and access to training, where higher-educated artisans were more likely to say that they had been given training. This indicates a gap in inclusivity and access to capacity-building programs, such that less-educated or illiterate artisans could be underserved.
- **Significant Association Between the Number of Employees in Units and Access to Training:** The training and support access is more in the case of handicraft units with a greater number of employees.
- **Association Between the Experience of Artisans and Access to Training:** There is a significant association between business experience and training received. Experienced entrepreneurs showed higher participation in training programs; others showed lower participation. This pattern underscores the need for more inclusive outreach to newer entrants in the sector.
- **Association Between the Usage of Intergenerational Skills and Age of Entrepreneurs:** The younger artisans are reluctant to use intergenerational skills for making various products. Middle-aged and older adults (above 45 years of age) are using traditional skills for their manufacturing activities. This problem of intergenerational transmission is key to the existence of traditional handicrafts.

5.2.2 Environmental Sustainability Practices of Grass-Based Handicraft Units in Kerala

- **Moderate Level of Environmental Sustainability Practices:** Environmental sustainability practices followed by grass-based handicraft units are not highly satisfactory. Even though this sector and its products are considered eco-friendly and green according to the literature, the present study highlights contrasting perceptions. The use of chemicals in raw material treatment, the emission of health-threatening dust in the manufacturing of products, etc., are the reasons limiting environmental sustainability.
- **Waste Minimisation and Quality Maintenance Practices:** Units follow strong policies for waste minimisation, quality maintenance and appropriate waste treatment. The byproducts could be used for making decorative and home utility items.
- **Least Use of External Support for Renewable Energy Adoption:** Systemic backing for green transitions remains limited and underutilised within the sector. Use of renewable energy accelerates the production process and promotes the maintenance of carbon neutrality.
- **Eco-friendly Practices Followed by Educated Entrepreneurs:** Education is a primary driver of environmentally sustainable practices in the grass-based handicrafts units. The level of education significantly influences environmental sustainability practices. Educated artisans are aware of the importance of eco-friendly practices and others are unaware of the way of practices.
- **Eco-friendly Practices and Income:** Income is the key driving force of eco-friendly practices in this sector. Monthly income significantly affects environmental sustainability practices. Lower-income units are unable to manage the cost of environmentally friendly practices. In contrast, the survival of the higher-income group depends on the adoption of eco-friendly activities.

- **Least Concern for the Environment Among Youth:** Late middle-aged respondents (46 years and above) are making maximum effort for maintaining environmental sustainability. In contrast, youth are least concerned about eco-friendly practices.
- **Gender Inclusive Environmental Practices:** There is no gender difference in practising environmental sustainability.
- **Least Effect of Business Experience on Eco-friendly Practices:** Business experience is not an influencing factor for maintaining environmental practices.
- **Ineffectiveness of Training for Environmental Practices:** There is no significant difference between trained and untrained artisans in environmental practices. The content training does not discuss environmental practices.

5.2.3 The Organisational Effectiveness of Grass-Based Handicraft Units in Kerala

- **Better Product Quality:** Grass-based units assure the quality of the products ($M = 4.06$), because lower-quality products badly affect the existence of the units.
- **Satisfactory Vendor Relations:** Units follow good relations ($M = 3.85$) with suppliers of raw materials to avoid the issue of raw material shortage in the production process.
- **Favourable Input-Output Ratio (Raw Material Conversion):** Artisans make maximum effort for converting the available raw material into finished goods ($M = 3.75$). It is consistent with the results of previous studies, which reported that handicraft businesses are converting the raw materials into usable, unique products.
- **Lag in Technology Utilisation and Skill Development:** Notable limitations were seen in the utilisation of modern technology ($M = 2.02$) because the production process led to a higher cost of production. Most of the artisans are not trying to develop new skills ($M = 1.91$) for innovative production.

- **Lack of Finance & Debt Burden:** The available source of finance is not sufficient for the development of the existing business. At the same time, entrepreneurs are struggling with repayment of existing loans from financial institutions. Financial institutions hesitate to provide more support because of the limited repayment capacity of the entrepreneurs in this sector. It confirms the findings of the previous literature that handicraft businesses lag in financial performance.
- **Gender Inclusive Organisational Performance:** There are no significant differences between gender and organisational effectiveness. Both men and women are performing equally for achieving organisational effectiveness. This finding aligns with the results of previous studies.
- **Business Experience Plays No Role in Effectiveness:** Business experience was not a determining factor for the performance of units. Experienced entrepreneurs are not contributing more towards the performance of the units. The results diverge from the conclusions of previous studies.
- **Performance Irrespective of the Nature of Activity:** Performance of business is not influenced by the activities of artisans engaged in raw material extraction to the distribution of products.
- **Contribution of Training for Organisational Effectiveness:** Training given by supporting agencies is the determining factor for the effectiveness of the organisation. The artisans trained by supporting agencies are contributing more towards organisational effectiveness.
- **Limited Organisational Impact of Young Entrepreneurs:** The contribution of younger people (Age below 40 years) is low towards organisational effectiveness because they are not able to conceive organisational functions more critically and confidently than others.
- **Monthly Income and Effectiveness:** Higher-income groups (more than Rs. 25000 p.m.) showed higher organisational performance. Similar conclusions were drawn in earlier studies that income is positively correlated with the results of cost control, cost reduction and management of challenges.

5.2.4 Marketing Efficiency of Grass-Based Handicraft Units

- **Good Customer Relationship Maintenance:** Grass-based handicrafts units are strong in long-term customer relationship maintenance ($M = 3.70$). The outcome challenges the findings of earlier studies indicating that handicraft units have limited knowledge about customer preference and customer relationship management.
- **Limited Knowledge of Digital Marketing:** Many units have limited knowledge of online marketing and struggle to use social media platforms effectively ($M = 2.01$).
- **Minimal Role of Advertising in Promotion Activities:** Units mainly depend on the trade fairs offered by the supporting agencies for promotion. The attractiveness and uniqueness of each product lead to sales promotion than an advertising campaign ($M = 1.10$). This finding contradicts earlier studies, which found that the advertising campaign promotes sales of handicraft products.
- **Limited Skill in Branding:** Entrepreneurs have insufficient skill to brand their products ($M = 2.67$) and thereby to popularise them. This finding is consistent with previous studies, which observed that the branding campaign of handicraft products is not satisfactory.
- **Poor Marketing Efficiency of Women Entrepreneurs:** Women entrepreneurs underutilise (Mean value=2.79) digital and technological opportunities compared to men (Mean value=2.97).
- **Least Effectiveness of Training in Improving Marketing Efficiency:** Training has no significant influence on the marketing efficiency of the units because the training module does not involve modern marketing strategies and tools. Conventional style marketing techniques are not suitable to compete with multinational products.

- **Location of Business Irrelevant to Marketing Efficiency:** Location is not a significant factor influencing marketing efficiency. Location-specific marketing efficiency is not revealed in the analysis.
- **Better Marketing Efficiency Among Educated Entrepreneurs:** Marketing efficiency is noticeable in educated artisans (above high school level). It confirms the findings of the previous literature that education is a primary driving factor of marketing efficiency.
- **Influence of Earnings on Marketing Efficiency:** Better-income groups (more than Rs. 25000 per month) reported comparatively higher marketing efficiency. It supports the findings of the previous studies that income is a key factor in using modern marketing techniques.
- **Nature of Business Activities Irrelevant to Marketing Efficiency:** Marketing performance of handicraft units is not influenced by their nature of business.
- **Marketing Efficiency Independent of Age Group:** Youth and others have no significant difference in performing marketing activities, leading to efficiency.
- **Least Effect of Business Experience on Marketing Efficiency:** In contrast to prior literature, the experience of an entrepreneur is not a factor contributing to marketing efficiency. There is no significant difference in the marketing efficiency of experienced and inexperienced entrepreneurs.

5.2.5 Prospects and Challenges of Grass-Based Handicraft Units in Kerala.

- **Emotional Fulfilment from Craftwork:** Artisans derive a sense of pride and self-esteem from engaging in craftwork, particularly disabled and socially vulnerable artisans.
- **Role of Trade Fairs and Exhibitions:** The artisans have opportunities to showcase their products and share ideas through trade fairs and exhibitions offered by supporting agencies. This support strengthened the distribution network, but such opportunities declined after the COVID-19 pandemic.

- **Unrealised Export Potentials:** Artisans are unable to utilise the export opportunities of crafts ($M = 1.28$). Entrepreneurs fail to meet the bulk demand of products due to the constraints of their small scale of operation.
- **Shortage of Sufficient Finance:** Lack of financial support from supporting agencies is a limiting factor contributing to the production process ($M = 1.66$)
- **Limited Technological Advancement:** Present supportive schemes do not address the issue of technological and digital gaps ($M = 3.77$)
- **Ineffective Raw Material Procurement System:** The shortage of raw materials is the main hindrance in the production process of handicraft units. There is no common facility or platform to ensure the continuous availability of raw materials for handicraft units ($M = 3.59$).
- **Hindrances of Raw Material Extraction:** Wildlife attacks and legal formalities hinder the smooth procurement of raw material from the forest.
- **Scarcity of Skilled Labour:** Lack of availability of skilled labour hinders the product quality ($M = 3.57$). It is mainly due to the disinterest of artisans' children in pursuing handicraft works.
- **Limited Growth Perception Among Younger Artisans:** Younger craftspeople see limited prospects in handicrafts in contrast to the older and experienced people.
- **Education Enhances Access to Opportunities:** Educated people are more likely to perceive greater opportunities, whereas less educated people often struggle to access them.
- **Business Prospects and Earning Capacity:** Better income groups actively seek to access all earning opportunities in the handicraft business.
- **Improved Business Opportunities Through End-to-end Involvement:** Artisans who undertook activities in the entire value chain (manufacturing and distribution) perceived improved business opportunities compared to artisans working only in manufacturing.

- **Prospects and Challenges Beyond the Gender Differences:** Male and female artisans tend to have similar perceptions about business opportunities and challenges. It confirms the findings of the previous literature that women entrepreneurs are empowered through various intervention programmes to manage prospects and challenges faced by the handicraft units.
- **Business Experience and Prospects:** Business experience is not an influencing factor in accessing opportunities in the handicrafts sector in the changing business environment.
- **Ineffective Training System for Accessing Prospects and Facing Challenges:** Training programmes are not capable of providing access opportunities or addressing the challenges of grass-based units.
- **Education Irrelevant to Challenges of Grass-based Units:** Formal education is not capable of overcoming various challenges of grass-based units.
- **Poor Challenge Management in Lower-income Groups:** Lower-income groups are comparatively weak to manage the issues and challenges faced by handicraft units.
- **Relationship Between Challenges and Nature of Business Activity:** Entrepreneurs engaged in the full value chain face more challenges compared to others.
- **Experience Improves the Ability to Overcome Challenges:** Better-resourced and more experienced artisans are comparatively more effective in addressing the problems and challenges faced by the units.

5.2.6 Supportive Schemes in the Promotion of Handicraft Units

- **Limited Awareness of Government Schemes and Support Systems:** Entrepreneurs have low awareness of financial aids ($M = 1.80$), infrastructure support ($M = 1.36$) and other supportive schemes ($M = 1.40$) offered by supporting agencies.
- **Marketing Support and Training Facility:** Supporting agencies offer trade fairs ($M = 3.07$) and various training programmes ($M = 3.11$) to artisans through financial institutions and other supporting agencies as part of giving subsidised loans.

- **Limited Effectiveness of Institutional Support:** The effectiveness of overall institutional support shows the very least influence on the sector. The training provided is not effective for accessing the targeted market.
- **Institutional Support Irrespective of the Gender and Age Group:** Age and gender differences are insignificant to institutional support because there is no age-specific or gender-specific support system.
- **Limited Supportive Schemes to Urban Areas:** Supportive schemes are mainly designed for the development of rural areas and not extended to the units in urban areas. Support through NABARD is available only to rural areas.
- **Training Programme as a Source of Support:** Supportive schemes are significantly influenced by the training received (Mean value = 2.033). Thus, participation in training is a better way to avail various assistance.
- **Institutional Support Among Educated Entrepreneurs:** Educated artisans reported stronger awareness and better access to supporting schemes.
- **Support System and Experience:** Experienced artisans are familiar with legal formalities, which leads to better access to supportive schemes.
- **Level of Income and Supportive Scheme:** Better income groups are utilising the supportive mechanisms more for expanding their business.
- **Greater Effectiveness of the Supportive Scheme in the Entire Value Chain Business:** Units engaged in broader business activities have more favourable views on institutional support.

5.2.7 Multi-Directional Influence of Key Aspects of Grass-Based Handicraft Units in Kerala

- **Predictive Variables Act as a Driving Force of Organisational Effectiveness:** Environmental sustainability practices, marketing efficiency, business prospects, supportive schemes and business challenges have an influence on organisational effectiveness. The impact of predictive variables on organisational effectiveness is 67.9%.

- Institutional Support and Eco-friendly Practices: Supportive schemes offered by the Government and non-government organisations positively influenced (23.7% variance) sustainability practices.
- Effect of Sustainability Practices on Marketing Performance: Units following sustainability practices are comparatively better in terms of marketing performance. The strength of the predictive relationship is 29.2% of the variance in marketing efficiency.
- Improved Marketing Efficiency Through Effective Supportive Schemes: Supportive schemes play a crucial role in improving the marketing efficiency of handicraft units (21% variance). It confirms the findings of the previous literature.
- Challenges Negatively Affected on Organisational Effectiveness: The operational and infrastructural challenges adversely affect the overall effectiveness of grass-based units. This finding aligns with the results of the previous studies reporting that the challenges weaken the growth of handicraft units.

5.3 Conclusion

The findings of the study comprehensively describe the operational, sociological, environmental and economic aspects of handicraft entrepreneurs. The study shows that experience and education are the most influential factors for accessing business prospects and improving the marketing efficiency of this sector. Experience in business operation has a lower influence on organisational performance, marketing efficiency and business prospects. It is evident that there is a practice of proper waste management and quality assurance of products in the industry. The government schemes available for entrepreneurs have a positive impact on the sustainability practices and marketing performance, but the institutional support is found to be limited. Despite the good practices in production efficiency and relationship management with customers, the handicraft industry faces many challenges in the availability of raw materials, the integration of the value chain, export participation, the adoption of innovative technology, the use of digital marketing and the provision of skill development for the youth. This understanding provides an important basis for making policy recommendations and future research aimed at helping to revitalise the grass-based industry.

Chapter 6

RECOMMENDATIONS

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6.1 Introduction

The implications and recommendations derived from the findings of the study on grass-based units in Kerala are presented in this chapter. The study contributes to both existing theories and practical applications. Actionable recommendations have been formulated to enhance the effectiveness, competitiveness and sustainability of the handicraft units in Kerala, especially the environmental sustainability practices, organisational effectiveness, efficiency in marketing, various problems and prospects of the units. Finally, the chapter outlined the scope for future studies, which was framed based on the limitations in the research.

6.2 Theoretical and Practical Implications of the Study

6.2.1 Theoretical Implications

- The study confirms the development of sustainability theory, which states that environmental sustainability practices positively influence organisational effectiveness. The sustainability implementation occurs as a result of the intrinsic values of organisations rather than regulatory measures for achieving effectiveness.
- The study expands institutional theory by showing a gap between awareness of government schemes and their effective utilisation.
- The study extends human capital theory, emphasising that capacity building is necessary for accessing various opportunities in handicraft industries. Developing income-specific and education-specific training addresses the challenges and reinforces the role of human capital in organisational effectiveness.

- The study emphasises the balance between tradition and innovation in handicraft enterprises. This confirms the advancement in entrepreneurship development theory through balancing livelihood creation and cultural preservation.
- The research focuses on rural employment, empowerment of women and environmentally friendly practices, indicating the influence of grass-based units on economic growth and sustainability practices. It confirms various aspects of sustainable development and socio-economic theory.
- The lowest adoption of digital marketing and branding among grass-based entrepreneurs indicates product innovation. This validates the diffusion of innovation theory, which recommends that effective training and brand establishment can boost innovation and thereby enhance market competitiveness.

6.2.2 Practical Implications

- Policy development strategies: The study calls for accessible, targeted policies for youth, women and disadvantaged artisans for the sustainable growth of the grass-based handicraft industry.
- Financial support strategies: Microfinance tailored to seasonal needs, collateral-free lending, innovative ideas and traditional skills by financial institutions are required.
- Organisation support strategies: Artisans need a training program in digital marketing, branding and eco-friendly practices.
- Infrastructural support strategies: A common facility centre is needed for raw material processing, technological support and quality assessment under the supervision of relevant supporting agencies.
- Digital support strategies: A common digital platform is necessary for procuring raw materials and the distribution of grass-based handicraft products.

- Social support strategies: There is a need for special support programmes for socially vulnerable artisans to enhance their mental well-being through participation in the handicraft activity.
- Environmental support strategies: Promotion of the cultivation of grass materials in ecologically sensitive areas to reduce disaster risk and ensure the continuous availability of raw materials is required.

6.3 Recommendation of the Study

- The handicraft sector is characterised by limited youth participation. It is due to the low earnings and limited growth prospects perceived by the youth. Therefore, the government and other supporting agencies have to formulate a comprehensive package for the development of the sector and thereby, the younger artisans can be attracted to the sector.
- Eventhough the majority of the units are owned and managed by women, the scope for their livelihood and further development is narrow because of low earning capacity and limited business diversification. It demanded new supportive schemes for women's empowerment, diversification of business and their products.
- Most of the entrepreneurs in this sector are less educated. This weakness is to be removed through the implementation of vocational training, digital literacy and skill enhancement programmes.
- Sales revenue and profitability of the units are very low. Lack of continuous production and limited exposure to export opportunities are behind this issue. Export promotion, regular trade fair and production volume enhancement programmes are to be conducted to enhance sales revenue.
- Growth of handicrafts in an urban setting is limited. It is due to the present supportive schemes focused on developing units in rural areas. Location-specific support is to be implemented to enrich units in urban areas, along with units in rural areas.

- A limited number of new entrepreneurs are in this sector due to limited motivating factors. Organise special campaigns to familiarise the wider scope of this sector and motivate them.
- Handicraft businesses are working with little human resources, because of small-scale operation and a low wage payment system. Provide financial and infrastructural support for enhancing the scale of operation. Frame an attractive wage payment system and create a sector-specific fund for the welfare of the labourers.
- Arrange district-level programs for recognising the ability of artisans, particularly for the strengthening of the uniqueness and diversification of handicrafts.
- The majority of the artisans participate in the full value chain business activities of handicrafts. Provide activity-specific support for strengthening this kind of operation.
- Poor inventory management due to a limited storage facility. Arrange a common storage centre based on the density of units in each district of Kerala. This facility can also be utilised for damaged products, because grass-based products are reparable and reusable.
- Due to legal restrictions, most entrepreneurs lack land for cultivation and grass materials. Handicraft artisans demand financial assistance from the government for the cultivation of grass material in barren land and in ecologically sensitive areas.
- Gathering of raw materials is a difficult process because it requires specialised skill. Organise a special workshop programme to familiarise with various methods of gathering raw materials and transmission of intergenerational skills.
- The digital divide denies the growth of the handicraft sector in rural areas due to the lack of sufficient digital knowledge. Develop a digital literacy programme, particularly for rural areas.

- Women artisans are mainly engaged in the manufacturing of products only. It is due to the limited skill in material extraction and marketing of products. Organise a gender-specific skill enhancement programme for gathering raw materials and marketing promotion.
- Lower-income units and inexperienced artisans show limited participation in full value chain business activities due to their lower value addition. Therefore, comprehensive support should be provided to enable their involvement in the entire value chain, thereby enhancing revenue generation.
- Participation in training is very low among less educated and inexperienced artisans. It is due to the lower level of access and inclusiveness in the present training programme. Provide awareness and training separately to less educated and inexperienced artisans.
- Youth are reluctant to use intergenerational skills in the production process due to the limited transmission of traditional skills. Conduct district-wise workshops to ensure the conservation and transmission of skills and culture.
- Eco-friendly practices remain at a moderate level due to the use of chemicals in raw material treatment and the emission of health-threatening dust during the production process. Promote traditional and scientific methods of raw material treatment and ensure the adoption of innovative tools to overcome this issue.
- The least use of renewable energy for manufacturing activities is due to the limited access to a supportive system. Provide awareness about the supportive schemes for the adoption of renewable energy and thereby maintain carbon neutrality.
- Poor environmental sustainability practices by less educated artisans are due to the limited knowledge of the importance of such practices. Organise an awareness campaign for eco-friendly practices and legal aspects as part of the training programme.
- Lower-income units and young entrepreneurs follow the least eco-friendly practices due to the inability to manage the cost of such practices. Develop an

inclusive support system for all groups of entrepreneurs to promote and maintain environmental sustainability and ensure the effective utilisation of CSR and international funds for this purpose.

- Training does not adequately support environmentally sustainable practices due to the limited coverage of environmental aspects in the existing modules. Therefore, the current training module should be revised to promote sustainability practices among grass-based handicraft units.
- Units focus on producing quality products, as lower-quality production adversely affects their survival. Therefore, a quality-checking system should be established in each district through the District Industrial Centres to ensure the sustainability of the entire grass-based sector.
- Artisans attempt to maximise product output from the limited availability of grass materials in order to reduce costs. Therefore, supporting agencies should make greater efforts to monitor and recognise such units to further strengthen them.
- The high cost of production is largely due to delays in adopting new technology. Therefore, an effective training and support programme should be developed to advance technological use across the value chain, from raw material procurement to product distribution.
- Poor financial performance arises from insufficient capital and the limited repayment capacity of loans and advances. To address this, loans should be provided to artisans based on the feasibility of project proposals submitted by the units. Financial institutions should adopt liberal policies to offer assistance at lower interest rates. In addition, special consideration should be given for promoting green investment and eco-friendly production, along with providing seed funding to units engaged in developing new product lines.
- Experience and nature of business activity are not determining factors of organisational effectiveness and marketing efficiency because of technological development and the changing business environment. A capacity-building

programme is to be organised for all groups of entrepreneurs in the handicraft sector.

- Training offered by supporting agencies enhances organisational effectiveness because the training involves various capacity-building factors. Conduct effective training for innovation, technological advancement, digital literacy, financial literacy and supportive scheme awareness.
- Young and lower-income entrepreneurs often show poor organisational effectiveness, as they are less able to manage organisational functions compared to others. Therefore, youth-specific and income-specific training and assistance should be provided in the grass-based handicraft sector.
- The procurement of raw materials from forests is difficult due to wildlife attacks and legal constraints. Security measures should be implemented to prevent wild animal attacks and legal formalities for gathering raw materials from forests should be liberalised, considering that bamboo is not classified as a tree under the 2017 Act.
- The least use of digital marketing is due to the limited knowledge of social media and online marketing procedures. Start a common facility centre in each district under the supervision of DIC to ensure access and continuous help for social media use and online marketing.
- Grass-based crafts show poor performance in branding due to insufficient skills in product promotion and brand building. To address this, regular workshops on product design and branding should be conducted to encourage product diversification and strengthen market positioning. Innovation should be promoted through awards, grants and recognitions at the district or state levels to motivate artisans. In addition, dedicated product development and branding support centres should be established to assist artisans in creating market differentiation and building strong brand identities.
- Minimal exposure to digital and technological opportunities by women entrepreneurs due to their limited capacity. The government provide special focus

to enhance digital and technological skills as part of the women empowerment programme.

- Training is inadequate for improving marketing efficiency, as it does not address the current needs of entrepreneurs. Therefore, the training module should be revised to include modern marketing strategies, enabling artisans to compete effectively with multinational products.
- Marketing performance is very poor among less educated and low-income entrepreneurs. While low levels of education hinder access to modern marketing strategies, limited income remains the key factor preventing their effective implementation. This issue can be addressed through education-specific training programmes and support from common facility centres.
- Craftwork provides an opportunity for emotional fulfilment because it enhances the self-esteem of people who are suffering from issues. Provide regular and targeted support for differently-abled and socially vulnerable artisans, such as less-educated, chronically ill and elderly people, to improve their self-esteem and mental well-being. These assistance programs are very cost-effective and successful, like NREGP implemented by the government.
- Trade fairs and exhibitions create an opportunity to showcase the products and share innovative ideas. Conduct fairs and exhibitions at regular intervals across the nation to enhance the wider opportunities of the grass-based handicraft sector.
- The least utilisation of export opportunities of grass-based products as the small-scale operations of units preventing them from meeting bulk demand. Develop an export-oriented support system for large-scale production and ensure the effective implementation of this system.
- Lack of continuous availability of adequate raw material due to poor value chain integration. Develop a common digital platform for raw material procurement and product marketing to reduce middlemen and strengthen value chain integration. That will ensure the artisans have access to quality raw materials and market their products at a reasonable price.

- The scarcity of skilled labour affects the product quality. Provide skill-oriented training to labourers for the manufacturing of quality products and thereby develop a committed workforce in this sector.
- Less educated and lower-income entrepreneurs face limited access to opportunities due to constraints in skill and affordability. Provide an education-specific and income-specific supportive programme for identifying and utilising the opportunity of grass-based handicraft units.
- Opportunities and challenges are limited in the grass-based units that are engaged in manufacturing-only business activities. Provide comprehensive support to enable entrepreneurs to expand their businesses and effectively manage challenges, ensuring full integration across value chain activities.
- Experience is not a decisive factor in accessing opportunities in the grass-based handicraft sector, as the dynamic business environment and evolving market demand shape the opportunities available. Provide training and support to address the requirements of entrepreneurs regardless of their experience.
- Training programmes are ineffective in enabling artisans to access opportunities or address the challenges faced by grass-based units. Develop and implement an effective training programme to overcome this issue.
- The present education system is insufficient to overcome the various challenges of grass-based units due to the absence of proper vocational education and capacity-building content. Develop a policy to include apprenticeship programmes for interested students within the education system. Additionally, reorganise and modify the training module to incorporate strategies for managing diverse challenges faced by grass-based handicraft units.
- Lower-income groups show poor management of challenges as they primarily focus on the operational aspects of their enterprises. Therefore, financial, technological and infrastructural support should be provided to help these groups effectively address the challenges faced by grass-based handicraft units.

- Less experienced entrepreneurs have a very low ability to manage challenges due to their poor capacity to manage various challenges. To overcome these issues, a capacity-building workshop will be conducted with the presence of experienced artisans.
- Entrepreneurs have limited awareness of the various schemes offered by supporting agencies. It is due to the lack of awareness programmes for accessing various supportive schemes. Conduct regular awareness programmes using social media and distribute informational brochures in the local language.
- The effectiveness of the present institutional support is very low. This is because schemes are generally developed to address all artisans across India. To overcome this issue, develop district-specific, grass-based and need-oriented supportive schemes.
- Supportive schemes are often ineffective due to the absence of gender-specific and age-specific programmes. Therefore, separate assistance schemes should be formulated to address this issue.
- Units in urban areas often lack adequate support, as most supportive schemes are primarily designed for rural artisans. Therefore, location-specific support measures should be developed to address this gap.
- There is very little awareness of supportive schemes among untrained entrepreneurs, as awareness programmes are usually offered only as part of training provided by agencies. Therefore, maximum participation in training programmes organised by supporting agencies should be ensured.
- Awareness of supportive schemes is very low among less educated and less experienced entrepreneurs due to their limited knowledge of the procedural aspects required to access them. Therefore, education-specific and experience-based support should be provided to address this gap.
- Units engaged in limited business activities have less exposure to supportive schemes, as most schemes are primarily designed for full value chain operations.

Therefore, separate supportive schemes should be developed to address the needs of different types of business activities within the value chain.

- The impact of independent variables on organisational effectiveness is very high. This is because environmental sustainability practices, marketing efficiency, business prospects, supportive schemes and business challenges influence factors of organisational effectiveness. Formulate a comprehensive development programme and training, including all these factors, for higher organisational performance.
- Supportive schemes positively influence sustainability practices. These schemes are a determining factor in sustainability practices. Develop a separate assistance program for the cultivation of grass materials, reduction of disaster risk, maintenance of green product quality and minimisation of waste.
- Sustainability practices impact on marketing efficiency because the eco-friendly practices improve market reputation. Develop sustainability practices through the maintenance of green product quality. Provide financial and social support for this green product movement (grass-based fruit basket and cake box, waste bin basket has a big scope) in the state.
- Supportive schemes positively influence the performance of marketing activities due to the higher dependence of supportive schemes on conducting trade fairs and export. Provide support for product diversification.
- Challenges badly affect the survival of grass-based handicraft units. Develop comprehensive challenge mitigation strategies for survival. Preventative problem-solving mechanisms should be encouraged instead of reactive measures against problems.

6.4 Future Scope of the Study

- Conduct a comparative study across states to understand regional differences in the performance of the grass-based handicraft sector. Such a study helps to identify varying levels of support and intervention within the sector.

- Environmental sustainability practices, consumer behaviour and export opportunities to provide deeper insights for strengthening the grass-based handicraft sector.
- Carbon footprint analysis and raw material availability analysis of the grass-based handicraft sector provides ecological importance of this sector.
- Export market analysis, entry modalities in the international market and cultural adaptation strategies would support this sector.
- The research can be carried out on digital marketing and support schemes for overall growth in the handicraft sector.
- Research on quality standards, design innovation and value addition, to improve the performance of grass-based handicraft units.
- Studies on intergenerational skill transmission and preservation methods are essential for the maintenance of cultural heritage.

6.5 Conclusion

The present study aims to understand the organisational effectiveness of grass-based handicraft units in Kerala. The systematic random sampling method was used to select the sample and a structured questionnaire was employed to collect data from the respondents. The results highlight that units follow strong policies for waste minimisation, quality maintenance and appropriate waste treatment. The units lag in technology utilisation, skill development and financial performance. Significant problems exist in digital marketing, supportive schemes awareness and availability of raw materials. The study recommends support for eco-friendly practices, innovative youth-specific training, common facility centres and a digital platform for procuring raw materials and marketing products. In short, this sector provides meaningful livelihoods for socially vulnerable artisans and thereby enhances dignity and self-esteem.

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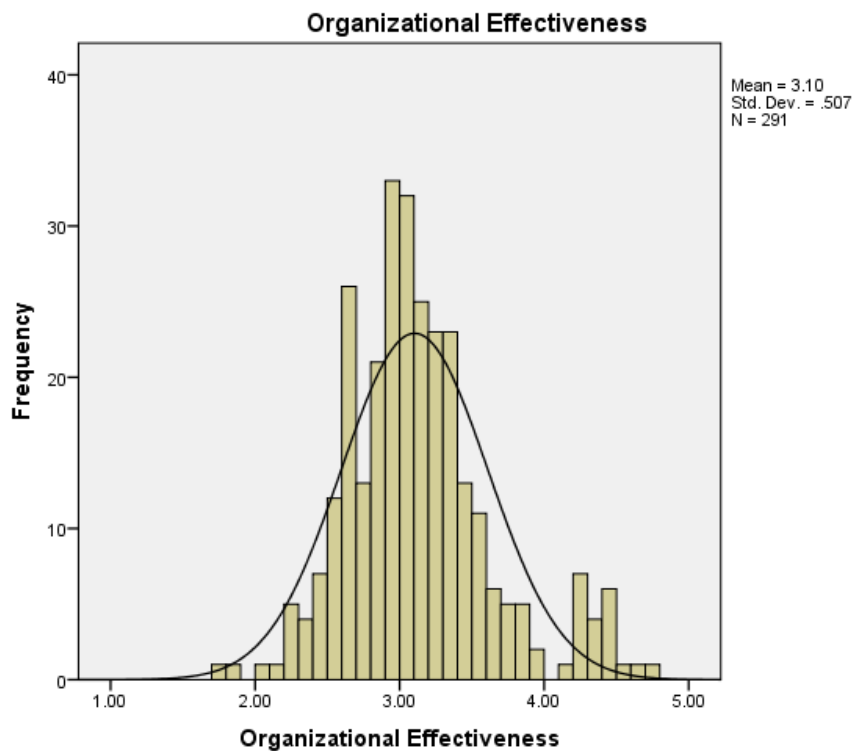
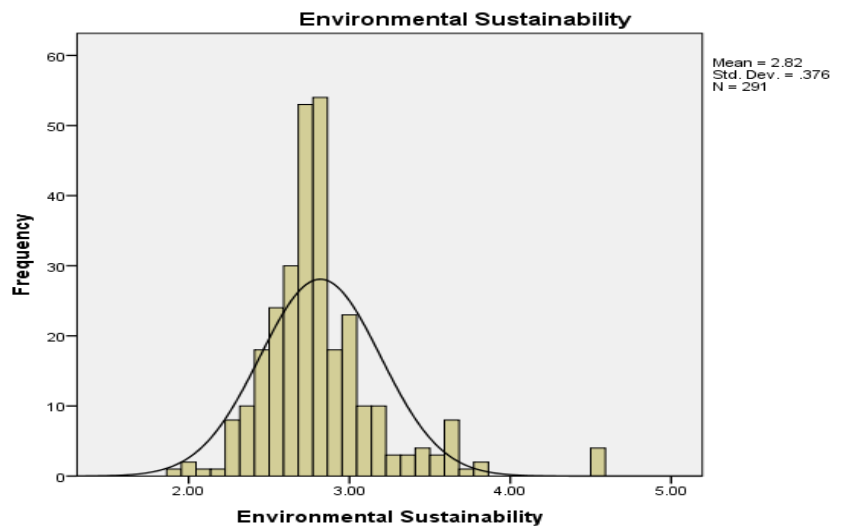
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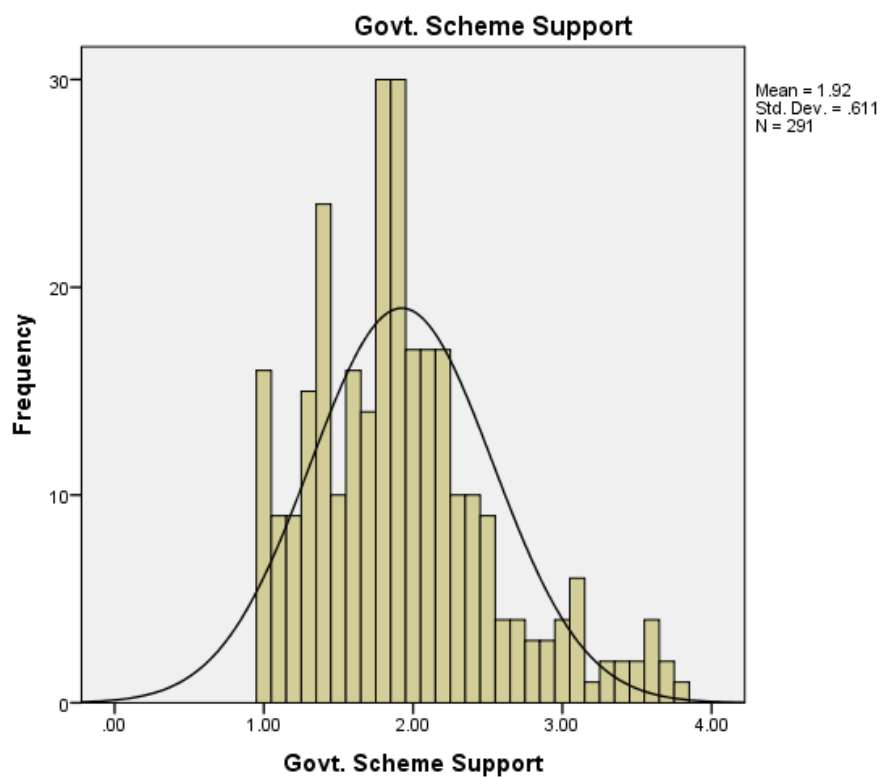
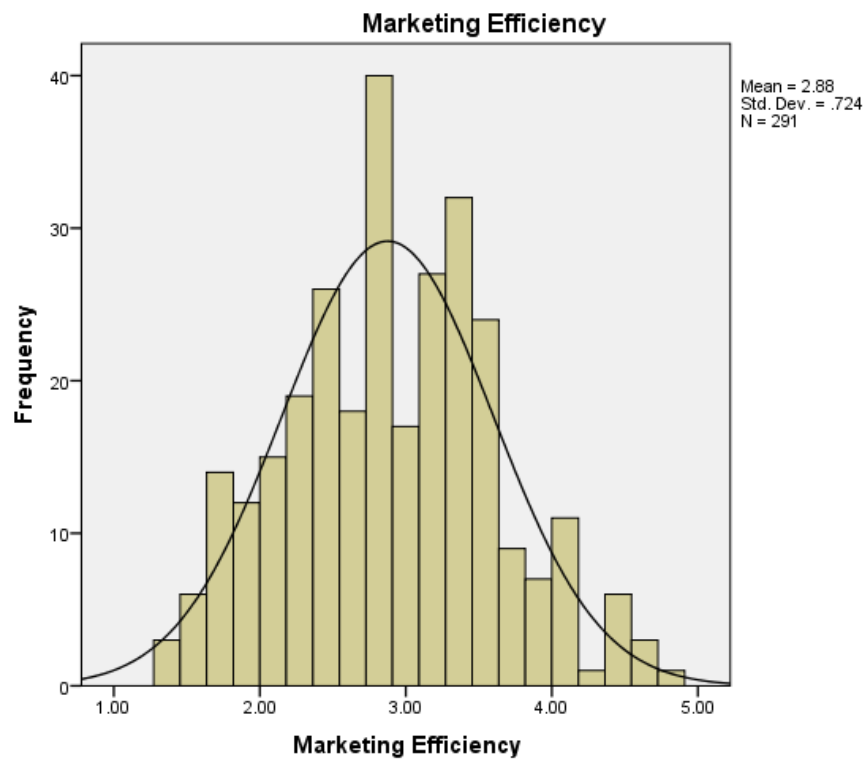
APPENDICES

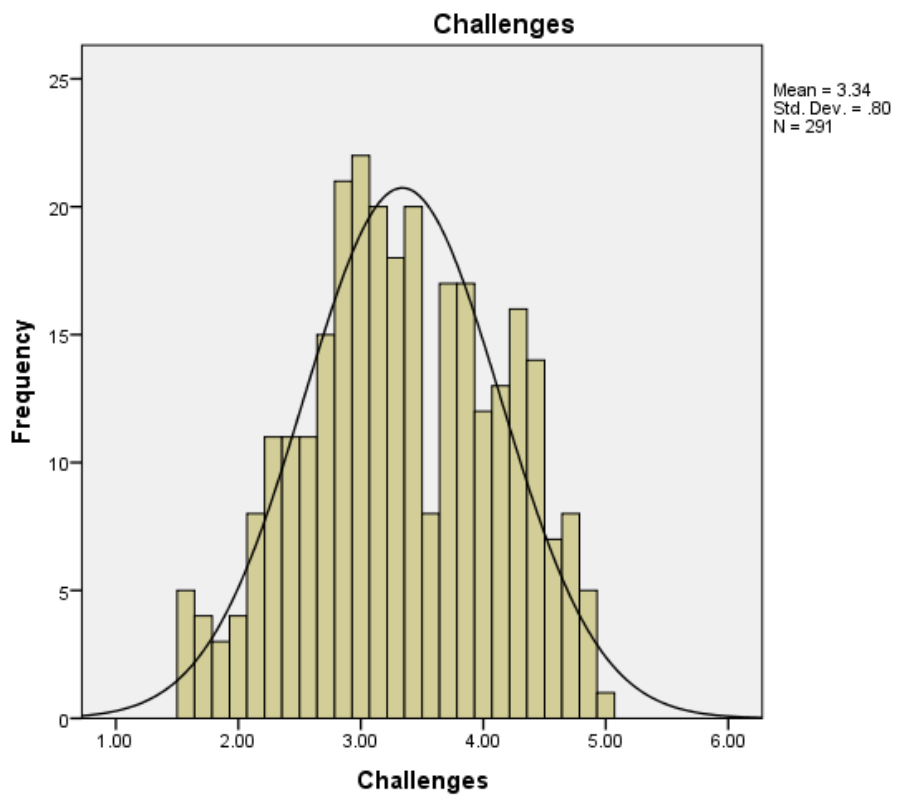
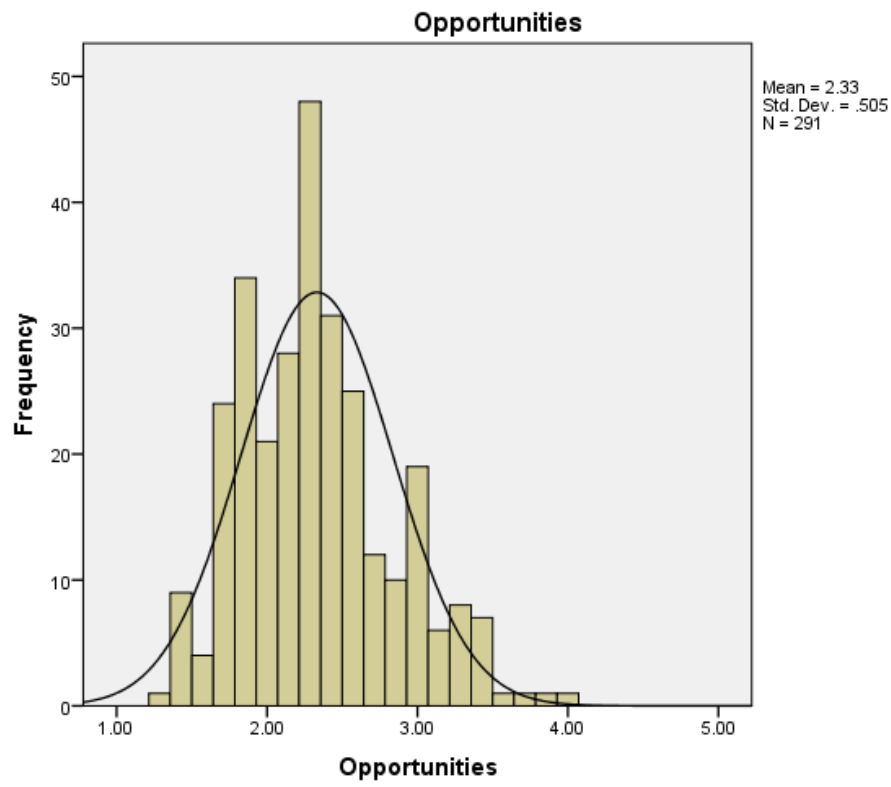
Appendix I

Normal Distribution Curves for Key Study Variables

The following histograms show the normality status of the main study variables used for this study and all the revealing the fact that the data are almost in line with the normal curve and numerically strongly distributed within the recommended ranges.







Appendix II
“Prospects and Challenges of Grass Based Handicrafts
Units in Kerala”

Questionnaire

Dear Respondent,

I am surveying “Prospects and Challenges of Grass-based Handicrafts Units in Kerala” as a part of my Ph.D work. I would be grateful if you kindly spend some of your valuable time and help fill out the questionnaire.

Thanking You

Rajendran m k

Research Scholar, Govt College Kodenchery

1. Name of Artisan/ Entrepreneur :
2. Age :
3. Gender :
 - a. Male
 - b. Female
 - c. Transgender
4. Educational qualification :
 - a. Illiterate
 - b. High school or less
 - c. Diploma
 - d. Bachelor's degree or more
5. Average Income per month :
6. Location :
 - a. Rural area (Panchayath)
 - b. Urban area (municipality and corporation)
7. Name of the products produced by the unit:
8. Nature of activity
 - i. Extraction of raw materials and Manufacturing
 - ii. Manufacturing only
 - iii. Manufacturing and distribution
 - iv. Extraction of raw materials, Manufacturing and distribution
9. Mode of acquisition of raw materials:
Cultivation/ Direct extraction / Direct purchase/ Agents purchase/ others
10. Whether the Business is registered or non-registered under DIC- UDYAM / Artisan card?
Yes/No
11. How long have you been working in the handicrafts industry?

12. Have you ever received any training or assistance related to the handicraft industry?
a. Yes b. No
13. Total business investment:
14. Reasons for starting the unit: (check box)
 - i. To meet livelihood expenditure
 - ii. To meet the needs of the locality
 - iii. To make use of locally available raw materials profitably
 - iv. To maintain hereditary occupation
 - v. Competition in the field attracted you
 - vi. Any others
15. The administrative policies of the organisation are framed by the:
 - i. Board of Directors of the business
 - ii. LSG/Government
 - iii. NGO
 - iv. Any other
16. The different types of raw material used by the units
 - i. Grass items
 - ii. Non-grass items
 - iii. Both Grass and non-grass items
17. Types of Raw Material Used:
Bamboo/Cane/Mani/ Others (.....) specify
18. Whether the treatment facility for raw material is available: Yes/No
19. If yes, whether it is owned or hired: owned/ hired
20. Are you trained in raw material collection: Fully Trained/ Partially Trained/ Not Trained
21. If No, whether the skilled or trained labourer is available for raw material collection: Yes/No
22. Nature of storage facility: Sufficient/ Partially sufficient/ Not Sufficient/ Not available
23. How many employees are working now.....

Objective 1. To analyse the role of handicraft units in Kerala for maintaining environmental sustainability.

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1. My handicraft unit has policies and practices to reduce waste					
2. The policies and practices of my unit ensure the conservation of natural resources					
3. I am using environment-friendly ancillary (synthetic) materials in our production processes.					
4. The unit uses renewable energy sources (solar or wind power) to power its operations.					
5. I receive government support for improving my unit's environmental sustainability					
6. I receive non-governmental support for improving my unit's environmental sustainability					
7. I evaluate the impact of wastes like dust, wastage, chemicals, etc.					
8. My unit always ensures compliance with environmental laws and regulations					
9. We always try to ensure the quality of our products					
10. Due to the excessive cost of production and regulations of the Government, I could maintain environmental sustainability.					
11. My unit is in a position to treat all wastes properly.					

Objective 2. To analyse the organisational effectiveness of grass-based handicraft units.

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1. All raw materials brought into my unit are converted into finished goods					
2. I always upgrade advanced technologies to improve efficiency.					
3. I feel many constraints in my production process of handicrafts.					
4. Presently, my unit has a suitable system to ensure the quality of raw materials.					
5. My unit is able to manage overhead costs like rent, utilities, electricity, etc.,					
6. I always try to reduce costs without affecting quality					
7. My unit effectively manages the cost of raw materials					
8. My unit is able to manage the cost of labour, such as wages, salary, commission, etc					
9. We have an effective inventory management system					
10. There is an effective logistics management system to deliver goods from my unit					
11. Our unit follows good vendor relationships (raw materials, other supplies)					
12. My unit ensures participation in training and EDP conducted by the supporting agency					
13. My unit always considers product quality					
14. My unit recruits and trains employees to improve productivity and efficiency					
15. Skilled workers retained in my unit with high salaries and incentives					

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
16. My unit has proper skill evaluation techniques.					
17. Overall financial performance of our business is good in my unit					
18. I identify the areas where I can improve profitability					
19. My unit is taking measures to increase revenue					
20. I ensure the availability of low-interest-rate loans					

Objective 3: To analyse the marketing efficiency of grass-based handicraft units.

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1. Our marketing efforts resulted in increased sales.					
2. The marketing efforts of my unit have resulted in increased customer acquisition					
3. My unit aims to build a long-term relationship with the customer					
4. My unit effectively utilises social media platforms to reach its target market.					
5. My unit ensures the usage of peculiar slogans to reveal product value					
6. My unit effectively utilises paid advertising to reach its target market.					
7. My unit effectively communicates the value of products in its target market.					
8. My unit always considers the target customer's needs and preferences.					

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
9. The marketing channels used in my units are cost-effective.					
10. I am well aware of the brand value of grass-based products.					
11. The effectiveness of the marketing is evaluated from time to time					

Objective 4: To analyse the prospects and challenges faced by grass-based handicrafts units in production and marketing.

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1. There are challenges in sourcing quality raw materials					
2. Difficult to find sufficiently skilled human resources in my unit					
3. Lack of innovative products affects the success of my unit					
4. I meet the challenges of market demand.					
5. There is difficulty in establishing a brand for my unit					
6. Lack of technological advancement affects the quality of the products.					
7. There are adequate export opportunities in my unit					
8. I am capable of exploring digital marketing for the progress of the unit					

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
9. I am satisfied with the available distribution networks.					
10. There is a source of finance available for the business and development.					
11. Social status influenced the performance of handicraft units					
12. The government policies and regulations support the growth of us entrepreneurs					
13. The operations of our unit are significantly affected by competition from large enterprises.					
14. Competition from other online platform businesses significantly impacts the operation of our unit.					

Objective 5: To evaluate the role of government and non-government agencies in the promotion of handicraft units

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1. I know the government schemes for supporting the handicraft sector.					
2. The government is providing sufficient funds for the promotion of units.					
3. Government or supporting agencies offer training to improve the quality of handicraft products.					
4. Government or supporting agencies offer training to develop a skilled workforce, which enhances productivity.					

Questions	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
5. The marketing and promotional efforts of supporting agencies (government and NGOs) are beneficial for operations.					
6. I assess the available support mechanisms to promote and foster the handicraft sector's development.					
7. I made every effort to receive assistance from supporting agencies.					
8. I seek agencies to market products domestically and internationally					
9. I am satisfied with the support provided by government and non-government agencies for my enterprise.					
10. There is adequate infrastructure provided by government and non-government agencies for my unit.					