

INSURANCE AS A CATALYST FOR RISK APPETITE AND SUSTAINABILITY OF MSME IN KERALA

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submitted to the University of Calicut
for the award of the Degree of
DOCTOR OF PHILOSOPHY IN COMMERCE

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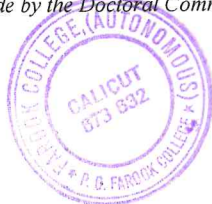
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List of Abbreviations

AMOS	:	Analysis of Moment Structure
ANOVA	:	Analysis of Variance
AVE	:	Average Variance Extracted
BCM	:	Business Continuity Management
BSUS	:	Bharat Sookshma Udyam Suraksha
BLUS	:	Bharat Laghu Udyam Suraksha
CB-SEM	:	Covariance – Based Structural Equation Modeling
CE	:	Circular Economy
CFA	:	Confirmatory Factor Analysis
CFI	:	Comparative Fit Index
COSO	:	Committee of Sponsoring Organisation
CR	:	Composite Reliability
DGCI&S	:	Directorate General of Commercial Intelligence & Statistics
DPDP	:	Digital Personal Data Protection Act
ECGC	:	Export Credit Guarantee Corporation of India
EMA	:	Environmental Management Accounting
ERM	:	Enterprise Risk Management
ES	:	Economic Sustainability
EU	:	European Union
FSB	:	Financial Stability Board
FY	:	Financial Year
GDP	:	Gross Domestic Product
GFI	:	Goodness of Fit Indices
GHI	:	Group Health Insurance
GSDP	:	Gross State Domestic Product
GST	:	Goods and Services Tax
GSVA	:	Gross State Value Added
HILM	:	Health Insurance Literacy Measure

IA	: Insurance Attitude
IB	: Insurance Behaviour
IC	: Insurance Confidence
IK	: Insurance Knowledge
IFC	: International Finance Corporation
ILO	: International Labour Organisation
IME	: Informal Micro Enterprise
IRDAI	: Insurance Regulatory and Development Authority of India
ISO	: International Organization for Standardization
KRI	: Key Risk Indicators
MGA	: Multi Group Analysis
MNC	: Multi National Corporation
MSME	: Micro Small and Medium Enterprises
MSMED	: Micro, Small & Medium Enterprises Development Act
NPA	: Non-Performing Assets
NSO	: National Statistical Office
OECD	: Organisation for Economic Co-operation and Development
PB	: Perceived Benefits
PBC	: Perceived Behavioural Control
PL-SEM	: Partial Least Squares Structural Equation Modeling
PRISMA	: Preferred Reporting Items for Systematic Reviews and Meta-Analysis
PSL	: Priority Sector Lending
RA	: Risk Appetite
RAS	: Risk Appetite Statement
RAV	: Risk Appetite Framework
RBI	: Reserve Bank of India
RBV	: Resource Based View
SCT	: Social Cognitive Theory
SDG	: Sustainable Development Goals
SEM	: Social Ecological Model
SEP	: Small Exporters Policy
SIDBI	: Small Industries Development Bank of India

SME : Small and Medium Enterprises
SS : Social Sustainability
TAM : Technology Acceptance Model
TBL : Triple Bottom Line
TPB : Theory of Planned Behaviour
UAP : Udyam Assist Portal
USD : United States Dollar
VRIN : Valuable, Rare, Inimitable and Non-Sustainable

Abstract

The Micro, Small, and Medium Enterprises (MSME) sector acts as a backbone of the Kerala economy, contributing significantly to employment generation and industrial output. However, the sector is characterized by high vulnerability to external shocks, financial fragility, and a reluctance to adopt aggressive growth strategies due to inherent risks. This study investigates the role of insurance not merely as a risk transfer mechanism, but as a strategic catalyst that enhances the risk appetite and long-term sustainability of entrepreneurs. Employing a descriptive and analytical design, primary data were collected through structured questionnaires from 385 MSME owners across all districts of Kerala. The study utilizes Structural Equation Modelling (SEM) to evaluate the interrelationships between insurance literacy, risk appetite, and sustainability, alongside a multigroup moderation analysis to assess variations across enterprise categories. The findings reveal that demographic and firm-level variables—specifically age, education, and prior experience—significantly determine various dimensions of insurance literacy. Structurally, the study establishes that insurance literacy positively drives MSME risk appetite; however, this influence is derived primarily from psychological factors such as attitude, behaviour, and confidence, rather than theoretical knowledge. Furthermore, insurance literacy was found to directly bolster economic sustainability, while attitude and confidence specifically enhance social sustainability. The multigroup analysis indicates that these dynamics are not uniform; significant differences exist between Micro, Small, and Medium enterprises, particularly regarding the impact of behaviour on economic sustainability. The research concludes that psychological drivers are more pivotal than theoretical knowledge in fostering resilience, suggesting that policymakers should move toward tailored, psychology-based interventions rather than uniform financial literacy programs.

Keywords: MSME, Insurance Literacy, Risk Appetite, Business Sustainability, Perceived Benefits of Insurance.

സംഗ്രഹം

കേരളത്തിന്റെ സമ്പദ്‌വ്യവസ്ഥയുടെ നട്ടെല്ലായി വർത്തിക്കുന്ന സൂക്ഷ്മ, ചെറുകിട, ഇടത്തരം സംരംഭങ്ങൾ (MSME), തൊഴിലവസരങ്ങൾ സൃഷ്ടിക്കുന്നതിലും വ്യാവസായിക ഉൽപ്പാദനത്തിലും നിർണ്ണായക പങ്ക് വഹിക്കുന്നു. എന്നിരുന്നാലും, ബാഹ്യമായ ആഘാതങ്ങളോടുള്ള ഉയർന്ന സംവേദനക്ഷമത, സാമ്പത്തിക അസ്ഥിരത, സ്വാഭാവികമായ റിസ്കുകൾ (Risks) കാരണം വളർച്ചാ തന്ത്രങ്ങൾ സ്വീകരിക്കുന്നതിലുള്ള വിമുഖത എന്നിവ ഈ മേഖലയുടെ വെല്ലുവിളികളാണ്. ഇൻഷുറൻസിനെ കേവലം ഒരു റിസ്ക് കൈമാറ്റ ഉപാധിയായി (Risk transfer mechanism) കാണാതെ, സംരംഭകരുടെ റിസ്ക് എടുക്കാനുള്ള സന്നദ്ധതയും (Risk Appetite) ദീർഘകാല സുസ്ഥിരതയും വർദ്ധിപ്പിക്കുന്ന ഒരു തന്ത്രപ്രധാനമായ ഘടകമായി ഈ പഠനം വിലയിരുത്തുന്നു. വിവരണാത്മകവും വിശകലനാത്മകവുമായ ഗവേഷണ രീതി (Descriptive and analytical design) പിന്തുടരുന്ന ഈ പഠനത്തിനായി, കേരളത്തിലെ എല്ലാ ജില്ലകളിൽ നിന്നുമായി 385 MSME ഉടമകളിൽ നിന്ന് ചോദ്യാവലികൾ വഴി പ്രാഥമിക വിവരങ്ങൾ ശേഖരിച്ചു. ഇൻഷുറൻസ് സാക്ഷരത, റിസ്ക് എടുക്കാനുള്ള സന്നദ്ധത, ബിസിനസ്സ് സുസ്ഥിരത എന്നിവ തമ്മിലുള്ള പരസ്പര ബന്ധം വിലയിരുത്തുന്നതിന് സ്ട്രക്ചറൽ ഇക്വേഷൻ മോഡലിംഗും (SEM), വിവിധ തരം സംരംഭങ്ങൾക്കിടയിലുള്ള വ്യത്യാസങ്ങൾ കണ്ടെത്തുന്നതിന് മൾട്ടിഗ്രൂപ്പ് മോഡറേഷൻ അനാലിസിസും ഈ പഠനത്തിൽ ഉപയോഗിച്ചിട്ടുണ്ട്. വ്യക്തിഗതവും സ്ഥാപനപരവുമായ ഘടകങ്ങൾ—പ്രത്യേകിച്ച് പ്രായം, വിദ്യാഭ്യാസം, മുൻപരിചയം എന്നിവ—ഇൻഷുറൻസ് സാക്ഷരതയുടെ വിവിധ തലങ്ങളെ നിർണ്ണായകമായി സ്വാധീനിക്കുന്നുണ്ടെന്ന് പഠനഫലങ്ങൾ വ്യക്തമാക്കുന്നു. ഇൻഷുറൻസ് സാക്ഷരത MSME-കളുടെ റിസ്ക് എടുക്കാനുള്ള സന്നദ്ധതയെ ഗുണപരമായി സ്വാധീനിക്കുന്നുവെന്ന് പഠനം തെളിയിക്കുന്നു. എന്നിരുന്നാലും, സൈദ്ധാന്തികമായ അറിവിനേക്കാളുപരി, മനോഭാവം (Attitude), പെരുമാറ്റം (Behaviour), ആത്മവിശ്വാസം (Confidence) തുടങ്ങിയ മനഃശാസ്ത്രപരമായ ഘടകങ്ങളാണ് ഇതിന് പ്രധാനമായും കാരണമാകുന്നത്. കൂടാതെ, ഇൻഷുറൻസ് സാക്ഷരത സാമ്പത്തിക സുസ്ഥിരതയെ നേരിട്ട് ശക്തിപ്പെടുത്തുമ്പോൾ, ഇൻഷുറൻസിനോടുള്ള മനോഭാവവും ആത്മവിശ്വാസവും സാമൂഹിക സുസ്ഥിരത വർദ്ധിപ്പിക്കുന്നതായി കണ്ടെത്തി. എന്നാൽ ഈ കാര്യങ്ങൾ എല്ലാത്തരം സംരംഭങ്ങളിലും ഒരുപോലെല്ലെന്ന് മൾട്ടിഗ്രൂപ്പ് വിശകലനം സൂചിപ്പിക്കുന്നു. സൂക്ഷ്മ, ചെറുകിട, ഇടത്തരം സംരംഭങ്ങൾ തമ്മിൽ, പ്രത്യേകിച്ച്

സാമ്പത്തിക സുസ്ഥിരതയിൽ 'ഇൻഷുറൻസ് പെരുമാറ്റത്തിനുള്ള' (Insurance behaviour) സ്വാധീനത്തിന്റെ കാര്യത്തിൽ, പ്രകടമായ വ്യത്യാസങ്ങളുണ്ട്. അതിജീവനശേഷി വളർത്തുന്നതിൽ സൈദ്ധാന്തികമായ അറിവിനേക്കാൾ പ്രധാനം മനുഷാസ്ത്രപരമായ ഘടകങ്ങളാണെന്ന് ഈ ഗവേഷണം സമർത്ഥിക്കുന്നു. അതിനാൽ, എല്ലാവർക്കും ഒരേപോലുള്ള സാമ്പത്തിക സാക്ഷരതാ പരിപാടികൾക്ക് പകരം, ഓരോ വിഭാഗത്തിനും അനുയോജ്യമായ, മനുഷാസ്ത്രത്തിലൂന്നിയ ഇടപെടലുകൾക്കാണ് നയരൂപീകരണക്കാർ മുൻഗണന നൽകേണ്ടതെന്ന് ഈ പഠനം നിർദ്ദേശിക്കുന്നു.

സൂചകപദങ്ങൾ (Keywords): എം.എസ്.എം.ഇ (MSME), ഇൻഷുറൻസ് സാക്ഷരത, റിസ്ക് ആപ്പറൈറ്റ് (റിസ്ക് എടുക്കാനുള്ള സന്നദ്ധത), ബിസിനസ്സ് സുസ്ഥിരത, ഇൻഷുറൻസിന്റെ നേട്ടങ്ങളെക്കുറിച്ചുള്ള കാഴ്ചപ്പാട്.

Chapter 1

INTRODUCTION

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1.1 Background of the Study

Micro, Small, and Medium Enterprises (MSME) serve as the fundamental backbone of the global economy, accounting for approximately 90% of all businesses and contributing significantly to income generation and social stability across both developed and developing nations (United Nations, 2024). These enterprises are critical drivers of economic dynamism, responsible for providing 60% to 70% of total global employment and contributing roughly 50% to the worldwide Gross Domestic Product (GDP) (World Bank, 2025). Beyond their quantitative economic contributions, MSME play an indispensable role in fostering innovation, supporting inclusive growth, and facilitating poverty reduction, particularly in emerging markets where they often function as the primary source of income for vulnerable populations (ILO, 2025). However, the status of MSME is frequently precarious; they face substantial structural challenges, most notably a persistent financing gap estimated at \$5.7 trillion globally, which severely constrains their ability to scale and adopt necessary digital and green technologies (International Finance Corporation, 2024). Despite these hurdles, international bodies like the OECD (2023) emphasize that MSME remain essential for ensuring economic resilience against global shocks and are pivotal in achieving the United Nations Sustainable Development Goals (SDGs).

The Micro, Small and Medium Enterprises (MSME) has been playing predominant role in Indian Economy by strengthening India's GDP and exports. As per the data from National Statistical Office (NSO) during the financial year 2022-23 the contribution of MSME towards Gross Domestic Product (GDP) was 30.1% and contribution towards manufacturing output was 36%. This indicates that the MSME in India become the backbone of Indias industrial growth. As per the data from

Directorate General of Commercial Intelligence and Statistics (DGCI & S) during the financial year 2023-24 the contribution of MSME towards Indian Exports was 45%. This indicates that the products and services of MSME sector meets international pricing and quality standards. Apart from these macroeconomic indicators, MSME ensures balanced development of the country by generating large number of employment opportunities outside of agriculture especially in unprivileged sectors and areas. This key role is amplified by fostering entrepreneurship at lower capital cost. As per the statistics of Udyam Portal of Ministry of MSME Government of India, 5.77 crore MSME were registered as on 31st December 2024. Through this 24.4 crore employment opportunities were generated. Through these MSME ensures rapid industrialization especially in rural and backward areas.

Table 1.1*Contributions of India's MSME Sector*

Contribution to GDP (2022-23)*	30.1%
Contribution to Manufacturing Output (2022-23)*	36%
Contribution to Exports (2024-25)**	45%
Rank in India's employment generation***	Second after Agriculture
Contribution to Employment (31 st December 2024)***	24.4 Crore
MSME registered (31 st December 2024)**	5.77 Crore

Source : * National Statistical Office (NSO), ** Directorate General of Commercial Intelligence and Statistics (DGCI & S), *** Annual Report Ministry of MSME

MSME in Kerala were growing in toon with the growth in the national level. As per the registration statistics of Udyam Portal (October 2025), there are 16.74 lakh (16,73,699) units. A decomposition of this figure reveals that 9.76 lakh units are Formal MSME registered under Udyam Portal, while a substantial portion 6.97 lakh units are classified as Informal Micro Enterprises (IMEs) under the Udyam Assist Portal (UAP). Kerala host 15th largest number of MSME in India and its growth deeply interwoven with Kerala Model of development which is characterized by high literacy rate, high skilled workforce, high human development indicators and a history of community development through cooperative societies. According to Kerala Economic Review (2024) MSME playing a pivotal role by providing employment

opportunities to more than 4 million people and also ensuring regional economic development of the state.

Despite of this crucial role of employment creation and balanced development, MSME sector in Kerala yet remains vulnerable to wide variety of risks – market volatility, uncertainty in climates and financial shocks (Thomas, J., & Suresh, R, 2022). In the scenario of destructive floods in Kerala during the year 2018 and 2019 followed by the COVID-19 pandemic proved the vulnerability of MSME sector. Such risks can lead to closure of business, catastrophic losses and other socio-economic consequences. This promotes a culture of risk aversion among MSME owners and it create a tendency to forgo potential growth opportunity of the organisation. It ultimately affects the sustainability of the business.

In this context it is essential to conceptualise the risk appetite and sustainability of MSME. Risk appetite is formally defined by the ISO 31000 standard as "the amount and type of risk that an organization is willing to pursue, retain, or accept" in the pursuit of its objectives. In the case of an MSME owners, risk appetite optimises strategic business decisions like entry in to new markets, product diversification, investing in new technology etc. Sustainability of MSME means integrating Economic, social and environmental responsibility in to the business operations by ensuring long term growth. A sustainable MSME meets the expectations of different stakeholders like owners, society, consumers etc.

Studies pointed that the insurance can act as a key risk mitigation mechanism that enrich the confidence of entrepreneurs and business resilience (Sharma, N., & Bansal, P., 2021; Bhatia, S., & Singh, R., 2023). Tailormade insurance products are available for the MSME risk mitigation but its penetration is remarkably low in India (Kumar, P., & Rani, D, 2023). Scholars highlighted that this gap is not only due to the affordability of insurance products but also due to the deeper issue of insurance literacy – awareness, knowledge and ability to use insurance effectively (Ofori, G., & Mensah, S., 2020). Insurance literacy and awareness enhance the risk appetite of MSME entrepreneurs by imparting their innovative business strategies, precise investment behaviours and the sustainability orientations (Alaeddin, O., Bashir, M.,

& Alzoubi, H, 2022). In this scenario understanding how improved insurance literacy results in MSME risk appetite and sustainability especially in the context of Kerala's MSME ecosystem which is featured by high rate of literacy but moderate risk tolerance. Therefore, understanding owner and venture characteristics, insurance literacy, risk appetite and sustainability of MSME is crucial for effective policy interventions and for design tailor-made products for MSME sector in Kerala.

1.2 Statement of the Problem

The key highlights of Kerala's Economy were the substantial contribution of MSME sector and the higher MSME density. MSME sector in Kerala is contributing more than 30% of GSDP and significant portion of employment opportunities. Despite of these vital parameters there exists paradoxical scenario of vulnerability which resulted high churn rate and fragile sustainability (Kerala State Planning Board, 2023). This fragility is magnified by devastating floods of 2018 & 2019 and Covid 19 pandemic. Many MSME never recovered out of this. The crux of these problems in MSME sector were due to the adoption of traditional and informal risk mitigation tools which has proved inefficient against systematic and clustered risk (Nair & Pillai, 2022). Insurance is the formal mechanism which safeguard the survival of these ventures.

A primary reason of this problem was due to deficit insurance literacy, which extends beyond mere awareness to a lack of functional understanding and trust. While owners may be aware of insurance as a concept, studies specific to Indian MSMEs reveal a significant gap in understanding policy intricacies, exclusions, and the claims process (Bapat & Mazumdar, 2023). This is compounded by behavioural biases such as over-optimism, where owners underestimate their vulnerability, and present bias, where the immediate cost of a premium outweighs the abstract future benefit (Shetty & Rodrigues, 2024). This literacy crisis is not uniform but is intrinsically shaped by the owners' characteristics—their education, prior experience with loss, and financial sophistication—which remain poorly mapped in the unique socio-cultural context of Kerala (Varghese, 2023).

The result of this literacy gap is a suppressed risk appetite, which prevents growth and innovation. Theoretically insurance act as a catalyst for entrepreneurial risk taking

which remains unfulfilled. Instead of enabling calculated risks for expansion, diversification, or technological adoption, the absence of insurance fosters a culture of risk aversion. Recent research by Mathew & George (2024) found that Kerala's MSMEs, particularly in the post-pandemic era, exhibit a "survivalist" mindset, prioritizing short-term operational continuity over long-term strategic growth which is known as risk appetite paralysis. It implies that potential economic opportunities are lost, and the sector's overall developmental potential remains capped, as firms are unwilling to undertake the very projects that could enhance their competitiveness and sustainability.

Furthermore, the existing body of knowledge suffers from significant fragmentation and contextual gaps. Studies on insurance adoption, risk perception, and firm sustainability often run in parallel streams, with limited research investigating their synergistic interplay. There is a critical lack of an integrated model that examines how owner and firm characteristics drive insurance literacy, which in turn influences risk appetite, perceived benefits of insurance and sustainability of MSME. Compounding this, the prevailing homogeneity in policy design fails to account for the vast differences between a micro-enterprise in a rural panchayat and a small manufacturing unit in an industrial estate, necessitating an investigation into how these dynamics vary across enterprise categories.

1.3 Research Questions

The following research questions have been developed based on the literature review.

1. How do the MSME owner characteristics and firm characteristics influences on the awareness of insurance products and insurance literacy in Kerala?
2. What is the interrelationship between different dimensions of insurance literacy and perception on risk appetite among MSME in Kerala?
3. How do the various dimensions of insurance literacy impact the perceived sustainability of MSME in Kerala?
4. What is the role of risk appetite on the perceived benefits of insurance among MSME in Kerala?

5. Is there any group difference among insurance literacy, risk appetite and MSME sustainability across different categories of MSME in Kerala?

1.4 Significance of the Study

This research work possesses at most significance for the advancement of theoretical knowledge in the fields of MSME finance and risk management. By constructing and empirically testing an integrated model that links owner and firm characteristics, insurance literacy, risk appetite, and sustainability, the study addresses a critical theoretical gap identified in recent literature (Antony, 2023). It moves beyond siloed approaches to present a holistic framework, thereby contributing to the Theory of Planned Behaviour by elucidating how a specific form of literacy (insurance) shapes behavioural intentions (risk-taking) and actual outcomes (sustainability). Furthermore, it will provide a validated, multi-dimensional scale for measuring insurance literacy within the MSME context, a methodological contribution that has been notably absent (Bapat & Mazumdar, 2023).

For policymakers and government agencies in Kerala, such as the Department of Industries and the Kerala State Planning Board, the findings of this study will serve as an invaluable evidence base for crafting targeted, high-impact interventions. The results will illuminate the specific literacy gaps and behavioural barriers that need to be addressed, enabling the design of state-level financial literacy programs that are contextually relevant. It can inform the strategic design of potential group insurance schemes or partial premium subsidy programs, not as blanket policies, but as targeted support for the most vulnerable enterprise categories, such as micro-enterprises in flood-prone districts, thereby enhancing the state's overall economic resilience (Nair & Pillai, 2022).

For the insurance industry, financial institutions, and MSME owners themselves, the practical implications are profound. The study will provide insurers with a granular segmentation of the Kerala MSME market, revealing the distinct needs and literacy levels across different sectors and sizes. This can guide the development of simplified, bundled, and trustworthy insurance products that are more likely to be adopted (Shetty & Rodrigues, 2024). For banks and NBFCs, understanding the role of insurance in

de-risking a business can refine credit appraisal models, potentially leading to preferential lending terms for insured MSMEs. Most importantly, for the MSME owners, this research will empower them with the knowledge that insurance is not a cost, but a strategic investment that can unlock their capacity for growth and innovation.

Finally, the study's significance extends to the broader national goal of fostering a resilient and sustainable MSME sector. As the Indian government continues to launch initiatives for MSME formalization and financing, this research from a highly literate yet risk-prone state like Kerala offers critical lessons on the non-financial barriers to risk management. The findings can inform national-level policy frameworks, such as those championed by the Ministry of MSME and IRDAI, by highlighting the indispensable role of demand-side interventions, specifically literacy enhancement, in achieving widespread insurance penetration and, consequently, a more robust and sustainable MSME ecosystem in India.

1.5 Scope of the Study

The conceptual scope of this research primarily relies up on four major constructs and their interrelationships. Firstly, owner and firm characteristics and the awareness of insurance will be examined. Secondly different dimensions of insurance literacy will be measured. Dimensions of literacy includes insurance attitude, insurance behaviour, insurance confidence and insurance knowledge. The third construct within the scope is risk appetite which will be conceptualized as the MSME owners' behavioural willingness to engage in growth oriented calculated risks. The fourth and final construct is the sustainability of MSME in Kerala. It includes both economic sustainability and social sustainability.

The geographical and sectoral scope of this study is confined to MSME which is officially registered under the Udyam Portal of Ministry of Micro, Small and Medium Enterprises, Government of India and it is operating within the state of Kerala. Proportionate random sampling technique is adopted for ensuring the representations across 14 districts of Kerala. MSME sectors is classified based on the notification of MSME Ministry, Government of India dated on 1st June 2020.

The methodological scope is delimited to a mixed method approach, dominantly relying on cross sectional survey for quantitative data collection validated with limited number of in-depth qualitative interview. Main data used in this study includes primary data which is collected from owners and key decision makers of MSME. The scope of variables being studied encompasses owner and firm characteristics, insurance awareness and insurance literacy as key independent variables. Risk appetite, the perceived benefits and sustainability of MSME serves as the ultimate dependent variable. MSME Category is considered as the moderating variable.

1.6 Objectives of the Study

The main purpose of the study to analyses numerous factors that affect insurance awareness and the insurance literacy for the risk appetite and the sustainability of MSME in Kerala. To achieve this fundamental goal the following objectives were formulated.

- 1 To examine the influence of MSME owner and firm characteristics on the awareness of insurance products and insurance literacy in Kerala.
- 2 To analyse the relationship between different dimensions of insurance literacy and MSME perception of risk appetite.
- 3 To explore the impact of various dimensions of insurance literacy on the sustainability of MSME in Kerala.
- 4 To assess the role of risk appetite in contributing to perceived benefits of insurance among MSME in Kerala.
- 5 To investigate whether the interrelationships among insurance literacy, risk appetite, MSME sustainability and perceived benefits differ significantly across various categories of enterprises.

1.7 Variables

This study evaluates the interrelationships among insurance awareness, insurance literacy, risk appetite, sustainability, and perceived benefits of insurance in the context of Micro, Small, and Medium Enterprises (MSME) in Kerala.

Insurance literacy, encompassing the dimensions of knowledge, attitude, confidence, and behaviour, serves as a fundamental determinant of how entrepreneurs perceive and respond to business risks (Nanda & Panda, 2021; Bhat & Choudhary, 2023). The variable of risk appetite reflects the extent to which business owners are willing to assume risk in pursuit of sustainable growth (Mousa et al., 2022). Perceived benefits of insurance represent the subjective evaluation of insurance as a mechanism for financial protection, continuity, and growth (Agyekum & Ansong, 2023). Meanwhile, sustainability—operationalized through economic and social dimensions—captures MSMEs’ capacity to maintain performance, adapt to shocks, and contribute to inclusive development (George et al., 2022). Finally, insurance awareness reflects the level of understanding and recognition of insurance options available to enterprises, shaping both adoption and behavioral outcomes (Suresh & Thomas, 2024).

Unitedly, these variables give a multidimensional view for assessing how insurance can act as a catalyst for risk mitigation, business resilience, and sustainability among MSME in Kerala.

Table 1.2

Variables Used for the Study

Purpose	Name of Variables	Description
Dimensions of Insurance Literacy	Insurance Knowledge	Refers to MSME owners’ understanding of insurance concepts, policy terms, coverage types, and claims procedures. It reflects cognitive comprehension influencing effective decision-making (Lusardi & Mitchell, 2020; Bhat & Choudhary, 2023).
	Insurance Attitude	Captures the psychological and emotional orientation toward insurance—whether owners perceive it as a necessity, a cost, or a risk management tool (Goyal & Yadav, 2022). Positive attitudes are often linked with proactive risk protection behaviour.

Purpose	Name of Variables	Description
	Insurance Confidence	Represents the self-assessed assurance of entrepreneurs in handling insurance-related decisions, policy comparisons, and claim management (Mousa et al., 2022; Nwosu & Okonkwo, 2023). High confidence enhances both awareness and policy uptake.
	Insurance Behaviour	Refers to the observable actions taken regarding insurance — such as policy purchase, renewal, and claim filing (Agyekum & Ansong, 2023). It translates insurance literacy into practical financial resilience.
Organizational Risk Appetite	Risk Appetite	Defines the extent of risk MSME are willing to undertake in pursuit of their strategic and operational goals. It mediates the relationship between insurance literacy and sustainability (George et al., 2022; Rahman et al., 2021).
Perceived Benefits	Perceived Benefits	Refers to the subjective evaluation of insurance as beneficial for business continuity, financial protection, and strategic stability (Chen et al., 2023). These perceptions drive insurance adoption behaviour among MSME.
Aspects of Sustainability	Economic Sustainability	Relates to the firm's ability to achieve stable growth, profitability, and financial continuity through effective risk and insurance management (Kumar & Joseph, 2024)

Purpose	Name of Variables	Description
	Social Sustainability	Concerns MSME contribution to community welfare, employee security, and equitable social development, often enhanced by stable risk management practices (Rana & Mishra, 2023).
Insurance Awareness	Awareness level	Indicates the extent of exposure and understanding MSME owners have regarding available insurance products, benefits, and regulatory frameworks (Suresh & Thomas, 2024). Awareness is a precursor to insurance literacy and adoption.
MSME Owner and Firm Characteristics	Age	Age of the respondent (Less than 30, 30-35, 35-40, 40-45, above 45)
	Educational Qualification	Educational qualification of the respondents (SSLC, Plus-Two, Undergraduate, Post Graduate)
	Prior Experience	Prior Experience (None, less than 5 Years, 5-10 years, above 10 years)
	Location	Location of Venture (Panchayath, Municipality, Corporation)
	Category	Category of Venture (Micro, Small, Medium)
	Business Sector	Sector (Manufacturing, Services, Agro-based, Other)
	Form of Organisation	Form of organization (Sole Proprietorship, Partnership, LLP, Private Limited)
	Total Investment	Investment (Below ₹5 Crore, ₹5 Crore - ₹20 Crore, ₹20

Purpose	Name of Variables	Description
		Crore - ₹35 Crore, Above ₹35 Crore)
	Major source of finance	Source (Equity, Debt)
	Annual Turnover	Turnover (Below ₹5 Crore, ₹5 Crore - ₹50 Crore, ₹50 Crore - ₹100 Crore, Above ₹100 Crore)
	Number of employees	Employees (1-10, 11-50, 51-100, Above 100)

Source: Compiled by the researcher

1.8 Operational Definitions

The operational definition of various key terms used in this study are discussed below with valid justifications.

MSME (Micro, Small and Medium Enterprises)

This study uses the definition of MSME as per the notification of Ministry of MSME Government of India dated 01/June/2020. Under this definition,

- Micro enterprises are defined by an investment in plant and machinery not exceeding one crore rupees and a turnover not exceeding five crore rupees.
- Small enterprises have an investment limit of ten crore rupees and a turnover limit of fifty crore rupees.
- Medium enterprises are defined by an investment up to fifty crore rupees and turnover up to two hundred and fifty crore rupees.

Risk Appetite

Risk appetite is formally defined by the ISO 31000 standard as "the amount and type of risk that an organization is willing to pursue, retain, or accept" in the pursuit of its objectives. In the case of an MSME owners, risk appetite optimises strategic business decisions like entry in to new markets, product diversification, investing in new technology.

Risk Management

Grounded in the Enterprise Risk Management (ERM) Theory and Resource-Based View (RBV), risk management is understood as a dynamic capability that helps MSME transform knowledge and resources into resilience and competitive advantage (George et al., 2022; Rana & Mishra, 2023). It is operationalised as the extent to which MSME owners implement structured processes and systems to identify, prioritize and mitigate the risks.

Risk Mitigation

Risk mitigation is one of the steps of risk management. It means taking various steps to reduce adverse effects of risk to the MSME. It includes both preventive actions (e.g., safety measures, diversification) and risk transfer mechanisms (e.g., insurance coverage).

1.9 Hypotheses

This section describes the list of hypotheses is formulated based on the objectives of the study. Sub hypotheses and detailed explanation is showed on the chapter 4.

Hypotheses for examining the Influence of MSME Owner Characteristics on Various Aspects of Insurance Literacy and Awareness.

H1: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Age of the respondents.

H2: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Educational Background of the respondents.

H3: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the Prior Experience of the respondents.

Hypotheses for examining the Influence of Firm Characteristics on Various Aspects of Insurance Literacy and Awareness.

H4: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Location of their venture.

H5: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Business Category.

H6: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Sector of Business.

Hypotheses for investigating the extent of relationship between Various Dimensions of Insurance Literacy, Risk Appetite and Sustainability of MSME.

SM.H1: Insurance Attitude significantly influences MSME Risk Appetite.

SM.H2: Insurance Behaviour significantly influences MSME Risk Appetite.

SM.H3: Insurance Confidence significantly influences MSME Risk Appetite.

SM.H4: Insurance Knowledge significantly influences MSME Risk Appetite.

SM.H5: Insurance Attitude significantly influences MSME Economic Sustainability

SM.H6: Insurance Behaviour significantly influences MSME Economic Sustainability

SM.H7: Insurance Confidence significantly influences MSME Economic Sustainability

SM.H8: Insurance Knowledge significantly influences MSME Economic Sustainability

SM.H9: Insurance Attitude significantly influences MSME Social Sustainability

SM.H10: Insurance Behaviour significantly influences MSME Social Sustainability

SM.H11: Insurance Confidence significantly influences MSME Social Sustainability

SM.H12: Insurance Knowledge significantly influences MSME Social Sustainability

SM.H13: Risk appetite significantly influences MSME Perceived Benefits of Insurance

Hypotheses for exploring the variations in the relationships among the variables across different Venture Categories namely Micro, Small, and Medium.

MG.H1: Venture category has a significant impact on the relationships among Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance

MG.H1a: Venture category moderates the relationship between Insurance Attitude and MSME Risk Appetite.

MG.H1b: Venture category moderates the relationship between Insurance Behaviour and MSME Risk Appetite.

MG.H1c: Venture category moderates the relationship between Insurance Confidence and MSME Risk Appetite.

MG.H1d: Venture category moderates the relationship between Insurance Knowledge and MSME Risk Appetite.

MG.H1e: Venture category moderates the relationship between Insurance Attitude and MSME Economic Sustainability

MG.H1f: Venture category moderates the relationship between Insurance Behaviour and MSME Economic Sustainability

MG.H1g: Venture category moderates the relationship between Insurance Confidence and MSME Economic Sustainability

MG.H1h: Venture category moderates the relationship between Insurance Knowledge MSME Economic Sustainability

MG.H1i: Venture category moderates the relationship between Insurance Attitude and MSME Social Sustainability

MG.H1j: Venture category moderates the relationship between Insurance Behaviour and MSME Social Sustainability

MG.H1k: Venture category moderates the relationship between Insurance Confidence and MSME Social Sustainability

MG.H1l: Venture category moderates the relationship between Insurance Knowledge and MSME Social Sustainability

MG.H1m: Venture category moderates the relationship between Risk appetite and MSME Perceived Benefits of Insurance

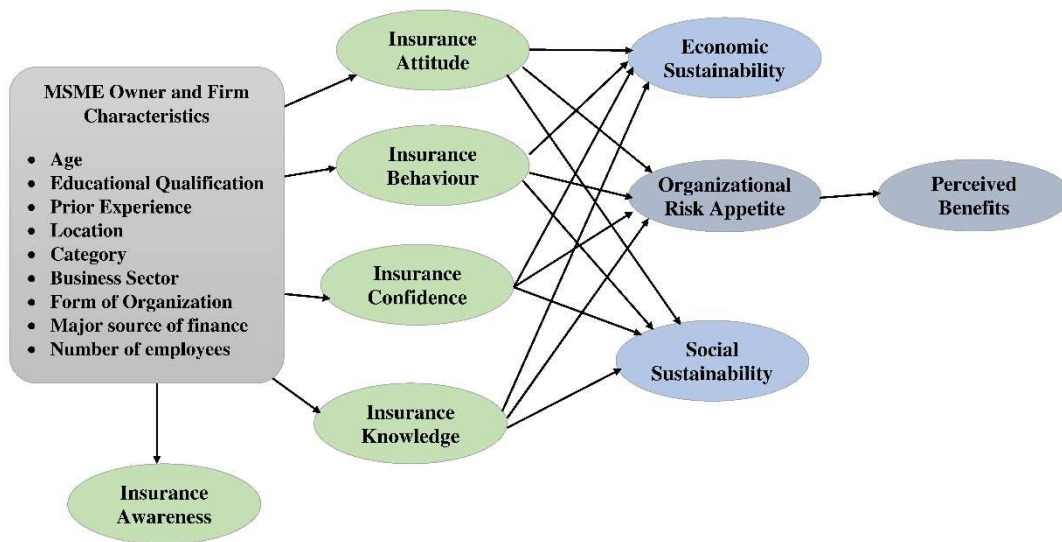
1.10 Conceptual Model

The conceptual framework of this study is developed for the empirical understanding how insurance act as a catalyst for enhancing risk appetite and sustainability of MSME in Kerala. The conceptual model illustrated below explains the theoretical framework

and variables used in this study. It also illustrates how the various dependent variables, independent variables and intervening variables are connected.

Figure 1.1

Conceptual Model of the study



1.11 Research Methodology

Research methodology is the step-by-step systematic process for the collection and analysis of data in order to make fruitful interpretation to the research problem. Following describes the different methodologies adopted for this study.

1.11.1 Research Design

The research design of this study is descriptive and analytical. Since the study describes the characteristics and the facts of the population it is descriptive and analyses the data by using different statistical tools then it is analytical one.

1.11.1.1 Research Onion

During 2009 Saunders et al., propounded research onion model which act as a systematic approach for conducting the research. Much like peeling an onion to reveal its inner layers, this model guides researchers through a systematic process of making crucial decisions that shape the entire research endeavor. It begins from the outermost layer, which involves selecting a broad research philosophy, and progresses inward through subsequent decisions about the approach, methodological choice, strategy, time horizon, and finally, the specific data collection techniques and analysis methods at the core. The model emphasizes that these layers are interconnected; the choice at one level influences and constrains the options available at the next, ensuring methodological coherence and rigor.

Figure 1.2

Research Onion Model of the Study

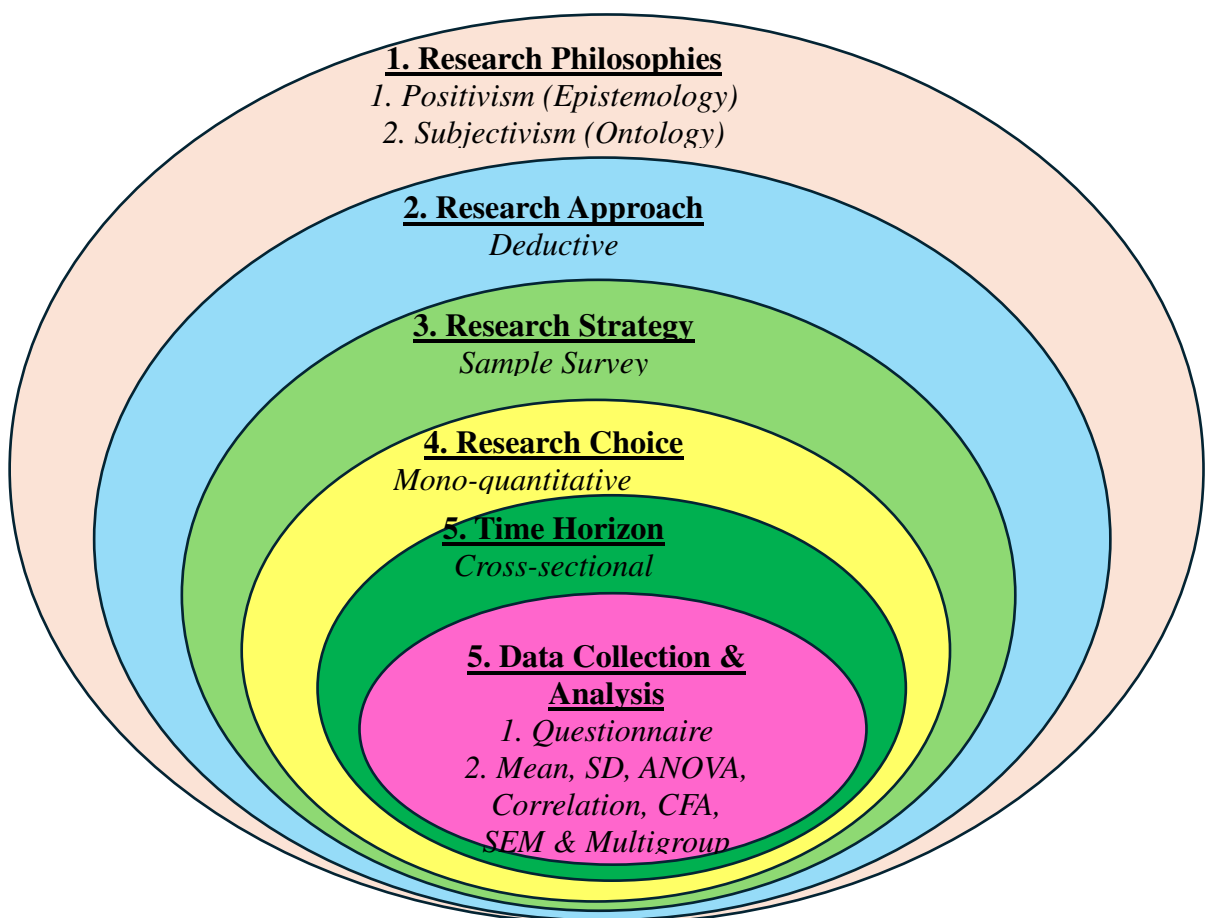


Table 1.3*Layers of Research Onion*

Layer	Name of Layer	General Explanation	Layer Applicable to the Current Study
1	Research Philosophy	<p>This layer concerns the researcher's assumptions about the nature of knowledge (epistemology) and reality (ontology).</p> <p>Positivism: Advocates for a scientific, objective approach, testing hypotheses and seeking causal relationships through measurable, quantitative data.</p> <p>Interpretivism: Focuses on understanding subjective, socially constructed meanings, often through qualitative data.</p> <p>Objectivism (Ontology): Assumes that social phenomena exist as an external, independent reality that can be measured.</p> <p>Subjectivism (Ontology): Assumes that social phenomena are created from the perceptions and actions of social actors.</p>	<p>This study adopts a Positivist philosophy. The objectives aim to examine influence, analyse relationships, and explore the impact of measurable variables (insurance literacy, risk appetite, sustainability). The research seeks to test hypotheses derived from theory, making positivism the most suitable epistemological stance.</p> <p>The ontological stance is Subjectivism, as it treats 'risk appetite' and 'sustainability' as social phenomena are created from the perceptions and actions of social actors.</p>
2	Research Approach	This describes the relationship between theory and research.	A Deductive Approach is used. The study is built on the established theoretical linkages

Layer	Name of Layer	General Explanation	Layer Applicable to the Current Study
		<p>Deductive: Starts with an existing theory, develops hypotheses, and then collects data to test these hypotheses, moving from the general to the specific.</p> <p>Inductive: Starts with data collection and observations, looks for patterns, and then develops a new theory, moving from the specific to the general.</p>	<p>between insurance, risk-taking, and business performance. It develops specific hypotheses (e.g., "insurance literacy positively impacts risk appetite") which will then be tested with empirical data collected from MSME in Kerala.</p>
3	Research Strategy	<p>This is the overall plan for how the researcher will answer the research questions. Strategies include surveys, case studies, experiments, action research, etc.</p>	<p>The primary strategy is a Sample Survey. This strategy is ideal for a positivist, deductive study as it allows for the collection of a large amount of quantitative data from a representative sample of MSME. This is necessary to statistically test the relationships between the variables in the objectives.</p>
4	Research Choice	<p>This refers to the combination of data types used.</p> <p>Mono-Method: Uses either a single quantitative or a single qualitative data collection technique.</p> <p>Mixed-Method: Combines both quantitative and qualitative techniques.</p>	<p>This study employs a Mono-Method (Quantitative) choice. The entire research design is based on collecting numerical data via a structured questionnaire and analysing it using statistical methods. This aligns with the objectives of measuring influence, relationships, and impact.</p>

Layer	Name of Layer	General Explanation	Layer Applicable to the Current Study
		Multi-Method: Uses more than one quantitative or qualitative technique.	
5	Time Horizon	<p>This is the timeframe over which the research is conducted.</p> <p>Cross-Sectional: A "snapshot" in time. Data is collected from the sample at a single point in time to examine relationships between variables.</p> <p>Longitudinal: Data is collected from the same sample repeatedly over an extended period to study changes.</p>	<p>A Cross-Sectional time horizon is adopted. The study will collect data from MSME owners at one specific point in time to analyze the current interrelationships between their insurance literacy, risk appetite, and perceived sustainability.</p>
6	Data Collection & Analysis	<p>The innermost layer, detailing the practical steps for gathering and analyzing data.</p>	<p>Data Collection: A Structured Questionnaire will be the primary instrument, designed to measure the key constructs (Owner's Characteristics, Insurance Literacy, Risk Appetite, Perceived Benefits, and Sustainability) using validated scales (e.g., Likert scales).</p> <p>Data Analysis: The data will be analyzed using statistical software (like SPSS or AMOS). Techniques will include:</p> <ol style="list-style-type: none"> 1. Descriptive Statistics (Mean, SD). 2. Inferential Statistics (T-tests, ANOVA).

Layer	Name of Layer	General Explanation	Layer Applicable to the Current Study
			3. Correlation and Regression Analysis.
			4. Structural Equation Modeling (SEM) and Multigroup Analysis.

1.11.2. Sources of Data

The data sources of this study are both primary and secondary.

Primary Data

A well-structured questionnaire is distributed to the MSME entrepreneurs in Kerala registered under the Udyam Portal of Ministry of MSME, Government of India to collect primary data.

Secondary Data

It is the published data collected from both Government and Non-Government Publications. Various sources of secondary data for this study includes

- Reports from Government Ministries /Bodies / Agencies
- Research Thesis / Dissertation
- Udyam Portal
- Journals
- Magazines
- News Papers
- LinkedIn profiles
- Reports of International Agencies
- Websites of IRDA, Industry etc.

1.11.3 Sample Design

For this study proportionate random sampling method is used for the sample selection. This method of sampling ensures randomness since each and every item in the population has an equal chance become a sample.

1. Population

The population of the study consists of MSME registered in the state of Kerala under Udyam Portal of Ministry of MSME, Government of India. As on 31/March/2024 there were 5,82,478 MSME registered in Kerala. It is considered as population of the study.

Table 1.4

District Wise List of MSME as per Udyam Portal

SI No	District	No of MSME 31/03/2024
1	Thiruvananthapuram	71516
2	Kollam	38950
3	Pathanamthitta	19290
4	Alappuzha	34254
5	Kottayam	31704
6	Idukki	18380
7	Ernakulam	83273
8	Trissur	56606
9	Palakkad	48133
10	Malappuram	47516
11	Kozhikode	57045
12	Wayanad	14550
13	Kannur	41404
14	Kasaragod	19857
Total		582478

Source : Udyam Portal, Ministry of MSME, Government of India

2. Determination of Sample Size

Sample size is determined by using the US National Education Association Statistical Table and method by Krejcie and Morgan (1970). The following formula is used for determining the sample size from the population.

$$S = \frac{\chi^2 NP(1 - P)}{d^2(N - 1) + \chi^2 P(1 - P)}$$

S = Sample Size to be determined

N = Size of the Population

χ^2 = Value of Chi-Square (At 95% confidence level with 1 degree of freedom)

d = Desired margin of error (0.05 for 95% confidence level)

P = Population Proportion

Sample size for the Population MSME in Kerala is as follows

$$\begin{aligned} S &= \frac{3.841 \times (582478 \times 0.5) \times (1 - 0.5)}{0.05^2 \times (582478 - 1) + 3.841 \times 0.5 \times (1 - 0.5)} \\ &= \frac{3.841 \times 291239 \times 0.5}{1456 + 0.96025} \\ &= \frac{559324.5}{1456.96} \\ &= 383.89 \text{ (Rounded to 385)} \end{aligned}$$

Therefore, Sample size is 385 (**Three Hundred and Eighty-Five**)

3. Sampling Method and Procedure

Sampling process are done through a structured process. In Kerala there are fourteen districts. Proportionate samples are selected from these fourteen districts. First process involves determining number of samples to be selected from each district. Second process involves selecting required samples from each district.

A. Determining Number of Samples in each district

Table No 1.5 illustrates the district wise total number of MSME registered on the Udyam portal of Ministry of MSME, Government of India. Total number of samples

to be collected from each district is determined on the basis of proportionate method. The following table explains in detail regarding the number of samples in each district.

Table 1.5

Number of Samples in each District

SI No	District	No of MSME 31/03/2024	Proportion	Number of Samples / District
1	Thiruvananthapuram	71516	12.3%	47
2	Kollam	38950	6.7%	26
3	Pathanamthitta	19290	3.3%	13
4	Alappuzha	34254	5.9%	23
5	Kottayam	31704	5.4%	21
6	Idukki	18380	3.2%	12
7	Ernakulam	83273	14.3%	55
8	Trissur	56606	9.7%	37
9	Palakkad	48133	8.3%	32
10	Malappuram	47516	8.2%	31
11	Kozhikode	57045	9.8%	38
12	Wayanad	14550	2.5%	10
13	Kannur	41404	7.1%	27
14	Kasaragod	19857	3.4%	13
Total		582478	100%	385

Source : Udyam Portal, Ministry of MSME, Government of India

B. Selection of Sample MSME

List of MSME registered under Udyam Portal for each district is downloaded from www.data.gov.in. From this list required number of samples are selected through simple random sampling method. Microsoft Excel is used to select samples from the list of MSME in each district.

1.11.4 Measurement of Research Instrument

During the literature review process, it is found that various techniques were used in the MSME based studies for data collection. It included questionnaire based and interview schedule based. For data collection current study used questionnaire-based

approach. Four objectives of the study are measured through first hand information. A structured questionnaire was prepared with the support of previous studies and the discussion with the various MSME owners. Suggestions also incorporated from the officials of Industries Department, Government of Kerala and MSME Development Institute, Government of India.

The questionnaire of the study is constructed with six parts. Part I : Demographic Characteristics of MSME owner and firm, Part II : Awareness level of insurance products available for MSME, Part III : Different Dimensions of Insurance Literacy, Part IV : Aspects of Organisational Risk Appetite, Part V : Perceived Benefits of Insurance Products Available for MSME and Part VI : Aspects of sustainable performance.

1.11.5 Scaling Technique

This section presents the operationalization of constructs employed in the current study. The process of operationalization enables the translation of theoretical concepts derived from the conceptual framework into empirically measurable variables or indicators. The constructs were first conceptually defined in line with previous empirical literature and subsequently translated into measurable dimensions suitable for the present context. The measurement scales used in this research were either (a) adopted directly from validated instruments in previous studies, (b) adapted with contextual modifications to reflect the Kerala MSME environment, or (c) developed by the researcher based on conceptual alignment and expert consultation.

Table 1.6

Sources of Measurement Scale Adopted

Purpose	Construct	Source	Measurement Scale adopted	Questions
Awareness Level of Insurance	Awareness	Adetayo, J. O., & Oseni, I. O. (2019)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	2.1 – 2.10

Purpose	Construct	Source	Measurement Scale adopted	Questions
Insurance Literacy	Insurance Attitude	Ajemunigbohun.et.al (2022)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	3.11-3.14
	Insurance Behaviour	Ajemunigbohun.et.al (2022)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	3.21-3.24
	Insurance Confidence	Ajemunigbohun.et.al (2022)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	3.31-3.34
	Insurance Knowledge	Garba. Et.al (2024)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	3.41-3.44
Organization Risk Appetite	Risk Appetite	Ajemunigbohun.et.al (2022)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	4.1-4.8
Perceived Benefit of Insurance	Perceived Benefits	Garba. Et.al (2024)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	5.1-5.3
Aspects of Sustainability	Economic Sustainability	(Garba et al., 2022; Gericke et al. (2019))	Five-point scale starting from strongly disagree (1) to strongly agree (5)	6.11-6.15

Purpose	Construct	Source	Measurement Scale adopted	Questions
	Social Sustainability	Gericke et al. (2019)	Five-point scale starting from strongly disagree (1) to strongly agree (5)	6.21-6.26

Source : Primary data

1.11.6. Pre-Testing and Revision of Instrument

Before initiating the main data collection, a pre-test of the questionnaire was conducted to refine the research instrument. The pre-test was designed to assess the face validity, clarity, and logical flow of the questionnaire and to ensure that the questions were appropriate for measuring the study constructs: insurance literacy, insurance awareness, risk appetite, perceived benefits of insurance, and sustainability of MSME.

The pre-test focused on evaluating aspects such as completion time, comprehension of items, structure, redundancy, and wording. The process was completed in three stages:

Phase I: Expert Evaluation by Industry Professionals

Two insurance experts representing public and private sector insurance organizations in Kerala reviewed the instrument. They provided feedback on the terminology and applicability of the questions to MSME insurance practices, leading to refinements in item wording and contextual adjustments.

Phase II: Academic Review

Three academic experts in entrepreneurship, risk management, and financial inclusion examined the questionnaire for theoretical accuracy and conceptual consistency. They ensured alignment between items and constructs, resulting in minor reorganization and elimination of redundant statements.

Phase III: Field Testing among MSME

A small sample of ten MSME from the Kozhikode district participated in the pre-test. Respondents were asked to comment on clarity, flow, and difficulty of questions. Their suggestions helped enhance the readability and structure of the final instrument, ensuring a more effective data collection process.

1.11.7. Pilot Study

A pilot study was conducted to further validate the revised questionnaire and identify potential operational issues before full-scale administration. It is conducted among 60 MSME owners of Kozhikode and Malappuram District. The pilot phase lasted for approximately three months. Minor modification to the questionnaire is done after the pilot study for the efficacy of final data collection.

1.11.8. Reliability and Validity

Reliability and validity tests were conducted to ensure the accuracy, consistency, and credibility of the measurement instrument.

Reliability

Reliability refers to the internal consistency of the measurement items in representing each construct. The reliability of an item or construct is checked when it consistently produces similar results. In statistics, the reliability of each scaled item is measured by using Cronbach's alpha. Table 1.8 the results of Cronbach's alpha values of nine measuring scales, along with the number of items in each construct. As per the table, it is clear that all items have a high level of internal consistency with an alpha value above 0.7 (Hinton et al., 2004). Thus, it can be summarized that the alpha value ranges from 0.921 to 0.767, which satisfies the reliability measurement.

Table 1.7*Reliability*

SLNO	Constructs	No of Items	Alpha
1	Insurance Awareness	8	0.921
2	Insurance Attitude	4	0.853
3	Insurance Behaviour	3	0.858
4	Insurance Confidence	4	0.869
5	Insurance Knowledge	4	0.872
6	Risk Appetite	8	0.921
7	Economic Sustainability	4	0.806
8	Social sustainability	4	0.767
9	Perceived benefit	3	0.885

Source: Primary Data

Validity

Validity determines the extent to which the instrument measures the intended concepts. The current study assessed validity through two relevant methods – Content or Face Validity and Construct Validity.

1. Content or Face Validity

Content validity refers to the extent to which a measurement instrument adequately represents all aspects of the concept it intends to assess. It ensures that the questionnaire items comprehensively capture the dimensions of the study constructs—such as insurance literacy, risk appetite, insurance awareness, perceived benefits of insurance, and MSME sustainability. This form of validity is typically established through expert judgment. In the present study, face validity was assessed through a systematic expert review process. A panel comprising academicians specializing in entrepreneurship, finance, and risk management, along with industry practitioners from the insurance and MSME sectors, carefully examined the questionnaire for clarity, relevance, and comprehensiveness. Their evaluations ensured that all items were conceptually aligned with the research objectives and contextually suitable for MSME in Kerala. The expert consensus confirmed that the

instrument demonstrated strong content and face validity, making it suitable for empirical investigation.

2. Construct Validity

Construct validity is assessed through two components: convergent validity and discriminant validity.

Convergent Validity

Convergent validity is determined using factor loadings and the Average Variance Extracted (AVE). AVE is calculated from standardized factor loadings, with a threshold value of greater than 0.5 indicating adequate convergence. Similarly, standardized factor loadings should exceed 0.5 to confirm item validity (Hair et al., 2010). When both AVE and factor loadings are above these thresholds, convergent validity is achieved.

Discriminant Validity

Discriminant validity is evaluated using the Fornell and Larcker (1981) criterion. This method compares the square root of the AVE for each construct with its correlations with other latent constructs. For adequate discriminant validity, the square root of a construct's AVE should exceed its correlations with other constructs, ensuring that the constructs are distinct from one another. Current study is fully met the criteria for discriminant validity. It indicates that the constructs in this study are distinct from another.

1.11.9. Normality

In statistics, the normality test determines whether the data follows a normal distribution. Initially the Kolmogorov-Smirnov normality test was used to check the normality of the data. Test result showed that none of the items are normally distributed, since their p-value is less than 0.05. Alternatively, Skewness and Kurtosis were done to ensure the normality of the data. According to Hair, J. et al. (2010), normality can be ensured when the skewness values range between -2 and +2, and the kurtosis value ranges between -7 and +7. All the items in the study satisfied the criteria of normality through Skewness and Kurtosis. Therefore, parametric tests are applicable.

1.11.10. Tools for Analysis

The analysis was carried out with the aid of Statistical Package for the Social Sciences (SPSS, Version 26) and Analysis of Moment Structures (AMOS, Version 24). SPSS was primarily employed for data coding, data cleaning, descriptive statistics, and preliminary analyses such as frequency distribution, mean, and standard deviation. It was also used to perform inferential tests, including Independent Sample t-tests and One-Way ANOVA to identify variations and relationships among the study variables. The Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were conducted using AMOS to examine the measurement and structural models.

1.11.10.1 Mean, SD and Percentage

The mean, standard deviation (SD), and percentage are the important descriptive statistics tool which describe the data in understandable and interpretable form. The mean is an important measure of central tendency, representing the mathematical average of a set of scores, which represents the typical value. The standard deviation (SD) is an important measure of dispersion which determine the variation of data from the mean. Percentage analysis was helpful to represent categorical variables like MSME Category, gender, enterprise size, and business type in an interpretable format.

1.11.10.2 One way ANOVA

A One-way Analysis of Variance (ANOVA) is an important inferential statistical test used to identify whether statistically significant differences exist between the means of three or more independent groups. It operates by comparing the variance between the groups to the variance within the groups, yielding an F-statistic that indicates if the observed differences in means are larger than would be expected by chance alone.

1.11.10.3 Post Hoc Test

Following the significant ANOVA results, a Post Hoc Test was carried out to pinpoint exactly which groups differed from each other. This study used Scheffe's Test and Games–Howell Test. Scheffe's Test is used when the size of sample is unequal and the homogeneity assumption of variance is fulfilled. If the sample size is unequal and the homogeneity assumption of variance is not fulfilled, Games–Howell Test is used

1.11.10.4 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is used to validate the measurement model by assessing the relationships between observed variables and their corresponding latent constructs. Confirmatory factor analysis is used as the foundation step in Structural Equation Modeling (Hoyle, 2000).

1.11.10.5 Covariance Based- Structural Equation Modeling (CB- SEM)

Covariance Based- Structural Equation Modeling (CB- SEM), a well-known multivariate analysis which allows simultaneous examination of multiple dependent and independent variables. There are mainly two methods: (1) Covariance Based-Structural Equation Modeling (CB- SEM) and (2) Partial Least Squares Structural Equation Model (PLS-SEM).

1.11.10.6 Multi Group Analysis

Multi-Group Analysis (MGA) was used to determine whether the structural relationships proposed in the model were consistent across different subgroups—specifically among Micro, Small, and Medium enterprises.

1.11.10.7 Measurement Invariance

Measurement invariance analysis is used to ensure that the measurement instrument operated equivalently across different subgroups in the study, such as Micro, Small, and Medium enterprises. Establishing invariance confirmed that differences in responses were due to actual variations in constructs rather than inconsistencies in how items were interpreted.

1.11.10.8 Chi-Square Difference test

Chi-Square Difference Test is an important test to assess the measurement invariance. If $p\text{-value} > 0.05$, indicates that the measurement models are invariant.

1.11.10.9 Structural Invariance Test

A Structural Invariance Test is performed after measurement invariance has been successfully established across groups. It was utilised to evaluate whether the hypothesized structural relationships within the conceptual model were consistent across different enterprise groups.

1.11.11 Period of Study

The study was initiated in the year 2018 and completed during the year 2025. Primary data was collected through a well-structured questionnaire, which was distributed to the selected owners of MSME through out fourteen districts of Kerala. Data collection was started on March 2024 and completed on December 2024.

1.12. Limitations of the Study

1. This study is based on self-reported data from MSME owners, which may include response bias.
2. The findings are based on cross-sectional data, which captures perceptions and relationships at a single point in time. This limits the ability to infer long-term causal relationships among the variables.
3. The registered MSME under Udyam Portal in the state of Kerala enhances focus to the study but limits the generalisability of the findings to the informal sector or to other states in India with different socio-economic contexts.
4. Despite a structured sampling strategy, the potential for sampling error and non-response bias cannot be entirely eliminated.
5. The sustainability dimension was measured through subjective perceptions rather than objective financial indicators. Here the sustainability of MSME is only measured through Economic and Social aspects.
6. Some constructs such as risk appetite may be influenced by external macroeconomic factors not covered in the present study.

1.13 Chapterisation

The study report is divided in two seven chapters.

Chapter 1: Introduction

This chapter gives an opening to the study. It includes background of the study, statement of the problem, significance of the study, objectives of the study, research methodology, operational definitions, variables, hypotheses, tools used and at last the limitations of the study

Chapter 2: Review Literature

This chapter contains review of various literature divided in to different sections based on the core constructs of the study. Sections include the review of studies in MSME Insurance Awareness, Insurance Literacy, Risk Appetite, Sustainability of MSME and Perceived Benefits of Insurance. Necessary research gap is identified and stated in the end of the chapter.

Chapter 3: Theoretical Framework

This chapter state the theoretical concepts, theories and frameworks related to the MSME, MSME Insurance Products, Dimensions of Insurance Literacy, Risk Appetite, Sustainability of MSME and Perceived Benefits of Insurance.

Chapter 4: Influence of MSME Owner and Firm Traits on MSME Insurance Literacy and Awareness.

This chapter presents an analysis of the sample data collected on MSME owner characteristics and MSME firm characteristics, focusing on various aspects of insurance literacy and insurance awareness. It start with frequency distribution of owner and firm characteristics and ends with the summary of hypothesis testing.

Chapter 5: Insurance Literacy, Risk Appetite, and MSME Sustainability: SEM Framework.

This chapter focuses developing hypothesized research models and validating them through Covariance-Based Confirmatory Factor Analysis (CB-CFA) and SEM techniques. Developed hypothesis are tested and summarized in this chapter.

Chapter 6: Summary, Findings and Conclusions.

This chapter states the overall summary of the study in the initial part. Later part discusses the key findings and overall conclusion for the study.

Chapter 7: Recommendations, Implications and Scope for Further Research

This chapter deals with the recommendations, implications, scope for further research based on the relevant findings of the study.

Chapter 2

REVIEW OF LITERATURE

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2.1 Introduction

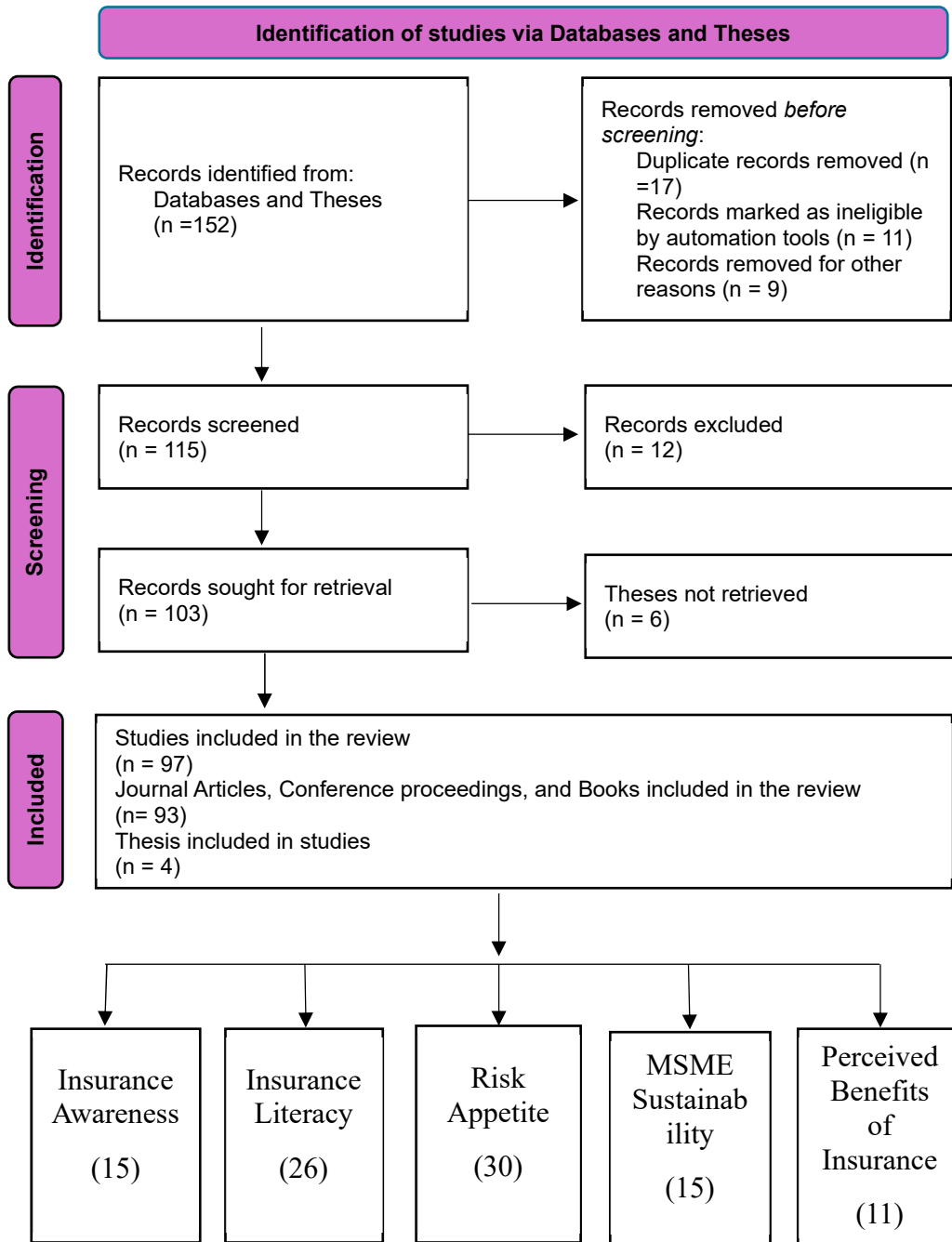
The core objective of this study is to examine the complex interrelationships between Insurance Literacy, Risk Appetite, and the Sustainability of Micro, Small, and Medium Enterprises (MSME) in Kerala. Beyond this, the research intends to identify the role of Risk Appetite on the Perceived benefits of Insurance. To substantively contribute to the existing academic reservoir, the researcher performed an exhaustive review of prior scholarly works in the domains of Insurance Awareness, Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits of Insurance, with the specific goal of pinpointing critical research gaps. Conducting a systematic literature review is a pivotal phase in the research process, serving as the bridge between initial problem identification and the formulation of a robust theoretical framework and instrumental design. Historically, literature reviews were often organised chronologically or thematically; however, contemporary research standards necessitate more rigorous methodologies such as bibliometric analysis and systematic reviews. In alignment with these standards, this study adopts the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure transparency and replicability. To optimize the analysis of the vast existing literature, the researcher has classified the selected studies into five distinct constructs relevant to the study's conceptual model: MSME Insurance Awareness, Dimensions of Insurance Literacy, Risk Appetite, Sustainability of MSME, and Perceived Benefits of Insurance. This structured approach allows for a granular understanding of how psychological and behavioural factors influence the economic and social resilience of enterprises.

2.2 Sources of Literature

Figure 2.1 illustrates the application of the PRISMA framework employed to conduct this literature review analysis. The PRISMA protocol mandates a four-phase flow diagram that delineates the systematic process of identifying, screening, determining eligibility, and finally including specific articles or papers that fall within the scope of the study. It also necessitates adherence to a checklist that scrutinizes elements such as the title, abstract, methodology, and findings to ensure relevance. In the current research, the researcher systematically assessed a wide array of academic databases—including Scopus, Web of Science, and Google Scholar—as well as university repositories for relevant theses that delve into MSME risk management and insurance behavior. The search was primarily focused on literature published between 2018 and 2024 to ensure the findings reflect the contemporary post-pandemic economic landscape. Following the initial identification, a rigorous inclusion-exclusion criterion was applied. Duplicate records, non-peer-reviewed articles, and studies unrelated to the financial or behavioral aspects of MSMEs were removed. Initially 152 theses, Journals and articles were under consideration – After screening 97 literature is considered based on relevance of the study. These selected studies have been organized and reviewed based on the core variables of the research. The subsequent sections present a critical evaluation of these 97 studies, synthesizing their findings to highlight the prevailing academic consensus and the specific gaps this research aims to address.

Figure 2.1

PRISMA Literature Review



Source: Compiled by the Researcher

2.2.1 Studies of MSME Insurance Awareness

This section related with the literature review analysis of the concept of Awareness of Insurance among MSME owners. Firstly, the topic of the study, name of journal and year of publication is presented in a table 2.1. Detailed summary of each review is written after that.

Table 2.1

Literature on MSME Insurance Awareness

SI No	Title	Journal Name	Year
1	Awareness and willingness to pay for a national health insurance scheme among informal sector workers in Harare, Zimbabwe	<i>PLOS ONE</i>	2023
2	The rising awareness of insurance post-COVID-19 pandemic	International Journal of Social Science and Economic Research	2022
3	Barriers to insurance adoption in SMEs: A qualitative study.	Journal of SME Development	2022
4	Mobile money adoption and usage and financial inclusion: Mediating effect of digital consumer protection	Digital Policy, Regulation and Governance	2020
5	Insurance uptake among small and medium-sized tourism and hospitality enterprises in a resource-scarce environment	Tourism Management Perspectives	2020
6	Financial literacy, financial inclusion, and savings behavior in Laos	Journal of Asian Economics	2020
7	An assessment of fire insurance awareness in the informal sector: A case study of the Kumasi central market	Journal of Risk Management	2019
8	Awareness and perception of motor third party insurance in Kampala, Uganda	Journal of Insurance Law	2019
9	Awareness and assessment about health insurance in Madurai District, Tamil Nadu	Thesis	2018

SI No	Title	Journal Name	Year
10	Insurance Awareness: A Literature Review	International Journal of Asian Social Science	2018
11	Farmers perception towards crop insurance as a risk management tool	Agriculture Update	2018
12	Determinants of micro-insurance demand in Jimma zone	International Research Journal of Business Studies	2018
13	Insurance Awareness and Acceptance: Empirical Evidence among Small and Medium-Sized Enterprises in the Lagos State, Nigeria	Trends Economics and Management	2018
14	A study on customers' awareness and satisfaction of products and service offered by the general insurance companies in the Nilgiris District	Thesis	2016
15	Awareness and Selection of General Insurance Products in Small Scale Sector	Thesis	2011

Source: Literature from various articles and theses compiled by the researcher

Chipunza (2023) assessed the awareness and willingness to join National Health Insurance (NHI) schemes among informal sector workers in Zimbabwe. Using logistic regression, the study identified that while awareness of the general need for health protection was high, specific awareness regarding the mechanics of the NHI was limited. Crucially, the study found that "solidarity with the sick" and membership in existing resource-pooling groups were strong predictors of willingness to join. This implies that social capital can be leveraged to enhance insurance awareness; MSME owners are more likely to become aware of and adopt insurance if it is promoted through their social and professional networks.

Jayasree (2022) provided a contemporary analysis of how the COVID-19 pandemic influenced insurance awareness. The study observed a paradigm shift in the mindset of small business owners, moving from viewing insurance as a discretionary "grudge purchase" to a critical business continuity asset. The author noted a surge in inquiries regarding business interruption and health insurance following the pandemic's

economic shock. However, the study warned that this "reactive awareness" is often transient and must be reinforced with sustained educational initiatives to become a permanent component of MSME risk management culture.

Chatterjee et al. (2022) identified barriers to insurance adoption in MSME, citing lack of awareness as a primary obstacle alongside cost and trust. The study found that many MSME owners view insurance as a non-essential expense due to a lack of understanding of its benefits. The authors noted that government policy and industry efforts have been insufficient in addressing this knowledge gap. The study recommended a multi-stakeholder approach involving government, insurers, and industry associations to drive awareness. This research confirms that awareness barriers are systemic and require coordinated interventions.

Morgan and Long (2020) discussed the role of financial literacy and awareness in financial inclusion. The study posited that awareness of financial products, including insurance, is a necessary condition for inclusion. The authors found that individuals who are not familiar with financial products tend to discontinue usage. The study concluded that financial literacy programs must explicitly focus on increasing awareness of product features and consumer rights. This study theoretically anchors awareness within the broader financial inclusion agenda.

Exploring the intersection of digital finance and insurance, **Okello Candiya Bongomin and Ntayi (2020)** examined the mediating role of digital consumer protection (trust) in the relationship between mobile money adoption and financial inclusion in Uganda. While the study focused on mobile money, its implications for insurance awareness are profound, as mobile platforms are increasingly the delivery channel for microinsurance. The authors found that awareness of digital platforms positively influenced usage, but this relationship was heavily dependent on the user's trust in the system's security. This suggests that awareness campaigns for digital insurance products must simultaneously address security concerns to be effective for MSME.

Dayour et al. (2020) investigated the factors influencing insurance uptake among Small and Medium-sized Tourism and Hospitality Enterprises (SMTHE) in Ghana.

The study utilized a multi-stage sampling technique to select 250 respondents and applied confirmatory factor analysis and multivariate logit regression. The research identified that risk concerns, firm characteristics, and the perceived benefits of insurance were significant determinants of uptake. However, the study also found that misinformation regarding insurance and claims processing negatively impacted trust and awareness. The authors argued that despite consumer education campaigns, uptake remains low if trust is not established. The study concluded that improving customer experience and transparency in claims processing is essential to converting awareness into actual insurance subscription.

Twum-Barima (2019) conducted an assessment of fire insurance awareness in the informal sector, using the Kumasi central market in Ghana as a case study. The research highlighted that despite the high frequency of fire outbreaks in markets, traders exhibited low levels of awareness regarding fire insurance policies. The study identified that reliance on informal risk-coping mechanisms and a lack of trust in formal financial institutions were major barriers. The author argued that awareness campaigns must be culturally sensitive and address the specific risks faced by informal traders. The study contributes to the understanding of the unique challenges in promoting insurance in the informal economy

Namukasa et al. (2019) assessed the level of awareness and perception of Motor Third Party Insurance in Kampala, Uganda. The results indicated that awareness was critically low, with over 95% of policyholders unaware of their rights and nearly 88% unaware of their obligations. This lack of awareness resulted in a failure to file claims after accidents. The study recommended comprehensive public education campaigns to inform motorists not just of the mandatory nature of the insurance, but of its benefits and procedures. The study highlights that mandatory insurance regimes do not automatically generate functional awareness

In the studies, **Ismail et al. (2018)** conducted a systematic literature review to evaluate the state of insurance awareness, analyzing 40 papers published between 2012 and 2017. The study aimed to categorize available research evidence and identify trends in insurance awareness research. The authors found that while awareness is a critical

driver for insurance penetration, research in this domain remains fragmented. The study highlighted that the majority of research has been concentrated in developing economies like India, where low penetration rates are attributed to a lack of awareness. The authors concluded that insurance awareness has grown steadily over time, yet significant gaps remain in understanding the specific nuances of product awareness versus general risk awareness. The study contributes to the literature by providing a structured overview of the field and identifying the need for more systematic research to bridge the gap between awareness and actual purchase behaviour.

Aduloju and Ajemunigbohun (2018) examined the relationship between insurance awareness and its acceptance among Small and Medium-sized Enterprises (SME) in the Lagos metropolis. The study employed a survey research design, collecting data from 352 SME operators. The findings revealed a low but slightly positive relationship between insurance awareness and its acceptance. The study highlighted that insurance products have not gained high popularity among small business operators, primarily due to a lack of trust and poor communication strategies by insurers. The authors recommended that insurance companies should focus on educational campaigns and engage SME owners in the design of insurance products to enhance relevance and acceptance. This study contributes to the understanding of the behavioral gap where awareness does not automatically translate to uptake without trust and product suitability.

Santhiya (2018) investigated the level of awareness and assessment of health insurance among households in the Madurai District of Tamil Nadu. The study highlighted that while India's economic liberalization has spurred growth, health insurance remains a critical tool for risk transfer and financial stability, yet awareness levels vary significantly across urban and rural demographics. Tracing the evolution of health insurance from early legislations like the Workmen's Compensation Act of 1923 to modern schemes, the research emphasized that the primary challenge lies in ensuring that insurance benefits reach the economically weaker sections without inducing cost inflation or procedural overuse. The study concluded that future development in the sector requires a focus on behavioral approaches to utilization and

comparative analyses between public and private sector services to ensure cost-effective management.

Bhoyar et al. (2018) further explored the constraints to insurance adoption among farmers in the Amravati district, focusing on the role of awareness as a risk management tool. The study employed a descriptive survey design and found that low awareness was the primary administrative constraint reported by respondents. The researchers highlighted that physical distance from financial institutions and the unavailability of insurance agents in rural areas exacerbated the awareness gap. The study concluded that without localized intermediaries to bridge the information asymmetry, awareness remains theoretical and fails to translate into risk mitigation behavior

In a study on the determinants of micro-insurance demand in Ethiopia, **Asmare and Worku (2018)** found that awareness was the single most significant variable influencing demand. The researchers utilized a mixed-methods approach and discovered that a vast majority of the target population was unaware of the existence of micro-insurance products tailored to their needs. The study highlighted that informal risk-sharing mechanisms (such as Iddir) were preferred not because they were superior, but because they were better understood and more socially embedded. The authors concluded that formal insurers must mimic the awareness strategies of informal groups to succeed

Poonkodi (2016) assessed the level of customer awareness and satisfaction regarding products and services offered by general insurance companies in the Nilgiris District. The study probed the influence of socio-demographic and economic variables on policyholder perceptions, revealing that a significant portion of the younger generation remains disengaged from general insurance services. The research highlighted the need for insurers to shift their marketing communication strategies to specifically target this younger demographic to foster interest and awareness. Concluding that a "one-size-fits-all" approach is insufficient, the study recommended that both public and private general insurance companies develop customized solutions tailored to the diverse requirements of different consumer segments to ensure better market penetration.

Subashini (2011) examined the levels of awareness and criteria for selecting general insurance products within the small-scale industrial sector in the Chittoor district of Andhra Pradesh. The study identified that while fire remains a predominant risk for these enterprises, a significant portion of entrepreneurs—more than one-third—lack adequate awareness of available general insurance solutions. The research highlighted a disparity in brand visibility, with public sector entities like New India Assurance enjoying higher recognition compared to private insurers, and concluded that to bridge this protection gap, insurance companies must collaborate more closely with financial institutions to aggressively promote awareness through targeted advertising and direct communication channels.

2.2.2 Studies of Insurance Literacy

Various literatures related to the different dimensions of Insurance Literacy is analysed and presented in Table 2.2 followed by critical explanation.

Table 2.2

Literature on Insurance Literacy

SI No	Title	Journal Name	Year
1	Investigating The Effect of Insurance Literacy on Sustainable Performance in Small and Medium Enterprises	Asia-Pacific Management Accounting Journal	2024
2	Financial literacy and small and medium enterprises performance: The moderating role of financial access	Journal of Financial Reporting and Accounting. Advance online publication	2024
3	Digital literacy, Insurtech adoption and insurance inclusion in Uganda	Journal of Risk and Financial Management	2024
4	An empirical analysis of the behavioral influences and information sources affecting the cyber insurance decisions of German SMEs	Journal of Risk Finance	2024

SI No	Title	Journal Name	Year
5	Exploring the link between financial literacy and business interruption insurance: Evidence from Italian micro-enterprises.	The Geneva Papers on Risk and Insurance - Issues and Practice	2024
6	Cybersecurity, cyber insurance and small-to-medium-sized enterprises: A systematic review	Information and Computer Security	2024
7	Insurance literacy: Significance of its dimensions for insurance inclusion in Uganda.	Economies	2023
8	Mapping Financial Literacy: A Systematic Literature Review of Determinants and Recent Trends	Sustainability	2023
9	The influence of digital financial literacy on Indonesian SMEs' financial behavior and financial well-being	International Journal of Professional Business Review	2023
10	Analysis of financial literacy and digital literacy on the sustainability of micro, small and medium enterprises (MSMEs)	International Journal of Asian Business and Management	2023
11	Insurance holdings: Does individual insurance literacy matter?	Finance Research Letters	2023
12	The role of financial literacy on sustainable development of micro, small and medium enterprises (MSMEs) in Africa	Qeios	2023
13	Insurance Literacy and Risk Appetite: Evidence from Selected Small and Medium Sized Enterprises in Lagos, Nigeria	ACTA UNIVERSITATIS DANUBIUS	2022
14	Insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability among SMEs	Journal of Social Economics Research	2022

SI No	Title	Journal Name	Year
15	Empowering MSMEs through financial literacy and management skills	Proceeding of The International Conference on Economics and Business	2022
16	Financial literacy of entrepreneurs: a systematic review.	Managerial Finance	2022
17	Digital Financial Literacy and Its Determinants: An Empirical Evidences from Rural India	South Asian Journal of Social Studies and Economics	2021
18	Decision making in personal insurance: Impact of insurance literacy	Sustainability	2019
19	Effect of owner-manager's financial literacy on the performance of SMEs in the Cape Coast Metropolis in Ghana	Journal of Global Entrepreneurship Research	2019
20	Extending financial literacy to insurance literacy: A survey approach	Accounting and Finance	2019
21	Property and pecuniary risk exposures: An investigation into SMEs' shutdown and mitigation methods in Nigeria	The Journal of Entrepreneurial Finance	2017
22	A proposed operational risk management framework for small and medium enterprises	South African Journal of Economic and Management Sciences	2017
23	Insurance: A contributor to development and resilience	Swiss Re	2017
24	Unlocking smallholder credit: Does credit-linked agricultural insurance work?	World Bank & ILO	2017
25	Factors affecting adoption of Takaful (Islamic insurance) in the Maldives	International Journal of Accounting & Business Management	2016
26	Affordability and availability of flood insurance: Findings from research with businesses	Department for Environment, Food and Rural Affairs (Defra)	2015

Source: Literature from various articles and theses compiled by the researcher

Garba et al. (2024) investigated the influence of insurance literacy on the sustainable performance of SME in Nigeria, specifically categorizing sustainability into economic and social dimensions. Utilizing Structural Equation Modelling (SEM), the study revealed that "understanding insurance" and "perceived benefits" significantly enhance both economic and social sustainability. However, interestingly, while general "insurance knowledge" positively impacted economic outcomes, it showed an insignificant effect on social sustainability, prompting recommendations for policymakers to prioritize deep comprehension of insurance mechanisms over superficial knowledge to foster holistic business resilience.

Kiwanuka and Sibindi (2024) introduced "digital literacy" as a critical new dimension of insurance literacy. Investigating Insurtech adoption in Uganda, they found that the ability to use digital interfaces mediates the relationship between traditional literacy and insurance inclusion. This suggests that in the digital age, an MSME owner cannot be considered "insurance literate" if they are digitally illiterate, as access is increasingly gatekept by technology.

Abdallah et al. (2024) examined the interplay between financial literacy and SME performance in Kuwait, specifically introducing financial access as a moderating variable. Using PLS-SEM to analyze data from 155 enterprises, the study confirmed that while financial literacy directly enhances business outcomes by improving management capabilities, this relationship is significantly strengthened when firms also possess adequate access to financial services. The findings highlighted those specific components of literacy—namely debt, investment, and insurance knowledge—had the most substantial impact on performance metrics. The authors concluded that financial knowledge alone is insufficient; it must be coupled with policies that reduce barriers to financing to fully unlock the growth potential of the SME sector.

Salzberger (2024) challenged Classical Utility Theory by examining the cyber insurance decisions of 1,248 German SME executives, isolating risk perception into distinct components of probability and financial impact. Using logistic regression analysis, the study uncovered that insurance demand is significantly driven by the

emotional fear of financial ruin rather than a rational calculation of attack probability, indicating a reliance on affect heuristics by decision-makers. Crucially, the research identified a "literacy paradox" where independent online research negatively correlated with uptake due to cognitive overload, whereas consultation with IT specialists fostered "mediated literacy," suggesting that insurers must shift from information provision to advisory partnerships to overcome cognitive barriers.

Investigating the nexus between financial literacy and business interruption (BI) coverage, **Ricci and Santilli (2024)** analyzed data from 1,998 Italian micro-enterprises to construct a composite financial literacy index. The study established a robust positive correlation where a one-unit increase in literacy significantly raised the probability of purchasing BI insurance, as understanding abstract concepts like "gross profit" and "indemnity periods" requires advanced cognitive processing. However, the authors noted that even among literate owners, penetration remained suboptimal due to a "trust deficit" and defensive scrutiny of ambiguous policy wording, concluding that post-pandemic literacy interventions must combine educational mechanics with regulatory standardization to reduce the cognitive load required to evaluate policies.

Through a systematic review of 19 studies, **Adriko and Nurse (2024)** identified a pervasive lack of cyber insurance literacy among MSME, specifically the failure to comprehend the dual value proposition of financial risk transfer and pre-breach mitigation services. The authors highlighted that "poor risk culture" and the compartmentalization of cybersecurity as a technical rather than business issue prevent holistic assessment, while obscure policy language exacerbates the gap between expected and actual coverage. Consequently, the study argued that current awareness campaigns focusing on fear are ineffective, recommending instead that government interventions standardize policy frameworks to simplify the choice architecture for limited-capacity owners.

Kiwanuka and Sibindi (2023) investigated the significance of individual components of insurance literacy—knowledge, skills, attitude, and behavior—in explaining insurance inclusion in Uganda. Using a correlational and cross-sectional

design with 400 respondents, the study utilized hierarchical multiple regression. The results revealed that knowledge, skills, and attitude significantly and positively predicted insurance inclusion. Interestingly, behavior was found to have an insignificant positive influence. The study contributed to the literature by breaking down insurance literacy into distinct psychological and cognitive components, showing that while people may have the right attitude and knowledge, translating this into consistent behavioral patterns remains a challenge in developing markets

Zaimovic et al. (2023) conducted a systematic literature review mapping financial literacy trends, identifying key determinants and recent developments. Analyzing 358 articles, the study found that entrepreneurs globally have a low degree of financial literacy, yet it promotes enterprise performance. The review highlighted that financial literacy is not a monolith but includes awareness, knowledge, skills, attitudes, and behaviors. The authors noted a trend towards "digital financial literacy" as a new, critical dimension for modern entrepreneurs. The study provides a theoretical framework for understanding the multifaceted nature of financial literacy in the context of entrepreneurship.

Gosal and Nainggolan (2023) investigated the transformative role of digital financial literacy (DFL) in the Indonesian business landscape, specifically examining its impact on the financial behavior and well-being of SME across four major cities. Utilizing a quantitative approach with Partial Least Squares Structural Equation Modeling (PLS-SEM), the authors established that DFL does not merely influence financial well-being directly but operates significantly through the mediation of financial behavior. The study posits that when SME owners possess adequate digital knowledge, they exhibit more prudent financial habits—such as disciplined budgeting and efficient capital management—which subsequently elevates their overall financial health. Consequently, the research underscores the necessity for targeted education programs that move beyond theoretical knowledge to foster practical digital behaviors, thereby enhancing economic resilience in an increasingly digitized market.

Putra et al. (2023) utilized a qualitative descriptive methodology to explore how financial and digital literacy contribute to the sustainability of MSME within the

Taman Kalong tourism area in Soppeng Regency. Through in-depth interviews and observation, the researchers identified that business continuity is heavily dependent on the owner's ability to implement financial planning, budgeting, and digital marketing strategies. The findings revealed that while financial literacy minimizes losses through better risk management and reporting, digital literacy acts as a catalyst for market expansion and innovation, allowing traditional businesses to reach wider consumer bases via social media. The study concludes that the integration of these dual literacies is essential for achieving the core pillars of business sustainability: growth, profitability, and humanitarian contribution.

Bongini et al. (2023) utilized a dataset from an insurance supervisor to test the impact of insurance literacy on insurance holdings in Italy. The study validated a comprehensive measure of literacy that included both basic and advanced insurance concepts. The results indicated that higher literacy levels correlate significantly with a broader portfolio of insurance products. The authors concluded that in developed markets, the complexity of products requires a high threshold of literacy, and the "literacy gap" is a primary driver of underinsurance

Lambert et al. (2023) conducted a quantitative investigation into the determinants of sustainable development for Micro, Small, and Medium Enterprises (MSME) within the African context. Employing regression analysis to interpret data regarding financial capabilities, the study disaggregated financial literacy into three distinct components: financial knowledge, financial skills, and financial experience. The empirical results demonstrated that all three dimensions possess a statistically significant positive relationship with the sustainable growth of enterprises. The authors concluded that theoretical knowledge alone is insufficient; rather, it is the combination of practical skills and hands-on financial experience that drives development, thereby recommending that policymakers focus on comprehensive capacity-building initiatives to foster economic resilience in the region.

In an empirical study focused on SMEs in Lagos, Nigeria, **Ajemunigbohun et al. (2022)** examined the nexus between insurance literacy dimensions and the risk appetite of business operators. Using a cross-sectional survey design, the authors

found that while insurance attitude, confidence, and knowledge demonstrated positive relationships with risk appetite, insurance behaviour did not show a significant link. The study suggests that to shape the behavioral risk attitudes of SME owners, insurance providers must focus on psychological and sociological engagement strategies to make insurance products more accessible and intellectually appealing.

Garba et al. (2022) focused on the MSME sector in Nigeria, examining how insurance literacy interacts with risk knowledge management to influence economic sustainability. Using structural equation modeling, the study found that insurance literacy is a significant predictor of economic sustainability. The authors decomposed literacy into "knowledge," "understanding," and "perceived value," finding that a holistic grasp of these dimensions is necessary for MSME to effectively utilize insurance as a sustainability tool. The study also highlighted the moderating role of financial inclusion in this dynamic.

Sara (2022) utilized a mixed-method approach, integrating surveys, interviews, and case studies, to explore effective strategies for enhancing the financial literacy and management acumen of MSME owners. The research assessed current literacy levels across diverse sectors and identified that generic training models often fail to address specific business needs. The findings highlighted that tailored financial education programs, supplemented by interactive workshops and mentorship schemes, are significantly more effective in augmenting financial competencies than standard interventions. The study concludes that empowering MSME requires a strategic focus on customized educational interventions to unlock their full potential for sustainable economic growth and performance.

Anshika and Anju (2022) conducted a systematic review of 358 papers on financial literacy and entrepreneurship. The study found a consensus that entrepreneurs generally possess low levels of financial literacy, which hinders enterprise performance. The authors identified a direct correlation between literacy and key business outcomes such as return on wealth and risk diversification. The review creates a theoretical framework mapping literacy to various entrepreneurial outcomes.

This comprehensive review solidifies the link between cognitive financial capabilities and business success.

Azeez and Akhtar (2021) defined digital financial literacy by considering the basics of digital financial risk and knowledge of consumer rights. The study found that digital financial literacy involves understanding how to protect personal data and use digital applications safely. The authors highlighted that women entrepreneurs, in particular, benefit from digital literacy by gaining access to broader markets and financial services. The study contributes to the gendered perspective of literacy, suggesting that digital skills can empower marginalized groups

Weedige et al. (2019) explored the impact of insurance literacy on decision-making in personal insurance. The study found that insurance literacy significantly influences the quality of decisions regarding coverage and policy selection. The authors identified that individuals with higher literacy levels were less likely to be underinsured and more likely to understand complex policy terms. The study utilized a quantitative approach to measure literacy dimensions, contributing a validated scale for assessing insurance-specific knowledge and skills. The findings align with behavioral finance theories suggesting that cognitive competence reduces bounded rationality in financial decision-making.

Agyapong and Attram (2019) drew upon the Resource-Based Theory to assess the impact of owner-managers' financial literacy on the performance of SME in the Cape Coast Metropolis of Ghana. By analyzing data from 132 registered businesses using Structural Equation Modeling, the study demonstrated a robust positive relationship between financial knowledge and firm performance, explaining a significant portion of the variance in business outcomes. The authors argued that financial literacy serves as a critical intangible resource that empowers managers to make superior decisions regarding budgeting, debt management, and resource allocation, thereby creating a competitive advantage. The research suggests that to improve the high failure rate of SME, policymakers must prioritize financial education as a prerequisite for credit access and business support.

Lin et al. (2019) extended the behavioral research in finance to the insurance domain, proposing a definition of insurance literacy that emphasizes the application of knowledge. Surveying postgraduate students, the study found that even highly educated individuals often exhibit low insurance literacy, succumbing to behavioral biases like overconfidence. The authors argued that general financial education is insufficient for the insurance sector and called for specialized insurance education that addresses specific cognitive biases inherent in risk decision-making

Adeyele, Osemene, and Olubodun (2017) investigated the high failure rates of Nigerian SMEs, attributing business shutdowns to a fundamental "risk identification" failure where owners could not distinguish between material damage and pecuniary loss. Surveying 389 firms, the study found a strong statistical relationship between informal transport methods and business losses, alongside a widespread misconception that standard fire insurance covers insolvency risks. The authors recommended that literacy programs must pivot from product pushing to "contract education," specifically teaching the crucial difference between asset reinstatement and income maintenance to prevent fatal under-insurance.

Naude and Chiweshe (2017) conducted a conceptual analysis of the South African market, establishing that SMEs exhibit a reactive approach to risk that indicates a reliance on "moral hazard," where insurance is viewed as a substitute for, rather than a complement to, internal controls. The authors highlighted the lack of internal capacity to perform formal risk assessments and proposed a simplified Operational Risk Management (ORM) framework to help owners categorize risks. The study concluded that enhancing literacy requires demystifying the assessment process through simple, resource-light tools that embed insurance into a holistic risk culture.

Swiss Re Institute (2017) provided a macroeconomic perspective on the protection gap, arguing that low uptake in emerging markets stems from the difficulty MSME owners face in quantifying the intangible "peace of mind" and risk-taking capacity that insurance provides. The report cited evidence that insured businesses invest more in high-yield technologies, but noted that this link is broken in low-literacy markets where owners engage in inefficient precautionary savings due to a lack of trust in

insurers. Consequently, the study emphasized that literacy campaigns must focus on "claims certainty" and regulatory strength to rebuild trust, suggesting mandatory insurance lines as a gateway to foster a broader insurance culture.

Mishra et al. (2017) evaluated credit-linked agricultural insurance schemes, identifying a phenomenon of "forced literacy" or passive consumption where farmers purchase coverage solely as a mandatory condition for loans. The study argued that this bundling fails to improve actual literacy, as borrowers often view premiums as arbitrary costs and struggle to understand complex concepts like "basis risk" in index insurance, leading to trust erosion when payouts are not triggered. The authors recommended that financial service providers must incentivize staff to educate clients on the mechanics of payouts, transforming the transaction from a requirement into a value-added service to ensure market sustainability.

Addressing the scarcity of empirical research in the Maldivian financial sector, **Shabiq and Hassan (2016)** examined the determinants of Takaful (Islamic insurance) adoption among 340 respondents in the capital city of Male'. Utilizing a quantitative approach anchored in Rogers' Innovation Diffusion Theory, the study tested five independent variables—Awareness, Relative Advantage, Compatibility, Social Influence, and Attitude—to isolate the drivers of consumer behavior. The regression analysis revealed a critical deviation from standard financial literacy models: while "Attitude" and religious "Compatibility" were found to be significant positive drivers of adoption, "Awareness" and "Social Influence" had no statistically significant impact. This implies that in strictly Muslim markets, mere product knowledge (awareness) is insufficient for conversion; rather, adoption is predicated on the consumer's ethical validation of the product. Consequently, the authors argued that insurers must transcend basic awareness campaigns and instead focus on "educational marketing" that explicitly aligns product features with Shariah principles to build the necessary attitudinal trust

Dickman, Langley, Silman, and Harrold (2015) explored risk awareness among UK small businesses, revealing a profound "availability bias" where owners in high-risk flood zones discounted scientific data in favor of their own past experiences. The

government-commissioned report identified a passive renewal behavior where businesses assumed "all-risks" policies covered flood damage without verification, demonstrating that high uptake rates often disguise low actual literacy. The study concluded that businesses often possess insurance they do not fully understand, leaving them vulnerable to coverage gaps when market terms shift, thus necessitating a transition from compliance-driven purchase to financial-tool understanding.

2.2.3 Studies of Risk Appetite

Risk appetite refers to the amount and type of risk that an organization is willing to take in order to meet its strategic objectives. This section reviews 30 studies examining risk appetite in the context of MSME, focusing on determinants, impacts on decision-making, and its relationship with insurance. List of selected reviews corresponding to the concept of Risk Appetite is explained in Table 2.3 and through subsequent explanation.

Table 2.3

Literature on Risk Appetite

SI No	Title	Journal Name	Year
1	The implementation of enterprise risk management (ERM) frameworks in small and medium enterprises (SMEs): A literature review.	International Journal of Academic Research in Business and Social Sciences	2024
2	The impact of entrepreneurial characteristics and competencies on business performance in the creative industry in Indonesia	Asia Pacific Journal of Innovation and Entrepreneurship	2024
3	The Role of Loan-Related Risk Appetite in the Relationship between Financial Risk Considerations and MSME Growth Decision: A Mediation Analysis.	Journal of Risk and Financial Management	2023
4	Adoption of Enterprise Risk Management(ERM)in small and medium-sized enterprises: evidence from Malaysia	Journal of Accounting & Organizational Change	2022

SI No	Title	Journal Name	Year
5	Insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability among SMEs	Journal of Social Economics Research	2022
6	Overconfidence and entrepreneurship: A meta-analysis of different types of over confidence in the entrepreneurial process.	Journal of Business Venturing	2022
7	How can biases affect entrepreneurial decision making? Toward a behavioral approach to unicorns.	International Entrepreneurship and Management Journal	2022
8	Entrepreneurial-Specific Characteristics and Access to Finance of SMEs in Khyber Pakhtunkhwa, Pakistan.	Sustainability	2022
9	Changes in entrepreneurs' risk-taking propensity across venture phases	Journal of Enterprising Culture	2022
10	An empirical study of risk management at micro, small and medium enterprises (MSMEs) in Karnataka	Thesis	2021
11	Rethinking risk management in entrepreneurial SMEs: towards the integration with the decision-making process	Management Decision	2021
12	Impact of the COVID-19 crisis on the perception of business risks in SMEs	Journal of International Studies	2021
13	How to reconsider risk management in SMEs? An Advanced, Reasoned and Organised Literature Review	European Management Journal	2021
14	Trust, fast and slow: A comparison study of the trust behaviors of entrepreneurs and non-entrepreneurs.	Journal of Business Venturing	2021
15	How to reconsider risk management in SMEs? An Advanced, Reasoned and Organised Literature Review	European Management Journal	2020
16	The influence of enterprise risk management on firm performance.	Economic Research-Ekonomska Istraživanja	2020
17	The Impact of Overconfidence and Ambiguity Attitude on Market Entry	Organization Science	2020

SI No	Title	Journal Name	Year
18	The influence of financial literacy on SMEs performance through access to finance and financial risk attitude as mediation variables.	Academy of Accounting and Financial Studies Journal	2020
19	The Influence of Risk Attitude towards the Entrepreneurial Intention	KnE Social Sciences	2020
20	Internationalization of small and medium enterprises (SME's): Dimensions and strategies.	Journal of Logistics, Informatics and Service Science	2020
21	Risk management in SMEs: A systematic literature review and future directions	European Management Journal	2019
22	Role of Insurance in the Development of India's Micro, Small and Medium Enterprises (MSMEs)	Journal of International Business, Economics and Entrepreneurship	2019
23	The impact of enterprise risk management on firm performance	Polish Journal of Management Studies	2019
24	Risk management practices in SMEs: A review	Journal of Risk Research	2018
25	Factors shaping hotel risk appetite	International Journal of Contemporary Hospitality Management	2018
26	Risk appetites and empirical survival pattern of small and medium enterprises in Nigeria	The Journal of Entrepreneurial Finance	2017
27	Risk appetite and strategic decision making in Nigerian firms	International Journal of Economics and Finance	2017
28	Risk management practices and performance of SMEs in South Africa	Risk Governance and Control: Financial Markets & Institutions	2017
29	Behavioral insurance: Theory and evidence	Journal of Risk and Insurance	2014
30	Project risk management methodology for small firms	International Journal of Project Management	2013

Source: Literature from various articles and theses compiled by the researcher

Ahmad and Teo (2024) explored risk appetite within the context of Enterprise Risk Management (ERM) implementation, highlighting that while defining risk appetite is a core objective of frameworks like COSO and ISO 31000, SME often struggle to formalize this due to a prevailing risk-averse organizational culture. The review posited that the successful adoption of ERM allows SME to move beyond mere risk avoidance by aligning their strategic objectives with a defined risk appetite, thereby enabling more informed decision-making and efficient resource allocation. However, the authors noted that internal cultural barriers—specifically a resistance to change and a focus on short-term survival rather than long-term strategic risks—often result in a suppressed risk appetite that stifles innovation. The study suggests that for SME to leverage ERM effectively, they must foster a "risk-aware" culture where risk appetite is not just a compliance metric but a strategic tool used to balance potential threats with the pursuit of opportunities.

Gunawan (2024) examined risk appetite as a psychological characteristic of entrepreneurs, specifically termed "risk-taking," and identified it as a critical determinant of business performance within the creative industry in Indonesia. The study defined this variable as the entrepreneur's readiness to commit significant resources and make bold decisions in uncertain situations, aiming for higher profits despite the potential for loss. Empirical results from the structural equation modeling (SEM) demonstrated that this risk-taking propensity, alongside creativity and proactiveness, significantly and positive impacts business performance. Gunawan argued that in the dynamic creative sector, risk appetite is inextricably linked to innovation; entrepreneurs must possess the courage to realize artistic ideas without guarantees of market acceptance. The findings suggest that high risk appetite acts as a catalyst, enabling MSME owners to seize market opportunities and navigate the inherent instability of the creative economy more effectively than their risk-averse counterparts.

Leyeza et al. (2023) investigated the "loan-related risk appetite" of MSME, exploring how inflation and access to finance modulate an entrepreneur's willingness to take on debt-related risks. Using the Stimulus-Organism-Response model, the study found a direct link between access to finance and increased risk appetite. The findings suggest

that when MSME feel supported by the financial ecosystem (including insurance), their appetite for growth-oriented risk increases, creating a virtuous cycle of investment and protection

Hafiz and Bakar (2022) utilized Structural Equation Modeling (SEM) to investigate the determinants of economic sustainability among Small and Medium Enterprises (SME) in Nigeria, focusing on the mediating role of risk-taking propensity. The study revealed that while SME owners typically exhibit risk-averse behavior which restricts their financial inclusion and access to capital, a balanced approach to risk—supported by adequate insurance literacy and risk management knowledge—significantly enhances economic sustainability. The authors concluded that risk appetite is not a static trait but a dynamic variable that can be positively moderated by improving financial literacy and inclusion, thereby enabling entrepreneurs to make more calculated strategic decisions for growth.

Kraft et al. (2022) conducted a comprehensive meta-analysis to disentangle the multidimensional construct of overconfidence and its distinct impacts on entrepreneurial risk-taking and performance. Aggregating data across decades of research, the authors distinguished between "overestimation" (inflating one's actual ability) and "over placement" (believing one is better than others), finding that while both forms significantly drive the decision to enter markets and assume initial risk, they have divergent effects on long-term survival. The study argued that the high risk appetite often attributed to entrepreneurs is frequently a manifestation of over placement, leading owners to enter saturated markets under the false premise that they can outperform incumbents, a bias that persists even in the face of negative feedback. This study is pivotal because it challenges the notion that entrepreneurs are inherently "risk-tolerant." Instead, it suggests they may be "risk-blind."

Tan and Lee (2022) employed a mixed-method approach to assess the adoption of Enterprise Risk Management (ERM) among Malaysian SME, benchmarking against the RIMS Risk Maturity Model. Their findings indicated that the overall maturity level of ERM adoption remains low to medium, with most firms only beginning to observe formal programs. The study identified that the establishment of a dedicated

risk management team and the development of formal risk appetite statements were the strongest predictors of ERM adoption, while Business Continuity Planning (BCP) emerged as the most common standalone practice implemented to mitigate business interruptions.

Kurniasih and Tobing (2022) analyzed risk management within the creative industry, finding that risk appetite often manifests as an informal strategy linked to value creation. The study explored the relationship between risk appetite, dynamic capabilities, and competitive advantage, revealing that while avoiding detrimental risks is crucial for maintaining dynamic capabilities, the mere act of risk-sharing does not automatically guarantee a competitive edge. The research contributes to the literature by integrating risk appetite into the dynamic capabilities framework, suggesting that how risks are approached is as important as how they are mitigated.

Abatecola et al. (2022) explored the cognitive distortions prevalent in high-growth SME, specifically those aspiring to "unicorn" status, by applying a behavioral strategy lens to decision-making processes. Through a theoretical synthesis and review of decision patterns, the study identified that biases such as availability, representativeness, and survivorship bias significantly inflate risk appetite, leading owners to pursue aggressive scaling strategies that defy statistical probability. The authors argued that the "unicorn narrative" creates a systemic vulnerability where MSME owners mimic the risky behaviors of outliers (the 0.01% of successes) while ignoring the silent majority of failures, effectively anchoring their risk tolerance on an unrepresentative sample.

Ahmad et al. (2022) examined the determinants of access to external finance for SMEs in the developing economy context of Pakistan, focusing on the interplay between entrepreneurial characteristics and lender perceptions. Through a quantitative survey of SME owners, the study identified that a moderate-to-high risk-taking propensity, when coupled with high financial literacy, significantly increases the likelihood of securing funding. The authors argued that in information-opaque markets, lenders view the owner's risk appetite (as evidenced by their willingness to

invest personal equity or pursue growth) as a positive signal of commitment, provided it is backed by the financial competence to manage that risk.

Salmony, F. U., & Kanbach, D. K. (2022) challenged the static trait view of risk-taking by examining how propensity for risk varies across different phases of the entrepreneurial lifecycle. Analyzing a cross-sectional sample of 266 entrepreneurs ranging from pre-launch to maturity, the authors observed a significant negative correlation between venture maturity and risk-taking propensity. The study argued that risk appetite naturally decays as firms accumulate assets and stakeholders ("status quo bias"), transitioning from an "offensive" risk posture focused on market entry to a "defensive" posture focused on wealth preservation, which can paradoxically threaten the firm's long-term survival by inhibiting necessary adaptation.

Crovini et al. (2021) introduced the "Advanced, Reasoned and Organised" (ARO) literature review methodology to critically evaluate the state of risk management in SMEs. Their analysis of 48 international studies revealed that risk management in smaller enterprises remains largely informal and sporadic, often lacking structured identification or assessment procedures. The authors argued that this immature risk approach is not merely a result of resource scarcity, but is fundamentally driven by the risk attitude and mindfulness of the owner-manager, suggesting that future research should focus on the behavioral reasons behind the non-adoption of formal controls rather than solely on technical tools.

Crovini et al. (2021) challenged the applicability of rigid risk frameworks for small businesses. Through an empirical study of entrepreneurial SME, they introduced the "Risk Management-Decision Making" (RM-DM) model. The authors found that while formal risk appetite statements are rare in SME, an "unconscious risk analysis" is integral to every decision made by the founder. They argued that risk appetite in SME is dynamic and inextricably linked to the entrepreneur's vision, making standardized insurance products often feel misaligned with the owner's fluid risk threshold.

Chiara et al. (2021) examined the adoption of Enterprise Risk Management (ERM) in SME, highlighting that risk appetite typically remains an informal, rather than

structured, concept in this sector. The study revealed that SME tend to prioritize risks based on immediate operational impact rather than through a comprehensive strategic appetite framework, largely due to financial and resource constraints. The authors argued that these limitations restrict smaller firms from investing in advanced risk tools, providing empirical evidence that resource scarcity is a defining feature of SME risk management practices.

Dvorsky et al. (2021) conducted a comparative analysis of risk perception between micro, small, and medium enterprises. The study found that risk appetite is not uniform; medium-sized enterprises displayed a lower appetite for personnel and market risks compared to micro-enterprises. The authors attributed this to the fact that medium enterprises have more to lose and thus are more likely to use financial reserves and insurance. This suggests that risk appetite decreases (and insurance demand increases) as an enterprise scale.

Bi et al. (2021) examined the intersection of social cognition and risk-taking by comparing the trust behaviors of entrepreneurs and non-entrepreneurs using a "Trust Game" experimental framework combined with reaction time analysis. The study revealed that entrepreneurs exhibit a distinct pattern of "swift trust," making faster and riskier decisions to trust strangers compared to the control group, who relied on slower, more analytical processing. The authors argued that this elevated social risk appetite is an adaptive heuristic (System 1 thinking) that allows MSME owners to rapidly assemble teams and secure resources in time-constrained environments, though it predisposes them to exploitation and partnership failure.

Policepatil (2021) conducted an empirical study on risk management practices within Micro, Small, and Medium Enterprises (MSME) in the Dharwad District of Karnataka. The research identified that while MSME face a spectrum of risks—ranging from financial and operational to internal challenges like employee turnover—a significant portion of these enterprises still manage risks in a rudimentary and unstructured manner. The study utilized statistical tools such as ANOVA and Structural Equation Modeling to demonstrate that structured risk identification and control are predominant dimensions that drive effective risk management. Concluding

that prudent risk management practices enable firms to sustain themselves during difficult times, the study recommended that government agencies play a more active role in guiding and monitoring the sector to foster a robust risk culture.

Through a systematic literature review and bibliometric analysis of 61 publications, **de Araújo Lima et al. (2020)** mapped the evolutionary trends of risk management within the SME context. Their findings indicated that while Financial Risk Management and Enterprise Risk Management (ERM) constitute the most developed research streams, a truly holistic approach remains rare among smaller firms. The study highlighted the emergence of new research avenues, specifically in Project, Strategic, and Supply Chain Risk Management, emphasising the need for tailored theoretical frameworks that assist SME in leveraging risk management for value creation rather than just protection.

Saeidi et al. (2020) looked at the moderating effect of intellectual capital on the relationship between ERM and performance. They found that firms with higher intellectual capital tend to have a more sophisticated risk appetite, viewing risk not just as a hazard but as an opportunity. These firms use insurance not to avoid risk, but to hedge the downside while pursuing aggressive upside strategies. This nuances the understanding of risk appetite in knowledge-intensive MSME.

Buchdadi et al. (2020) investigated the structural relationship between financial literacy, risk attitude, and firm performance among 165 MSME owners in Yogyakarta, Indonesia. Using Structural Equation Modeling (SEM), the study found that financial literacy has a positive and significant direct effect on financial risk attitude, which in turn mediates the relationship with firm performance. The authors argued that financially literate owners possess a "calibrated" risk appetite that allows them to confidently leverage external finance and investment opportunities, whereas illiterate owners tend to exhibit paralyzing risk aversion or uncalculated recklessness, both of which stifle growth.

Filmina , A. ., & Mayangsari, L. . (2020) explored the antecedents of venture creation among aspiring entrepreneurs in Indonesia, focusing on the predictive power of risk attitude on entrepreneurial intention. Through a quantitative regression

analysis, the study confirmed that a positive attitude toward risk—viewing it as a source of opportunity rather than anxiety—is a primary determinant of the intention to start a business. The authors argued that risk attitude is a malleable psychological construct that can be influenced by education, suggesting that the low rate of new venture creation in certain demographics is linked to a "risk-negative" educational culture that prioritizes security over autonomy.

In their study regarding the internationalization of small and medium-sized enterprises (SME), **Ramezani and Khazaei (2020)** operationalized risk appetite through the dimension of "Entry Mode," distinguishing between risk-averse and risk-taking strategies as fundamental components of SME global expansion. The authors identified that SME willingness to tolerate risk dictates its market entry mechanism; "risk-averse" firms tend to prefer indirect or direct exporting which requires minimal resource commitment, whereas "risk-taking" firms opt for high-commitment modes such as joint ventures, mergers and acquisitions, or greenfield investments. The study further synthesized these behaviors into comprehensive strategic profiles, labeling high-risk-appetite firms as "Technology-Oriented Aggressors" or "Growth Pursuer Customer-Oriented Groups"—entities that combine aggressive extension patterns with a willingness to accept uncertainty to achieve rapid market penetration. Conversely, firms with low-risk appetite were categorized as "Thrifty Conservatives" or "Niche Differentiated Groups," prioritizing standardization and cost reduction to mitigate the financial exposure associated with international operations.

Chakraborty and Das (2019) investigated the critical role of the insurance sector in fortifying the sustainability of Micro, Small, and Medium Enterprises (MSME) in India. Identifying that MSME are disproportionately vulnerable to financial, managerial, and environmental risks due to limited resources, the authors argued that insurance serves not merely as a protective buffer against catastrophic losses but as a strategic enabler that enhances creditworthiness. The study posits that by transferring risk through instruments such as property and business interruption insurance, MSME become more attractive to financial intermediaries, thereby reducing the prevalence of credit rationing. Consequently, the authors recommend that policymakers and

lenders integrate insurance coverage as a prerequisite for financing to foster a stable, "shock-proof" entrepreneurial ecosystem that encourages innovation.

Gutierrez et al. (2020) experimentally investigated the nuance between risk attitude (dealing with known probabilities) and ambiguity attitude (dealing with unknown probabilities) in the context of market entry decisions. Using an incentivized experimental design that isolated these variables, the study found that entrepreneurs are not necessarily more risk-tolerant than the general population but are significantly less ambiguity-averse, a trait strongly correlated with overconfidence. The authors argued that the defining characteristic of the entrepreneurial "risk appetite" is actually a comfort with the unknowable, driven by a belief in one's ability to influence outcomes, which effectively reduces perceived ambiguity to manageable risk.

Hanggraeni et al. (2019) examined the impact of Enterprise Risk Management (ERM) on SME performance. They argued that defining risk appetite is a prerequisite for value creation. The study found a positive correlation between the maturity of ERM practices (which include explicit risk appetite definitions) and firm performance. The authors posited that MSME that formally define what risks they are willing to accept are better positioned to transfer the "excess" risk to insurers, leading to more efficient capital allocation.

Ajemunigbohun and Adeoye (2018) critically reviewed the risk management landscape within developing economies, identifying a significant deficiency in the techniques employed by SME. The study highlighted that the absence of structured insurance literacy programs and well-defined risk appetite frameworks severely impedes the ability of these enterprises to identify, evaluate, and mitigate risks effectively. The authors argued that this operational incapacity to manage uncertainty directly diminishes the survival capacity of SME, pointing to a critical gap between the theoretical concepts of risk appetite and the practical realities faced by operators in the sector.

Zhang et al. (2018) investigated the determinants of risk appetite within the hospitality sector, identifying it as a pivotal element of strategic decision-making. The study found that organizational risk appetite is shaped by a complex interplay of

factors, including board composition, corporate culture, and external competitive pressures. The authors noted that while risk appetite is inherent in every company, the conscious evaluation and articulation of it remain a significant challenge for leadership. This contribution is particularly valuable for isolating the organizational antecedents of risk behavior in service-oriented industries.

Markowska et al. (2018) investigated the formation of strategic orientations among nascent entrepreneurs, specifically contrasting "prediction-oriented" (causal) approaches with "risk-oriented" (effectual) approaches. Using a longitudinal dataset of startups, the study found that successful nascent entrepreneurs often adopt an "affordable loss" risk orientation—focusing on what they can afford to lose rather than predicting potential returns—which allows them to navigate high uncertainty without engaging in reckless gambling. The authors argued that this distinct form of risk appetite, rooted in the logic of effectuation, is a critical survival mechanism in the early stages of a venture, enabling flexibility and iterative learning that rigid, goal-oriented risk models often stifle.

Adeyele and Omorokunwa (2017) applied reliability theory—a framework traditionally used in engineering and medical sciences—to model the survival patterns of Micro, Small, and Medium Enterprises (MSME) in Nigeria. By analyzing data from 209 enterprises in Lagos and Benin City, the study examined how "risk appetite," defined as the organization's response to risk exposure, influences business continuity. The empirical findings revealed a high failure rate within the first five years of operation, with survival chances diminishing significantly as years increase without adequate mitigation. Although the regression analysis indicated that risk financing strategies had a positive but statistically insignificant effect on immediate survival, the authors argued that proactive risk mitigation, such as insurance, is essential for avoiding total business discontinuity compared to reactive measures like treating losses as running expenses.

Adeyele and Omorokunwa (2017) explored the strategic application of risk appetite among Nigerian firms, revealing that the concept is frequently treated as an abstract theoretical subject rather than a pragmatic decision-making tool. The research

indicated that a majority of organizations fail to integrate risk appetite frameworks into their daily operational routines, leading to a disconnect between strategic objectives and actual risk-taking behavior. The authors emphasized that for risk appetite to be effective, it must clearly define the scope of operations and be actively embraced to guide the pursuit of business objectives, underscoring a significant implementation gap in the sector.

Sifumba et al. (2017) offered a critical perspective on risk governance, suggesting that overly rigid or poorly designed risk management practices can detrimentally impact SME performance. The study argued that an excessive reliance on cautionary measures might lead to an "impoverishment of the conception of risk appetite," where firms miss out on valuable opportunities due to risk aversion. The authors contended that risk management should evolve beyond mere hazard avoidance to encompass strategic risk-taking, warning against frameworks that stifle innovation and growth through excessive controls.

Addressing the lack of suitable project management standards for smaller organizations, **Marcelino-Sádaba et al. (2014)** designed and validated a specific project risk management methodology for SME based on extensive fieldwork with Spanish companies. Their research identified that small firms frequently neglect the strategic definition phase and the final closure phase of projects, which are critical for success. Consequently, they proposed a practical framework utilising simple tools like checklists and Failure Mode and Effects Analysis (FMEA) to help non-expert managers align projects with company strategy and effectively document lessons learned.

Richter et al. (2014) leveraged the Expected Utility Theory to elucidate the behavioral underpinnings of risk acceptability among individual SME operators. The study established that risk appetite is intrinsically linked to the behavioral patterns of individual agents, rather than being solely a corporate construct. Furthermore, the authors explained that insurance mechanisms support risk appetite by facilitating the transfer of specific hazards, which in turn frees up the firm's capacity to engage in

other necessary business risks. This research provides a crucial theoretical link between micro-level behavioral economics and firm-level strategic risk management.

2.2.4 Studies of Sustainability of MSME

This section reviews 15 studies that enumerate the concept of Sustainability dimensions to the MSME. Table 2.4 list out various literatures appended with the summary of each literature showing the relevance of sustainability.

Table 2.4

Literature on Sustainability of MSME

SI No	Title	Journal Name	Year
1	Sustainable strategy and fintech integration for MSMEs	International Journal of Sustainable Agricultural Management	2024
2	A bibliometric analysis of sustainability in MSME.	Involvement International Journal of Business	2024
3	CSR in MSMEs: A systematic literature review and future research agenda	Paper ASIA	2024
4	The effect of technology adaptation and government financial support on sustainable performance of MSMEs during the COVID-19 pandemic	Cogent Business & Management	2023
5	Green innovation in small and medium-sized enterprises (SMEs): A qualitative approach	Sustainability	2023
6	The impact of insurance literacy on the sustainable performance of SMEs in Nigeria	Asia-Pacific Management Accounting Journal	2022
7	Empowering MSMEs through financial literacy and management skills	ICEB	2022
8	Barriers to the adoption of circular economy practices in micro, small and medium enterprises: Instrument development, measurement and validation.	Journal of Cleaner Production	2022

SI No	Title	Journal Name	Year
9	Evaluating decision making in sustainable project selection between literature and practice	Sustainability	2021
10	Determinants of the transition towards circular economy in SMEs: A sustainable supply chain management perspective.	International Journal of Production Economics	2021
11	Economic business sustainability and strengthening human resource capacity based on increasing the productivity of small and medium enterprises (SMEs) in Makassar City, Indonesia.	Sustainability	2021
12	Sustainable manufacturing practices, competitive capabilities, and sustainable performance: Moderating role of environmental regulations.	Sustainability	2021
13	Circular economy to enhance sustainability of small and medium-sized enterprises	Business Strategy and the Environment	2020
14	Determinants for integration of sustainability with innovation for Indian manufacturing enterprises: Empirical evidence in MSMEs.	Journal of Cleaner Production	2019
15	Corporate sustainability in small and medium-sized enterprises: A literature analysis and road ahead	Journal of Indian Business Research	2019

Source: Literature from various articles and theses compiled by the researcher

Pradnyani et al. (2024) presented a holistic model for MSME sustainability in Bali, examining the synergistic effects of financial technology, literacy, and inclusion. The empirical findings demonstrated that the integration of these financial dimensions positively influences sustainable business strategies, which encompass regulatory compliance and environmental responsibility. The authors emphasized that MSME to achieve long-term viability, they must align their financial capabilities with a broader strategic vision which includes technological adoption and ethical practices.

Patel and Singh (2024) conducted a comprehensive bibliometric analysis to map the trajectory of academic research regarding sustainability within the Micro, Small, and

Medium Enterprise (MSME) sector. By scrutinizing 85 documents indexed in the Scopus database between 2014 and 2024, the study identified a significant upward trend in scientific production, culminating in a peak in 2023, which reflects the growing global urgency of the topic. The analysis uncovered robust collaborative networks and highlighted strong research ties between India and various other nations. The authors emphasized that this surge in scholarly attention underscores the critical importance of integrating sustainable practices into MSME operations for long-term success, providing a meta-level perspective on the field's current state and future research directions.

Nustini et al. (2024) conducted a systematic literature review to map the landscape of Corporate Social Responsibility (CSR) within Micro, Small, and Medium Enterprises (MSME), identifying it as a pivotal driver for broader organizational sustainability. The study synthesized findings to distinguish the unique internal and external determinants of CSR in smaller firms, noting that unlike large corporations, MSME engagement is often informal and deeply rooted in the owner's personal values and connection to the local community. The authors highlighted that integrating CSR into core business strategies allows MSME to build social capital and enhance reputation, which are critical assets for survival in competitive markets. The research concludes that fostering sustainability in this sector requires moving beyond voluntary compliance to a strategic model where social and environmental responsibilities are seen as integral to long-term economic viability and innovation.

Kurniawan and Iskandar (2023) investigated the determinants of organizational resilience during the global COVID-19 crisis, specifically analyzing the dual impact of technology adaptation and government financial assistance on the sustainable performance of MSME. The study established that the ability to swiftly integrate digital tools into core business operations was a decisive factor in ensuring business continuity and survival amidst pandemic-induced disruptions. Furthermore, the authors demonstrated that external financial support provided by the government acted as a critical buffer, enabling these enterprises to maintain necessary liquidity and operational stability. The research concludes that a synergistic approach combining internal technological agility with robust external policy support which is

essential for fostering long-term sustainability in the MSME sector during periods of severe economic uncertainty.

Rodrigues and Franco (2023) extended the research on environmental management to the specific context of small and medium-sized enterprises (SME), focusing on the drivers and implementation of green innovation. Adopting a qualitative approach through interviews with SME managers, the study found that green innovation in these smaller entities is often reactive, driven largely by compliance with environmental regulations and the desire to reduce costs rather than proactive strategic intent. The authors argued that unlike large corporations, SME lack the specialized resources for formal R&D, yet they can achieve significant sustainability outcomes by embedding environmental strategies directly into their operational routines, suggesting that policy support should focus on practical, process-oriented innovations rather than high-tech solutions.

Garba et al. (2022) investigated the cognitive determinants of business resilience, focusing on the impact of insurance literacy on the sustainable performance of Nigerian SME. The study revealed that a deep understanding of insurance principles and a high perception of its benefits are significant predictors of both economic and social sustainability. The authors argued that insurance literacy empowers SME owners to make prudent, risk-based decisions that prevent operational disruptions, thereby linking cognitive financial skills directly to the broader construct of organizational sustainability.

Sara (2022) employed a mixed-method research design, integrating surveys, in-depth interviews, and case studies, to evaluate strategies for enhancing financial literacy and management acumen among MSME owners. The study assessed the existing landscape of financial skills across diverse sectors and identified that generic training models often fail to address the specific, nuanced needs of small businesses. The findings revealed that customized educational interventions, such as interactive workshops and targeted mentorship schemes, yielded significantly better results in augmenting financial competencies than standard programs. The author argued that empowering MSME requires a strategic pivot from broad-based education to tailored,

practical interventions that directly unlock their potential for sustainable economic growth and improved business performance.

Mishra, R., Singh, R. K., & Govindan, K. (2022) investigated the impediments to adopting circular economy (CE) practices within the MSME sector, proposing a framework to prioritize these barriers based on their severity. Using a systematic review and expert analysis, the study identified that financial constraints and a lack of investment support are the most critical barriers, often exacerbating other challenges like inadequate infrastructure and limited technical knowledge. The authors reasoned that because MSME operate with thin margins, they view the transition to circular models as a high-risk financial burden, implying that without targeted financial incentives and risk-sharing mechanisms from the government, the shift toward circular sustainability will remain stagnant.

Alyamani et al. (2021) critically evaluated the decision-making processes governing sustainable project selection, highlighting a significant divergence between theoretical frameworks proposed in academic literature and the actual practices employed by industry professionals. By conducting a comparative analysis, the study revealed that while academia emphasizes complex, multi-criteria decision-making models to balance economic, environmental, and social goals, practitioners often rely on more intuitive or simplified financial metrics due to the practical difficulty of implementing theoretical models. The authors argued that for organizations to truly achieve long-term sustainability, there must be a convergence where practical tools are developed that incorporate sustainability criteria without being operationally burdensome. This finding is particularly relevant for MSME sustainability, suggesting that smaller enterprises require tailored, accessible decision-support systems to effectively integrate sustainable development goals into their project portfolios without overwhelming their limited managerial resources.

Centobelli et al. (2021) explored the determinants facilitating the transition toward a circular economy in SME, specifically examining the role of supply chain relationships. Surveying over 200 SME, the research revealed that environmental commitment and green economic incentives significantly positively impact

sustainable supply chain design and relationship management. The authors concluded that internal motivation alone is insufficient for circularity; instead, MSME require a supportive ecosystem where economic incentives align with environmental goals, arguing that sustainability in this sector is fundamentally a network-dependent capability rather than an isolated firm-level attribute.

Hernita et al. (2021) examined the determinants of economic sustainability in small and medium enterprises (SME) in Makassar City, Indonesia, focusing specifically on the critical role of human resource (HR) capacity and productivity. Utilizing a sequential explanatory design that combined qualitative observations with quantitative surveys of 350 SME owners, the study identified that the productivity of these firms is significantly hindered by low HR competence, limited mastery of technology, and a lack of business diversification. The researchers found that strengthening HR capacity—through improved education, skills, and managerial ability—serves as a primary driver for increasing business productivity, which in turn acts as a catalyst for labor absorption and economic stability. The study concluded that for SME to achieve long-term sustainability ($R^2 = 72.3\%$), they require integrated government policy support that not only enhances human capital but also facilitates access to technology and capital, thereby enabling a shift from traditional management to more innovative, technology-driven business models.

Ali, Chen, and Hao (2021) investigated the relationship between sustainable manufacturing practices (SMPs) and the sustainable performance of manufacturing SME in China, drawing on the natural-resource-based view (NRBV) of the firm. Based on data collected from 288 SME, the study employed structural equation modeling to demonstrate that adopting SMP directly enhances sustainable performance and indirectly influences it by building competitive capabilities in product cost, quality, flexibility, and delivery. Furthermore, the authors identified a significant moderating effect of environmental regulations, revealing that the positive impact of SMPs on performance is strengthened when firms adhere to government environmental mandates. The findings suggest that compliance with regulations should not be viewed merely as a cost burden but as a strategic enabler that, when

combined with sustainable practices, allows SME to gain distinct competitive advantages and achieve superior economic, social, and environmental outcomes.

Dey et al. (2020) addressed the operational integration of circular economy principles to enhance the sustainability performance of SME. Through a mixed-methods study involving surveys and case studies in the UK, the researchers found that while all circular economy fields of action (take, make, distribute, use, recover) correlated with economic performance, only the "make" and "use" phases showed significant links to environmental and social benefits. The authors posited that SME tend to prioritize circular practices that yield immediate operational efficiencies, arguing that achieving comprehensive sustainability requires a strategic shift to value the "recover" and "distribute" phases, which are currently underutilized due to a lack of reverse logistics capabilities.

Khurana, Haleem, and Mannan (2019) investigated the integration of sustainability with innovation capabilities in the context of manufacturing MSME in developing economies. Using structural equation modeling, the study demonstrated that top management support and a flexible organizational culture are the primary internal drivers that enable the successful fusion of sustainability into innovation processes. The authors contended that technology acquisition is secondary to soft skills; they argued that without a leadership mindset that explicitly values sustainable outcomes, MSME fail to leverage innovation for environmental and social gain, calling for management training programs that link innovation directly to sustainability goals.

Das, Krish, and Dutta (2019) conducted a systematic meta-analysis of peer-reviewed literature published between 1985 and 2016 to evaluate the current state of corporate sustainability practices within small and medium-sized enterprises (SME), specifically focusing on the context of Asian emerging markets. Utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology, the authors identify a distinct disparity in sustainability adoption between large corporations and SME, noting that the latter often neglect critical social and environmental responsibilities. The study proposes a conceptual framework suggesting that factors such as government policy, collaborative operational modes,

and a supportive organizational culture can positively influence SME sustainability and subsequent financial performance. However, the authors highlight that existing research is predominantly qualitative and lacks robust empirical evidence; consequently, their proposed model validated only by a limited pilot study of 20 SME requires further quantitative testing across diverse industrial clusters to effectively guide the sector toward sustainable development.

2.2.5 Studies of Perceived Benefits of Insurance

Perceived Benefits refer to the tangible and intangible value that MSME owners attribute to insurance products for the business continuity, financial protection and strategic ability. This section reviews 11 studies that explore Perceived Benefits of Insurance.

Table 2.5

Literature on Perceived Benefits of Insurance

SI No	Title	Journal Name	Year
1	Impact of consumer perceived benefit and risk towards the purchase intention of life insurance products with consumer perceived fear as a mediating variable on Bank Jatim Jember branch	Journal of Innovations in Business and Industry	2024
2	The influence of perceived benefits, financial literacy, and demographics on health insurance purchase intention by Gen Z which is mediated by attitude.	Return: Study of Management, Economic and Business	2024
3	Cybersecurity, cyber insurance and small-to-medium-sized enterprises: A systematic review.	Information and Computer Security	2024
4	Effectiveness of insurance coverage in managing business interruption risks in Morocco	International Journal of Modern Risk Management	2024
5	Financial literacy and sustainability in SMEs: Do financial risk attitude, access to finance, and organizational risk-taking tolerance mediate?	Asian Economic and Financial Review	2024

SI No	Title	Journal Name	Year
6	Perceptions of the benefits of the basic medical insurance system among the insured: Mixed methods research of a northern city in China	Frontiers in Public Health	2023
7	The influence of perceived benefit, customer trust, service quality, and price perception on customer satisfaction and repurchase intention on Cigna Insurance	International Journal of Creative Research Thoughts	2023
8	Determinants of insurance uptake among selected small and medium scale enterprises in Lagos State, Nigeria.	International Journal of Innovative Research in Accounting and Sustainability	2023
9	Insurance uptake among small and medium-sized tourism and hospitality enterprises	Tourism Management Perspectives	2020
10	Insurance uptake among SMEs in Ghana and factors that influence SMEs demand for insurance products in Ghana.	Indo-Asian Journal of Finance and Accounting	2020
11	Self-efficacy in insurance decision making among older adults.	The American Journal of Managed Care	2015

Source: Literature from various articles and theses compiled by the researcher

Adriko and Nurse (2024) conducted a systematic review of the intersection between cybersecurity, cyber insurance, and SME emphasizing the value proposition of insurance in the digital age. The authors identified that the perceived benefits of cyber insurance of SME extend beyond financial compensation to include access to expert incident response services and legal guidance, which are otherwise unaffordable for small firms. However, they noted a critical gap: the complexity of policy language often obscures these benefits, leading to low uptake. The study argues that to enhance the perceived value, insurers must bundle coverage with proactive security services, effectively positioning insurance not just as a risk transfer mechanism but as a comprehensive cybersecurity resilience tool.

Darwin and Gularso (2024) identified perceived benefit as the strongest predictor of Generation Z's attitude towards health insurance in the Greater Jakarta area, which

subsequently mediates their purchase intention. The research highlighted that for this demographic, perceived benefit is conceptualized as a belief in the provider's honesty and the expectation that the insurance will effectively act as a safety net without opportunistic behavior from the insurer. The study's structural equation modeling results confirmed that a positive perception of these benefits significantly enhances Gen Z's attitude, which is the primary driver of their interest in buying insurance. The findings imply that to capture the youth market, insurance providers must emphasize the practical and protective utility of their products, as high perceived value directly translates into a positive disposition and a higher likelihood of purchase behavior.

In a study examining life insurance purchasing behaviours at Bank **Jatim**, **Imaddudin, Suroso, and Sudaryanto (2024)** tested the role of perceived benefits alongside risk and fear, yielding a counterintuitive finding where perceived benefits did not significantly influence consumer concerns or purchase intentions. Despite the theoretical expectation that a strong belief in positive rewards would drive purchasing decisions, the empirical results showed that risk perception was the dominant factor, significantly increasing both consumer worry and purchase intention. The authors argued that while perceived benefits (such as investment value and protection) are theoretically important, they failed to act as a strong enough predictor to override the influence of risk perception in this specific context. This suggests that for certain market segments or products, the mere presentation of benefits is insufficient to trigger a purchase if the underlying risks or consumer anxieties are not adequately addressed.

Naciri (2024) investigated the effectiveness of insurance coverage in managing business interruption risks, a critical concern for MSME in the post-pandemic era. Using a mixed-methods approach involving surveys of Moroccan businesses, the study found that firms with comprehensive business interruption coverage reported a 40% reduction in financial losses and significantly faster recovery times compared to uninsured peers. The author highlighted that the perceived benefit of insurance is strongest when policies are tailored to specific environmental risks rather than generic "one-size-fits-all" products. The findings suggest that the tangible benefit of insurance

lies in its ability to ensure business continuity, allowing MSME to survive operational shocks that would otherwise lead to insolvency.

Masdupi, Firman, Rasyid, and Darni (2024) investigated the role of financial literacy in the sustainability of SME in West Sumatra, Indonesia, positing that financial knowledge enables entrepreneurs to perceive the benefits of risk management tools, including the purchase of business insurance. The study found that financial literacy significantly improves an SME manager's "financial risk attitude," which dictates their willingness to invest in instruments that mitigate uncertainty and ensure long-term survival. The authors argued that a key benefit of this literacy is the cognitive ability to assess the need for insurance and maintaining financial reserves, thereby allowing the firm to control risks effectively in volatile economic environments. By establishing a structural model, the research demonstrated that the perceived value of financial risk management (influenced by literacy) directly contributes to organizational resilience and sustainability, validating the resource-based view that knowledge-based resources are critical for navigating business crises.

Zusrina and Indrajaya (2023) investigated the determinants of customer retention for Cigna Insurance in South Jakarta, explicitly identifying perceived benefit as a critical driver of both customer satisfaction and repurchase intention. Defining perceived benefit as the total functional and non-functional advantages received—ranging from feelings of security to specific financial rewards—the study demonstrated that when customers feel confident about the benefits they receive, their anxiety regarding future risks is reduced. The statistical analysis using Partial Least Squares (PLS) revealed a positive and significant path coefficient between perceived benefits and customer satisfaction, as well as a direct significant effect on repurchase intention. These findings suggest that for insurance products, the tangible and intangible value propositions (such as peace of mind and ease of access) are fundamental to building the trust and satisfaction necessary to ensure policyholders renew their coverage in a competitive market.

In an analysis of the basic medical insurance system (BMIS) in Harbin, China, **Wang et al. (2023)** explored the construct of "perceptions of benefits" (PBBMI) not merely

as a measure of satisfaction, but as a multidimensional evaluation of the system's utility, fairness, and financial protection. The study found that nearly 44% of the insured population reported low perceptions of benefits, a sentiment significantly driven by the financial burden of daily drug purchases and the convenience of medical treatment. The authors established that perceived benefits are negatively correlated with the gap between the insured's expectations—such as fully reimbursed hospitalization or stable participation costs—and the actual system performance. Furthermore, the research highlighted those subjective cognitive biases, such as relying on anecdotal evidence from social circles or misunderstanding policy information, can severely diminish an individual's perception of the insurance's value, suggesting that raising the perceived benefit requires both structural policy improvements and better information dissemination to correct cognitive biases.

Dansu and Olubusade (2023) explored the determinants of insurance uptake among 191 SME in Lagos State, Nigeria, identifying the level of education of SME owners as a critical demographic factor that shapes the perceived need and benefit of insurance coverage. The study argued that education acts as a catalyst for "insurance need awareness," enhancing an entrepreneur's ability to make objective purchase decisions and perceive insurance not just as a cost, but as a beneficial mechanism for risk transfer and business success. The findings indicated a strong positive relationship between the owner's educational level and insurance uptake, suggesting that educated owners are better equipped to understand the value proposition of insurance in protecting assets and facilitating access to finance. The authors recommended that to improve the perceived benefits among less educated owners, stakeholders must intensify insurance education programs that equip entrepreneurs with the requisite skills to understand insurance as a vital risk treatment technique rather than a mere regulatory burden.

Dayour et al. (2020) identified "perceived benefits" as a key determinant of insurance uptake among tourism enterprises. The study found that firms that perceived insurance as a tool for risk transfer and financial security were more likely to subscribe. However, the authors noted that negative perceptions regarding claims payments

could negate these benefits. The study highlights the fragility of perceived benefits in the face of poor service delivery.

Musah and Duker (2020) examined the factors influencing insurance demand among 384 SME in Accra, Ghana, focusing on the variable of "expectations," which they defined as the SME owners' perception of trust and the potential benefits that would accrue in the event of a disaster. The study revealed a statistically significant positive association between these expectations (perceived benefits) and the demand for insurance products, noting that SME are more likely to subscribe to policies when they trust that claims will be paid promptly and that the coverage provides genuine risk mitigation. The authors found that while 72% of respondents had some form of insurance, a disconnect remained where many owners acknowledged the general benefits of insurance but failed to apply it to their specific business risks, often viewing it merely as a legal requirement rather than a strategic benefit. The research suggests that enhancing the perceived benefit requires nodal agencies and industry associations to actively educate members on how insurance specifically secures business assets against natural disasters and operational shocks.

While focusing primarily on decision-making self-efficacy among older adults, **Kan, Barnes, Hanoch, and Federman (2015)** provided insight into how the perception of insurance benefits is mediated by an individual's ability to navigate complex options. The study found that beneficiaries with lower self-efficacy often correlated with lower health literacy and poorer health status. They were less confident that their chosen insurance coverage was optimal for their needs, essentially diminishing the perceived benefit of their selection. The authors noted that the complexity of choosing among numerous Medicare Part D plans could obscure the actual benefits of a plan, leading many older adults to prefer delegating the decision to others. Consequently, the perception of obtaining the "right" or beneficial coverage is heavily dependent on the availability of trusted social support and the individual's knowledge, implying that perceived benefit in this context is less about the product's intrinsic features and more about the consumer's confidence that the product matches their personal health requirements.

2.3 Research Gap

The research gap for the current study was identified through a comprehensive review of the literature presented above. The researcher extracted relevant literature through PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis). Then reviews were arranged according to the constructs of the study. By critically analysing, the researcher is identified the following research gap.

1. Most research focuses on Insurance Awareness and general Financial Literacy, with limited attention paid to the specific dimensions of Insurance Literacy (Knowledge, Skills, Attitude, Behaviour) and how they distinctively impact MSME decision-making.
2. There is a scarcity of research dissecting the multidimensional construct of Insurance Literacy and its interconnection to the Risk Appetite specifically within the MSME ecosystem of Kerala.
3. The consequential impact of insurance on entrepreneurial behaviour is unexplored. Specifically, the theoretical proposition that insurance acts as a "catalyst" for enhancing Risk Appetite (willingness to take calculated risks for growth) lacks empirical validation in the Indian context.
4. There is limited evidence linking Insurance Literacy directly to long-term Business Sustainability of MSME.
5. The link between perceived benefits of insurance and actual uptake is often assumed but rarely tested against competing priorities in resource-constrained MSME.
6. There is limited research integrating the factors of Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived benefits of Insurance into a single framework to explain the catalyst role of Insurance in emerging economies like India, where unique socio-economic factors play a role.

7. There is insufficient comparative analysis on how the interrelationships between Literacy, Risk Appetite, and Sustainability differ across Micro, Small, and Medium venture categories

2.4 Conclusion

This chapter provided a comprehensive review of previous research conducted by various scholars within the realms of insurance and MSME. Initially, 152 studies were identified, from which 97 pertinent studies were selected and categorized into five key constructs. The review highlighted the critical roles of Insurance Awareness, dimensions of Insurance Literacy, Risk Appetite, MSME sustainability and the Perceived Benefits of Insurance. Consequently, this study addresses the identified gaps by developing and testing a comprehensive structural model linking insurance literacy, risk appetite, perceived benefits, and sustainability among MSME in Kerala.

Chapter 3

MSME AND THEORETICAL FRAMEWORK

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3.1 Introduction

The contemporary economic discourse surrounding development economics places the Micro, Small, and Medium Enterprises (MSME) sector at the epicenter of sustainable growth strategies (Ayyagari, Beck, & Demirguc-Kunt, 2007). Often eulogized as the "backbone" of the global economy, this sector accounts for approximately 90% of all businesses and contributes to more than 50% of employment worldwide (World Bank, 2022). In the context of emerging economies like India, and specifically within the sub-national context of Kerala, the MSME sector transcends its economic function to become a pivotal instrument of social engineering, regional equity, and poverty alleviation (Kerala State Planning Board, 2023). However, this critical sector operates in a precipitous environment characterized by high vulnerability to external shocks, financial fragility, and a persistent "missing middle" phenomenon where enterprises struggle to graduate from micro to medium scales due to structural impediments (Hsieh & Olken, 2014).

This chapter establishes a comprehensive theoretical framework to analyse the symbiotic relationship between Insurance Literacy and Awareness, entrepreneurial Risk Appetite, and the long-term Sustainability of MSME with a specific focus on the socio-economic landscape of Kerala. The primary objective of the current research is to move beyond the traditional view of insurance as a passive risk transfer tool and instead position it as a strategic catalyst that fundamentally alters the decision-making calculus of entrepreneurs. By mitigating the downside variance of business outcomes, financial protection tools theoretically enable entrepreneurs to assume the calculated risks necessary for innovation, expansion, and competitive advantage.

The analysis is situated within the unique socio-economic landscape of Kerala, a state characterized by high human development indices yet paradoxically high unemployment rates and a heavy reliance on the service sector and remittances (Centre for Development Studies, 2022). The recent state-led initiative, "Year of Enterprises," which facilitated the registration of over 200,000 new units, provides a fertile empirical ground to test these theoretical constructs (Government of Kerala, 2023). This chapter will rigorously examine the Concept of MSME, MSME Statistics, Domestic MSME Ecosystem, Insurance Literacy, Insurance Products for Indian MSME Sector, Risk Appetite, Sustainability of MSME, Perceived Benefits of Insurance and the empirical relationship between Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits.

3.2 Concept of Micro, Small, and Medium Enterprises (MSME)

Universally MSME acknowledged as the backbone of the world economy, representing the most growing and dynamic sector in terms of income generation, innovation, employment generation and poverty alleviation. However, they operate in a distinct environment characterised by resource constraints and heightened vulnerability to external shocks compared to large scale organisations. Understanding the definition of MSME and its categorization are crucial to analyse and interpret the studies based on it

3.2.1 Definitions and Classifications: A Global and National Perspective

The definition of MSME is not static; it varies significantly across jurisdictions, influenced by the economic maturity, population density, and policy objectives of different nations. These definitions typically pivot around quantitative metrics such as capital investment in assets, annual turnover, and employment headcount.

Global Definitions

Globally, organizations like the World Bank and the International Finance Corporation (IFC) utilize a multi-variable approach to define this sector. The IFC defines an enterprise as an MSME if it meets two out of three criteria regarding employees, total

assets, and annual sales. This flexibility allows for a more holistic categorization that accounts for labour-intensive vs. capital-intensive industries.

International Finance Corporation defines an enterprise qualifies as a micro, small or medium enterprise if it meets two out of three criteria of the IFC MSME Definition (employees, assets and sales), or if the loan to it falls within the relevant MSME loan size proxy.

Table 3.1

World Bank Definition of MSME

Indicator	IFC MSME Definition			MSME Loan Size Proxy
	Employees	Total Assets US\$	Annual Sales US\$	Loan Size at Origination
Micro Enterprise	< 10	<\$100,000	<\$100,000	<\$10,000
Small Enterprise	10 - 49	\$100,000 - \$3 million	\$100,000 - \$3 million	<\$100,000
Medium enterprise	50 - 300	\$3 million - \$15 million	\$3 million - \$15 million	<\$1 or \$2 million *

- US\$2 million for more advanced countries including: Argentina, Brazil, Chile, China, Colombia, India, Korea, Mexico, Morocco, Peru, Russia, South Africa, Thailand, Tunisia, Turkey, and all EU accession countries—Poland, Hungary, Czech Republic, the Baltics and Slovenia.

Source : International Financial Corporation

As per the above definition A micro-enterprise is defined as having fewer than 10 employees, assets and sales less than USD 1,00,000 or the loan size of the organisation less than USD 10,000. A small enterprise ranges from 10 to 49 employees, with assets and sales between USD 1,00,000 and USD 3 million or the loan size of the organisation less than USD 1,00,000. Medium enterprises scale up to 300 employees with assets/sales up to USD 15 million or the loan size of the organisation less than USD one or two million as the case may be.

The Indian Context: Evolution of the Definition

In India, the definition has undergone a paradigm shift to align with the changing economic landscape and to remove the "fear of growth" that historically prevented enterprises from scaling up due to the potential loss of government benefits. Prior to 2020, the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006, classified enterprises solely based on investment in plant and machinery, creating a dichotomy between manufacturing and service sectors. This old definition often discouraged transparency and modernization, as investing in new technology could inadvertently push a unit out of the 'Small' category into 'Medium' or 'Large,' thereby losing priority sector lending benefits.

To facilitate ease of doing business and reflect the true scale of operations in an inflationary environment, the Government of India revised the definition via Gazette Notification S.O. 2119(E) dated June 26, 2020, effective from July 1, 2020. The new classification adopts a composite criterion of Investment and Turnover, significantly raising the ceilings and eliminating the distinction between manufacturing and services. This unification acknowledges that the service sector is a critical growth engine and faces similar capital challenges as manufacturing.

Recognising that static thresholds suffer from "bracket creep" in high-inflation environments, and aiming to integrate MSME into the \$5 trillion economy roadmap, the Union Budget 2025-26 changed substantial enhancements to these limits, effective from April 1, 2025 (Ministry of Finance, 2025). This shift represented a major recalibration rather than a minor adjustment. By increasing investment limits by 2.5 times and doubling turnover limits, the revision aims to broaden the MSME ambit. This allows larger firms to retain access to credit guarantee schemes, mitigating the "cliff edge" effect where growing firms lose support abruptly.

Table 3.2*Definition of MSME - Pre and post 01.04.2025 (₹ in Crore)*

Category	Investment (Not exceeding)		Turnover (Not exceeding)	
	(From 1.7.2020 to 31.3.2025)	(1.4.2025 onwards)	(From 1.7.2020 to 31.3.2025)	(1.4.2025 onwards)
Micro	1	2.5	5	10
Small	10	25	50	100
Medium	50	125	250	500

Source : Ministry of MSME, Government of India

As per the above latest definition from Ministry of MSME, Government of India, an enterprise shall be classified as a micro, small or medium enterprise on the basis of the following criteria, namely: --

- A micro enterprise, where the investment in plant and machinery or equipment does not exceed two crore fifty lakh rupees and turnover does not exceed ten crore rupees;
- A small enterprise, where the investment in plant and machinery or equipment does not exceed twenty-five crore rupees and turnover does not exceed one hundred crore rupees; and
- A medium enterprise, where the investment in plant and machinery or equipment does not exceed one hundred twenty-five crore rupees and turnover does not exceed five hundred crore rupees.

3.2.2 The 2020 Structural Reform and 2025 Expansion: Composite Criteria and Homogenization

In response to the economic exigencies posed by the COVID-19 pandemic and the strategic imperative to align with global standards, the Government of India initiated a paradigm shift with the Atmanirbhar Bharat package in 2020. This structural transformation was further consolidated and expanded by the amendments in the Union Budget 2025-26, effective April 1, 2025. Together, these regulatory

interventions introduced three critical changes that fundamentally altered the theoretical landscape of MSME classification:

Composite Criteria and Enhanced Thresholds: The regulatory framework abandoned the sole reliance on investment, adopting a composite criterion that requires firms to meet thresholds for both Investment in Plant and Machinery/Equipment and Annual Turnover. While the 2020 notification established this dual-metric structure, the 2025 revision significantly recalibrated the limits to address inflation and encourage scalability. The new definition theoretically aligns with a firm's market footprint and asset base by expanding the "Medium" category to include enterprises with investment up to ₹125 crore and turnover up to ₹500 crore (Ministry of Finance, 2025). This shift provides a more robust proxy for size and risk capacity, mitigating the "cliff-edge" effect where growing firms previously lost benefits too early in their lifecycle (Union Bank of India, 2025).

Sectoral Parity: The artificial distinction between Manufacturing and Service sectors was eliminated in 2020 and maintained under the 2025 revisions. Both sectors are subject to the same enhanced investment and turnover limits. This homogenization is particularly significant for Kerala, a service-dominated economy, as it allows service enterprises (e.g., tourism, healthcare, IT) to scale up to the new 2025 limits (e.g., ₹100 crore turnover for Small enterprises) without losing MSME status. This parity acknowledges that modern service enterprises often require infrastructure investment comparable to manufacturing units (Ministry of MSME, 2024).

Exclusion of Exports: Perhaps the most theoretically significant feature, retained and amplified by the scale of the 2025 revisions, is the exclusion of export turnover from the calculation of total turnover. The regulations explicitly state that "exports of goods or services or both, shall be excluded while calculating the turnover of any enterprise" (Ministry of MSME, 2020). This provision serves as a direct policy intervention to enhance Risk Appetite. By removing the penalty for export-led growth, the state encourages MSME to take the strategic risk of entering global markets. Under the 2025 framework, an enterprise can theoretically possess an export turnover far exceeding the ₹500 crore statutory limit; as long as its domestic turnover and

investment remain within the prescribed caps, it retains its MSME status (Ministry of Finance, 2025).

3.3 MSME Statistics

The statistical landscape of the Micro, Small, and Medium Enterprises (MSME) sector offers a compelling empirical basis for its designation as the "engine of global economic growth." Academically, the significance of this sector is not merely anecdotal but is grounded in robust macroeconomic indicators that highlight its role in decentralizing economic power and fostering inclusive development. Globally, the sector exhibits a pervasive presence, constituting approximately 90% of all business entities and accounting for 60% to 70% of total employment, thereby serving as the primary vehicle for income generation in both developed and emerging economies (World Bank, 2025). Furthermore, with a contribution of nearly 50% to the global Gross Domestic Product (GDP), the MSME sector effectively challenges the traditional corporate-centric narratives of economic dominance, validating the "Missing Middle" hypothesis where small enterprises drive substantial aggregate output (United Nations, 2024).

3.3.1 Global MSME Statistics: An Analysis of Unit Density and Distribution

Ubiquity and Economic Density From a macro-statistical perspective, the Micro, Small, and Medium Enterprise (MSME) sector constitutes the overwhelming majority of the global business landscape. According to the World Bank (2025) and the United Nations (2024), MSME represent approximately 90% of all business units worldwide. This density translates into a pivotal economic footprint, with these units accounting for 60% to 70% of total global employment and contributing approximately 50% to the Global Gross Domestic Product (GDP). Academically, this ubiquity challenges the traditional "corporate-centric" view of economics, suggesting that the atomic unit of the global economy is not the multinational corporation but the micro-enterprise.

A rigorous analysis of global MSME unit statistics requires a bifurcation between the "formal" and "informal" sectors, often described as the "invisible universe" of enterprises. The International Labour Organization (ILO, 2025) estimates that up to

80% of MSME operate within the informal economy, particularly in the Global South. This informality creates a statistical "Missing Middle," where official registries capture only a fraction of the actual economic activity. For instance, while formal registries might account for 400 million enterprises globally, the inclusion of informal micro-units pushes this figure significantly higher, creating a "shadow economy" that is critical for subsistence but disconnected from formal financial grids (IFC, 2017).

The spatial distribution of these units reveals a distinct concentration in emerging markets. Data from the International Finance Corporation (IFC) indicates that the highest density of MSME units is located in East Asia and the Pacific, followed by Sub-Saharan Africa. However, a "Unit-Productivity Paradox" exists: while developing economies possess a higher raw volume of micro-units, these units often suffer from low productivity and stunted growth compared to their counterparts in OECD nations. In advanced economies like the United States, roughly 34.8 million small businesses account for 99.9% of firms but are highly formalized and integrated into global value chains (ElectroIQ, 2025). Conversely, in developing regions, the high unit count is often driven by "survivalist entrepreneurship" rather than "opportunity entrepreneurship," leading to a fragmented landscape of millions of unscalable micro-enterprises.

3.3.2 Statistical Profile of the Indian MSME Sector

The contemporary statistical landscape of India's MSME sector, as evidenced by data from the Udyam Registration and Udyam Assist Platform (UAP), reveals a colossal industrial base of approximately 6.96 crore (6,95,64,288) enterprises. A structural analysis of this aggregate uncovers a distinct "pyramidal asymmetry" characterized by an overwhelming dominance of micro-enterprises. Specifically, registered Micro units under the formal Udyam protocol number 4.09 crore, while the integration of the informal sector through the UAP has added another 2.80 crore Informal Micro Enterprises (IMEs) to the official fold. This heavy concentration at the bottom reinforces the "Missing Middle" hypothesis, as the scalable "Small" and "Medium" segments represent a statistically minute fraction of the ecosystem. Only 4.82 lakh enterprises fall into the "Small" category, and a mere 36,252 qualify as "Medium,"

indicating that less than 1% of Indian MSME have successfully transitioned beyond the micro-stage.

Table 3.3

State wide List of MSME in India (as on 31/October/2025)

S. No.	State/UT Name	Formal MSME (Udyam)	Informal MSME (UAP)	Total MSME
1	Maharashtra	65,64,083	26,07,543	91,71,626
2	Uttar Pradesh	42,56,805	32,96,949	75,53,754
3	Tamil Nadu	37,74,269	18,27,643	56,01,912
4	West Bengal	18,85,957	28,83,852	47,69,809
5	Karnataka	23,22,478	22,40,374	45,62,852
6	Madhya Pradesh	20,63,266	22,86,843	43,50,109
7	Rajasthan	28,20,503	11,52,510	39,73,013
8	Gujarat	27,17,908	12,36,103	39,54,011
9	Bihar	17,43,928	20,26,341	37,70,269
10	Andhra Pradesh	18,14,839	17,25,530	35,40,369
11	Telangana	15,60,257	12,86,707	28,46,964
12	Odisha	11,99,685	9,63,508	21,63,193
13	Punjab	14,75,966	4,70,982	19,46,948
14	Haryana	12,74,781	5,19,380	17,94,161
15	Kerala	9,76,419	6,97,280	16,73,699
16	Jharkhand	6,95,461	6,97,675	13,93,136
17	Delhi	9,53,648	3,39,559	12,93,207
18	Assam	9,20,035	3,68,152	12,88,187
19	Chhattisgarh	6,19,977	5,86,447	12,06,424
20	Jammu and Kashmir	5,54,601	2,13,372	7,67,973
21	Uttarakhand	3,97,791	1,76,815	5,74,606
22	Himachal Pradesh	2,41,967	68,955	3,10,922
23	Tripura	1,01,616	1,82,485	2,84,101
24	Manipur	1,10,790	47,304	1,58,094
25	Goa	79,652	39,438	1,19,090
26	Puducherry	57,060	41,750	98,810

S. No.	State/UT Name	Formal MSME (Udyam)	Informal MSME (UAP)	Total MSME
27	Chandigarh	57,590	15,723	73,313
28	Nagaland	42,549	24,058	66,607
29	Meghalaya	46,275	15,008	61,283
30	Mizoram	33,649	13,853	47,502
31	Arunachal Pradesh	25,405	17,442	42,847
32	The Dadra and Nagar Haveli and Daman and Diu	26,478	6,041	32,519
33	Sikkim	18,220	13,087	31,307
34	Andaman and Nicobar Islands	16,971	3,338	20,309
35	Ladakh	13,599	5,463	19,062
36	Jammu and Kashmir	1,397	903	2,300
Total:-		4,14,65,875	2,80,98,413	6,95,64,288

Source : Ministry of MSME, Government of India

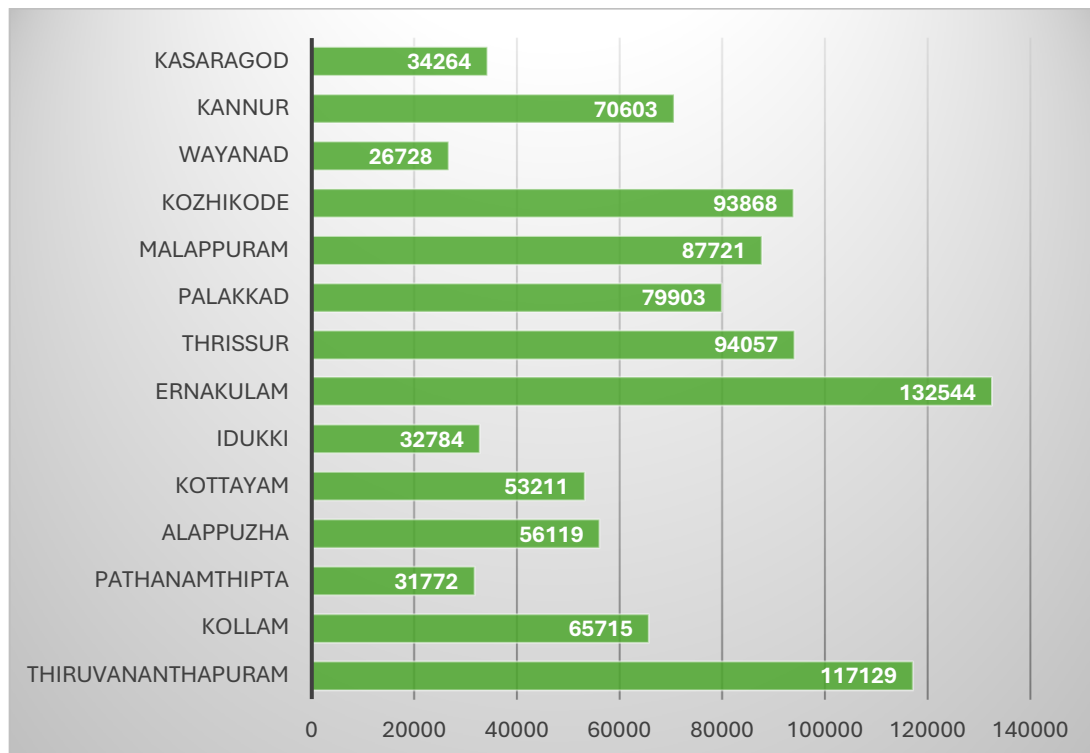
As per the Table 3.3 highlights significant heterogeneity in industrial maturity across Indian states. Maharashtra stands as the undisputed hegemon of the sector, hosting the highest volume of 91.71 lakh enterprises. More crucially, it leads in "quality" metrics, housing the highest number of Small (73,628) and Medium (6,774) units, which reflects a robust, scalable industrial ecosystem rather than mere subsistence entrepreneurship. In contrast, states like Uttar Pradesh and West Bengal demonstrate a "volume-driven" profile heavily reliant on the informal sector. Uttar Pradesh ranks second with 75.53 lakh total units but has a massive base of 32.96 lakh IMEs, the highest in the country. Similarly, West Bengal's ecosystem is dominated by informal micro-units, which constitute 28.83 lakh of its 47.69 lakh total enterprises. Conversely, Gujarat (39.54 lakh total units) exhibits a "manufacturing-intensive" profile, ranking second nationally in both Small (53,570) and Medium (4,176) categories, underscoring its status as a hub for scalable industrial activity despite having a lower total volume than UP or West Bengal.

3.3.3 Kerala's MSME Statistics

Kerala's MSME landscape reflects the national trend of micro-dominance but also exhibits unique regional characteristics. The state boasts a total of 16.73 lakh (16,73,699) registered MSME units. A decomposition of this figure reveals that 9.62 lakh units are registered as Micro enterprises under the standard Udyam protocol, while a substantial portion—6.97 lakh units—are classified as Informal Micro Enterprises (IMEs) under the Udyam Assist Portal. The scalable segment remains thin, with only 12,730 Small and 749 Medium enterprises currently registered in the state. This high concentration of micro-units (comprising over 99% of the total) underscores the state's reliance on small-scale, often service-oriented, proprietorships rather than large industrial manufacturing bases.

Figure 3.1

Districtwise List of MSME Registered under Udyam Portal (31/October/2025)



Source: data.gov.in

A spatial analysis of MSME distribution within Kerala, based on data provided in figure 3.1, reveals significant inter-district disparities. Ernakulam emerges as the

undisputed industrial hub of the state, recording the highest number of MSME registrations (exceeding 1.3 lakh units), driven likely by its status as the commercial capital and port city. Thiruvananthapuram, the state capital, follows as the second largest node with substantial registrations (approx. 1.15 lakh units), reflecting its administrative and growing IT significance. Conversely, the hill districts exhibit much lower enterprise density. Wayanad records the lowest number of registrations in the state (below 30,000 units), followed closely by Idukki and Pathanamthitta. This uneven distribution highlights a "coastal-urban bias" in entrepreneurship, where industrial activity is concentrated in urbanized coastal belts while the high-range agrarian districts lag in formal enterprise formation.

3.4 The Domestic MSME Ecosystem: National Trends and Regional Dynamics

This section shifts the analytical lens from the global arena to the domestic landscape, examining the MSME sector's pivotal role in the Indian economy and the distinct socio-economic laboratory of Kerala. It explores the dichotomy between the sector's rapid formalization and robust growth metrics against the persistent "protection gap" and structural vulnerabilities that characterize the operational reality of these enterprises.

3.4.1 The Indian Scenario: Economic Centrality and the Protection Gap

In the contemporary Indian economic framework, the Micro, Small, and Medium Enterprises (MSME) sector is widely recognized as a pivotal pillar of national development, contributing approximately 30% to the Gross Domestic Product (GDP) and accounting for over 45% of the nation's total exports (Ministry of MSME, 2024). This sector serves as the primary engine for industrial decentralization and employment generation, second only to agriculture. The formalization of this vast sector has been significantly accelerated through digital public infrastructure, specifically the Udyam Registration Portal. While initial estimates in early 2024 placed registered units at 4.77 crore, more recent consolidated data integrating the Udyam Assist Platform (UAP) indicates that the total registered base has expanded to approximately 6.96 crore enterprises (Ministry of MSME, 2025). This digital formalization has enhanced the sector's resilience in the post-pandemic era, evidenced

by a robust recovery in exports, which surged from ₹3.95 lakh crore in 2020-21 to ₹12.39 lakh crore in 2024-25, reflecting the sector's adaptability to global value chains (India Brand Equity Foundation, 2025).

However, this growth narrative is sharply juxtaposed against a critical structural vulnerability termed the "protection gap." While the government has successfully catalyzed credit flow—evidenced by the Pradhan Mantri Mudra Yojana sanctioning over ₹33 lakh crore to infuse liquidity—there has been no commensurate rise in risk mitigation mechanisms. Industry reports highlight that insurance penetration within the MSME segment is alarmingly low, with less than 10% of units possessing coverage beyond mandatory motor vehicle insurance (IRDAI, 2023). This creates a dangerous "Liability-Protection Mismatch" in the MSME balance sheet. On the liability side, enterprises are increasingly leveraged due to easy credit access; on the asset side, they remain critically uninsured. This asymmetry implies that a single catastrophic event—be it a natural disaster like a flood or a systemic shock like a pandemic—can trigger immediate insolvency. Consequently, viable credit can rapidly devolve into Non-Performing Assets (NPAs), leading to the destruction of the enterprise and systemic stress on the banking sector (Reserve Bank of India, 2024).

3.4.2 The Kerala Context: The "Year of Enterprises" and Structural Uniqueness

Kerala serves as a unique socio-economic laboratory for analyzing MSME dynamics, characterized by its "Kerala Model of Development"—high human development indices, 94% literacy, and high consumption expenditure, paradoxically coupled with high unemployment and a historical deficit in large-scale industrialization (Kerala State Planning Board, 2024). To address this industrial stagnation and leverage the post-pandemic recovery, the Government of Kerala launched the ambitious "Year of Enterprises" campaign in the fiscal year 2022-23. The initiative aimed to facilitate the formation of 100,000 new enterprises within a year but significantly exceeded expectations. By 2024, the campaign successfully facilitated the registration of over 200,000 new units (with recent dashboards indicating figures surpassing 3.38 lakh), mobilizing investments worth over ₹13,000 crore (Government of Kerala, 2025).

The structural composition of Kerala's MSME landscape diverges significantly from the national average, heavily favoring the tertiary sector. In the 2023-24 fiscal year, the service sector contributed 64.2% to the state's Gross State Value Added (GSVA), a figure significantly higher than the national average (Kerala State Planning Board, 2024). This "Service Sector Dominance" fundamentally alters the risk profile of enterprises in the state. Unlike manufacturing units where risks are physical (e.g., machinery breakdown, fire), Kerala's service-oriented MSME face intangible risks such as professional indemnity liabilities, cyber threats, and business interruptions. Consequently, standard "shopkeeper" insurance policies are often inadequate, necessitating the development of specialized liability-oriented insurance products.

Furthermore, the state's ecosystem is marked by a "Literacy-Protection Paradox." Despite high general literacy, specific insurance literacy regarding business continuity remains low, particularly in districts like Ernakulam. Research indicates a Behavioural disconnect where entrepreneurs recognize environmental risks (e.g., recurring floods) but fail to utilize insurance as a financial hedging tool, often due to optimism bias or lack of tailored products (Centre for Public Policy Research, 2023). Additionally, the campaign's success in fostering "Gender Inclusivity"—with over 35,000 women-led enterprises registered—adds a critical dimension to the theoretical framework. Women entrepreneurs in the state often operate smaller, home-based units (e.g., under the Kudumbashree network) and may face distinct barriers in accessing financial and insurance markets, making targeted, micro-insurance interventions essential (Gulati & Kumar, 2020). Finally, the wide "Spatial Distribution" of these units across both rural and urban distinct necessitates a distribution model capable of reaching the "last mile," as traditional insurer branch density is often concentrated in urban centers, leaving rural entrepreneurs underserved.

3.5 Insurance Literacy: Dimensions, Theoretical Constructs, and Behavioural Determinants

The consumption of insurance products—spanning life, health, property, and casualty domains—represents one of the most cognitively demanding financial activities undertaken by households. Unlike savings or credit, which offer tangible and often

immediate utility, insurance involves the exchange of a certain current premium for a contingent future payout, predicated on events that consumers actively wish to avoid. This unique psychological and economic landscape necessitates a specialized form of competency known as Insurance Literacy. While often conflated with general financial literacy, insurance literacy is a distinct multi-dimensional construct comprising Knowledge (cognitive understanding), Attitude (affective evaluation and trust), Behaviour (functional skills and actions), and Confidence (self-efficacy) (Sanjeewa et al., 2019). This report provides an analysis of these dimensions, synthesizing theoretical frameworks such as the Theory of Planned Behaviour (TPB) and the Health Insurance Literacy Measure (HILM). Drawing on empirical evidence, the analysis demonstrates that insurance literacy is a primary antecedent to insurance inclusion and effective risk management (Lin et al., 2019).

3.5.1 The Conceptual Distinctiveness of Insurance Literacy

The modern financial marketplace has shifted significant risk management responsibilities onto individuals. Consumers are expected to act as rational risk managers, yet a growing body of academic literature suggests that they are often ill-equipped for this role due to significant deficits in insurance literacy. Insurance literacy is formally defined as "the degree to which individuals have the knowledge, ability, and confidence to find and evaluate information about insurance plans, select the best plan for their own (or their family's) financial and circumstances, and use the plan once enrolled" (Paez et al., 2014). This definition moves beyond a static inventory of facts to encompass dynamic capabilities required for navigating complex financial products.

Figure 3.2

Different Dimensions of Insurance Literacy



Source: Compiled by the researcher

Scholars emphasize that insurance literacy is distinct from financial literacy (Tennyson, 2011). While financial literacy focuses on accumulation and intertemporal consumption (savings, investments, loans), insurance literacy focuses on risk protection and contingent claims. Research indicates that proficiency in general financial concepts does not necessarily translate into insurance literacy, as insurance decisions require unique cognitive scripts regarding probability, risk pooling, and legal liability (Lin et al., 2019). Consequently, insurance literacy is conceptualized as a composite of four interacting dimensions: Knowledge (cognitive), Attitude (affective), Behaviour (functional), and Confidence (psychological) (Sanjeeva et al., 2019).

3.5.2 Theoretical Constructs and Frameworks

To understand the mechanisms through which literacy influences decision-making, researchers have adapted established psychosocial theories. These models provide the architecture for understanding how cognitive knowledge transforms into Behavioural action.

3.5.2.1 The Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (Ajzen, 1991) is a dominant theoretical lens used to model insurance purchase intention. It posits that Behaviour is determined by Intention, which is driven by Attitude, Subjective Norms, and Perceived Behavioural Control (PBC) (Elangovan & Michel, 2025). In the context of insurance literacy, these components are operationalized to explain purchase Behaviour. Attitude towards Behaviour represents the consumer's evaluation of purchasing insurance, influenced by beliefs about financial security. Studies demonstrate that insurance literacy acts as a critical antecedent to Attitude; as literacy increases, the "fear of the unknown" dissipates, leading to a more positive evaluation of insurance (Weedige et al., 2019).

Subjective Norms refer to the perceived social pressures to purchase or not purchase insurance. In many cultures, the "responsible provider" norm is a driver for life insurance, but social skepticism can inhibit purchase even if the individual is literate (Elangovan & Michel, 2025). Perceived Behavioural Control (PBC) mirrors the concept of self-efficacy. It is the consumer's perception of the ease or difficulty of buying insurance. High insurance literacy directly enhances PBC, as consumers who understand the terminology perceive the task as less daunting (Kwasniok, 2025). Recent structural equation modeling has refined the TPB application by identifying mediation pathways, proposing that Trust and Perceived Benefit mediate the relationship between Literacy and Intention (Lin et al., 2019).

3.5.2.2 The Health Insurance Literacy Measure (HILM) Conceptual Model

Developed by Paez et al. (2014) for the American Institutes for Research, the HILM framework addresses the specific complexities of the health insurance market. The framework distinguishes between two distinct phases of the consumer journey: Choosing (Selection Phase) and Using (Utilization Phase) (Paez et al., 2014). This matrix is critical because empirical testing reveals that consumers often possess different literacy levels across these domains. A consumer might be confident in selecting a plan based on premiums but demonstrate low literacy in using the plan, such as understanding network restrictions (Paez et al., 2014).

3.5.2.3 The Technology Acceptance Model (TAM)

As insurance distribution shifts to digital platforms, the Technology Acceptance Model (TAM) has been integrated with insurance literacy frameworks. TAM posits that Perceived Usefulness and Perceived Ease of Use determine adoption. Research indicates that insurance literacy significantly influences Perceived Ease of Use; literate consumers find digital platforms easier to navigate because they understand the labels and categories (Giri, 2019).

Literacy as a Moderator: Research indicates that insurance literacy significantly influences Perceived Ease of Use. Literate consumers find digital platforms easier to navigate because they understand the labels and categories (e.g., "deductible," "liability limit"). Illiterate consumers experience cognitive friction, leading to platform abandonment or decision postponement.

Trust in Digital Channels: In online environments, literacy also moderates trust. Consumers with higher digital insurance literacy are better able to evaluate the credibility of online platforms, reducing the perceived risk of electronic transactions.

3.5.2.4 Social Cognitive Theory and Self-Efficacy

Albert Bandura's Social Cognitive Theory (SCT) provides the foundational psychological framework for understanding the "Confidence" dimension of insurance literacy, positing that human Behaviour is not merely a reaction to external stimuli but a product of "Self-Efficacy"—the belief in one's capability to execute courses of action required to manage prospective situations. In the context of insurance, this self-efficacy is cultivated through four primary sources: Mastery Experiences (successfully filing a claim), Vicarious Experiences (observing peers navigate insurance issues), Social Persuasion (advice from trusted agents), and Physiological States (anxiety reduction during financial planning). Central to this theory is the concept of Reciprocal Determinism, a triadic model where personal factors (cognitive trust), Behavioural patterns (purchasing decisions), and environmental influences (market complexity) continuously interact in a feedback loop. Theoretically, this creates a "virtuous or vicious cycle" in insurance markets: a positive claim settlement

(mastery) reinforces the policyholder's self-efficacy, encouraging future risk-hedging Behaviour; conversely, a rejected claim or bureaucratic friction acts as a negative reinforcement, eroding trust and leading to "market avoidance," where even rational individuals exit the formal risk-transfer system due to learned helplessness.

3.5.2.5 Social Ecological Model

The Social Ecological Model (SEM) expands the theoretical lens beyond the individual to a systemic perspective, arguing that insurance literacy is embedded within a nested hierarchy of influences ranging from the Interpersonal to the Public Policy level. Unlike cognitive theories that focus on internal processing, SEM posits that an individual's "Insurance Inclusion" is heavily constrained or enabled by their environment. At the Interpersonal Level, decisions are often non-linear and socially constructed, heavily influenced by "social proof" from family and peer networks rather than independent actuarial calculations. Moving outward to the Organizational Level, the availability of workplace group insurance or employer-led financial wellness programs acts as a critical "nudge" for coverage. The Community Level involves cultural norms regarding risk (e.g., relying on community charity vs. formal insurance) and the physical accessibility of insurers in rural areas. Finally, the Public Policy Level dictates the regulatory environment, such as mandatory disclosure norms or tax incentives (e.g., Section 80D in India), which structurally alter the cost-benefit analysis for consumers. Consequently, the model suggests that interventions targeting only individual knowledge are destined to fail if they ignore the "obesogenic-like" financial environment that creates barriers to access.

3.5.3. Dimension I: Knowledge and Cognitive Skills

Knowledge represents the cognitive foundation of insurance literacy. It includes the facts, concepts, and principles that a consumer must possess to process information. Researchers distinguish between Declarative Knowledge (knowing what terms mean) and Procedural Knowledge (knowing how to apply that information). Testing shows that procedural knowledge is often significantly lower than declarative knowledge; consumers may define terms correctly but fail to calculate costs in practical scenarios (Paez et al., 2014).

Knowledge gaps are often product-specific. In general insurance, consumers may understand mortality risk but fail to grasp the nuances of whole life versus term life policies. In property and casualty insurance, there are significant gaps regarding exclusions, such as the assumption that standard homeowners policies cover flood damage (Tennyson, 2011). Furthermore, insurance is inherently mathematical, requiring Numeracy to interpret probability and intertemporal finance. Low risk literacy can lead to biases where consumers prefer expensive policies that eliminate small risks over affordable policies that cover catastrophic risks (Tennyson, 2011).

3.5.4 Dimension II: Attitude and Affective Factors

Attitude refers to the emotional and evaluative stance a consumer takes toward insurance. It acts as a filter through which information is processed. Because insurance is an intangible credence good, Trust is its fundamental currency. Research decomposes trust into Integrity, Credibility, Reliability, and Benevolence (Mayer et al., 1995). Empirical findings suggest that Integrity, Credibility, and Reliability are significant predictors of insurance inclusion, whereas Benevolence is often less significant (Kiwanuka & Sibindi, 2023).

Attitude also encompasses Risk Perception. In some contexts, fatalism or a "what will be, will be" worldview can negate the perceived value of insurance. Conversely, high insurance literacy fosters cognition-based trust, helping consumers realize that denied claims are often due to contractual terms rather than bad faith (Weedige et al., 2019). Additionally, cultural and religious norms influence attitude; for instance, religious objections to conventional insurance in some cultures necessitate specific products like Takaful (Elangovan & Michel, 2025).

3.5.5. Dimension III: Behaviour (Conative Dimensions)

Behaviour represents the functional application of literacy—what the consumer actually does. Literate consumers engage in Active Information Seeking, comparing multiple quotes and verifying insurer ratings. In contrast, low-literacy consumers often exhibit Passive Reliance, depending on agent recommendations without verification (Insurance Authority, 2025).

Insurance decisions are often characterized by choice overload and complexity, leading to Decision Postponement. When faced with complex options, consumers with low literacy experience cognitive strain and delay decisions, which can be catastrophic if a loss occurs (Shiu, 2021). The HILM research also identifies a divergence between "choosing" and "using" Behaviours. Many consumers may be "Choosing Literate" (able to find a cheap plan) but "Using Illiterate" (unable to navigate the claims process), leading to underinsurance despite having coverage (Paez et al., 2014).

3.5.6. Dimension IV: Confidence (Self-Efficacy)

Confidence, or self-efficacy, is the belief in one's agency to navigate the insurance landscape. A major theme in literacy research is the calibration between subjective confidence and objective knowledge. Overconfidence, or the "Illusion of Competence," occurs when consumers express high confidence but score poorly on objective tests (Tennyson, 2011). Conversely, under confidence can lead to paralysis or excessive dependence on advisors.

In the Social Cognitive Theory framework, self-efficacy mediates the relationship between knowledge and action. A consumer may know they need insurance and believe it is beneficial, but if they lack the self-efficacy to navigate the application process, they will not act (Paez et al., 2014). Research in health insurance literacy has observed that those with the lowest literacy often overestimate their competence, a manifestation of the Dunning-Kruger effect (Ron et al., 2025).

Table 3.4

Dimensions of Insurance Literacy - Empirical Findings

Dimension	Definition	Key Empirical Findings	Source
Knowledge	Understanding of concepts, terms, and products.	High declarative knowledge but low procedural knowledge. Significant gaps in understanding exclusions and cost-sharing.	Tennyson (2011); Paez et al. (2014)

Dimension	Definition	Key Empirical Findings	Source
Attitude	Perceptions of value, trust, and risk.	Trust is a critical mediator. Fatalism and "expense" perception inhibit uptake. Social proof is a strong driver.	Sanjeewa et al. (2019); IA Hong Kong
Behaviour	Actions taken to seek, buy, and use insurance.	"Action Gap": High knowledge does not always lead to action. Decision postponement due to complexity. Low document literacy.	IA Hong Kong; Shiu (2021)
Confidence	Self-efficacy in decision-making and usage.	Miscalibration (Dunning-Kruger). High confidence in choosing but low confidence in using is common.	Paez et al. (2014); Bandura (SCT)

Insurance literacy is a complex, multi-dimensional construct that serves as a vital firewall against financial fragility. It cannot be reduced to a simple stock of knowledge but is the dynamic interplay of Knowing (Knowledge), Feeling (Attitude), Doing (Behaviour), and Believing (Confidence). The integration of theoretical constructs like the Theory of Planned Behaviour and the Health Insurance Literacy Measure reveals the causal pathways: Knowledge builds Trust; Trust reduces Perceived Risk; and Self-Efficacy enables Action. Disruptions at any point in this chain result in suboptimal Insurance Behaviours. Global evidence underscores that addressing this requires a shift from simple financial education to capability building that fosters skills, trust, and confidence (Lin et al., 2019; Paez et al., 2014).

The quantitative contribution of the MSME sector is staggering, driving roughly 45% of India's manufacturing output and 40% of its total exports. However, the economic

resilience of the sector is paradoxically fragile. Research indicates that a significant portion of these enterprises operate on thin profit margins with limited capital buffers (SIDBI, 2024). This fragility renders MSME disproportionately susceptible to external shocks. A single catastrophic event—be it a fire in a manufacturing unit, a flood disrupting supply chains, or a liability lawsuit—can precipitate insolvency. Unlike large conglomerates that possess diversified balance sheets and access to capital markets, MSME often rely on the personal wealth of the proprietor or high-cost informal credit to recover from such shocks. Consequently, the role of insurance transitions from a mere financial instrument to a critical mechanism for business continuity and economic stability.

3.6 Insurance Products for the Indian MSME Sector: A 2024-2025 Perspective

A dominant theme emerging from the analysis of the current insurance landscape is the "Insurance Protection Gap." This concept is bifurcated into two distinct categories: the Risk Protection Gap (the difference between total economic losses and insured losses) and the Insurance Protection Gap (where insurance is purchased but is insufficient due to underinsurance or coverage limitations). Statistical data from FY24 indicates that India's overall insurance penetration declined to 3.7%, with non-life insurance penetration stagnant at a mere 1.0% (Economic Times, 2024; 5paisa Capital Ltd, 2024). This figure is notably below the global average and reflects a substantial under-penetration in the commercial sector. In the context of MSME, academic research suggests that over 60% of such enterprises in emerging economies are either completely uninsured or significantly underinsured (International Journal of Engineering Sciences, 2025).

The genesis of this gap is multifaceted. Historically, complex policy wordings, the prevalence of the "average clause" which penalizes underinsurance, and a lack of trust in claim settlement processes have deterred adoption (Supriya & Gunasegari, 2025). Furthermore, the perception of insurance as a "sunk cost" rather than a strategic asset remains prevalent among small business owners. The recent contraction in penetration, despite a rise in per capita premiums, suggests that while the insured

population is spending more, the widening of the insurance net to cover the "missing middle", the MSME remains a structural challenge (Economic Times, 2024).

3.6.1 Regulatory Framework and Standardized Property Insurance

The governance of insurance in India has undergone a transformative evolution, shifting from a rigid tariff-based regime to a de-tariffed market, and more recently, to a "standardized" product regime for the SME sector. Recognizing the difficulties faced by small businesses in understanding complex insurance contracts and the frequent disputes arising from "underinsurance" penalties, the IRDAI introduced landmark reforms in 2021 replacing the Standard Fire and Special Perils policy for smaller risks (IRDAI, 2021).

3.6.1.1 Bharat Sookshma Udyam Suraksha (BSUS)

The Bharat Sookshma Udyam Suraksha policy serves as the foundational property insurance product for micro-enterprises. It is mandatory for insurers to offer this standard product to risks where the total value at risk (sum insured) at one location is up to ₹5 Crore (New India Assurance, n.d.). The policy operates on a "Named Peril" basis, covering physical loss, damage, or destruction caused by specific unforeseen events. These explicitly include fire (even resulting from spontaneous combustion), explosion or implosion, and a wide range of natural catastrophes such as earthquakes, floods, storms, and cyclones. Furthermore, it covers impact damage, riot, strike, malicious damage, and theft if it occurs within seven days of and is proximately caused by an insured event (IRDAI, 2021).

A pivotal feature of the BSUS policy is the adoption of the Reinstatement Value principle for buildings and plant & machinery. This means the insurer agrees to pay the cost of replacing the damaged property with a new one of the same kind and capacity, without deducting depreciation (National Insurance Company, n.d.). In traditional policies, depreciation deductions often left MSME with a capital shortfall to restart operations. Additionally, the policy integrates several coverages that were previously optional add-ons. These in-built covers include additions and alterations to property up to 15% of the Sum Insured, protection for stocks on a floater basis,

temporary removal of stocks, and start-up expenses incurred to restart the business consequent to a loss (IRDAI, 2021).

3.6.1.2 Bharat Laghu Udyam Suraksha (BLUS)

Targeting the "Small" and "Medium" segment, the Bharat Laghu Udyam Suraksha policy is designed for enterprises with a total value at risk across all insurable asset classes at one location exceeding ₹5 Crore but not exceeding ₹50 Crore (Policybazaar, 2025). While sharing the fundamental architecture of the BSUS, the BLUS policy imposes a standard excess of 5% of the claim amount, subject to a minimum of ₹10,000, ensuring that the insurance mechanism is utilized for significant financial shocks rather than minor operational losses.

Perhaps the most significant structural reform in both BSUS and BLUS policies is the waiver of underinsurance up to 15% (New India Assurance, n.d.). In traditional insurance law, the principle of "Average" dictates that if a property is underinsured, the claim is reduced proportionately. Under the new Bharat policies, if the underinsurance is within 15%, the condition of average is waived, and the full claim is paid subject to the sum insured. This tolerance band provides a vital safety net for MSME against inadvertent valuation errors (National Insurance Company, n.d.).

3.6.3 Statutory and Civil Liability Insurance

In the contemporary legal environment, MSME are increasingly exposed to liabilities arising from their operations, products, and management decisions. The legal framework in India imposes both "Strict" and "Fault-based" liabilities, making liability insurance a non-negotiable component of risk management.

3.6.3.1 Public Liability Insurance Act Policy

Enacted in the aftermath of industrial disasters, the Public Liability Insurance Act, 1991 imposes a statutory duty on owners of hazardous industries to provide immediate relief to victims of accidents, irrespective of negligence. Any "Owner" who owns, controls, or handles hazardous chemicals exceeding specified threshold quantities is legally required to subscribe to this policy (Government of India, 1991). The Act

operates on the principle of "No-Fault Liability," meaning the claimant does not need to prove negligence on the part of the owner to claim relief. The policy covers death, injury, and damage to private property of third parties, and owners must also contribute to the Environmental Relief Fund (ERF) (Reliance General Insurance, n.d.).

3.6.3.2 Commercial General and Product Liability

For MSME that do not handle hazardous substances above the statutory threshold, the risk of third-party injury remains. A standard Public Liability (Industrial) policy covers legal liability arising from negligence, including bodily injury and property damage to third parties occurring on the insured premises (Reliance General Insurance, n.d.). Furthermore, with the enactment of the Consumer Protection Act, 2019, the liability landscape has tightened significantly. Product Liability Insurance indemnifies the business against the legal liability to pay compensation to third parties for bodily injury or property damage caused by defective products

3.6.3.3 Directors and Officers (D&O) Liability

Once perceived as a product exclusively for large listed corporations, D&O insurance is increasingly relevant for the SME sector. Directors and Officers can be held personally liable for "Wrongful Acts" committed in their managerial capacity, including breach of duty, neglect, error, misstatement, or misleading statements (Allianz, n.d.). Indian MSME face increasing scrutiny from regulatory bodies, and D&O policies cover the defense costs for regulatory investigations and shareholder disputes. Modern D&O policies for MSME often include Employment Practices Liability (EPL) extensions, covering claims regarding wrongful termination or harassment (BimaKavach, n.d.-a; Plum Insurance, n.d.).

3.6.4 Human Capital and Social Security Insurance

Human capital is a primary asset for MSME, and its protection is mandated by strong social security legislation in India.

3.6.4.1 Workmen's Compensation Insurance

The Employees' Compensation Act, 1923 (formerly Workmen's Compensation Act) is a piece of social security legislation that imposes a statutory liability on employers to pay compensation to employees for injury or death arising out of and in the course of employment (Bajaj General Insurance, n.d.-a). The employer is liable irrespective of negligence. The compensation structure for death or permanent total disablement is calculated based on age factors and wages, with a wage ceiling of ₹15,000 per month for calculation purposes as per the 2020 notification (Bajaj General Insurance, n.d.-a; Tata AIG, n.d.).

3.6.4.2 Group Health Insurance (GHI)

The landscape of employee health insurance has shifted dramatically post-pandemic. The IRDAI has mandated that all commercial establishments must provide health coverage to their workforce, a directive that has accelerated adoption (Plum Insurance, n.d.-b). Historically, GHI was accessible only to large corporates, but the market has evolved with insurers now offering "SME Group Health" products for groups as small as 7 employees (Policybazaar, n.d.-c). These policies typically waive the standard waiting periods for pre-existing diseases, covering them from day one, and often include maternity benefits and family floater options (Acko, n.d.).

3.6.5 Marine, Transit, and Trade Credit Insurance

For MSME involved in the movement of goods, the transit period represents a high-risk phase where assets are outside the direct control of the business. A Marine Open Policy is the standard mechanism for businesses with frequent shipments. Rather than purchasing a specific policy for each consignment, the MSME takes an annual policy covering all transits. The policy typically covers inland transit risks like fire, collision, and overturning, as well as import/export risks under Institute Cargo Clauses (BimaKavach, n.d.-b; Bajaj General Insurance, n.d.-c).

Access to credit and the risk of bad debts are perennial challenges for MSME. The Export Credit Guarantee Corporation of India (ECGC) provides a critical safety net for exporters. ECGC policies protect exporters against the risk of non-payment by

overseas buyers due to commercial risks (insolvency, default) or political risks (war, import bans). Specific schemes like the Small Exporters Policy (SEP) and Micro Exporter Policy (MEP) are tailored for smaller turnovers, offering simplified administration and high coverage ratios (Drip Capital, 2025; ECGC, n.d.).

3.6.6. Emerging Frontiers: Cyber and Data Liability

As MSME increasingly digitize their operations, they become prime targets for cyber threats. The risk landscape has been fundamentally altered by the Digital Personal Data Protection (DPDP) Act, 2023. The Act imposes strict obligations on businesses collecting data to safeguard personal data, with potential penalties for breaches (The Cyber Express, 2024). Cyber insurance is transitioning from a specialized product to a necessity for MSME. Modern policies cover first-party losses such as IT forensic investigations, data restoration costs, and business interruption, as well as third-party liabilities including defense costs and damages for privacy breaches (Policywings, 2025).

The insurance ecosystem for MSME in India has matured significantly in the 2024-2025 period. The intervention of the IRDAI in standardizing property products (Bharat Sookshma/Laghu Udyam Suraksha) has eliminated many of the historical friction points regarding underinsurance and complex wordings. The product suite is now comprehensive, covering the full spectrum of risks from physical assets and statutory liabilities to employee welfare and cyber threats. However, the "Protection Gap" persists, primarily due to a lack of awareness and the lingering perception of insurance as a non-core expense. To build a resilient enterprise, MSME owners must prioritize statutory compliance, opt for reinstatement value in property insurance, and acknowledge the reality of digital risks by adopting cyber insurance safeguards.

3.7 Risk Appetite: Theoretical Frameworks and Business Continuity

In the contemporary domain of enterprise risk management (ERM), the concept of risk appetite has emerged as a critical instrument for strategic governance, serving as the bridge between high-level organizational objectives and operational decision-making. Risk appetite is fundamentally defined as the amount and type of risk that an

organization is willing to pursue or retain in pursuit of its strategic objectives (ISO, 2018). This concept shifts the paradigm of risk management from a purely defensive posture—focused solely on hazard avoidance—to a strategic enabler where risk is viewed as a necessary currency for value creation. The efficacy of a risk appetite framework (RAF) is contingent upon its integration with business continuity management (BCM), ensuring that the organization not only pursues opportunity within defined boundaries but also possesses the resilience to withstand shocks that exceed those boundaries.

Theoretical Frameworks of Risk Governance The academic and professional discourse on risk appetite is anchored in two primary frameworks: the COSO ERM framework and the ISO 31000 standard. These frameworks offer diverging ontological perspectives. The Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines risk appetite as the amount of risk an entity is "prepared to accept" in pursuit of value (COSO, 2017). This definition emphasizes a control-based approach, heavily influenced by auditing traditions, where risk appetite serves as a constraint on strategy. Conversely, the International Organization for Standardization (ISO) defines risk appetite as the amount of risk an organization is "willing to pursue or retain" (ISO, 2018). The ISO perspective is often favored in non-financial sectors for its flexibility and its recognition of risk as an uncertainty that can have positive effects on objectives (Aven, 2013).

For Systemically Important Financial Institutions (SIFIs), the Financial Stability Board (FSB) established a more prescriptive theoretical model following the 2008 financial crisis. The FSB Principles define a Risk Appetite Framework (RAF) as the overall approach, including policies, processes, controls, and systems, through which risk appetite is established, communicated, and monitored (Financial Stability Board, 2013). This framework introduces a hierarchical taxonomy distinguishing between "Risk Appetite" (the aggregate level of risk the firm is willing to assume) and "Risk Capacity" (the maximum level of risk the firm can assume before breaching regulatory capital or liquidity constraints). The distinction is critical: effective governance

requires that risk appetite always remains within risk capacity, providing a buffer that ensures solvency during stressed conditions (FSB, 2013).

3.7.1 Conceptual Foundations: Ontology and Taxonomy

To effectively operationalize risk management, one must first navigate the complex ontology of its core terms: Risk Appetite, Risk Tolerance, and Risk Capacity. These terms, while often used interchangeably in colloquial business discussions, possess distinct technical definitions that have significant implications for governance, legal liability, and operational planning. The academic and professional literature presents a hierarchy of risk concepts that functions as a system of nested constraints (Hopkin, 2018).

3.7.1.1 Distinguishing Risk Appetite, Tolerance, and Capacity

The relationship between these terms is best understood as a series of concentric boundaries. At the center is the strategic target; surrounding it is the appetite (the preferred zone); enabling variation is the tolerance (the acceptable zone); and bounding the entire system is the capacity (the survival zone) (Læssøe, 2021).

Risk Appetite: The Strategic Intent

Risk appetite is broadly defined as the amount and type of risk an organization is willing to pursue or retain in pursuit of its strategic objectives. It is a strategic, high-level statement of intent—a reflection of the organization's philosophy and attitude toward uncertainty. For instance, a fintech startup may have a "high" appetite for market risk to drive rapid growth but a "zero" appetite for compliance risk, whereas a pension fund might have a "low" appetite for both (Quail, 2012).

COSO defines risk appetite as "the amount of risk, on a broad level, an organization is willing to accept in pursuit of stakeholder value" (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2004, p. 19). In contrast, ISO Guide 73:2009 defines it as the "amount and type of risk that an organization is willing to pursue or retain" (International Organization for Standardization [ISO], 2009, p. 8). While subtle, the COSO definition emphasizes "acceptance" in the context of value,

whereas ISO emphasizes the active "pursuit" of risk, aligning with the view of risk as a vehicle for opportunity. Hans' article on Strategic Decision Solutions highlights a linguistic nuance: COSO's "prepared to take" vs. ISO's "willing to take." He argues that "appetite" serves as a baseline, while "tolerance" is the amount one is willing to exceed that baseline (Læssøe, 2021).

Risk Tolerance: The Operational Boundary

Risk tolerance is the operationalization of appetite. It represents the specific, measurable boundaries or variations around strategic objectives that an organization is willing to accept. If risk appetite is the broad strategic direction, risk tolerance provides the specific metrics—the "lanes on the highway" within which the organization must operate (Risk and Insurance Management Society [RIMS], 2012).

Figure 3.3

Interrelationship between Risk Appetite, Tolerance and Capacity



Source: Compiled by the researcher

A helpful analogy shared by risk management professionals clarifies this distinction:

- Risk Appetite is the posted speed limit (e.g., 65 mph)—the target level of risk-taking considered optimal for progress.

- Risk Tolerance is the acceptable variance (e.g., driving 68 mph might be tolerated without penalty, but 80 mph triggers an immediate response). It keeps the driver from veering into danger while allowing for natural fluctuations in speed.

However, conflicting definitions persist in the literature. Some sources suggest that COSO views tolerance as "acceptable variation" in performance (e.g., revenue $\pm 10\%$), while ISO views it as the "readiness to bear risk after risk treatment" (ISO, 2009). This discrepancy requires organizations to explicitly define their chosen lexicon to avoid internal confusion.

Risk Capacity: The Existential Limit

Risk capacity represents the absolute boundary—the maximum amount of risk an organization can bear without insolvency, existential failure, or irretrievable reputational damage (Hopkin, 2018). Unlike appetite (what you want to take) and tolerance (what you are willing to accept), capacity is an objective reality determined by capital reserves, liquidity, regulatory covenants, and operational redundancy.

The relationship is critical: Appetite must always be within Capacity. If an organization's appetite exceeds its capacity, it is inadvertently managing toward insolvency. The "Risk Capacity" is the cliff edge; "Risk Tolerance" is the guardrail placed well before the cliff; and "Risk Appetite" is the path chosen to travel.

3.7.2 Theoretical Frameworks of Risk Governance

The operationalization of risk appetite relies on robust governance structures. Two primary frameworks dominate the global landscape: COSO ERM and ISO 31000. Additionally, specialized frameworks for financial institutions, such as those from the Financial Stability Board (FSB), provide granular guidance on Risk Appetite Frameworks (RAF).

3.7.2.1 COSO ERM Framework

The COSO Enterprise Risk Management framework, particularly the 2017 update ("Enterprise Risk Management—Integrating with Strategy and Performance"), is deeply rooted in the North American corporate governance tradition, heavily

influenced by accounting and auditing standards (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2017). Principles and Structure COSO ERM emphasizes the integration of risk into strategic planning. It views risk appetite as a core element of the "Strategy and Objective-Setting" component. The framework argues that risk appetite must be defined before strategy is finalized, as the appetite determines which strategies are viable. If a strategy requires a level of risk-taking that exceeds the board's appetite, either the strategy must be revised, or the appetite adjusted (COSO, 2017). Key characteristics of the COSO approach include:

- **Governance-Driven:** Strong emphasis on the "tone at the top" and board oversight. The board is responsible for approving the appetite and ensuring management operates within it.
- **Structured and Prescriptive:** Offers detailed guidance on internal controls, reporting, and taxonomy. It draws heavily from auditing expertise, making it favored in regulated sectors.
- **Performance Linkage:** Explicitly connects risk to performance management, arguing that failing to take enough risk is as detrimental as taking too much. It uses "Risk Tolerance" as the acceptable variation in performance outcomes (e.g., failing to meet a sales target is a risk realization).

The Role of Risk Tolerance in COSO In the COSO vernacular, risk tolerance is the "acceptable variation in performance" (COSO, 2017). This is a crucial distinction; it frames risk not just as a hazard but as a deviation from expected outcomes (positive or negative). For example, if a company targets \$100M in revenue, a tolerance of $\pm 10\%$ allows for outcomes between \$90M and \$110M. This ties risk management directly to performance variability.

3.7.2.2 ISO 31000 Standard

ISO 31000:2018 ("Risk management — Guidelines") presents a more flexible, principle-based approach that is widely adopted internationally (International Organization for Standardization [ISO], 2018). Unlike COSO, which originated in auditing, ISO 31000 emerged from a consensus of global standards bodies, resulting

in a broader, more adaptable framework. Principles and Philosophy ISO 31000 defines risk as the "effect of uncertainty on objectives" (ISO, 2018). This definition is neutral, acknowledging that risk can have positive or negative effects.

- **Tool-Agnostic:** It does not prescribe specific tools (like risk matrices or heat maps) but encourages organizations to customize techniques to their context. This encourages innovation and bespoke risk management techniques.
- **Cultural Integration:** Places immense weight on embedding risk management into the organizational culture and decision-making processes at all levels, rather than treating it as a separate function.
- **Iterative Process:** Focuses on continuous improvement and the dynamic nature of risk.

Divergence on Risk Appetite Interestingly, ISO 31000 does not explicitly define "risk appetite" in its core vocabulary (Guide 73), although the concept is implicit in the requirement to define "risk criteria" (International Organization for Standardization [ISO], 2009). Some practitioners argue that ISO's omission reflects a skepticism of the "appetite" metaphor, preferring terms like "risk criteria" or "attitude". However, in practice, organizations using ISO 31000 still develop risk appetite statements to satisfy stakeholder expectations.

3.7.2.3 The Financial Stability Board (FSB) Principles

For Systemically Important Financial Institutions (SIFIs), the FSB Principles for an Effective Risk Appetite Framework (2013) constitute the "gold standard" (Financial Stability Board [FSB], 2013). These principles were developed in response to the 2008 crisis, where many banks failed despite having "risk management" because they lacked a cohesive framework that aggregated risk. The FSB defines the Risk Appetite Framework (RAF) as the overall approach, including policies, processes, controls, and systems through which risk appetite is established, communicated, and monitored. Components of an effective RAF include:

- Risk Appetite Statement (RAS): The articulation of the aggregate level and types of risk.
- Risk Limits: Granular quantitative measures allocated to business lines.
- Roles and Responsibilities: Clear definitions of who owns the risk vs. who oversees it.

The FSB explicitly requires that risk appetite be actionable, measurable, and cascaded down to legal entities and business units. It emphasizes that a sound RAF reinforces a strong risk culture, ensuring that risk-taking activities beyond the firm's appetite are recognized and addressed (FSB, 2013).

3.7.3 The Risk Appetite Framework (RAF): Architecture and Components

A theoretical understanding of risk appetite must be translated into a functional architecture. The Risk Appetite Framework (RAF) serves as the "operating system" for risk governance. According to best practices identified by the Institute of Risk Management (IRM) and academic literature, a robust RAF consists of several interlinked components that translate high-level intent into frontline action (Institute of Risk Management [IRM], 2011).

3.7.3.1 The Risk Appetite Statement (RAS)

The RAS is the foundational document of the RAF. It articulates the board's philosophy on risk. A best-practice RAS is not a single statement but a composite of qualitative and quantitative assertions covering different risk categories.

- Qualitative Statements: Express the "tone." Example: "We have zero appetite for risks that compromise employee safety". These statements are crucial for risks that are difficult to quantify, such as reputation or ethics.
- Quantitative Metrics: Define the "measure." Example: "We accept financial market volatility up to a Value-at-Risk (VaR) of \$10M per day".

Research suggests that effective RAS documents distinguish between different types of risk. For instance, a "balanced" scorecard approach might show:

Strategic Risk: High Appetite (to drive innovation and enter new markets).

Operational Risk: Low Appetite (to ensure stability and efficiency).

Compliance Risk: Zero Appetite (to avoid legal penalty).

The Institute of Risk Management (IRM) Guidance Paper (2011) suggests that the RAS should be constructed by considering the "propensity to take risk" versus the "propensity to exercise control" (IRM, 2011). It emphasizes that there is no single "correct" appetite; it is entirely dependent on the organization's context and maturity.

3.7.3.2 Risk Limits, Triggers, and Cascading

The RAF must translate the high-level RAS into operational limits through a process known as "cascading."

Hard Limits: Absolute boundaries that cannot be breached (linked to Risk Capacity).

Triggers/Early Warning Indicators: Thresholds set within the appetite (e.g., at 75% of the limit) that prompt management action or escalation.

The "Cascading" problem is a frequent point of failure identified in academic reviews. PwC (2014) noted that while many firms have an enterprise-level RAS, few successfully cascade this down to business units in a way that influences day-to-day decision-making (PricewaterhouseCoopers [PwC], 2014). The challenge lies in translation: how to convert "Low Reputation Risk" into a specific limit on "Customer Complaint Response Time" for a call center manager.

Mathematical modeling plays a significant role here, especially in the insurance and financial sectors. As described by the Society of Actuaries, an enterprise risk model capturing line-of-business (LOB) correlations is necessary (Society of Actuaries [SOA], 2016). Limits are often set by determining the aggregate capital need at a specific confidence level (e.g., 99.5%) and then allocating this "risk budget" down to specific units. This ensures that the sum of the parts does not exceed the whole, accounting for diversification benefits.

3.7.3.3 Governance and Roles

The RAF requires a clear "Three Lines of Defense" model to function:

- First Line (Business Units): Own the risk and operate within the appetite limits. They are responsible for day-to-day decision-making.
- Second Line (Risk Function): Designs the RAF, monitors aggregate risk against appetite, and reports breaches. They act as the "constructive challenge" to the first line.
- Third Line (Internal Audit): Provides independent assurance that the RAF is functioning as designed and that the reporting is accurate.

Academic literature further refines these frameworks through the lens of the Dynamic Capabilities View (DCV). Scholars argue that risk management is not merely a static compliance function but a dynamic capability that allows firms to sense, seize, and transform in response to rapidly changing environments (Teece et al., 1997). Within this theoretical construct, a well-defined risk appetite acts as a sensing mechanism, enabling the organization to quickly distinguish between "acceptable" volatility (which fits within the appetite) and "unacceptable" disruption (which triggers crisis response), thereby enhancing organizational agility and resilience (Bleady et al., 2024).

3.7.4 Intersection of Risk Appetite and Business Continuity Management (BCM)

One of the most critical yet under-researched intersections in risk management is the relationship between Risk Appetite and Business Continuity Management (BCM). While ERM focuses on managing uncertainty to achieve objectives (often focusing on probability), BCM focuses on the resilience of critical functions after a disruption occurs (focusing on impact and time). BCM is often viewed as a specific type of risk treatment—a control for risks that have low probability but catastrophic impact. However, the ISO 22301 standard (Societal security – Business continuity management systems) explicitly links BCM to risk appetite (International Organization for Standardization [ISO], 2012).

The connection lies in the definition of "Acceptable Levels of Disruption."

- MBCO (Minimum Business Continuity Objective): The minimum level of services and/or products that is acceptable to the organization to achieve its business objectives during a disruption.
- MTPD (Maximum Tolerable Period of Disruption): The time it would take for the adverse impacts, which might arise as a result of not providing a product/service or performing an activity, to become unacceptable (ISO, 2012).

These metrics are, in essence, expressions of Risk Tolerance. The MTPD is the temporal boundary of risk appetite. If an organization says, "We have a low appetite for customer service disruption," this must translate into a short MTPD (e.g., 4 hours). If the appetite is higher, the MTPD might be 24 hours. Riskconnect (2017) argues that utilizing risk appetite to scope the BCM system helps align BCM with organizational strategy, ensuring that expensive continuity capabilities are focused only on risks that management is unwilling to accept.

3.7.4.1 The "Acceptance" Paradox in BCM

In traditional risk management, risks are assessed by Probability × Impact. High risks are mitigated; low risks are accepted. In BCM, the logic shifts. BCM deals with events that will happen (assumption of breach). Therefore, risk appetite in BCM is not about the likelihood of the disaster, but about the impact the organization is willing to absorb before recovery is complete.

Garefalakis, Dimitras, Floros, and Lemonakis (2018) and other researchers argue that BCM should be restricted to risks that are "deemed not acceptable" to the organization. If a disruption fits within the risk appetite (e.g., a minor system outage that resolves within the tolerance window), BCM activation is not required. BCM is the tool for managing risks that exceed operational tolerance but must be contained within survival capacity.

3.7.4.2 Managerial Ability and Leadership in BCM

The seminal work by Shaw and Harrald (2004) on the core competencies of business continuity managers highlights that BCM is not a technical IT function but a strategic leadership function. They identify that understanding the organization's "risk appetite" is a critical competency for BCM executives. Without this, BCM managers cannot accurately scope the "Business Impact Analysis" (BIA) or justify the budget for recovery strategies.

Managerial ability is a significant variable in the efficacy of this intersection. A study utilizing the measure of managerial ability (Demerjian model) found a positive correlation between high managerial ability and the effective design of risk appetite documents (Demerjian, Lev, & McVay, 2012). Capable managers are better at:

- Scanning the Horizon: Identifying emerging threats that could breach capacity.
- Resource Allocation: Determining how much to spend on redundancy (mitigation) vs. how much risk to accept.
- Crisis Leadership: Making decisions during a disruption when information is incomplete—essentially recalibrating risk appetite in real-time.

The Intersection of Risk Appetite and Business Continuity The relationship between risk appetite and Business Continuity Management (BCM) is symbiotic yet distinct. While risk appetite defines the boundaries of acceptable uncertainty for achieving strategic goals, BCM focuses on the resilience required when those boundaries are breached. Business continuity is often scoped by the organization's risk tolerance, specifically through metrics such as the Maximum Tolerable Period of Disruption (MTPD) and the Minimum Business Continuity Objective (MBCO) (Riskconnect, 2017). These metrics are operational expressions of risk appetite; for example, a low appetite for customer service disruption translates into a very short MTPD and high investment in redundancy.

Research highlights an "acceptance paradox" at this intersection. Traditional risk management treats low-probability, high-impact risks as "unlikely," often leading to

their exclusion from daily appetite considerations. However, BCM operates on the assumption that these unlikely events will occur. Therefore, BCM functions as the operational safety net for risks that exceed the organization's appetite but must remain within its capacity to survive (Garefalakis et al., 2019). Effective BCM ensures that when a risk event materializes, the impact is contained within the survival limits defined by the organization's risk capacity.

3.7.5 Operationalizing Risk Appetite: From Theory to Practice

The most significant challenge identified in the literature is the "operationalization gap"—the difficulty of moving from a high-level Board statement to practical tools for decision-making (Bromiley, McShane, Nair, & Rustambekov, 2015). Organizations frequently face challenges in embedding risk appetite statements into business operations, leaving them as abstract concepts rather than actionable guides.

Managerial Ability and Accountability The successful operationalization of risk appetite and business continuity is heavily dependent on managerial ability. Research by Yari, Mehrazeen, Yarifard, and Masihabadi (2021) indicates that managerial ability is a significant determinant in the design and usage of risk appetite documents. Capable managers are better equipped to integrate risk appetite into the company's activities, thereby reducing the risk of business discontinuity. This aligns with the seminal work of Shaw and Harrald (2004), who identified that executive-level business continuity managers require specific competencies, including the ability to understand and articulate the organization's risk appetite to bridge the gap between strategic intent and operational response.

3.7.5.1 Developing Metrics and KRIs

To operationalize appetite, organizations must develop Key Risk Indicators (KRIs). Unlike Key Performance Indicators (KPIs) which measure past performance, KRIs are forward-looking metrics that signal changes in the risk profile (Hopkin, 2018). Effective operationalization requires selecting metrics that are proxies for the risk appetite statements. For example, if the statement is "We will not compromise on data privacy," the KRI cannot simply be "Number of breaches" (which is a lagging metric). It must be "Percentage of servers with unpatched vulnerabilities > 30 days" (a leading

metric) (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2017).

Table 3.5

Examples of Operationalizing Risk Appetite into Metrics

Risk Category	Risk Appetite Statement (Qualitative)	Operational Metric (KRI)	Tolerance Threshold (Trigger)	Capacity Limit (Breach)
Cyber Security	"We have a low appetite for data breaches affecting customer PII."	% of unpatched critical vulnerabilities > 30 days.	> 5% of assets	> 10% of assets
Business Continuity	"We must maintain critical services during a regional outage."	System Uptime / Recovery Time Actual (RTA).	RTA > 4 hours	RTA > 24 hours
Financial	"We accept moderate market volatility to achieve returns."	Daily Value-at-Risk (VaR).	VaR > \$5M	VaR > \$10M
Reputation	"We have zero appetite for ethical misconduct."	Number of substantiated whistleblower complaints.	> 0 complaints	> 5 complaints

Source : Institute of Risk Management (2011) and COSO (2017)

3.7.5.2 The "Traffic Light" Reporting System

A "Traffic Light" system is commonly used to visualize these metrics for the Board and senior management, providing an instant view of the risk profile relative to appetite (Institute of Risk Management [IRM], 2011):

- Green: Within Appetite. No action needed. The business is operating as intended.
- Amber: Within Tolerance but approaching Limit. This acts as an early warning system. Increased monitoring or minor mitigation is required to bring the risk back to the "Green" zone.

- Red: Outside Appetite/Breach of Limit. This indicates that the organization is taking more risk than it is willing to accept (or less risk than it needs to). Immediate remediation and reporting to the Board are required.

3.7.5.3 The Australian Department of Employment Case Study

A detailed case study of the Australian Department of Employment illustrates a practical methodology for defining risk appetite in the public sector, where financial metrics are often less relevant than reputation and service delivery (Comcover, 2016). The Department utilized a 10-step process to redefine its appetite, which included:

- Reference Group: Appointing a core group to drive the process.
- Visual Sliders: Instead of complex numbers, they used visual sliders to discuss relative tolerance. This helped overcome the tendency for public officials to default to "zero tolerance" for everything.
- The "Last Dollar" Question: Executives were asked, "Where would you spend your last dollar to reduce risk?" This forced trade-offs and revealed true priorities.

As a result, they developed a template that visually illustrated tolerance for sub-categories of risk. Crucially, they updated their Risk Assessment Matrix so that "High" and "Low" severity ratings aligned with the new appetite. They also added scales for Velocity (how fast a risk impacts) and Confidence (how sure are we of the assessment) (Comcover, 2016). This case demonstrates that operationalization is not just about numbers; it is about creating tools (like visual sliders and matrices) that help decision-makers visualize the abstract concept of appetite.

3.7.5.4 The Global Fund Case Study

The Global Fund to Fight AIDS, Tuberculosis and Malaria offers a compelling example of operationalizing risk appetite in "Challenging Operating Environments" (COE) (The Global Fund, 2018). The Global Fund operates in countries with high inherent risks (corruption, instability). A standard "zero tolerance" policy would make their mission impossible.

Their RAF explicitly defines different appetites for different grant components. They may have a "High" appetite for "Drug Theft/Diversion" in a conflict zone (recognizing it as a cost of doing business up to a point) but a "Zero" appetite for "Corruption/Fraud" by grant recipients. The RAF allows them to document the decision to "accept" supply chain risks that cannot be mitigated without ceasing life-saving operations. This documentation is crucial for accountability and donor assurance (The Global Fund, 2018).

3.7.6 The Role of Risk Culture and Behavioural Aspects

Theoretical frameworks and mathematical models are insufficient without a supportive risk culture. The Risk Appetite and Tolerance Guidance Paper (IRM, 2011) and subsequent academic research emphasize that culture determines whether the appetite is respected or ignored.

3.7.6.1 Culture as a Control Mechanism

Risk culture is defined as "the shared values, beliefs, knowledge, attitudes and understanding about risk" (IRM, 2012). In an organization with a "pathological" risk culture (to use Westrum's typology), risk appetite statements are viewed as bureaucratic hurdles to be bypassed. In a "generative" culture, they are viewed as essential guardrails that enable safe speed.

Research by Braumann, Grabner, and Posch (2020) indicates that organizations where leaders explicitly demand risk oversight have significantly higher levels of ERM sophistication. This suggests that "Tone at the Top" is a causal factor in the effective operationalization of appetite. If the CEO speaks about "aggressive growth" but the RAF specifies "low risk tolerance," culture will almost always override the framework.

3.7.6.2 Behavioural Aspects: The "Physical Analogy"

Hillson (2012) explores the Behavioural psychology behind risk appetite using a "Physical Analogy" (Hunger).

- Hunger (Appetite): The internal, visceral drive to take risk (e.g., to gain market share or bonus).
- Diet (Tolerance/Control): The imposed limits to ensure health.

Hillson argues that "unmanaged" risk appetite (pure hunger) leads to poor outcomes. He proposes that organizations must move from "Unmanaged" (intuitive) to "Informed" (active choice) risk-taking. This involves explicitly checking the "gut feel" thresholds against the objective "Risk Capacity" (Hillson, 2012).

Furthermore, the social amplification of risk suggests that risk events are interpreted through social lenses. A breach of appetite in a company with a "blame culture" will be hidden, leading to catastrophic failure later. In a "just culture," it is reported as a near-miss and used for learning (IRM, 2012).

Furthermore, a study on Greek MSME by Garefalakis et al. (2019) emphasized that in turbulent economic environments, the establishment of BCM is not just a technical requirement but a strategic imperative for viability. The study found that organizations with a proactive stance toward risk management—driven by leadership that understands the nuances of risk appetite—were better positioned to safeguard their strategic viability against financial and operational threats (Garefalakis et al., 2019). This underscores that documents and frameworks alone are insufficient; they must be activated by a risk culture and leadership capable of making trade-off decisions between risk and reward.

In conclusion, Risk Appetite serves as the strategic "thermostat" for an organization, regulating the level of risk-taking to align with objectives. Theoretical frameworks provided by COSO, ISO, and the FSB provide the necessary scaffolding for this governance. However, the theoretical model must be operationalized through a robust connection with Business Continuity Management. By treating BCM as the mechanism for managing risks that exceed appetite, and by fostering high managerial ability to oversee this dynamic, organizations can move beyond mere compliance to achieve true organizational resilience.

3.8 Sustainability of MSME; Drivers, Barriers and Strategic Frameworks

The global discourse on sustainable development has traditionally focused on large multinational corporations, driven by their visible environmental footprints and extensive resources. However, a paradigm shift is underway, recognizing the pivotal role of Micro, Small, and Medium Enterprises (MSME) in achieving global sustainability goals. MSME are not merely smaller versions of large corporations; they are distinct entities with unique operational dynamics, stakeholder relationships, and constraints. In many nations, MSME constitute over 90% of businesses and employ nearly 60% of the workforce, acting as the primary engine of economic growth and social stability (Chakraborty et al., 2025).

Despite their individual scale, the collective environmental impact of MSME is profound. Estimates suggest that manufacturing MSME contribute approximately 65% of industrial air pollution and a significant share of global waste generation (Chakraborty et al., 2025). Consequently, the path to a sustainable global economy is inextricably linked to the transformation of the MSME sector. This analysis aims to dissect the multifaceted nature of MSME sustainability, moving beyond simplistic compliance narratives to explore how small businesses can leverage sustainability as a strategic asset. It is grounded in the Triple Bottom Line (TBL) framework, which mandates a balance between economic prosperity, environmental quality, and social equity.

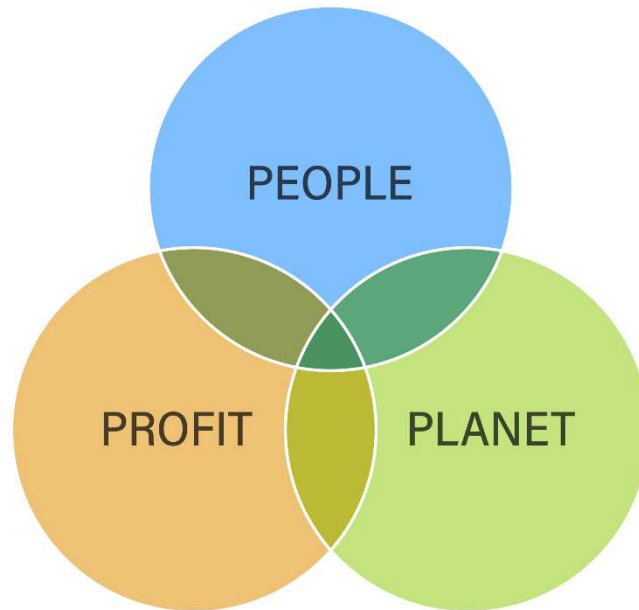
3.8.1 Triple Bottom Line (TBL)

The concept of the Triple Bottom Line (TBL) was introduced by John Elkington in 1994, fundamentally altering the corporate accounting landscape. Elkington challenged the traditional "single bottom line" of profit, arguing that true organizational success must be measured against three interrelated dimensions: Profit (Economic), People (Social), and Planet (Environmental), often referred to as the "3Ps" (Indiana Business Research Center, 2011; Jonker, 2024). The TBL was never intended solely as an accounting mechanism but rather as a "provocation" to inspire a deeper rethinking of capitalism (Jonker, 2024). Elkington envisioned a system where businesses would not just minimize harm but actively regenerate social and

environmental capital. Over the decades, TBL has evolved from a theoretical construct into a practical framework for sustainability reporting, influencing global standards like the Global Reporting Initiative (GRI) (Jonker, 2024).

Figure 3.4

Triple Bottom Line (TBL)



Source: Compiled by the researcher

3.8.1.1 The Economic Dimension (Profit/Prosperity)

In the Triple Bottom Line (TBL) framework, the economic dimension extends beyond internal financial profit to encompass the broader economic impact of the organization on its environment. This is often termed "prosperity" to reflect the economic benefits society receives from the organization's existence (Jonker, 2024). For Micro, Small, and Medium Enterprises (MSME), economic sustainability is the foundational prerequisite; without financial viability, a small enterprise cannot sustain its social or environmental commitments.

- **Personal Income and Job Growth:** MSME serve as the primary drivers of local employment and income distribution, directly influencing the economic well-being of the communities in which they operate.

- **Cost of Underemployment:** This metric assesses the efficiency with which the firm utilizes available human capital, highlighting potential gaps between labour capacity and actual productivity.
- **Establishment Churn:** The rate at which firms enter and exit the market indicates the level of economic dynamism and the health of the local business ecosystem.
- **Tax Contributions:** The firm's fiscal contribution to the public purse is a critical measure, as it funds necessary social services and infrastructure (Indiana Business Research Center, 2011).

3.8.1.2 The Social Dimension (People/Equity)

The social dimension focuses on the organization's impact on its stakeholders, including employees, customers, and the local community. This dimension is closely aligned with Corporate Social Responsibility (CSR) initiatives. For MSME, which are often deeply embedded in their local communities, this dimension is frequently more tangible and immediate than for large corporations.

- **Human Capital Development:** This is measured by indicators such as the average hours of training provided per employee and career retention rates, reflecting the firm's investment in its workforce.
- **Social Equity:** Key indicators in this area include female labour force participation rates, median household income levels, and the firm's contribution to relative poverty reduction.
- **Health and Safety:** The physical well-being of the workforce is tracked through safety incident rates, lost workday rates, and the broader health-adjusted life expectancy within the community (Indiana Business Research Center, 2011).
- **Community Engagement:** This involves the firm's active participation in local issues, including charitable contributions and its role in maintaining local social stability (Lubis et al., 2024).

3.8.1.3 The Environmental Dimension (Planet)

The environmental dimension assesses the firm's ecological footprint, involving the management of natural resources and the minimization of waste and emissions. This is often the most challenging aspect for MSME to measure due to the requirement for specific technical data.

- **Resource Consumption:** This variable tracks the usage of essential inputs, specifically energy consumption (measured in kilowatt-hours), water consumption, and the use of natural gas or alternative fuels.
- **Waste Management:** A critical measure of sustainability is the ratio of waste sent to landfills versus the amount of material recycled or repurposed by the firm.
- **Emissions:** Firms must account for their atmospheric impact, specifically tracking greenhouse gas emissions and maintaining inventories of toxic releases.
- **Ecological Health:** The broader impact on the local environment is assessed through indicators regarding land use changes, the preservation of forest canopies, and local air quality (Indiana Business Research Center, 2011).

3.8.2 Theoretical Lenses for MSME Sustainability

To understand the motivations behind MSME sustainability adoption, researchers employ several theoretical frameworks that explain the interaction between the firm and its environment.

3.8.2.1 Stakeholder Theory

Stakeholder Theory posits that organizations have obligations to a broad range of groups beyond shareholders. In the context of MSME, the stakeholder map includes customers, employees, suppliers, government bodies, and the local community (Javed et al., 2022; Nica et al., 2025). Research indicates that pressure from these stakeholders is a primary driver of sustainable practices. For instance, in the MSME sector of Oman, stakeholder pressure—alongside legal and strategic factors—was identified as a major catalyst for adopting sustainable business practices (Iqbal et al.,

2025). MSME, being closer to their customers and communities, are often highly responsive to "social license to operate" pressures, even in the absence of strict regulations.

3.8.2.2 Institutional Theory

Institutional Theory explains how external pressures force organizations to conform to social norms to gain legitimacy. It identifies three forms of isomorphism. Coercive Isomorphism involves pressure from entities with power, such as government regulations. For example, strict environmental legislation in China forces MSME to adopt Environmental Management Accounting (EMA) to avoid penalties (Javed et al., 2022).

Normative Isomorphism arises from pressure via professional standards and social expectations. As sustainability becomes a global norm, MSME adopt these practices to be viewed as "modern" and "responsible" by their peers and society (Iqbal et al., 2025). Mimetic Isomorphism occurs when firms copy the actions of successful competitors in uncertain environments. An MSME might adopt eco-labeling because a market leader has done so successfully (Iqbal et al., 2025).

3.8.2.3 Resource-Based View (RBV)

The Resource-Based View suggests that firm performance is determined by the resources it owns and controls. To achieve a competitive advantage, these resources must be valuable, rare, inimitable, and non-substitutable (VRIN). In the sustainability context, "green capabilities"—such as specialized knowledge in circular design, energy-efficient processes, or reputation for ethical sourcing—are viewed as strategic resources. For resource-constrained MSME, leveraging intangible assets like "organizational agility" or "local trust" can allow them to implement sustainability strategies that are difficult for large competitors to replicate (Troise et al., 2023).

3.8.3 Drivers of Sustainability in MSME

The transition toward sustainability in MSME is not a uniform process; it is propelled by a complex mix of internal motivations and external pressures. Understanding these drivers is crucial for designing effective support policies.

3.8.3.1 External Drivers

Government Regulation and Policy Legislation remain the most significant external push factor. Governments influence MSME Behaviour through "command and control" regulations (fines, penalties) and economic incentives (grants, tax breaks). In Oman, the "Conservation of Environment and Prevention of Pollution Act" creates a legal framework that deters harmful industrial acts. However, research by Iqbal et al. (2025) highlights that Omani MSME often feel the regulatory pressure is minimal compared to large corporations, leading to a compliance-based rather than strategic approach.

In China, the government has recognized the massive pollution contribution of MSME. Strict legislation has been identified as a critical success factor for the adoption of Environmental Management Accounting (EMA). Without the threat of regulatory action, many MSME prioritize short-term profit over environmental protection (Javed et al., 2022). Beyond punishment, governments provide Incentives. Tax concessions and grants facilitate Behavioural change, helping MSME overcome the initial capital hurdles of green technology adoption (Abdul-Rashid et al., 2017).

Market and Customer Pressure "Green demand" is reshaping the competitive landscape. Consumers are increasingly environmentally conscious, preferring products with lower carbon footprints and ethical supply chains. For MSME, Differentiation through eco-innovation is a tool for survival; a good ecological reputation attracts customers and legitimizes the firm's existence (Abdul-Rashid et al., 2017). Furthermore, Supply Chain Requirements are tightening. MSME often function as suppliers to large multinational corporations (MNCs). As MNCs commit to net-zero goals, they impose strict sustainability requirements on their suppliers. Lee

and Jung (2025) found that buying firms play a critical role in enhancing MSME suppliers' sustainability innovation management in the South Korean automobile industry.

3.8.3.2 Internal Drivers

3.2.1 Personal Values and Leadership Unlike large public companies where decision-making is diffuse, MSME are often dominated by the owner-manager. Consequently, the personal values, beliefs, and lifestyle of the owner are decisive drivers. Internal factors such as Commitment, "personal values of owners," and "habit" are cited as major drivers (Abdul-Rashid et al., 2017). Additionally, a Connection to Nature plays a role. In Oman, some MSME owners expressed an inherent attraction toward nature, driven by direct interactions with the environment and personal experiences of climate change impacts, such as floods destroying assets. This intrinsic motivation often supersedes legal requirements (Iqbal et al., 2025).

Operational Efficiency and Cost Reduction Sustainability is increasingly viewed through the lens of efficiency. "Lean green" practices that reduce waste and energy consumption directly improve the bottom line. Cost Savings from measures such as energy efficiency, recycling of materials, and waste reduction lower operational costs. For cash-strapped MSME, this economic argument is often more persuasive than abstract environmental benefits (Abdul-Rashid et al., 2017). Furthermore, Resource Valorization—the internal drive to "make the most of what we have"—aligns with circular economy principles. This "problemistic search" for efficiency leads MSME to innovate in ways that reduce resource dependency (Troise et al., 2023).

Strategic Intent and Competitiveness Forward-thinking MSME view sustainability as a strategic intent to ensure long-term survival. Adopting green practices can open new markets, improve brand image, and enhance product quality (Abdul-Rashid et al., 2017; Iqbal et al., 2025).

3.8.4 Barriers to Sustainability Adoption

Despite the drivers, the adoption rate of sustainable practices in MSME remains suboptimal. The barriers are significant and often systemic.

3.8.4.1 Financial Constraints

The most pervasive barrier is the lack of financial resources. High Initial Investment is a major hurdle; implementing green technologies such as solar panels, waste treatment systems, or circular production lines requires substantial upfront capital. For MSME with limited cash flow, these "sunk costs" are difficult to justify (Touratier-Muller et al., 2025). Additionally, there is a Lack of Access to Finance. Financial institutions often view MSME as high-risk borrowers, and there is a lack of specialized "green finance" products tailored to small businesses. Javed et al. (2022) note that the unavailability of flexible financing options is a major hurdle for EMA adoption in Chinese MSME. Finally, ROI Uncertainty creates hesitation. The benefits of sustainability are often long-term and intangible (e.g., reputation), while the costs are immediate and tangible. This discrepancy leads to a "profit-first" mentality that sidelines environmental investments (Lubis et al., 2024).

3.8.4.2 Knowledge and Skill Gaps

Implementing sustainability requires specialized technical knowledge that is often absent in MSME. Technical Expertise skills related to Life Cycle Assessment (LCA), carbon foot printing, and circular design are rare in the MSME workforce. Unlike large firms, MSME cannot afford dedicated sustainability officers (Chakraborty et al., 2025). This leads to Information Asymmetry, where MSME owners often lack information about how to implement sustainable practices or where to access government support. This "knowledge gap" prevents the translation of environmental awareness into action (Sabri, 2019). Furthermore, Managerial Inertia persists; a lack of awareness among top management regarding the benefits of tools like Environmental Management Accounting (EMA) leads to low adoption rates (Javed et al., 2022).

3.8.4.3 Institutional and Infrastructural Voids

The external environment often fails to support MSME sustainability. Infrastructure is a critical issue. In developing economies, the lack of physical infrastructure—such as waste collection systems, recycling plants, and public transport—makes circular business models physically impossible to implement. Touratier-Muller et al. (2025) found that Serbian SME faced inadequate waste collection infrastructures as a major barrier, unlike their French counterparts. Additionally, Regulatory Complexity poses a challenge. While regulation drives some, it confuses others. Complex, inconsistent, or poorly enforced regulations create uncertainty. In some cases, MSME feel that regulations are designed for large corporations and are ill-suited to their operational reality (Iqbal et al., 2025).

3.8.5 Strategic Pathway of Circular Economy (CE)

The Circular Economy (CE) represents a regenerative paradigm designed to decouple economic growth from resource consumption, standing in stark contrast to the traditional linear "take-make-waste" model. By prioritizing the retention of products and materials in use for as long as possible, MSME can leverage their inherent agility to redesign products for durability, disassembly, and recyclability (Chakraborty et al., 2025). This approach includes strategies such as repair, refurbishment, and remanufacturing, which allow firms to access secondary markets and service-based revenue streams. Furthermore, the framework emphasizes the regeneration of natural systems, particularly in sectors like agri-food. For instance, MSME are increasingly converting organic waste—such as coffee pulp and manure—into biofertilizers and biogas, thereby reducing both operational costs and environmental degradation (Sari et al., 2025).

Despite the clear benefits, the adoption of CE models is hindered by significant barriers, particularly regarding financial constraints which vary depending on the specific business model employed. Research by Touratier-Muller et al. (2025) indicates that financial hurdles are most acute for "Circular Input" and "Resource

Recovery" models, which necessitate substantial capital investment in heavy machinery. In contrast, service-oriented models such as "Product-as-a-Service" and "Sharing Platforms" encounter fewer financial barriers but face considerable challenges related to market acceptance and consumer skepticism, highlighting that the path to circularity is not uniform across all MSME sectors.

3.8.6 The Role of Industry 4.0 and Digitalization

The Fourth Industrial Revolution, commonly known as Industry 4.0, equips organizations with a technological toolkit essential for implementing advanced sustainability strategies. This integration of digital innovations with physical processes facilitates the emergence of "smart sustainability," where data-driven insights drive environmental efficiency. By bridging the gap between digital systems and physical operations, Industry 4.0 enables Micro, Small, and Medium Enterprises (MSME) to move beyond reactive measures toward proactive resource management and strategic environmental stewardship.

Key technologies within this paradigm include the Internet of Things (IoT), Artificial Intelligence (AI), and Blockchain, each playing a distinct role in operational optimization. IoT sensors capture real-time data on energy consumption, machine health, and material flows, granting MSME the visibility needed to precisely identify and eliminate waste (Machado et al., 2024; Renukappa et al., 2025). Simultaneously, Artificial Intelligence optimizes logistics and production schedules to minimize fuel consumption and overproduction, while AI-driven predictive maintenance extends machinery lifecycles in alignment with circular economy principles (Renukappa et al., 2025). Furthermore, Blockchain technology ensures supply chain transparency by providing an immutable record of product provenance, thereby verifying claims of ethical sourcing and sustainability for customers (Renukappa et al., 2025).

The sustainability of MSME is no longer a peripheral issue; it is central to the global economic and environmental agenda. This theoretical analysis has demonstrated that while MSME face unique challenges—primarily financial constraints, knowledge

gaps, and infrastructural voids—they also possess unique strengths. Their agility, community embeddedness, and owner-driven values allow for authentic and rapid sustainability transitions when the right drivers are in place. The Triple Bottom Line provides a robust framework for this transition, enabling MSME to measure and manage their impact across economic, social, and environmental dimensions. The integration of Circular Economy principles and Industry 4.0 technologies offers a pathway to overcome resource constraints, turning waste into value and data into efficiency. Importantly, the evidence confirms that this transition is financially viable, with TBL practices leading to improved long-term profitability and resilience.

3.9 Perceived Benefits of Insurance to MSME

The adoption of insurance within the Micro, Small, and Medium Enterprise (MSME) sector is a critical factor for economic resilience, yet it is often hindered by a lack of awareness regarding its utility. The "perceived benefit" of insurance—the business owner's subjective evaluation that the coverage offers value beyond its cost—is a primary driver of purchase intention. Recent literature suggests that these benefits are multifaceted, ranging from financial safety nets and business continuity to improved access to credit and cyber resilience.

3.9.1 Business Continuity and Operational Resilience

One of the most significant perceived benefits of insurance is its ability to ensure business continuity following disruptions. For small enterprises, particularly in volatile sectors like tourism, the decision to purchase insurance is often a response to resource scarcity and environmental risks. Research indicates that in such resource-scarce environments, business owners perceive insurance as a necessary mechanism for survival, allowing them to manage specific operational risks that would otherwise lead to closure (Dayour, Adongo, & Amuquandoh, 2020). This sentiment is echoed in broader risk management contexts, where the effectiveness of insurance coverage is directly linked to the speed of recovery. Studies in Morocco have demonstrated that comprehensive insurance coverage is effective in managing business interruption

risks, providing the financial liquidity needed to resume operations quickly after a shock (Naciri, 2024).

3.9.2 Financial Protection and Access to Credit

Beyond immediate disaster recovery, insurance is perceived as a strategic financial tool that enhances an MSME sustainability. Financial literacy plays a crucial mediating role here; business owners with higher financial literacy are better able to understand the long-term benefits of risk transfer. When MSME possess a high tolerance for organizational risk and adequate financial literacy, they view insurance not just as an expense, but as a facilitator of sustainability that protects their bottom line against unforeseen financial shocks (Gunawan et al., 2024). Furthermore, in emerging economies like Nigeria, the uptake of insurance is heavily influenced by economic determinants, where insurance is often perceived as a prerequisite for securing loans and demonstrating financial stability to investors (Dansu & Olubusade, 2023).

3.9.3 Trust, Service Quality, and Customer Satisfaction

The intangible nature of insurance means that its perceived benefit is heavily reliant on trust and service quality. Research on Cigna Insurance customers highlights that when clients perceive high service quality and trust the insurer, their satisfaction and intention to repurchase increase significantly. The "benefit" here is psychological—the peace of mind derived from trusting that the insurer will honor their commitments (Narahdita, 2023). Conversely, fear can also drive the perception of benefit. In the life insurance sector, consumer perceived fear acts as a mediating variable; when individuals fear potential risks, they perceive higher benefits in insurance products, which in turn drives their purchase intention (Nursiana et al., 2024).

3.9.4 Cybersecurity and Emerging Risks

As MSME increasingly digitize, the perceived benefits of insurance have expanded to include cyber defense. A systematic review of cyber insurance reveals that for small

businesses, the benefit of such policies extends beyond financial reimbursement. Cyber insurance is increasingly viewed as a mechanism that provides access to incident response experts and mandates better cybersecurity hygiene, thereby improving the firm's overall security posture against digital threats (Adriko & Nurse, 2024).

3.9.5 Health and Human Capital

The health of the business owner and employees is a critical asset for MSME. The perceived benefits of medical insurance systems are often evaluated based on their ability to alleviate the financial burden of healthcare. Studies in China suggest that the insured population's perception of benefit is tied to the system's ability to prevent "medical poverty" and ensure access to necessary care (Liu, Liu, & Liang, 2023). Among younger generations (Gen Z), the intention to purchase health insurance is driven by a combination of financial literacy and attitude, where insurance is perceived as a responsible component of personal financial planning (Darwin & Gularso, 2024).

3.9.6 Decision-Making and Self-Efficacy

Finally, the ability to perceive these benefits is contingent on the decision-maker's self-efficacy. Research on insurance decision-making indicates that individuals with higher self-efficacy—confidence in their ability to make sound decisions—are more likely to engage with insurance products and perceive their value correctly. In contrast, those with lower self-efficacy may feel overwhelmed and fail to recognize the benefits of coverage (Barnes, Hanoch, & Rice, 2015). This aligns with findings from Ghana, where factors such as education and income levels were found to directly influence the demand for insurance, suggesting that a lack of understanding (or low self-efficacy) prevents many SME owners from perceiving the true benefits of insurance products (Musah & Duker, 2021).

3.10 Interrelationship between Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits

As per the theoretical frameworks, concepts and theories explained, following interconnection can be derived between Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits.

3.10.1 Dimensions of Insurance Literacy as a Strategic Resource

Drawing upon the Resource-Based View (RBV), Insurance Literacy within the MSME context functions as a critical intangible resource that meets the VRIN criteria—valuable, rare, inimitable, and non-substitutable. Just as specialized knowledge in circular design provides a competitive edge (Troise et al., 2023), multidimensional insurance literacy (comprising knowledge, skills, and attitude) empowers owner-managers to navigate complex financial landscapes. This cognitive capability reduces the "information asymmetry" that typically creates barriers to entry for small firms. By treating insurance literacy as a strategic asset rather than a mere administrative function, MSME can overcome the resource constraints that typically hinder strategic decision-making, transforming their internal capabilities into a platform for sustainable growth (Troise et al., 2023).

3.10.2 The Nexus of Risk Appetite and Perceived Benefits

High levels of insurance literacy directly recalibrate an MMSME Risk Appetite and Perceived Benefits. In the absence of literacy, owners often exhibit a low risk appetite driven by a fear of the unknown, viewing insurance premiums merely as "sunk costs" or financial burdens (Touratier-Muller et al., 2025). However, informed owners can accurately assess risk-return trade-offs, leading to a calculated risk appetite that supports innovation and expansion. This knowledge shifts the Perceived Benefit of insurance from a passive expense to an active value-creation mechanism—a necessary tool for asset protection and business continuity. This cognitive shift enables managers to engage in "problemistic search" for efficiency, recognizing that risk transfer

mechanisms are essential for stabilizing the firm's operations against external shocks (Troise et al., 2023).

3.10.3 Insurance Literacy and Economic Sustainability (Profit/Prosperity)

In the context of the Triple Bottom Line's Economic Dimension, insurance literacy is a foundational driver of long-term viability and "Prosperity" (Jonker, 2024). By effectively utilizing insurance to mitigate catastrophic risks, MSME protect their balance sheets from sudden depletion, thereby reducing "Establishment Churn"—the rate at which firms fail and exit the market (Indiana Business Research Center, 2011). This stability ensures the firm remains a going concern, capable of sustaining its "Tax Contributions" and driving local economic dynamism. Without the financial safety net provided by insurance, the economic sustainability of an MSME is fragile, as a single adverse event can dismantle years of value accumulation (Indiana Business Research Center, 2011).

3.10.4 Insurance Literacy and Social Sustainability (People/Equity)

Finally, insurance literacy underpins Social Sustainability by enabling the firm to fulfill its obligations under Stakeholder Theory. MSME are deeply embedded in their local communities and have significant responsibilities toward employees and social stakeholders (Javed et al., 2022; Nica et al., 2025). A literate owner is more likely to secure coverage that protects "Human Capital," such as workmen's compensation and health insurance, which are critical for workforce retention and social equity (Indiana Business Research Center, 2011). Furthermore, by ensuring the firm's survival, insurance allows the MSME to maintain its role in "Community Engagement" and charitable support, thereby preserving the social fabric and stability of the local ecosystem (Lubis et al., 2024; Iqbal et al., 2025).

3.11 Conclusion

This chapter has established the theoretical scaffolding for the study. By synthesizing different theories and models related to Insurance Literacy, Risk Appetite and

Sustainability, the framework posits that insurance is not merely a cost but a catalyst. It argues that increasing Insurance Literacy will lead to higher Adoption, which in turn enhances Risk Appetite, ultimately securing the Sustainability of MSME in Kerala. It is highly relevant to the specific context of Kerala, with its high climate risk profile. These findings thoroughly examined through upcoming analysis chapters.

Chapter 4

INFLUENCE OF OWNER AND FIRM TRAITS ON MSME INSURANCE LITERACY AND AWARENESS

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4.1. Introduction

This chapter presents an analysis of the sample data collected on MSME owner characteristics and MSME firm characteristics, focusing on various aspects of insurance literacy and insurance awareness. This analysis addresses the first objective of the study. To achieve this, one-way ANOVA and post hoc tests were employed, with post hoc tests applied only when the ANOVA results were found to be significant.

The chapter is organized into eight sections. The first section provides a brief introduction, while the second and third sections present a detailed discussion of MSME owner and firm characteristics, respectively. Owner characteristics include respondents' age, educational qualifications, and prior experience. Firm characteristics cover aspects such as location, category of business, sector of business, form of organisation, total investment, annual turnover, number of employees and sources of finance. The fourth section discusses descriptive statistics, including means and standard deviations, followed by an assessment of the reliability and normality of each variable in the fifth section. Section six evaluates all hypotheses related to the first objective (H1 to H7), while section seven provides a summary of these hypotheses. The final section offers the conclusion of this chapter.

4.2. MSME Owner Characteristics

The age, educational qualification, and prior experience are the three categories under which demographic information is evaluated. The detailed description of each categorical variable is presented below with the help of graphs.

4.2.1. Age-Wise Distribution of Sample Respondents

Figure 4.1

Age-wise Classification of Respondents

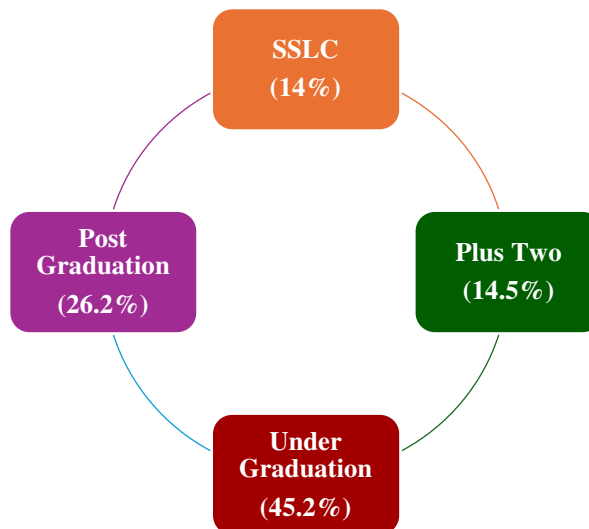


From Figure 4.1, it can be interpreted that the majority of MSME owners in Kerala fall within the age of 35 to 40 years age category (27.8%). The second-highest group is those under the age of 30 (22.3%). Owners in the 40 to 45 years category represent 20.8%, while 30-35 categories accounts for 21.6%. This indicates that young people prefer to start enterprises in Kerala.

4.2.2. Educational Qualification-Wise Distribution of Sample Respondents

Figure 4.2

Educational Qualification-wise Classification of Respondents



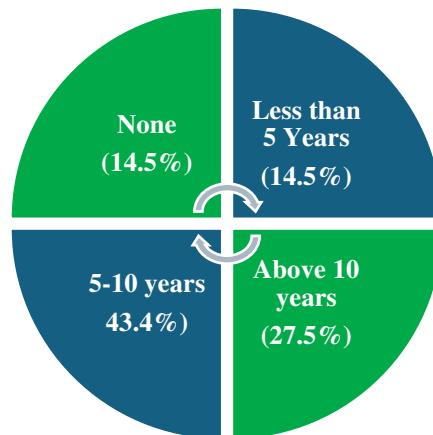
In Figure 4.2, the majority of respondents (45.2%) have undergraduate qualifications. The rest of the people (26.2%) attained their post-graduation. A small proportion of owners have SSLC and Plus Two qualifications (14 and 14.5% respectively). Thus, it indicates a significant percentage of owners are well-educated.

4.2.3. Prior Experience-Wise Distribution of Sample Respondents

This section explains the prior experience-wise analysis of the sample respondents before starting their venture. For this purpose, the researcher divided the prior experience of respondents into four different categories, such as no experience, less than 5 years' experience, 5 to 10 years' experience, and above 10 years experience. Based on the data collected from 385 respondents, it is clear that 5 to 10 years of experience has the highest percentage of respondents (43.4%). It is also clear that, above 10 years category of experience ranked in the second position (27.5%). Finally, there are equal position for the below 5 years and no experience respondents (14.5%) for both categories. Thus, it is interpreted that the majority of respondents possess prior experience.

Figure 4.3

Prior Experience-wise Classification of Respondents



4.3. MSME Firm Characteristics

The firm characteristics include seven items, such as location, category of venture, business sector, form of organization, total investment, major source of finance, annual turnover, and number of employees.

4.3.1. Location-Wise Distribution of Sample Respondents

Figure 4.4

Location-wise Classification of Respondents

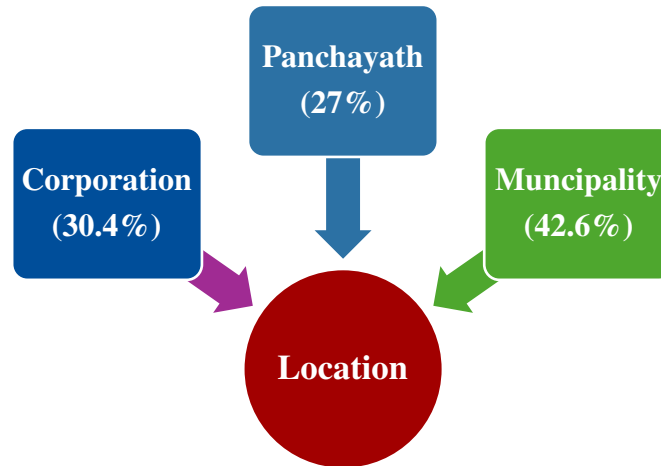


Figure 4.4 presents information about the location of businesses. The majority of the ventures in the sample are located in municipal areas (42.6%), followed by those in corporation areas (30.4%) and panchayats (27%). Thus, most of them are situated in Municipalities.

4.3.2. Category-Wise Distribution of Sample Respondents

Figure 4.5

Category-wise Classification of Respondents

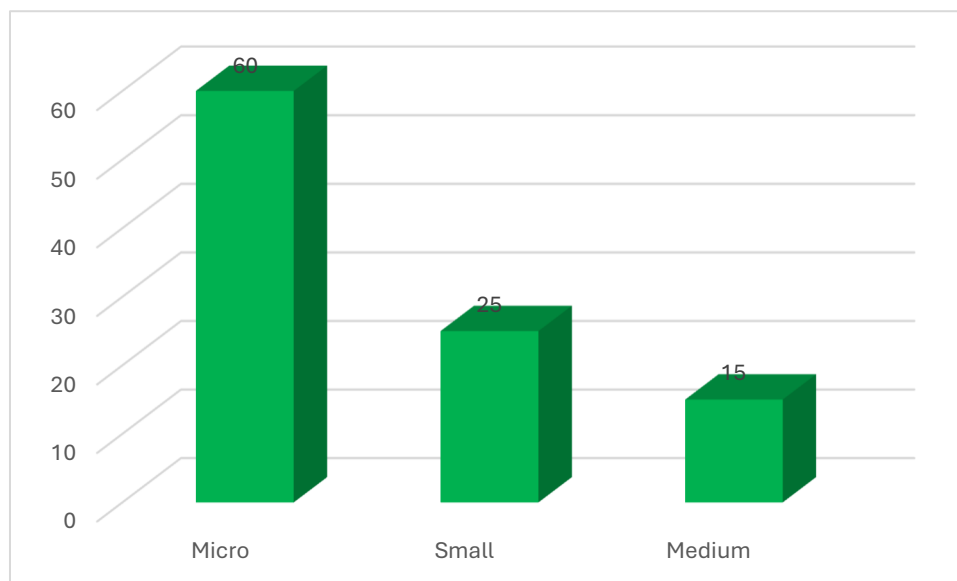


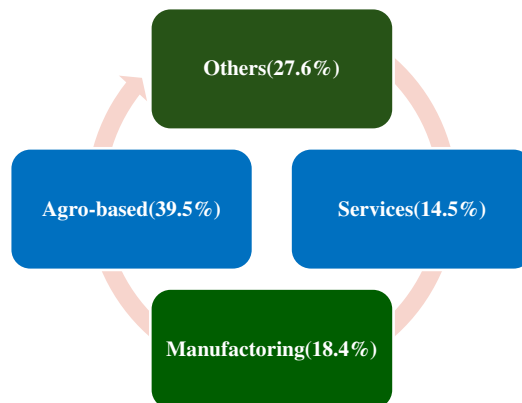
Figure 4.5 shows the information about the category of businesses. The majority of the ventures in the sample are categorized as micro enterprises (60%), followed by small enterprises (25%) and medium enterprises (15%). Therefore, most of them fall under the category of micro enterprises.

4.3.3. Business Sector-Wise Distribution of Sample Respondents

The researcher divided the entire organization into four different categories. Among these, the majority of the selected sample respondents fall under the category of Agro-Based Ventures (39.5%). It is also observed that the Service Sector accounts for the lowest proportion of respondents (14.5%).

Figure 4.6

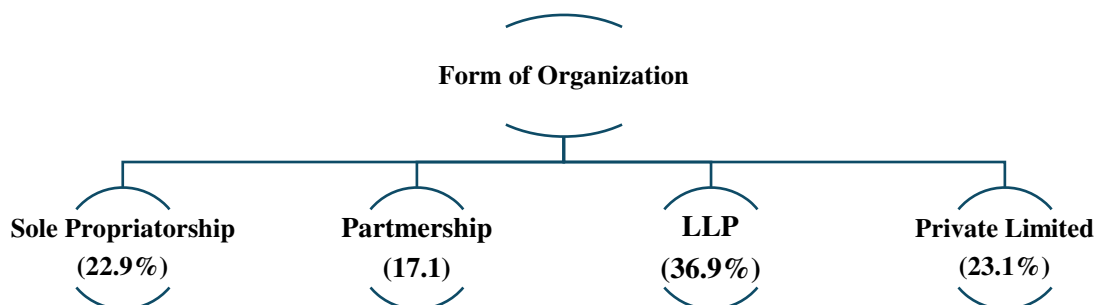
Business Sector-wise Classification of Respondents



4.3.4. Form of Organization- Wise Distribution of Sample Respondents

Figure 4.7

Form of organization-wise Classification of Respondents

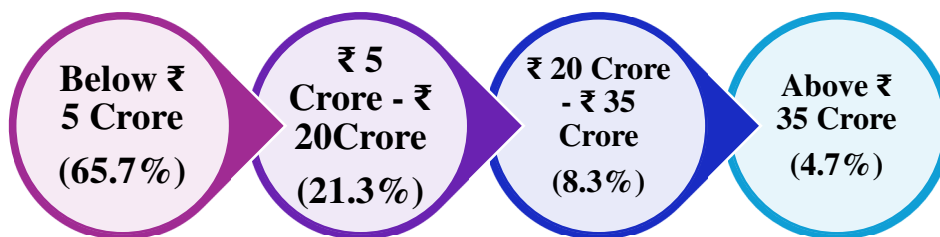


As per figure 4.7, it is clear that MSME in Kerala is registered as four different categories such as sole proprietorship, partnership, Limited Liability Partners and Private Limited Companies. Thus, it can be summarised that majority of the respondents are registered as Limited Liability Partners (36.9%), followed by Private Limited Companies (23.1%). Among these, least category of respondents are fall under the category of partnership firms (17.1%).

4.3.5. Total Investment- Wise Distribution of Sample Respondents

Figure 4.8

Total Investment-wise Classification of Respondents



The respondents of the current study were divided based on the total investment of their ventures. It is found that the majority of the respondents fall under the category of Below 5 Crore investment category (65.7%), followed by enterprises with an investment of ₹5 Crore - ₹20 Crore (21.3%). Likewise, organization with investments between ₹20 Crore – ₹35 Crore consists of 8.3% and the above ₹35 Crore category comprises 4.7% of the sample.

4.3.6. Major Source of Investment- Wise Distribution of Sample Respondents

Figure 4.9

Source of Investment -wise Classification of Respondents

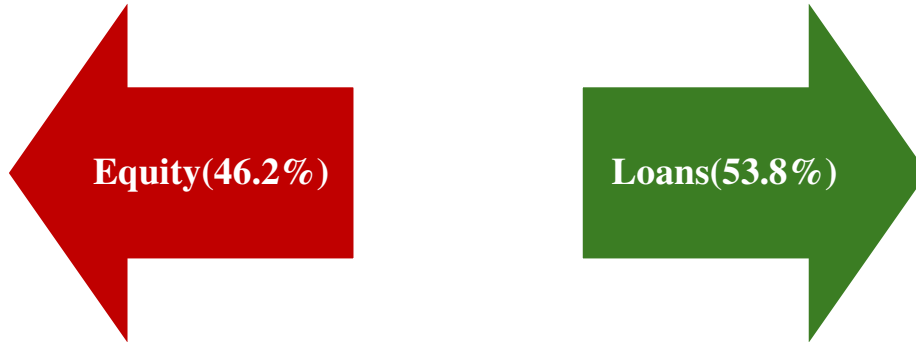
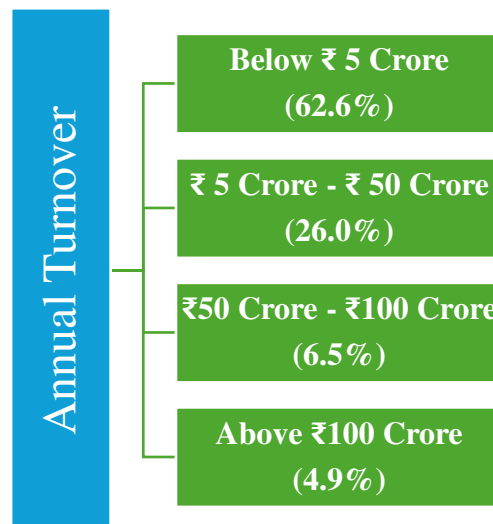


Figure 4.9 shows the respondents' source of investment. It is clear that the major source of investment of MSME through loans from financial institutions (53.8%) followed by own equity (46.2%).

4.3.7. Annual Turnover- Wise Distribution of Sample Respondents

Figure 4.10

Annual Turnover -wise Classification of Respondents



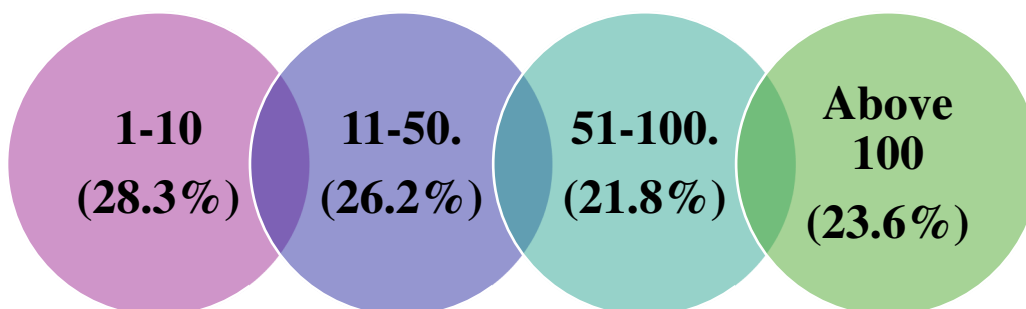
The sample respondents were divided based on the annual turnover of their ventures. The result indicates that the highest proportion of respondents belongs to the below ₹5Crore turnover category (62.6%) since the majority enterprises come under Micro

category. The smallest group, representing 4.9%, comprises ventures with an annual turnover of above ₹100 Crore.

4.3.8. Number of employees- Wise Distribution of Sample Respondents

Figure 4.11

Number of Employees -Wise Classification of Respondents



The sample enterprises were classified based on the number of employees. The largest group, 28.3%, consists of enterprises with 1–10 employees. This is followed by enterprises with 11–50 employees (26.2%) and those employing more than 100 employees (23.6%). The smallest proportion, 21.8%, represents enterprises with 51–100 employees.

4.4. Descriptive Statistics

This section explains the descriptive statistics for all the variables used in the current study.

4.4.1. Descriptive Statistics of Insurance Awareness

Table 4.1 explains the descriptive statistics of insurance awareness about MSME owners with the help of mean score and standard deviation.

From the table, it is clear that the **Insurance Awareness** level among MSME shows a moderate to high level of awareness (Mean ranging from **3.519 to 3.891**). Among these” insurance awareness provided by Banks and financial institutions” scored highest rank with mean score of 3.891 and SD of 0.759. It is also understood that government plays a significant role in offering insurance awareness among MSME (Mean: 3.844, SD: 0.768). In contrary, MSME owners agree that information about

the insurance products are not readily available, which scored lowest score with Mean and SD of 3.519 and 0.933 respectively. Thus, the results imply that there is a **need for more information dissemination and awareness campaigns** by both insurance providers and government bodies.

Table 4.1

Descriptive Statistics of Insurance Awareness

Constructs	Item Code	Items	Mean	SD	SE	Rank
Insurance Awareness	AW1	I am aware of the insurance products available for MSME.	3.873	0.815	0.042	2
	AW2	Information about MSME insurance options is readily available.	3.519	0.933	0.048	8
	AW3	I understand the benefits of using insurance for risk mitigation.	3.735	0.805	0.041	6
	AW4	I am aware of the various types of insurance, such as property, liability, and health insurance.	3.839	0.863	0.044	4
	AW5	Government programs have effectively raised awareness about MSME insurance.	3.844	0.768	0.039	3
	AW6	Banks and financial institutions provide sufficient guidance on MSME insurance.	3.891	0.759	0.039	1
	AW7	Insurance providers conduct adequate awareness campaigns for MSME.	3.569	0.908	0.046	7
	AW8	Peers and colleagues in my industry have discussed the importance of insurance.	3.764	0.790	0.040	5

Source: Primary Data

4.4.2. Descriptive Statistics of Insurance Literacy Dimensions

Table 4.2 explains the descriptive statistics of insurance literacy dimensions about MSME owners with the help of the mean score and standard deviation. As per the current study, there are four different dimensions of insurance literacy: Insurance attitude, insurance behaviour, insurance confidence, and insurance knowledge. All the items for measuring these constructs were taken from prior literature. The detailed explanations of each dimension are given below;

The researcher used four different items for measuring insurance attitude. Most of the respondents had a positive attitude toward insurance, since it is considered an important tool for financial safety. Among these four items, “willing to make insurance by taking security” is placed first rank with a mean and SD of 3.91 and 0.876, respectively. Similarly, insurance behaviour is measured by using three indicators; respondents are financially cautious and deliberate in decision-making (Mean = 4.01, SD = 0.873), carefully consider their options before financial decisions (Mean = 3.90), and moderate control over budgeting for major expenditures (Mean = 3.87).

Insurance confidence items show the confidence level of MSME owners in making investment decisions. From the table, it is clear that consulting an expert for taking insurance decisions placed the lowest rank with a mean and SD of 3.48 and 0.971, respectively. Finally, the researcher used four items for measuring insurance knowledge. Among these four, “some care in taking insurance decision” placed first position (Mean = 2.91). In summary, the insurance literacy among MSME in Kerala is highly important for making their investment decisions and reducing risks.

Table 4.2

Descriptive Statistics of Insurance Literacy Dimensions

Constructs	Item Code	Items	Mean	SD	SE	Rank
Insurance Attitude	IA1	When it comes to making a financial investment like insurance, I prefer it as safety to risk	3.87	0.947	0.048	2
	IA2	The amount of return from insurance has nothing to do with my willingness to take risk	3.91	0.876	0.045	1
	IA3	I am happy with any financial investment like insurance as long as the risk is minimal	3.86	0.913	0.047	3
	IA4	I do not agree with the idea that greater risk leads to a higher rate of return from insurance	3.78	0.939	0.048	4
Insurance Behaviour	IB1	I usually have control over my budget (like buying insurance) for the major spending of the year	3.87	1.017	0.052	3
	IB2	Before taking any financial decision like insurance, I would consider my options multiple times	3.90	0.981	0.050	2
	IB3	I have never spent my income on buying financial products like insurance	4.01	0.873	0.045	1
Insurance Confidence	IC1	I am afraid to making financial decisions like insurance, no matter how good I think my decisions are	3.62	1.032	0.053	1
	IC2	I am not confident in planning my financial budget for buying an	3.56	0.996	0.051	2

Constructs	Item Code	Items	Mean	SD	SE	Rank
		insurance product for the year				
	IC3	I do not feel confident making insurance decisions, even when I have the knowledge to do so	3.62	0.894	0.046	1
	IC4	I prefer consulting experts in managing my losses through the purchase of insurance rather than managing it myself	3.48	0.971	0.049	3
Insurance Knowledge	IK1	I am more comfortable with living a life that does not involve high financial risk, thereby buying insurance	2.37	0.065	1.269	4
	IK2	When making financial decisions like insurance, I am being very careful	2.91	0.075	1.469	1
	IK3	When it comes to financial spending like insurance, I am financially more conservative	2.44	0.068	1.338	3
	IK4	Because I believe in luck, my understanding of a financial instrument like insurance is not necessary	2.74	0.072	1.412	2

Source: Primary Data

4.4.3. Descriptive Statistics of Risk Appetite

Organizational risk appetite refers to the amount of risk that an individual organization is willing to tolerate to handle organizational risk. The current study used eight different items for measuring risk appetite. Among these, pressure from stakeholders placed first in risk tolerance decisions (**Mean 3.891, SD = 0.759**). Likewise, the company's risk-taking capacity and the owner's tendency to take risks an important factors in taking risk tolerance decisions (Mean: 3.844 and 3.873

respectively). On the other hand, past risk experiences have less influence on current risk decisions (Mean: 3.519 and SD: 0.933). Overall, the findings show that pressures from external actors and internal risk tolerance level have a stronger influence on risk appetite than prior experiences.

Table 4.3

Descriptive Statistics of Risk Appetite

Constructs	Item Code	Items	Mean	SD	SE	Rank
<i>Risk Appetite</i>	RA1	The owner's or operator's tendency to take risks influences our decision for risk tolerance	3.873	0.815	0.042	2
	RA2	Our company's past risk experience influences our decision to accept risk	3.519	0.933	0.048	8
	RA3	The awareness and knowledge of our business environment influence our decision on risk tolerance	3.735	0.805	0.041	6
	RA4	Perceived riskiness in our kind of business influences our decision for some level of risk tolerance	3.839	0.863	0.044	4
	RA5	Our company's risk capacity influences our desire for risk acceptance	3.844	0.768	0.039	3
	RA6	Other stakeholders' pressures influence our risk tolerance decision at times	3.891	0.759	0.039	1
	RA7	The frequency of risk reporting determines the amount and type of risk my organisation wishes to accept	3.569	0.908	0.046	7
	RA8	My company's size influences our risk tolerance level	3.764	0.790	0.040	5

Source: Primary Data

4.4.4. Descriptive Statistics of Sustainability Constructs

Two different constructs were used to measure the sustainability of MSME, namely **economic sustainability** and **social sustainability**.

Table 4.4

Descriptive Statistics of MSME Sustainability

Constructs	Item	Items	Mean	SD	SE	Rank
Economic	F1	Business firms need to distribute goods and services fairly among people worldwide.	3.37	0.887	0.045	3
	F2	Our company has improved its market share	3.37	1.005	0.051	3
	F3	Our company has improved its position in the marketplace.	3.67	0.921	0.047	2
	F4	Our company has increased its profits.	3.92	0.842	0.043	1
Social	S1	Companies need to act responsibly towards their employees, customers, and suppliers	3.96	0.708	0.036	1
	S2	Our company has improved or enhanced the overall stakeholder welfare	3.90	0.685	0.035	2
	S3	Our company has improved the occupational health and safety of employees.	3.34	0.944	0.048	4
	S4	Our company has improved the awareness and protection of the claims and rights of the community served	3.71	0.776	0.040	3

Source: Primary Data

Four indicators were used to assess each construct. The items for measuring economic sustainability include the company's increased profits (Mean = 3.92, SD = 0.842), improved position in the marketplace (Mean = 3.67, SD = 0.921), and increased

market share (Mean = 3.33, SD = 1.005), among others. Similarly, *responsibility towards stakeholders* ranked first in measuring social sustainability (Mean = 3.96, SD = 0.708).

4.4.5. Descriptive Statistics of Perceived Benefits

Three items were used to measure the benefits received from insurance. The detailed explanations are given in Table 4.5.

Table 4.5

Descriptive Statistics of Perceived Benefits

Constructs	Item	Items	Mean	SD	SE	Rank
<i>Perceived Benefits</i>	PB1	When evaluating insurance, I relied on my feelings and expectations of its benefits.	3.48	1.223	0.062	2
	PB2	I thought my feelings were necessary for my evaluation of the insurance policy.	3.57	1.203	0.061	1
	PB3	I always try to discover whether my feelings or expected benefits influenced my choice of insurance patronage.	3.23	1.199	0.061	3

Source: Primary Data

As per Table 4.5, it is clear that all the items show a moderate agreement among MSME, with mean scores ranging from 3.23 to 3.57. Among these, respondents' feelings in evaluating insurance products placed the highest rank (**Mean = 3.57, SD = 1.203**). Conversely, respondents are somewhat less consistent in examining how their feelings impact their insurance decisions, placing a lower rank (**Mean = 3.23**).

4.5. Reliability and Normality

The following section explains the reliability of the scaled items used in the research and the normality of the data using different statistical tools.

4.5.1. Reliability

Table 4.6

Reliability

SLNO	Constructs	No of Items	Alpha
1	Insurance Awareness	8	0.921
2	Insurance Attitude	4	0.853
3	Insurance Behaviour	3	0.858
4	Insurance Confidence	4	0.869
5	Insurance Knowledge	4	0.872
6	Risk Appetite	8	0.921
7	Economic Sustainability	4	0.806
8	Social sustainability	4	0.767
9	Perceived benefit	3	0.885

Source: Primary Data

The reliability of an item or construct is checked when it consistently produces similar results. In statistics, the reliability of each scaled item is measured by using Cronbach's alpha. Table 4.6 shows the results of Cronbach's alpha values of nine measuring scales, along with the number of items in each construct. As per the table, it is clear that all items have a high level of internal consistency with an alpha value above 0.7 (Hinton et al., 2004). Thus, it can be summarized that the alpha value ranges from 0.921 to 0.767, which satisfies the reliability measurement.

4.5.2. Normality

In statistics, the normality test determines whether the data follows a normal distribution. The Kolmogorov-Smirnov normality test was used to check the normality of the data. Table 4.7 shows the summary of results. As per the table, it is clear that none of the items are normally distributed, since their p-value is less than 0.05. Alternatively, skewness and Kurtosis were done to ensure the normality of the data. Table 4.8 presents the skewness and kurtosis results (Byrne, 2010).

Table 4.7

Kolmogorov-Smirnov Test of Normality

Items	N	Statistics	p value	Items	N	Statistics	p value
IA1	385	0.288	0.000	RA7	385	0.239	0.000
IA2	385	0.293	0.000	RA8	385	0.311	0.000
IA3	385	0.268	0.000	F1	385	0.212	0.000
IA4	385	0.274	0.000	F2	385	0.221	0.000
IB1	385	0.281	0.000	F3	385	0.283	0.000
IB2	385	0.271	0.000	F4	385	0.297	0.000
IB3	385	0.294	0.000	S1	385	0.325	0.000
IC1	385	0.239	0.000	S2	385	0.300	0.000
IC2	385	0.251	0.000	S3	385	0.213	0.000
IC3	385	0.284	0.000	S4	385	0.276	0.000
IC4	385	0.222	0.000	PB1	385	0.246	0.000
IK1	385	0.203	0.000	PB2	385	0.272	0.000
IK2	385	0.186	0.000	PB3	385	0.189	0.000
IK3	385	0.192	0.000	AW1	385	0.302	0.000
IK4	385	0.188	0.000	AW2	385	0.258	0.000
RA1	385	0.305	0.000	AW3	385	0.299	0.000
RA2	385	0.260	0.000	AW4	385	0.314	0.000
RA3	385	0.301	0.000	AW5	385	0.305	0.000
RA4	385	0.313	0.000	AW6	385	0.308	0.000
RA5	385	0.306	0.000	AW7	385	0.241	0.000
RA6	385	0.308	0.000	AW8	385	0.309	0.000

Source: Primary Data

Table 4.8 shows the results of skewness and kurtosis measurements for checking the normality of data.

Table 4.8*Skewness and Kurtosis*

Item	Skewness		Kurtosis		Item	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error		Statistic	Std. Error	Statistic	Std. Error
IA1	-0.972	0.124	1.056	0.248	RA7	-0.376	0.124	-0.037	0.248
IA2	-0.892	0.124	1.096	0.248	RA8	-0.722	0.124	1.153	0.248
IA3	-0.708	0.124	0.374	0.248	F1	-0.289	0.124	0.08	0.248
IA4	-0.82	0.124	0.797	0.248	F2	-0.357	0.124	-0.323	0.248
IB1	-0.9	0.124	0.372	0.248	F3	-0.702	0.124	0.472	0.248
IB2	-0.955	0.124	0.795	0.248	F4	-0.871	0.124	1.243	0.248
IB3	-1.123	0.124	1.892	0.248	S1	-0.697	0.124	1.491	0.248
IC1	-0.684	0.124	0.244	0.248	S2	-0.165	0.124	-0.173	0.248
IC2	-0.703	0.124	0.391	0.248	S3	-0.141	0.124	-0.53	0.248
IC3	-0.755	0.124	0.802	0.248	S4	-0.258	0.124	-0.07	0.248
IC4	-0.351	0.124	-0.227	0.248	PB1	-0.56	0.124	-0.653	0.248
IK1	0.585	0.124	-0.718	0.248	PB2	-0.765	0.124	-0.28	0.248
IK2	0.167	0.124	-1.353	0.248	PB3	-0.321	0.124	-0.73	0.248
IK3	0.514	0.124	-0.911	0.248	AW1	-0.692	0.124	0.699	0.248
IK4	0.284	0.124	-1.209	0.248	AW2	-0.473	0.124	-0.068	0.248
RA1	-0.704	0.124	0.744	0.248	AW3	-0.596	0.124	0.646	0.248
RA2	-0.483	0.124	-0.069	0.248	AW4	-0.832	0.124	0.808	0.248
RA3	-0.606	0.124	0.666	0.248	AW5	-0.558	0.124	0.61	0.248
RA4	-0.829	0.124	0.792	0.248	AW6	-0.604	0.124	0.78	0.248
RA5	-0.567	0.124	0.636	0.248	AW7	-0.384	0.124	-0.031	0.248
RA6	-0.604	0.124	0.78	0.248	AW8	-0.702	0.124	1.102	0.248

Source: primary data

As per the table, the skewness and kurtosis values are used to measure the normality of a dataset. According to Hair, J. et al. (2010), normality can be ensured when the skewness values range between -2 and +2, and the kurtosis value ranges between -7 and +7. Thus, all the items in the study satisfied the criteria. Therefore, parametric tests are applicable.

4.6. Relationship between MSME Owner Characteristics and Firm Characteristics on Various Dimensions of Insurance Literacy and Awareness.

Four dimensions of insurance literacy—namely, Insurance Attitude, Insurance Behaviour, Insurance Confidence, and Insurance Knowledge—as well as Insurance Awareness levels among MSME are analysed with various owner characteristics and firm characteristics of MSME. To achieve this first objective, a one-way ANOVA is applied.

4.6.1. Influence of MSME Owner Characteristics on Various Aspects of Insurance Literacy and Awareness.

In the present study, the researcher examined founder characteristics—specifically age of the owner, educational qualifications, and prior experience—with the dimensions of insurance literacy and the insurance awareness levels of MSME Owners in Kerala

4.6.1.1 Influence of Age of respondent on Various Aspects of Insurance Literacy and Awareness.

The following hypotheses have been formulated to examine whether the age of the MSME owner influences various insurance literacy dimensions and insurance awareness level. Thus, for this purpose, the researcher applied one-way ANOVA to test the relationship between variables.

H1: There is a significant difference in the various aspects of Insurance literacy and Insurance Awareness based on the Age of the respondents.

H1a: There is a significant difference between the Insurance Attitude and the Age of the MSME owners

H1b: There is a significant difference between the Insurance Behaviour and the Age of the MSME owners

H1c: There is a significant difference between the Insurance Confidence and the Age of the MSME owners

H1d: There is a significant difference between the Insurance Knowledge and the Age of the MSME owners

H1e: There is a significant difference between the Insurance Awareness and the Age of the MSME owners

Table 4.9

Age-wise Analysis of Insurance Literacy Dimensions and Awareness

		N	Mean	SD	F Value	P value	Remarks
Insurance Attitude	Less than 30	86	15.93	3.24	1.024	0.394	Insignificant
	30-35	83	15.14	2.85			
	35-40	107	15.34	2.97			
	40-45	80	15.44	3.37			
	Above 45	29	14.86	2.52			
	Total	385	15.41	3.06			
Insurance Behaviour	Less than 30	86	11.70	2.52	0.5	0.735	Insignificant
	30-35	83	11.49	2.50			
	35-40	107	11.86	2.62			
	40-45	80	11.98	2.58			
	Above 45	29	12.03	2.37			
	Total	385	11.78	2.54			
Insurance Confidence	Less than 30	86	14.23	3.18	3.042	0.017*	Significant
	30-35	83	13.34	3.50			
	35-40	107	14.51	3.04			
	40-45	80	15.05	3.49			
	Above 45	29	13.97	3.01			
	Total	385	14.27	3.30			
Insurance Knowledge	Less than 30	86	9.28	4.07	4.073	0.003**	Significant
	30-35	83	11.88	5.05			
	35-40	107	10.33	4.60			
	40-45	80	10.89	4.63			
	Above 45	29	9.28	4.60			
	Total	385	10.46	4.67			

		N	Mean	SD	F Value	P value	Remarks
Insurance Awareness	Less than 30	86	30.56	5.72	1.399	0.234	Insignificant
	30-35	83	29.19	5.17			
	35-40	107	30.72	4.75			
	40-45	80	29.71	5.96			
	Above 45	29	29.24	4.73			
	Total	385	30.03	5.34			

Source: primary data

** denotes significant at 1% level

* denotes significant at 5% level

Table 4.9 presents the results of a one-way ANOVA conducted to examine the relationship between the age of the respondents and various dimensions of insurance literacy and awareness. To test the equality of variances, Levene's test for homogeneity was performed. Fisher's F-test was used for cases where the assumption of homogeneity was satisfied; when this assumption was violated, the Welch test was applied instead.

As per Table 4.9, four dimensions of insurance literacy were considered: Insurance Attitude, Insurance Behaviour, Insurance Confidence, and Insurance Knowledge. First, the researcher examined the relationship between the respondents' age and Insurance Attitude. The result indicates no significant relationship, as the p-value exceeds 0.05 ($p = 0.394$). Thus, Hypothesis H1a is rejected.

Next, the relationship between age and Insurance Behaviour was assessed. This also showed no significant relationship, as the p-value was greater than 0.05. Hypothesis H1c evaluated the relationship between Insurance Confidence and age. The results revealed a significant relationship between the respondents' age and their insurance confidence level. Among the groups, respondents aged 40–45 years recorded the highest mean score for insurance confidence (Mean = 15.05), followed by those aged 35–40 years (Mean = 14.51, SD = 3.04). This suggests a positive relationship between age and the insurance confidence level of MSME founders.

Similarly, Hypothesis H1d tested the relationship between Insurance Knowledge and age. The analysis indicated a significant relationship, with respondents in the 30–35 age group again showing the highest mean score (Mean = 11.88, SD = 5.05) compared to other groups. Finally, the relationship between age and Insurance Awareness was assessed using one-way ANOVA. The result showed no significant relationship between the age of the respondents and their level of insurance awareness.

Multiple Comparisons of Insurance Knowledge and Insurance Confidence by Age of the Respondents

The results from the one-way ANOVA test indicated a statistically significant relationship between insurance confidence and insurance knowledge among MSME owners across various age groups. Thus, the next step is to find its group-wise differences. In statistics, the group-wise differences can be performed by using a post hoc test. Generally, there are two kinds of post hoc tests: Scheffe's post hoc test (equal variance is assumed) and Games-Howell's post hoc test (equal variance is not assumed). The results of the post hoc analysis of insurance confidence and insurance knowledge concerning the age of the founders are presented in Table 4.10.

Table 4.10

Age-wise Post Hoc Test – Insurance Confidence

(I) Age	(J) Age	Mean Difference (I-J)	SE	Sig.
Less than 30	30-35	0.895	0.503	0.531
	35-40	-0.281	0.473	0.986
	40-45	-0.817	0.508	0.629
	Above 45	0.267	0.702	0.997
30-35	Less than 30	-0.895	0.503	0.531
	35-40	-1.177	0.478	0.197
	40-45	-1.71265*	0.512	0.026
	Above 45	-0.628	0.705	0.939
35-40	Less than 30	0.281	0.473	0.986
	30-35	1.177	0.478	0.197
	40-45	-0.536	0.483	0.873
	Above 45	0.549	0.684	0.958

(I) Age	(J) Age	Mean Difference (I-J)	SE	Sig.
40-45	Less than 30	0.817	0.508	0.629
	30-35	1.71265*	0.512	0.026
	35-40	0.536	0.483	0.873
	Above 35	1.084	0.709	0.673
Above 45	Less than 30	-0.267	0.702	0.997
	30-35	0.628	0.705	0.939
	35-40	-0.549	0.684	0.958
	40-45	-1.084	0.709	0.673

Source: Primary Data

** The mean difference is significant at the 0.05 level*

The post-hoc test of owners' insurance confidence across different age categories is shown in Table 4.10. The Scheffe post hoc test is done for multiple comparisons since the sample sizes are equal and the homogeneity assumption is satisfied. The result of the study indicates that there is a significant difference in insurance confidence between owners who are between the ages of 30-35 and 40-45, as the p value is less than .05. Thus, compared to founders between the ages of 30-35, the age group of 40-45 had a more favourable insurance confidence (Mean=1.71).

Table 4.11

Age-wise Post Hoc Test – Insurance Knowledge

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
Less than 30	30-35	-2.60045*	0.707	0.010
	35-40	-1.04803	0.666	0.649
	40-45	-1.60843	0.714	0.282
	Above 45	0.00321	0.987	1.000
30-35	Less than 30	2.60045*	0.707	0.010
	35-40	1.55242	0.672	0.257
	40-45	0.99202	0.720	0.755
	Above 45	2.60366	0.992	0.144

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.
35-40	Less than 30	1.04803	0.666	0.649
	30-35	-1.55242	0.672	0.257
	40-45	-0.56040	0.679	0.954
	Above 45	1.05124	0.962	0.879
40-45	Less than 30	1.60843	0.714	0.282
	30-35	-0.99202	0.720	0.755
	35-40	0.56040	0.679	0.954
	Above 45	1.61164	0.996	0.624
Above 45	Less than 30	-0.00321	0.987	1.000
	30-35	-2.60366	0.992	0.144
	35-40	-1.05124	0.962	0.879
	40-45	-1.61164	0.996	0.624

Source: Primary Data

* The mean difference is significant at the 0.05 level

The findings from a post hoc test between the insurance knowledge and various age groups are shown in Table 4.11. In this case, the researcher performed Scheffe's post hoc for multiple comparisons because the sample sizes are unequal and the homogeneity of assumption is met. Insurance Knowledge is significantly different across the age groups of those under 30 and the 30-35 age group, with a p value of less than 0.05 ($p = .010$). Founders between the ages of 30-35 have a mean rating of 2.6004, which is greater than those who are in the below 30-year age group.

4.6.1.2 Influence of the educational qualification of the respondent on Various Aspects of Insurance Literacy Dimensions and Awareness

The following hypotheses have been proposed to examine whether the educational background of the MSME owner influences various insurance literacy dimensions and insurance awareness level. Thus, the researcher performed a one-way ANOVA to test the relationship between variables. Further, the group-wise differences are evaluated by using Scheffé and Games-Howell post hoc tests.

H2: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Educational background of the respondents.

H2a: There is a significant difference between the Insurance Attitude and the Education of the MSME owners

H2b: There is a significant difference between the Insurance Behaviour and the Education of the MSME owners

H2c: There is a significant difference between the Insurance Confidence and the Education of the MSME owners

H2d: There is a significant difference between the Insurance Knowledge and the Education of the MSME owners

H2e: There is a significant difference between the Insurance Awareness and the Education of the MSME owners

Table 4.12

Educational Qualification-wise Analysis of Insurance Literacy Dimensions and Awareness

		N	Mean	SD	SE	F value	Sig Value	Remarks
Insurance Attitude	SSLC	54	15.54	3.38	0.46	2.247	0.082	Insignificant
	Plus Two	56	15.82	2.91	0.39			
	Under Graduation	174	14.98	3.14	0.24			
	Post-Graduation	101	15.86	2.77	0.28			
	Total	385	15.41	3.06	0.16			
Insurance Behaviour	SSLC	54	12.00	2.84	0.39	2.039	0.108	Insignificant
	Plus Two	56	11.98	2.34	0.31			
	Under Graduation	174	11.44	2.57	0.19			
	Post-Graduation	101	12.15	2.38	0.24			
	Total	385	11.78	2.54	0.13			

		N	Mean	SD	SE	F value	Sig Value	Remarks
Insurance Confidence	SSLC	54	13.73	3.43	0.47			
	Plus Two	56	14.80	3.37	0.45			
	Under Graduation	174	13.83	3.35	0.25	2.968	0.032*	Significant
	Post-Graduation	101	14.90	3.01	0.30			
	Total	385	14.27	3.30	0.17			
Insurance Knowledge	SSLC	54	10.13	4.84	0.66			
	Plus Two	56	10.64	4.39	0.59			
	Under Graduation	174	10.62	4.85	0.37	0.237	0.87	Insignificant
	Post-Graduation	101	10.28	4.46	0.44			
	Total	385	10.46	4.67	0.24			
Insurance Awareness	SSLC	54	28.41	5.81	0.79			
	Plus Two	56	30.61	5.14	0.69			
	Under Graduation	174	29.87	5.50	0.42	2.78	0.041*	Significant
	Post-Graduation	101	30.86	4.76	0.47			
	Total	385	30.03	5.34	0.27			

Source: primary data

* denotes significant at 5% level

The results of the ANOVA for evaluating the impact of educational qualifications on insurance literacy dimensions and insurance awareness among owners are summarized in Table 4.12. First, the researcher evaluated the interconnection between educational qualifications and the different dimensions of insurance literacy. As per the result, it is clear that the education of the respondent has no significant effect on insurance attitude and insurance behaviour, since its p-value is more than 0.05 (p=0.082 and 0.108, respectively). Then the researcher evaluated the interconnection between insurance confidence and education of the respondents using one-way ANOVA, and the results show a significant relationship between these two variables (F value 2.968 and p = 0.032). It is also clear that postgraduate scholars possess more confidence towards insurance products (Mean=14.90 and SD=3.01) and show the lowest confidence among SSLC qualified founders (Mean=13.73 and

SD=3.43). Thus, there is a positive correlation between the educational qualification of the respondent and insurance confidence level. However, the result of the ANOVA table shows that there is no significant connection between the educational qualification of the respondents and insurance knowledge level, since its p value is more than 0.05(p value=0.870).

Finally, the researcher performed an interconnection between educational qualification and insurance awareness. The result shows that there is a significant connection between the awareness level of insurance products and their educational qualifications. Further, it is inferred that the insurance awareness is most possessed by the post-graduate scholars rather than other educational groups (Mean=30.86, SD=4.76). Thus, it can be inferred that there is a significant relationship exists between the educational background and the insurance awareness level of the MSME owners. Further group differences can be measured by using a post hoc test.

Multiple Comparisons of Insurance Knowledge and Insurance Confidence by Education of the Respondents

Among all the hypotheses formulated to examine the relationship between the educational qualification of the respondents and various insurance literacy dimensions and awareness, two hypotheses (H2c and H2e) showed a significant positive effect. To further explore group differences in these variables, the researcher conducted a multi-group analysis using a post hoc test. Since the assumption of homogeneity of variances was satisfied in both cases, the Scheffé post hoc test was applied.

Table 4.13

Education-wise Post Hoc Test – Insurance Confidence

(I) education	(J) education	Mean Difference (I-J)	Std. Error	(I) education
	Plus Two	-0.87765	0.625	0.579
SSLC	Under Graduation	0.09259	0.511	0.998
	Post-Graduation	-0.97506	0.553	0.376

(I) education	(J) education	Mean Difference (I-J)	Std. Error	(I) education
Plus Two	SSLC	0.87765	0.625	0.579
	Under Graduation	0.97024	0.504	0.296
	Post-Graduation	-0.09742	0.546	0.999
Under Graduation	SSLC	-0.09259	0.511	0.998
	Plus Two	-0.97024	0.504	0.296
	Post-Graduation	-1.06766	0.410	0.081
Post-Graduation	SSLC	0.97506	0.553	0.376
	Plus Two	0.09742	0.546	0.999
	Under Graduation	1.06766	0.410	0.081

Source: Primary data

The Scheffé post hoc test was performed to identify group-wise differences in insurance confidence based on the respondents' educational qualifications. The results revealed that most pairwise comparisons between educational levels—SSLC, Plus Two, Under Graduation, and Post-Graduation—did not show statistically significant differences, as the p-values were greater than 0.05.

Table 4.14

Education-wise Post Hoc Test – Insurance Awareness

(I) education		Mean Difference (I-J)	Std. Error	Sig.
SSLC	Plus Two	-2.200	1.012	0.195
	Under Graduation	-1.466	0.827	0.371
	Post-Graduation	-2.454	0.895	0.059
Plus Two	SSLC	2.200	1.012	0.195
	Under Graduation	0.734	0.815	0.847
	Post-Graduation	-0.254	0.884	0.994
Under Graduation	SSLC	1.466	0.827	0.371
	Plus Two	-0.734	0.815	0.847
	Post-Graduation	-0.988	0.664	0.53

(I) education		Mean Difference (I-J)	Std. Error	Sig.
	SSLC	2.454	0.895	0.059
Post-Graduation	Plus Two	0.254	0.884	0.994
	Under Graduation	0.988	0.664	0.53

Source: Primary data

The Scheffé post hoc test was performed to identify group-wise differences in insurance awareness level based on the respondents' educational qualifications. The results revealed that most pairwise comparisons between educational levels—SSLC, Plus Two, Under Graduation, and Post-Graduation—did not show statistically significant differences, as the p-values were greater than 0.05.

4.6.1.3 Influence of the Prior Experience of the Respondent on Various Aspects of Insurance Literacy Dimensions and Awareness

The following hypotheses were formulated to examine the interconnection between prior experience in insurance literacy dimensions and insurance awareness.

H3: There is a significant difference in the various aspects of Insurance Literacy and Insurance Awareness based on the Prior experience of the respondents.

H3a: There is a significant difference between the Insurance Attitude and the Prior experience of the MSME owners

H3b: There is a significant difference between the Insurance Behaviour and the Prior experience of the MSME owners

H3c: There is a significant difference between the Insurance Confidence and the Prior experience of the MSME owners

H3d: There is a significant difference between the Insurance Knowledge and the Prior experience of the MSME owners

H3e: There is a significant difference between the Insurance Awareness and the Prior experience of the MSME owners

Table 4.15 shows the results of one-way ANOVA analysis, indicating that prior experience plays a significant role in influencing various dimensions of insurance literacy and awareness among the MSME owners. For Insurance Attitude, the findings show a statistically significant difference across various prior experiences ($F = 4.030$, $p = 0.008$). Founders with more than 10 years of experience show the highest mean score (Mean = 16.160), indicating that more experienced individuals tend to have a more positive attitude toward insurance. Then the researcher performed the interconnection between insurance behaviour and prior experience of founders using ANOVA. As per Table 4.1, the ANOVA result is not significant, since its p value is more than 0.05 ($p = 0.439$), indicating that the level of prior experience does not significantly influence how owners behave towards insurance practices.

It is also clear that, for Insurance Confidence, the ANOVA result shows a significant difference across various prior experiences ($F = 2.678$, $p = 0.047$). Here also, respondents with above 10 years of experience show the highest confidence (Mean = 14.943), while those with no experience have the lowest (Mean = 13.804). This suggests that there is a positive correlation exists between prior experience and insurance confidence. In the case of Insurance Knowledge, no significant differences were found across various groups ($p = 0.325$). This shows that the prior experience does not have a significant effect on insurance knowledge. Moreover, the researcher performed an interconnection of insurance awareness level and prior experience of founders. However, for Insurance Awareness, the results show a statistically significant difference ($F = 3.742$, $p = 0.011$). Respondents with more than 10 years of experience again have the highest awareness level (Mean = 30.849), whereas those with no experience show the lowest (Mean = 27.982).

Table 4.15

Prior Experience-wise Analysis of Insurance Literacy Dimensions and Awareness

Dimen- sions	Variables	N	Mean	SD	F value	Sig Value	Remarks
Insurance Attitude	None	56	15.429	3.297	4.030	0.008	Significant
	Less than 5 Years	56	15.607	2.715			
	5 years to 10 years	167	14.868	3.224			
	Above 10 years	106	16.160	2.701			
	Total	385	15.413	3.064			
Insurance Behaviour	None	56	11.643	2.957	0.905	0.439	insignificant
	Less than 5 Years	56	12.054	2.022			
	5 years to 10 years	167	11.587	2.544			
	Above 10 years	106	12.019	2.541			
	Total	385	11.782	2.539			
Insurance Confidence	None	56	13.804	3.338	2.678	0.047	Significant
	Less than 5 Years	56	14.536	3.191			
	5 years to 10 years	167	13.904	3.465			
	Above 10 years	106	14.943	2.992			
	Total	385	14.268	3.304			
Insurance Knowledge	None	56	10.054	4.799	1.159	0.325	insignificant
	Less than 5 Years	56	10.643	4.618			
	5 years to 10 years	167	10.898	4.793			
	Above 10 years	106	9.906	4.415			
	Total	385	10.465	4.670			
Insurance Awareness	None	56	27.982	5.910	3.742	0.011	Significant
	Less than 5 Years	56	30.393	4.990			
	5 years to 10 years	167	30.084	5.403			
	Above 10 years	106	30.849	4.893			
	Total	385	30.034	5.344			

Source: Primary data

* Denotes significant at 5% level

** denotes significant at 1% level

Multiple Comparisons of Insurance Attitude, Confidence, and Awareness by Prior Experience of the Respondents

Among all the hypotheses formulated to examine the relationship between the prior experience of the respondents and various insurance literacy dimensions and awareness, three hypotheses (H3a, H3c, and H3e) showed a significant positive effect. The researcher conducted a multi-group analysis using a post hoc test to explore group differences in these variables further. Since the assumption of homogeneity of variances was satisfied in all the cases, the Scheffé post hoc test was applied.

Table 4.16

Prior Experience-wise Post Hoc Test – Insurance Attitude

(I) Prior_Exp	(J) Prior_Exp	Mean Difference (I-J)	Std. Error	Sig.
None	Less than 5 Years	-0.17857	0.572	0.992
	5 years to 10 years	0.56031	0.467	0.697
	Above 10 years	-0.73181	0.500	0.545
Less than 5 Years	None	0.17857	0.572	0.992
	5 years to 10 years	0.73888	0.467	0.477
	Above 10 years	-0.55323	0.500	0.748
5 years to 10 years	None	-0.56031	0.467	0.697
	Less than 5 Years	-0.73888	0.467	0.477
	Above 10 years	-1.29211*	0.376	0.009
Above 10 years	None	0.73181	0.500	0.545
	Less than 5 Years	0.55323	0.500	0.748
	5 years to 10 years	1.29211*	0.376	0.009

Source: Primary data

The post hoc test reveals that, among the various group differences, only the comparison between owners with 5 to 10 years of prior experience and those with more than 10 years of experience is statistically significant ($p = 0.009$). Moreover, owners with above 10 years of experience indicated significantly higher mean scores

compared to those with 5 to 10 years of experience (Mean=1.292). In contrast, all other pairwise comparisons have no significant differences ($p > 0.05$).

Table 4.17

Prior Experience-wise Post Hoc Test – Insurance Confidence

(I) Prior_Exp	(J) Prior_Exp	Mean Difference (I-J)	Std. Error	Sig.
None	Less than 5 Years	-0.732	0.620	0.707
	5 years to 10 years	-0.101	0.507	0.998
	Above 10 years	-1.140	0.542	0.221
Less than 5 Years	None	0.732	0.620	0.707
	5 years to 10 years	0.632	0.507	0.670
	Above 10 years	-0.408	0.542	0.904
5 years to 10 years	None	0.101	0.507	0.998
	Less than 5 Years	-0.632	0.507	0.670
	Above 10 years	-1.039	0.408	0.092
Above 10 years	None	1.140	0.542	0.221
	Less than 5 Years	0.408	0.542	0.904
	5 years to 10 years	1.039	0.408	0.092

Source: Primary data

The post hoc test showing the differences in prior experience and insurance confidence indicates that none of the pairwise comparisons are statistically significant, as all p-values are above the 0.05 threshold.

Table 4.18*Prior Experience-wise Post Hoc Test – Insurance Awareness*

(I) Prior_Exp	(J) Prior_Exp	Mean Difference (I-J)	Std. Error	Sig.
None	Less than 5 Years	-2.411	0.999	0.123
	5 years to 10 years	-2.102	0.816	0.087
	Above 10 years	-2.86691*	0.873	0.014
Less than 5 Years	None	2.411	0.999	0.123
	5 years to 10 years	0.309	0.816	0.986
	Above 10 years	-0.456	0.873	0.965
5 years to 10 years	None	2.102	0.816	0.087
	Less than 5 Years	-0.309	0.816	0.986
	Above 10 years	-0.765	0.657	0.715
Above 10 years	None	2.86691*	0.873	0.014
	Less than 5 Years	0.456	0.873	0.965
	5 years to 10 years	0.765	0.657	0.715

Source: Primary data

The post hoc test on insurance awareness and prior experience reveals that only one relationship is statistically significant. Specifically, founders with more than 10 years of previous experience scored significantly higher than those with no prior experience (Mean=2.867). This indicates that a person with higher prior experience (more than 10 years) has a significant positive influence on the insurance awareness.

4.6.2. Influence of Firm Characteristics on Various Aspects of Insurance Literacy and Awareness.

In the present study, the researcher examined firm characteristics—specifically location of business, category, and business sector—with the dimensions of insurance literacy and the insurance awareness levels of SME founders in Kerala

4.6.2.1 Influence of location of business on Various Aspects of Insurance Literacy and Awareness.

The following hypotheses have been formulated to examine whether the location of the MSME influences various insurance literacy dimensions and insurance awareness levels. Thus, for this purpose, the researcher applied one-way ANOVA to test the relationship between variables.

H4: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the location of their venture.

H4a: There is a significant difference between the Insurance attitude and the location of their venture

H4b: There is a significant difference between the Insurance behaviour and the location of their venture

H4c: There is a significant difference between the Insurance confidence and the location of their venture.

H4d: There is a significant difference between the Insurance knowledge and the location of their venture

H4e: There is a significant difference between the Insurance awareness and the location of their venture

Table 4.19 shows the results of the interconnection between insurance literacy and awareness across different locations—Panchayat, Municipality, and Corporation. Among these five hypotheses formulated, the relationship between location on Insurance Confidence and Insurance Knowledge show statistically significant differences, while Insurance Attitude, Insurance Behaviour, and Insurance Awareness do not.

As per the table, it is clear that there is different confidence level exhibited by the owners based on the location of business ($F=4.808$ and $p=0.009$). Further, the table interpreted that respondents from corporation areas demonstrated the highest mean score (14.96) compared to those from panchayats (14.10) and municipalities (13.88).

Thus, individuals urbanized and administratively developed areas (like corporations) tend to feel more confidence towards Insurance.

Similarly, Insurance Knowledge also shows significantly across region ($F=3.618$ and $p= 0.028$), with panchayat respondents scoring the highest (mean = 11.49), followed by corporation (10.26) and municipality (9.96). Then the relationship between Insurance attitude and behaviour exhibited by the founders located in different region shows insignificant results ($p = 0.213$ and $p = 0.185$ respectively). In summary, while confidence and knowledge in insurance vary significantly based on local body type, especially favouring corporation and panchayat areas respectively, attitudes, behaviours, and awareness appear consistent across regions.

Table 4.19

Location-wise Analysis of Insurance Literacy Dimensions and Awareness

Category	Category	N	Mean	SD	SE	F Value	P Value	Remarks
Insurance Attitude	Panchayat	104	15.548	3.407	0.334	1.554	0.213	insignificant
	Municipality	164	15.104	2.982	0.233			
	Corporation	117	15.726	2.833	0.262			
	Total	385	15.413	3.064	0.156			
Insurance Behaviour	Panchayat	104	11.433	2.988	0.293	1.697	0.185	insignificant
	Municipality	164	11.805	2.381	0.186			
	Corporation	117	12.060	2.294	0.212			
	Total	385	11.782	2.539	0.129			
Insurance Confidence	Panchayat	104	14.096	3.886	0.381	4.808	0.009**	Significant
	Municipality	164	13.884	3.215	0.251			
	Corporation	117	14.957	2.737	0.253			
	Total	385	14.268	3.304	0.168			
Insurance Knowledge	Panchayat	104	11.490	5.001	0.490	3.618	0.028*	Significant
	Municipality	164	9.963	4.444	0.347			
	Corporation	117	10.256	4.572	0.423			
	Total	385	10.465	4.670	0.238			
Insurance Awareness	Panchayat	104	29.769	6.767	0.664	0.993	0.372	insignificant
	Municipality	164	29.817	4.686	0.366			
	Corporation	117	30.573	4.753	0.439			
	Total	385	30.034	5.344	0.272			

Source: primary data

* denotes significant at 5% level

Multiple Comparisons of Insurance Confidence and Knowledge by location of business

In this case, both the Scheffé test and the Games-Howell test were applied. For the relationship between insurance confidence and location, the assumption of homogeneity of variances was not satisfied; therefore, the Games-Howell test was used. On the other hand, the relationship between insurance knowledge and location satisfied the homogeneity assumption; thus, the scheffe test was applied.

Table 4.20

Location-wise Post Hoc Test – Insurance Confidence

(I) Location	(J) Location	Mean Difference (I-J)	SE	Sig.
Panchayat	Municipality	0.212	0.456	0.888
	Corporation	-0.861	0.4576	0.147
Municipality	Panchayat	-0.2120	0.456	0.888
	Corporation	-1.07312*	0.356	0.008
Corporation	Panchayat	0.8611	0.457	0.147
	Municipality	1.07312*	0.3564	0.008

Source: Primary data

Table 4.20 shows the post hoc test results for the relationship between insurance confidence and location of the ventures situated. The group differences from each category shows that, founders located in corporation reported higher insurance confidence compared to those from municipalities (Mean=1.073). However, the comparisons between panchayat and municipality (p = 0.888) and between panchayat and corporation (p = 0.147) did not show any significant differences.

Table 4.21

Location-wise Post Hoc Test – Insurance Knowledge

(I) Location	(J) Location	Mean Difference (I-J)	Std. Error	Sig.
Panchayat	Municipality	1.52697*	0.581	0.033
	Corporation	1.23397	0.625	0.144

(I) Location	(J) Location	Mean Difference (I-J)	Std. Error	Sig.
Municipality	Panchayat	-1.52697*	0.581	0.033
	Corporation	-0.29300	0.561	0.873
Corporation	Panchayat	-1.23397	0.625	0.144
	Municipality	0.29300	0.561	0.873

Source: primary data

Table 4.21, shows the post hoc test results for the relationship between insurance knowledge and location of the ventures situated. The group differences from each category shows that, owners located in panchayat reported higher insurance knowledge compared to those from municipalities (Mean=1.526). However, the comparisons between panchayat and Corporation ($p = 0.144$) and between municipality and corporation ($p = 0.873$) did not show any significant differences.

4.6.2.2 Influence of Venture Category on Various Aspects of Insurance Literacy and Awareness.

The following hypotheses have been formulated to examine whether the category of the MSME influences various insurance literacy dimensions and insurance awareness levels. Thus, for this purpose, the researcher applied one-way ANOVA to test the relationship between variables.

H5: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the business category.

H5a: There is a significant difference between the Insurance attitude and the category of venture

H5b: There is a significant difference between the Insurance behaviour and the category of venture

H5c: There is a significant difference between the Insurance confidence and the category of venture

H5d: There is a significant difference between the Insurance knowledge and category of venture

H5e: There is a significant difference between the Insurance awareness and the category of venture

Table 4.22 presents the results of a one-way ANOVA conducted to examine the relationship between the category of venture and various dimensions of insurance literacy and awareness. First, the researcher examined the relationship between the venture type and Insurance Attitude. The result indicates no significant relationship, as the p-value exceeds 0.05 ($p = 0.055$). Thus, Hypothesis H5a is rejected.

Next, the relationship between category of venture and Insurance Behaviour was assessed. This showed a significant relationship, as the p-value was less than 0.05 ($F=3.374$, $P=0.035$). It is also clear that medium category venture founders possess more behaviour towards insurance (Mean=12.12 and SD=2.24), followed by small enterprises (Mean=11.79 and SD=2.56) and Micro enterprises (Mean=11.16 and SD=2.87). Thus, it can be summarised that there is significant connection exists between category of venture and insurance behaviour exhibited by the ventures. So, hypotheses H5b is accepted. Hypothesis H5c evaluated the relationship between Insurance Confidence and category of venture. The results revealed a significant relationship between the category of MSME and their insurance confidence level. Among the groups, medium enterprises recorded the highest mean score for insurance confidence (Mean = 15.16), followed by small enterprises (Mean = 13.99, SD = 3.21). This suggests a positive relationship between category and the insurance confidence level of MSME owners.

Similarly, Hypothesis H5d tested the relationship between Insurance Knowledge and venture category. The analysis indicated a significant relationship, with micro enterprises showing the highest mean score (Mean = 11.97, SD = 5.09) compared to other groups. Finally, the relationship between category and Insurance Awareness was assessed using one-way ANOVA. The result showed no significant relationship between the business category and their level of insurance awareness. Thus, Hypothesis, H5e is not supported.

Table 4.22*Category-wise Analysis of Insurance Literacy Dimensions and Awareness*

Variables	Categories	N	Mean	SD	F Value	P value	Remarks
Insurance Attitude	Micro	231	15.12	3.52	2.946	0.055	Insignificant
	Small	96	15.18	3.13			
	Medium	58	15.91	2.63			
	Total	385	15.41	3.06			
Insurance Behaviour	Micro	231	11.16	2.87	3.374	0.035*	Significant
	Small	96	11.79	2.56			
	Medium	58	12.12	2.24			
	Total	385	11.78	2.54			
Insurance Confidence	Micro	231	13.36	3.83	8.476	<0.001**	Significant
	Small	96	13.99	3.21			
	Medium	58	15.16	2.91			
	Total	385	14.27	3.30			
Insurance Knowledge	Micro	231	11.97	5.09	4.788	0.009**	Significant
	Small	96	10.13	4.51			
	Medium	58	10.09	4.51			
	Total	385	10.46	4.67			
Insurance Awareness	Micro	231	29.42	6.27	1.173	0.312	insignificant
	Small	96	29.89	5.22			
	Medium	58	30.58	4.94			
	Total	385	30.03	5.34			

Source: primary data

* denotes significant at 5% level

** denotes significant at 1% level

Multiple Comparisons of Insurance Behaviour, Confidence and Knowledge by Business Category.

In all these cases, the homogeneity assumptions were satisfied and the researcher applied sheffe post hoc test.

Table 4.23

Categories-wise Post Hoc Test – Insurance Behaviour

Category (I)	Category (J)	Mean Difference (I-J)	SD	Sig.
Micro	Small	-0.62133	0.350	0.207
	Medium	-.95869*	0.369	0.035
Small	Micro	0.62133	0.350	0.207
	Medium	-0.33736	0.290	0.508
Medium	Micro	.95869*	0.369	0.035
	Small	0.33736	0.290	0.508

Source: Primary data

The post-hoc analysis of owners insurance behaviour across different business categories is presented in Table 4.23. The Scheffé post hoc test was employed for multiple comparisons, as the sample sizes are equal and the assumption of homogeneity of variances was satisfied. The results indicate a significant difference in insurance behaviour between founders of micro and medium enterprises, with a p-value less than 0.05. Specifically, founders from medium-sized enterprises exhibit higher levels of insurance behaviour compared to those from micro enterprises (Mean difference = 0.958, $p = 0.035$). However, there are no significant differences between micro and small enterprises, or between small and medium enterprises, as the p-values for these comparisons are greater than 0.05.

Table 4.24

Categories-wise Post Hoc Test – Insurance Confidence

Category (I)	Category (J)	Mean Difference (I-J)	SD	Sig.
Micro	Small	-0.638	0.449	0.365
	Medium	-1.80537*	0.474	0.001
Small	Micro	0.638	0.449	0.365
	Medium	-1.16703*	0.372	0.008
Medium	Micro	1.80537*	0.474	0.001
	Small	1.16703*	0.372	0.008

Source: Primary data

The table 4.24 indicate a significant difference in insurance confidence between owners of micro and medium enterprises, with a p-value less than 0.05(0.001). Specifically, owners from medium-sized enterprises exhibit higher levels of insurance confidence compared to those from micro enterprises (Mean difference = 1.8053). Likewise, there is significant difference between owners of small and medium enterprises, with a p-value less than 0.05(0.008). Specifically, owners from medium-sized enterprises exhibit higher levels of insurance confidence compared to those from small enterprises (Mean difference = 1.1670). However, there is no group differences between micro and small enterprises.

Table 4.25

Categories-wise Post Hoc Test – Insurance knowledge

Category (I)	Category (J)	Mean Difference (I-J)	SD	Sig.
Micro	Small	1.84623*	0.641	0.016
	Medium	1.88030*	0.676	0.022
Small	Micro	-1.84623*	0.641	0.016
	Medium	0.03407	0.531	0.998
Medium	Micro	-1.88030*	0.676	0.022
	Small	-0.03407	0.531	0.998

Source: Primary data

The table 4.25 indicate a significant difference in insurance knowledge between founders of micro and small enterprises, with a p-value less than 0.05(0.016). Specifically, founders from micro enterprises exhibit higher levels of insurance knowledge level compared to those from small enterprises (Mean difference = 1.846). Likewise, there is significant difference between founders of micro and medium enterprises, with a p-value less than 0.05(0.022). Specifically, founders from micro enterprises exhibit higher levels of insurance knowledge compared to those from medium enterprises (Mean difference = 1.880). However, there is no group differences between medium and small enterprises.

4.6.2.3 Influence of Sector on Various Aspects of Insurance Literacy and Awareness.

The following hypotheses have been formulated to examine whether the sector of the MSME influences various insurance literacy dimensions and insurance awareness levels. Thus, for this purpose, the researcher applied one-way ANOVA to test the relationship between variables.

H6: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the sector of business.

H6a: There is a significant difference between the Insurance attitude and the business sector

H6b: There is a significant difference between the Insurance behaviour and the business sector

H6c: There is a significant difference between the Insurance confidence and the business sector

H6d: There is a significant difference between the Insurance knowledge and the business sector

H6e: There is a significant difference between the Insurance awareness and the business sector

Table 4.26 presents the results of a one-way ANOVA conducted to examine the relationship between the sector and various dimensions of insurance literacy and awareness. First, the researcher explored the relationship between sector and insurance attitude, which showed a significant difference, as the p-value was less than 0.05 ($F = 5.517$, $p = 0.002$). It is evident that founders from the "Other" category exhibit a higher attitude towards insurance (Mean = 16.02, SD = 2.68), followed by those in the service sector (Mean = 15.89, SD = 3.35) and the manufacturing sector (Mean = 15.69, SD = 2.80). Therefore, it can be concluded that a significant association exists between sector and insurance attitude, and thus, Hypothesis H6ba is accepted. Hypothesis H6b evaluated the relationship between insurance behaviour

and the sector of the enterprise. The results indicate that there is no significant difference in insurance behaviour among founders based on their sector, as the p-value was greater than 0.05.

Next, the relationship between insurance confidence and sector was assessed using ANOVA, revealing a significant relationship between the sector in which the owners operate and their level of insurance confidence ($F = 4.454$, $p = 0.004$). Among the sectors, the service sector recorded the highest mean score for insurance confidence (Mean = 12.17), followed by the "Other" category (Mean = 11.96, SD = 2.43).

Similarly, the ANOVA test was used to evaluate the relationship between sector and insurance knowledge. The results showed that this relationship is not statistically significant, with a p-value of 0.09, which is greater than 0.05. However, the analysis of insurance awareness revealed that awareness levels vary according to sector. Specifically, MSME in the service sector demonstrated the highest levels of insurance awareness, followed by those in the "Other" category, and finally, the manufacturing sector. To further explore group-wise differences, post hoc tests were conducted.

Table 4.26

Sector-wise Analysis of Insurance Literacy Dimensions and Awareness

Variables	Sector	N	Mean	SD	F	P	Remarks
Insurance Attitude	Manufacturing	71	15.690	2.801			
	Services	56	15.893	3.356			
	Agro based	152	14.678	3.193	5.157	0.002**	Significant
	Others	106	16.028	2.685			
	Total	385	15.413	3.064			
Insurance Behaviour	Manufacturing	71	11.873	2.694			
	Services	56	12.179	2.273			
	Agro based	152	11.467	2.614	1.448	0.228	Insignificant
	Others	106	11.962	2.438			
	Total	385	11.782	2.539			

Variables	Sector	N	Mean	SD	F	P	Remarks
Insurance Confidence	Manufacturing	71	14.127	3.093			
	Services	56	15.054	3.440			
	Agro based	152	13.612	3.476	4.454	0.004**	Significant
	Others	106	14.887	2.935			
	Total		385	14.268	3.304		
Insurance Knowledge	Manufacturing	71	9.873	4.404			
	Services	56	10.625	4.555			
	Agro based	152	11.132	4.876	2.125	0.097	Insignificant
	Others	106	9.821	4.525			
	Total		385	10.465	4.670		
Insurance Awareness	Manufacturing	71	29.437	5.618			
	Services	56	30.964	5.717			
	Agro based	152	29.362	5.358	2.637	0.049*	Significant
	Others	106	30.906	4.780			
	Total		385	30.034	5.344		

Source: primary data

* denotes significant at 5% level

** denotes significant at 1% level

Multiple Comparisons of Insurance Attitude, Confidence and Awareness by Sector

In all these cases, the homogeneity assumptions were satisfied and the researcher applied sheffe post hoc test.

Table 4.27

Sector-wise Post Hoc Test – Insurance Attitude

(I) Sector	(J) Sector	Mean Difference (I-J)	Std. Error	Sig.
Manufacturing	Services	-0.203	0.539	0.986
	Agro based	1.013	0.433	0.143
	Others	-0.338	0.462	0.911
Services	Manufacturing	0.203	0.539	0.986
	Agro based	1.215	0.471	0.086
	Others	-0.135	0.498	0.995

(I) Sector	(J) Sector	Mean Difference (I-J)	Std. Error	Sig.
Agro based	Manufacturing	-1.013	0.433	0.143
	Services	-1.215	0.471	0.086
	Others	-1.35067*	0.382	0.006
Others	Manufacturing	0.338	0.462	0.911
	Services	0.135	0.498	0.995
	Agro based	1.35067*	0.382	0.006

Source: Primary data

The scheffe post-hoc test were conducted to evaluate the mean differences among the different sectors—Manufacturing, Services, Agro-based, and Others. The results shows that a statistically significant difference was observed only between the Agro and Others sectors (Mean= -1.35, $p = 0.006$). It is also clear that the mean score for the others sector shows higher mean score than that of the Agro-based sector. In contrast, no statistically significant differences were found between Manufacturing and Services, Manufacturing and Agro-based, Manufacturing and Others, Services and Agro-based, or Services and Others (all $p > 0.05$).

Table 4.28

Sector-wise Post Hoc Test – Insurance Confidence

(I) Business Sector	(J) Business Sector	Mean Difference (I-J)	Std. Error	Sig.
manufacturing	Services	-0.927	0.583	0.471
	Agro based	0.515	0.469	0.751
	Others	-0.760	0.500	0.511
Services	manufacturing	0.927	0.583	0.471
	Agro based	1.44173*	0.510	0.047
	Others	0.167	0.539	0.992
Agro based	manufacturing	-0.515	0.469	0.751
	Services	-1.44173*	0.510	0.047
	Others	-1.27495*	0.413	0.024
Others	manufacturing	0.760	0.500	0.511
	Services	-0.167	0.539	0.992
	Agro based	1.27495*	0.413	0.024

Source: Primary data

Table 4.28 presents the results of the Scheffé post-hoc test conducted to evaluate the mean differences among the different sectors in relation to the insurance confidence level exhibited by the founders. The analysis revealed that a statistically significant difference was observed only between the Agro-based and others sectors (Mean Difference = 1.27, $p = 0.024$), with the others sector reporting a higher mean score than the Agro-based sector. The results also indicate a notable mean difference between the Services and Agro-based sectors, with the p-value being less than 0.05. However, no statistically significant differences were found among the other sector pairs.

Table 4.29

Sector-wise Post Hoc Test – Insurance awareness

(I) Business Sector	(J) Business Sector	Mean Difference (I-J)	Std. Error	Sig.
Manufacturing	Services	-1.528	0.949	0.460
	Agro based	0.075	0.763	1.000
	Others	-1.469	0.814	0.355
Services	Manufacturing	1.528	0.949	0.460
	Agro based	1.602	0.830	0.294
	Others	0.059	0.877	1.000
Agro based	Manufacturing	-0.075	0.763	1.000
	Services	-1.602	0.830	0.294
	Others	-1.544	0.672	0.154
Others	Manufacturing	1.469	0.814	0.355
	Services	-0.059	0.877	1.000
	Agro based	1.544	0.672	0.154

Source: Primary data

Table 4.29 presents the results of the Scheffé post-hoc test conducted to evaluate the mean differences among the different sectors in relation to the insurance awareness level exhibited by the founders. The analysis revealed that no statistically significant difference was observed between the paths, since its p value is more than 0.05 for all the cases.

4.7 Hypotheses Results Summary

The summary of six main hypotheses relating to the first objective based on the discussion above are presented here. In this instance “√” represents a significant relationship between the Independent and dependent variables, and “×” denotes an insignificant relationship.

Table 4.30

Summary of First Objectives

Hypotheses	Independent Variables	Dependent Variables					Tool used
		Insurance Attitude	Insurance Behaviour	Insurance Confidence	Insurance Knowledge	Insurance awareness	
H1	Age	×	×	√	√	×	ANOVA
H2	Educational Qualification	×	×	√	×	√	ANOVA
H3	Prior Experience	√	×	√	×	√	ANOVA
H4	Location	×	×	√	√	×	ANOVA
H5	Category	×	√	√	√	×	ANOVA
H6	Sector	√	×	√	×	√	ANOVA

4.8. Conclusion

This chapter reveals how demographic and firm related factors influence various aspects of insurance literacy and awareness level of MSME in Kerala. This study forms the first objective. As per the analysis, it is clear that the age significantly affects insurance confidence and insurance knowledge, but does not impact attitude, behaviour, or awareness. Similarly, educational qualification has a significant influence on insurance confidence and awareness, but not on attitude, behaviour, or knowledge. Prior experience plays a critical role in shaping insurance attitude, confidence, and awareness, while it does not significantly affect behaviour or knowledge. Location impacts insurance confidence and knowledge, but not attitude, behaviour, or awareness. Category influences insurance behaviour, confidence, and knowledge, with no significant effect on attitude or awareness. Lastly, sector is

associated with differences in insurance attitude, confidence, and awareness, while behaviour and knowledge remain not affected. In summary, insurance confidence is consistently influenced across multiple factors. This suggests that demographic and professional characteristics play differential roles in shaping individuals' perceptions and actions regarding insurance.

Chapter 5

INSURANCE LITERACY, RISK APPETITE, AND MSME SUSTAINABILITY: SEM FRAMEWORK

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5.1. Introduction

This chapter primarily addresses the second, third, and fourth objectives of the study, which are examined using the Structural Equation Modelling (SEM) approach. The key focus is on developing hypothesized research models and validating them through Covariance-Based Confirmatory Factor Analysis (CB-CFA) and SEM techniques. Specifically, a SEM model was constructed to evaluate the second objective that is to examining the relationship between different dimensions of insurance literacy and MSME perception of risk appetite. The chapter further investigates how various dimensions of insurance literacy influence the sustainability of MSME and assesses the role of risk appetite in shaping the perceived benefits of insurance among MSME in Kerala. To meet these objectives, several hypotheses were tested using the SEM framework with the support of IBM SPSS AMOS software. The researcher applied CB-SEM to evaluate how well the proposed model corresponded with the observed data. The procedure included several steps, starting with confirmatory factor analysis to assess reliability, validity, and model fit, and then moving on to analyse the interrelationships among variables. SEM was deemed more suitable than other multivariate statistical methods, as most alternative techniques are primarily descriptive in nature. A summary of the hypothesis testing results is also presented in this chapter. In addition, a multigroup analysis was carried out to address the fifth objective, which aimed to examine whether significant differences exist in the interrelationships among insurance literacy, risk appetite, and the sustainability of MSME across different categories of enterprises namely micro, small, and medium enterprises.

This chapter is organized into nine sections. The first section provides an introduction along with an explanation of structural equation Modelling. The second section presents the SEM model and its hypotheses, developed on the basis of the literature review. The third section discusses confirmatory factor analysis, including construct validity and model fit measures of the measurement model. The fourth section illustrates the structural model and its path analysis. The fifth section summarizes the results of the SEM hypotheses testing. The sixth section focuses on multigroup analysis using AMOS, applying covariance-based structural equation Modelling (CB-SEM) to examine the interrelationships among insurance literacy, risk appetite, and the sustainability of MSME across micro, small, and medium enterprises. The seventh section addresses the analysis and interpretation of multigroup moderation through the measurement invariance approach. The eighth section consolidates the results of the multigroup hypotheses examined in this chapter. Finally, the ninth section concludes the chapter.

5.2 Structural Equation Model and Hypotheses

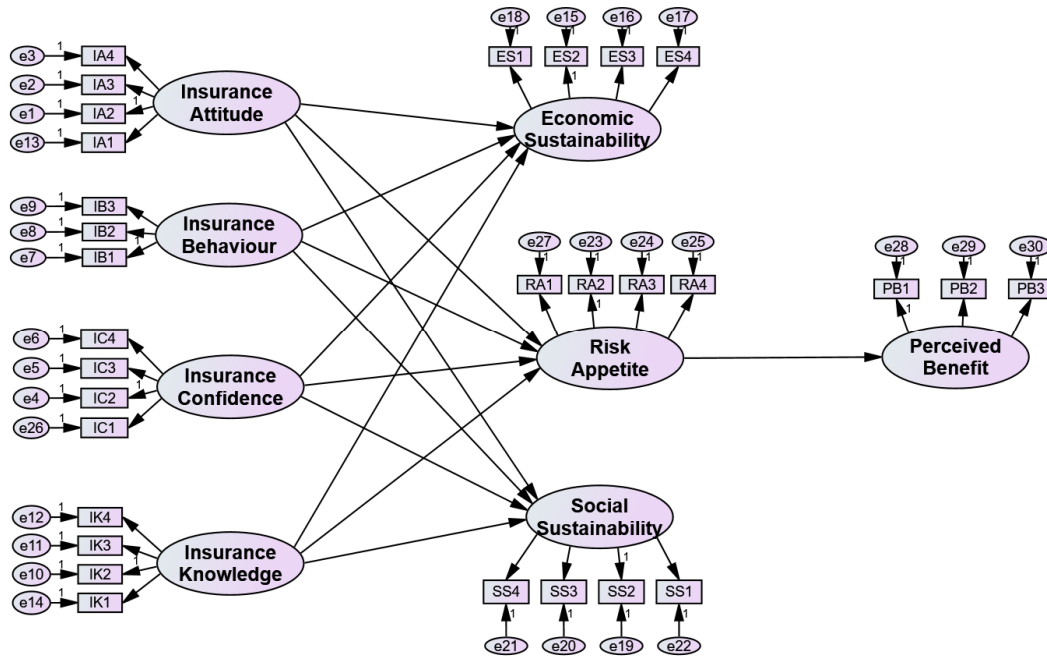
Structural equation modelling (SEM) refers to a set of statistical techniques that allow the simultaneous examination of relationships among multiple independent and dependent variables. It integrates elements of both multiple regression and factor analysis (Collier, 2020). SEM consists of two key components: the measurement model and the structural model. The measurement model, assessed through confirmatory factor analysis, illustrates the links between observed variables and the latent constructs within the proposed framework (Schreiber et al., 2006). In this study a research model was constructed based on thirteen hypotheses derived from prior studies. The model, which illustrates the hypothesized relationships among the eight variables considered in the study, is presented in Figure 5.1. This proposed framework seeks to test and validate the SEM hypotheses outlined in Table 5.1.

Table 5.1

SEM Hypotheses

Hypotheses No.	Hypotheses
SM.H1	Insurance Attitude significantly influences MSME Risk Appetite.
SM.H2	Insurance Behaviour significantly influences MSME Risk Appetite.
SM.H3	Insurance Confidence significantly influences MSME Risk Appetite.
SM.H4	Insurance Knowledge significantly influences MSME Risk Appetite.
SM.H5	Insurance Attitude significantly influences MSME Economic Sustainability
SM.H6	Insurance Behaviour significantly influences MSME Economic Sustainability
SM.H7	Insurance Confidence significantly influences MSME Economic Sustainability
SM.H8	Insurance Knowledge significantly influences MSME Economic Sustainability
SM.H9	Insurance Attitude significantly influences MSME Social Sustainability
SM.H10	Insurance Behaviour significantly influences MSME Social Sustainability
SM.H11	Insurance Confidence significantly influences MSME Social Sustainability
SM.H12	Insurance Knowledge significantly influences MSME Social Sustainability
SM.H13	Risk appetite significantly influences MSME Perceived Benefits of Insurance

Note: SM.H indicates Structural Model Hypotheses

Figure 5.1*Proposed SEM Model*

5.3 Confirmatory Factor Analysis for the Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance

Figure 5.1 presents the hypothesized conceptual model that illustrates the impact of insurance literacy dimensions on risk appetite and sustainability, as well as the effect of risk appetite on the perceived benefits of insurance.

5.3.1 Reliability and Validity Assessment of the Proposed Constructs using Confirmatory Factor Analysis (CFA)

The data analysis in this chapter is guided by two primary objectives. The first is to verify the reliability and validity of the various measures employed in the research instrument. The second is to evaluate the hypothesized relationships within the research model. In this study, the researcher employed Structural Equation Modelling (SEM). Confirmatory Factor Analysis (CFA) is a statistical technique used to validate the factor structure of a group of observed variables. It examines the associations between observed indicators and their underlying latent constructs (Suhr, 2009). Additionally, CFA is conducted to verify whether the measurement model satisfies the necessary criteria for the research instrument's validity and reliability. These

criteria encompass the instrument's reliability along with its convergent and discriminant validity.

In this study, the researcher performed a confirmatory factor analysis (CFA) to evaluate the measurement model, which consists of eight latent constructs. The results of the CFA are depicted in Figure 5.2. In the figure, each latent (unobserved) construct is represented by an oval, while the observed indicators used to measure these constructs are shown as rectangles, with single-headed arrows pointing from the latent constructs to their corresponding indicators. Co-variances among the latent variables are indicated by two-headed arrows connecting them.

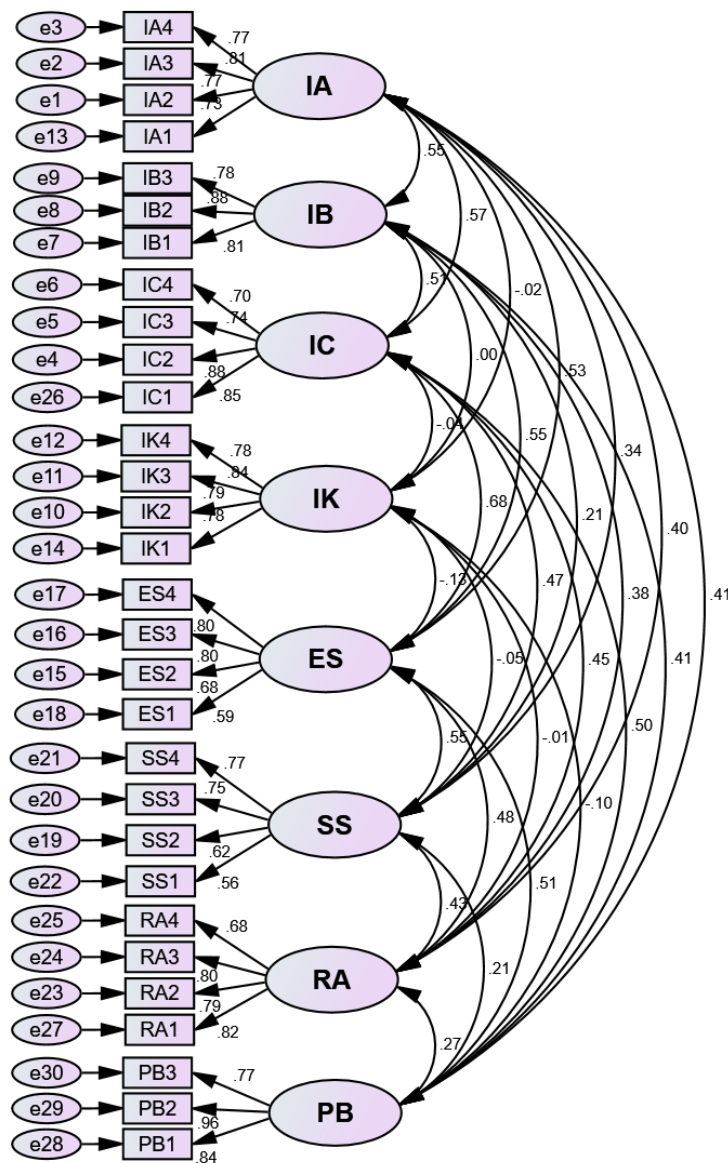
In this research, the researcher applied standard criteria for reliability, convergent validity, and discriminant validity to evaluate the suitability of the measurement model. The following tools were employed to assess its reliability and validity:

1. **Composite Reliability (CR):** This metric assesses the overall reliability of a construct, with values ranging from 0 to 1. A CR value of 0.7 or higher indicates good reliability, whereas values below 0.6 suggest a lack of internal consistency (Hair et al., 2010).
2. **Construct Validity:** Construct validity is assessed through two components:
 - (a) **Convergent Validity:** Convergent validity is determined using factor loadings and the Average Variance Extracted (AVE). AVE is calculated from standardized factor loadings, with a threshold value of greater than 0.5 indicating adequate convergence. Similarly, standardized factor loadings should exceed 0.5 to confirm item validity (Hair et al., 2010). When both AVE and factor loadings are above these thresholds, convergent validity is achieved.
 - (b) **Discriminant Validity:** Discriminant validity is evaluated using the Fornell and Larcker (1981) criterion. This method compares the square root of the AVE for each construct with its correlations with other latent constructs. For adequate discriminant validity, the square root of a construct's AVE should exceed its correlations with other constructs, ensuring that the constructs are distinct from one another.

Figure 5.2 presents the results of the confirmatory factor analysis (CFA) carried out to assess the interrelationships among the dimensions of insurance literacy, risk appetite, sustainability, and perceived benefits of insurance. The CFA was conducted using AMOS SEM, with all constructs linked to the covariates. The outcomes of the CFA between the constructs are summarized in Table 5.2.

Figure 5.2

Confirmatory Factor Analysis



Source: Primary data

Notes: IA-Insurance Attitude, IB- Insurance Behaviour, IC-Insurance Confidence, IK-Insurance Knowledge, RA-Risk Appetite, ES-Economic Sustainability, SS-Social Sustainability and PB-Perceived Benefit

Table 5.2

Reliability and Convergent Validity of CFA model

Factors	Item	Loading	C Alpha	AVE	CR
Insurance Attitude (IA)	IA1	0.730	0.853	0.594	0.854
	IA2	0.771			
	IA3	0.806			
	IA4	0.775			
Insurance Behaviour (IB)	IB1	0.806	0.858	0.676	0.862
	IB2	0.881			
	IB3	0.777			
Insurance Confidence (IC)	IC1	0.847	0.869	0.631	0.872
	IC2	0.877			
	IC3	0.739			
	IC4	0.701			
Insurance Knowledge (IK)	IK1	0.782	0.872	0.633	0.873
	IK2	0.786			
	IK3	0.836			
	IK4	0.777			
Economic Sustainability (ES)	ES1	0.594	0.921	0.523	0.812
	ES2	0.679			
	ES3	0.795			
	ES4	0.804			
Social Sustainability (SS)	SS1	0.562	0.806	0.500	0.773
	SS2	0.620			
	SS3	0.750			
	SS4	0.769			
Risk Appetite (RA)	RA1	0.816	0.767	0.598	0.856
	RA2	0.789			
	RA3	0.802			
	RA4	0.679			
Perceived Benefits (PB)	PB1	0.837	0.885	0.738	0.893
	PB2	0.956			
	PB3	0.773			

Source: Primary data

Table 5.2 presents the results of reliability and validity tests for the items used to measure the dimensions of insurance literacy, risk appetite, economic sustainability, social sustainability, and perceived benefits of insurance. All factor loadings are above the acceptable threshold of 0.5, confirming the validity of the measurement items. Both Cronbach's Alpha and Composite Reliability values are greater than 0.7, indicating strong internal consistency reliability across the constructs. Moreover, the Average Variance Extracted (AVE) values are higher than the recommended minimum of 0.5, demonstrating a satisfactory level of convergent validity. Since all parameters fall within the acceptable range, the data is deemed appropriate for further analysis and model development.

The present study employed four independent variables: insurance attitude, insurance behaviour, insurance confidence, and insurance knowledge. For insurance attitude, the construct demonstrated a reliability of 0.853, with an Average Variance Extracted (AVE) of 0.594 and a Composite Reliability (CR) of 0.854, all of which satisfy the required validity criteria. Insurance behaviour obtained a CR of 0.862 and an AVE of 0.676, confirming adequate convergent validity. Similarly, insurance confidence achieved a CR of 0.872 and an AVE of 0.631, both within acceptable thresholds. Insurance knowledge reported a CR of 0.873 and an AVE of 0.633, also meeting the standards for convergent validity. Overall, the findings confirm that all constructs are both reliable and valid for the purposes of this study.

The study also incorporated four dependent variables: economic sustainability, social sustainability, risk appetite, and perceived benefit. For economic sustainability, the construct recorded a reliability of 0.921, an Average Variance Extracted (AVE) of 0.523, and a Composite Reliability (CR) of 0.812, all satisfying the validity requirements. Social sustainability showed a reliability of 0.806, with an AVE of 0.500 and a CR of 0.773, meeting the necessary validity standards. Risk appetite demonstrated a reliability of 0.767, an AVE of 0.598, and a CR of 0.856, confirming adequate validity. Lastly, perceived benefit exhibited a reliability of 0.885, an Average Variance Extracted (AVE) of 0.738, and a CR of 0.893, all of which fulfill the required validity criteria.

Table 5.3 presents the correlation matrix results used to assess the discriminant validity of the constructs in the study. It displays both the square root of the AVE values and the inter-construct latent variable correlations. The bolded figures indicate the square root of the AVE scores, which should exceed the corresponding inter-construct correlation values to confirm the absence of overlap among the construct items.

Table 5.3

Discriminant Validity among the constructs

	IA	IC	IB	IK	ES	SS	RA	PB
IA	0.771							
IC	0.574	0.795						
IB	0.548	0.512	0.822					
IK	-0.020	-0.042	0.004	.796				
ES	0.531	0.677	0.546	-0.131	.723			
SS	0.339	0.470	0.207	-0.055	0.549	.681		
RA	0.404	0.453	0.378	-0.008	0.477	0.430	.773	
PB	0.414	0.498	0.408	0.102	0.514	0.215	0.269	.859

Notes: IA-Insurance Attitude, IB- Insurance Behaviour, IC-Insurance Confidence, IK-Insurance Knowledge, RA-Risk Appetite, ES-Economic Sustainability, SS-Social Sustainability and PB-Perceived Benefit

Source: Primary data

Based on Table 5.3, it can be concluded that the constructs in this study are distinct from one another, as the criteria for discriminant validity are fully met.

5.3.2 Model Fit Measures of Measurement Model

Table 5.4 provides the outcomes of the model fit analysis for the items included in the study. The indices used to assess model fit are CMIN/DF, GFI, AGFI, and RMSEA, and their respective results are reported in the table.

Table 5.4*Model fit indices for confirmatory factor analysis*

Attributes	CMIN/DF	CFI	GFI	AGFI	RMSEA
Model Value	2.193	0.927	0.913	0.943	0.056
Threshold Limit	1-5	>0.9	>0.9	>0.9	<0.08
Model Evaluation	Excellent	Acceptable	Acceptable	Acceptable	Excellent
Literature Support	Hair et al., (1998)	Hu and Bentler (1999)	Shevlin & Miles, (1998)	Hu and Bentler (1999)	Hair et al. (2006)

Source: Primary data

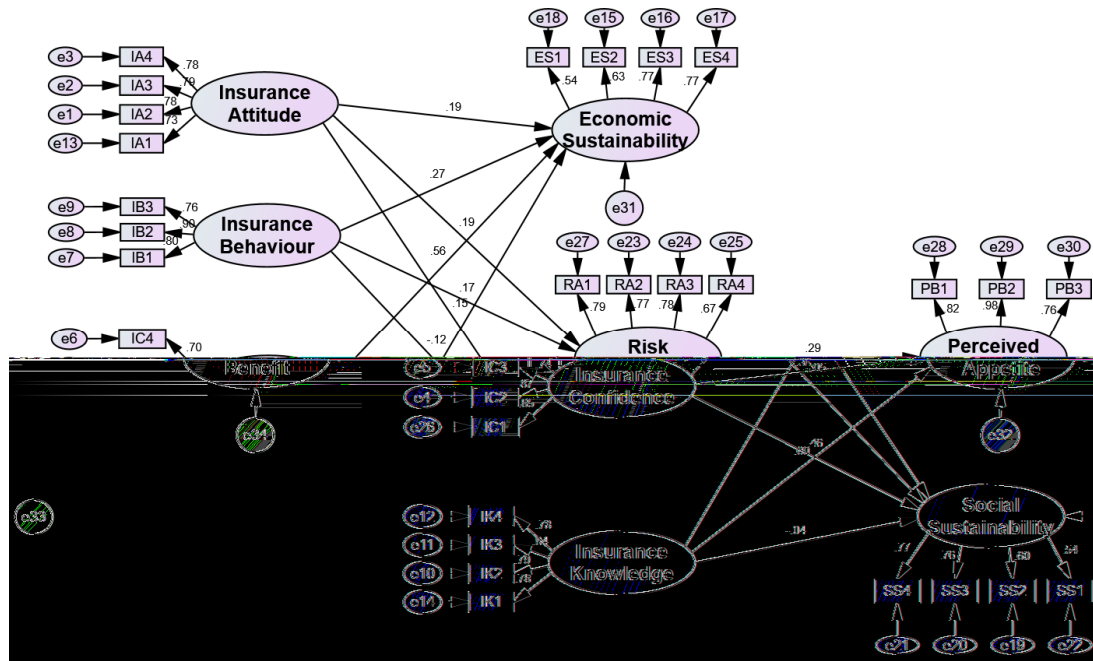
The findings show that the Chi-Square to degrees of freedom ratio is 2.193, which is within the acceptable limit of 5. The RMSEA value of 0.056 is well below the recommended threshold of 0.08. Additionally, the GFI and AGFI values are above 0.9, and the CFI is close to the standard cut-off of 0.9, reflecting a strong model fit. Hence, the CFA model for insurance literacy, risk appetite, sustainability, and perceived benefits of insurance is deemed appropriate for further analysis.

5.4 Covariance-Based Structural Equation Model for Interrelationship between Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits and Path Analysis of SEM

The Covariance-Based Structural Equation Modelling (SEM) approach is a confirmatory technique mainly used to validate hypotheses and examine phenomena linked to structural theory. In this study, IBM SPSS AMOS 21 was employed to conduct the SEM analysis. Figure 5.3 presents the results of the CB-SEM model, illustrating the relationship between Insurance Literacy, Risk Appetite, and SME Sustainability. The analysis first tested the overall measurement model, as shown in Figure 5.2, followed by the structural model test in Figure 5.3, which was developed based on the hypotheses outlined in Table 5.5.

Figure 5.3

CB-SEM for Interrelationship between Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits



5.4.1. Path Analysis of Structural Equation Model

The structural equation model was executed and evaluated using IBM SPSS AMOS, with the path analysis and the corresponding outcomes of the relationships between exogenous and endogenous variables presented in Table 5.5.

Table 5.5

Path analysis for the model

Constructs Path Index	Standardized Coefficient (Beta)	P-Value	Result
Risk Appetite ← Insurance Attitude	0.814	<0.001**	Supported
Risk Appetite ← Insurance Behaviour	0.146	0.002**	Supported
Risk Appetite ← Insurance Confidence	0.284	<0.001**	Supported
Risk Appetite ← Insurance Knowledge	-.001	0.977	Not Supported
Economic Sustainability ← Insurance Attitude	0.165	<0.001**	Supported

Constructs Path Index	Standardized Coefficient (Beta)	P-Value	Result
Economic Sustainability ← Insurance Behaviour	0.196	<0.001**	Supported
Economic Sustainability ← Insurance Confidence	.388	<0.001**	Supported
Economic Sustainability ← Insurance Knowledge	-.064	0.017*	Supported
Social Sustainability ← Insurance Attitude	0.089	0.010*	Supported
Social Sustainability ← Insurance Behaviour	-.027	0.344	Not Supported
Social Sustainability ← Insurance Confidence	0.215	<0.001**	Supported
Social Sustainability ← Insurance Knowledge	-.015	0.454	Not Supported
Perceived Benefit ← Risk Appetite	0.419	<0.001**	Supported

Note: ** Indicates significant at 1% level, * Indicates significant at 5% level

Source: Primary Data

5.4.2 Results of path analysis and hypotheses testing

This section presents the path estimation results for the hypotheses tested in the study. Hypotheses SM.H1 to SM.H13 represent the structural model assumptions concerning the relationships between the dimensions of Insurance Literacy, Risk Appetite, and MSME Sustainability, along with their outcomes.

SM.H1: Insurance Attitude significantly influences MSME Risk Appetite

The standardized beta coefficient of insurance attitude on MSME risk appetite is 0.814, indicating its partial effect while keeping other path variables constant. The positive sign of the estimate shows that an increase in insurance attitude leads to a corresponding rise in MSME risk appetite. Specifically, for every one-unit increase in the standard deviation of insurance attitude, risk appetite increases by 0.814. This coefficient is statistically significant at the 1% level, confirming that insurance attitude exerts a positive and significant influence on MSME risk appetite.

SM.H2: Insurance Behaviour significantly influences MSME Risk Appetite

The standardized beta coefficient for insurance behaviour on MSME risk appetite is 0.146, indicating its partial effect while keeping other path variables constant. The positive coefficient suggests that higher levels of insurance behaviour are associated with an increase in risk appetite. In precise terms, MSME risk appetite rises by 0.146 for every one standard deviation increase in insurance behaviour. This effect is statistically significant at the 1% level, demonstrating that insurance behaviour positively influences MSME risk appetite.

SM.H3: Insurance Confidence significantly influences MSME Risk Appetite

The standardized beta coefficient for insurance confidence on MSME risk appetite is 0.284, indicating its partial effect when other path variables are held constant. The positive coefficient shows that a rise in insurance confidence contributes to an increase in risk appetite. In particular, MSME risk appetite grows by 0.284 for every one standard deviation increase in insurance confidence. This effect is statistically significant at the 1% level, confirming that greater insurance confidence strengthens MSME risk appetite.

SM.H4: Insurance Knowledge significantly influences MSME Risk Appetite.

Since the p-value exceeds 0.05, the results reveal that hypothesis SM.H4 is not supported, rejecting the assumption that insurance knowledge influences MSME risk appetite ($p = 0.977$). Hence, the result indicates that insurance knowledge has no significant effect on MSME risk appetite.

SM.H5: Insurance Attitude significantly influences MSME Economic Sustainability

The standardized beta coefficient of insurance attitude on MSME economic sustainability is 0.165, reflecting its partial effect while keeping other path variables constant. The positive coefficient indicates that higher insurance attitude contributes to greater economic sustainability, with MSME economic sustainability increasing by 0.165 for every one standard deviation rise in insurance attitude. This relationship is

statistically significant at the 1% level, suggesting that strengthening insurance attitude can enhance economic sustainability.

SM.H6: Insurance Behaviour significantly influences MSME Economic Sustainability

The standardized beta coefficient of insurance behaviour on MSME economic sustainability is 0.196, indicating its partial effect while controlling for other path variables. The positive sign shows that higher insurance behaviour is associated with greater economic sustainability, with MSME economic sustainability rising by 0.196 for each one standard deviation increase in insurance behaviour. This effect is statistically significant at the 1% level, suggesting that improved insurance behaviour enhances MSME economic sustainability.

SM.H7: Insurance Confidence significantly influences MSME Economic Sustainability

The standardized beta coefficient of insurance confidence on MSME economic sustainability is 0.388, reflecting its partial effect while other path variables are held constant. The positive coefficient indicates that higher insurance confidence leads to increased economic sustainability, with MSME economic sustainability rising by 0.388 for every one standard deviation increase in insurance confidence. This relationship is statistically significant at the 1% level, suggesting that strengthening insurance confidence can enhance MSME economic sustainability.

SM.H8: Insurance Knowledge significantly influences MSME Economic Sustainability.

The standardized beta coefficient of insurance knowledge on MSME economic sustainability is -0.064, indicating its partial effect while controlling for other path variables. The negative sign suggests an inverse relationship, meaning that MSME economic sustainability decreases by 0.064 for every one standard deviation increase in insurance knowledge. This coefficient is statistically significant at the 5% level, indicating that higher insurance knowledge is associated with a slight reduction in MSME economic sustainability.

SM.H9: Insurance Attitude significantly influences MSME Social Sustainability

The standardized beta coefficient of insurance attitude on MSME social sustainability is 0.089, reflecting its partial effect while keeping other path variables constant. The positive coefficient indicates that an increase in insurance attitude is associated with higher social sustainability, with MSME social sustainability rising by 0.089 for every one standard deviation increase in insurance attitude. This effect is statistically significant at the 1% level, suggesting that enhancing insurance attitude can improve MSME social sustainability.

SM.H10: Insurance Behaviour significantly influences MSME Social Sustainability

Since the p-value exceeds 0.05, the results reveal that hypothesis SM.H12 is not supported, rejecting the assumption that insurance behaviour influences MSME social sustainability ($p = 0.344$). This indicates that insurance behaviour has no effect on MSME social sustainability.

SM.H11: Insurance Confidence significantly influences MSME Social Sustainability

The standardized beta coefficient of insurance confidence on MSME social sustainability is 0.215, reflecting its partial effect while controlling for other path variables. The positive sign indicates that higher insurance confidence is associated with greater social sustainability, with MSME social sustainability increasing by 0.215 for every one standard deviation rise in insurance confidence. This coefficient is statistically significant at the 1% level, suggesting that strengthening insurance confidence can enhance MSME social sustainability.

SM.H12: Insurance Knowledge significantly influences MSME Social Sustainability

Since the p-value exceeds 0.05, the results reveal that hypothesis SM.H12 is not supported, rejecting the assumption that insurance knowledge influences MSME

social sustainability ($p = 0.454$). This indicates that insurance knowledge has no effect on MSME social sustainability.

SM.H13: Risk Appetite significantly influences MSME Perceived Benefits of Insurance

The standardized beta coefficient of risk appetite on perceived benefits of insurance is 0.419, indicating its partial effect while controlling for other path variables. The positive coefficient suggests that higher risk appetite is associated with increased perceived benefits of insurance, with these benefits rising by 0.419 for every one standard deviation increase in risk appetite. This effect is statistically significant at the 1% level, indicating that enhancing risk appetite can improve the perceived benefits of insurance.

5.5 SEM Hypotheses Results Summary

The results summary for the SEM hypotheses is presented in Table 5.6.

Table 5.6

SEM Hypotheses

Hypotheses No.	Hypotheses	Result
SM.H1	Insurance Attitude significantly influences MSME Risk Appetite.	Supported
SM.H2	Insurance Behaviour significantly influences MSME Risk Appetite.	Supported
SM.H3	Insurance Confidence significantly influences MSME Risk Appetite.	Supported
SM.H4	Insurance Knowledge significantly influences MSME Risk Appetite.	Not Supported
SM.H5	Insurance Attitude significantly influences MSME Economic Sustainability	Supported
SM.H6	Insurance Behaviour significantly influences MSME Economic Sustainability	Supported

Hypotheses No.	Hypotheses	Result
SM.H7	Insurance Confidence significantly influences MSME Economic Sustainability	Supported
SM.H8	Insurance Knowledge significantly influences MSME Economic Sustainability	Supported
SM.H9	Insurance Attitude significantly influences MSME Social Sustainability	Supported
SM.H10	Insurance Behaviour significantly influences MSME Social Sustainability	Not Supported
SM.H11	Insurance Confidence significantly influences MSME Social Sustainability	Supported
SM.H12	Insurance Knowledge significantly influences MSME Social Sustainability	Not Supported
SM.H13	Risk appetite significantly influences MSME Perceived Benefits of Insurance	Supported

Note: SM.H indicates Structural Model Hypotheses

5.6 Multigroup Analysis Using AMOS

A multigroup analysis was conducted to verify whether the model holds consistently across different groups. Before testing for structural invariance, it was necessary to first examine measurement invariance to ensure comparability across the groups under study. To address the fifth objective, a multigroup moderation analysis was performed to explore variations in the relationships among the variables across different venture categories namely micro, small, and medium. For this purpose, the researcher applied the measurement invariance approach in conducting the multigroup moderation analysis. The hypotheses related to this analysis are presented in Table 5.7.

Table 5.7*Multigroup Hypotheses*

Hypotheses No.	Multigroup Hypotheses
MG.H1	Venture category has a significant impact on the relationships among Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance
MG.H1a	Venture category moderates the relationship between Insurance Attitude and MSME Risk Appetite.
MG.H1b	Venture category moderates the relationship between Insurance Behaviour and MSME Risk Appetite.
MG.H1c	Venture category moderates the relationship between Insurance Confidence and MSME Risk Appetite.
MG.H1d	Venture category moderates the relationship between Insurance Knowledge and MSME Risk Appetite.
MG.H1e	Venture category moderates the relationship between Insurance Attitude and MSME Economic Sustainability
MG.H1f	Venture category moderates the relationship between Insurance Behaviour and MSME Economic Sustainability
MG.H1g	Venture category moderates the relationship between Insurance Confidence and MSME Economic Sustainability
MG.H1h	Venture category moderates the relationship between Insurance Knowledge MSME Economic Sustainability
MG.H1i	Venture category moderates the relationship between Insurance Attitude and MSME Social Sustainability
MG.H1j	Venture category moderates the relationship between Insurance Behaviour and MSME Social Sustainability
MG.H1k	Venture category moderates the relationship between Insurance Confidence and MSME Social Sustainability
MG.H1l	Venture category moderates the relationship between Insurance Knowledge and MSME Social Sustainability
MG.H1m	Venture category moderates the relationship between Risk appetite and MSME Perceived Benefits of Insurance

Note: MG.H1, MG.H1a to MG.H1m indicate multi-group analysis hypotheses

5.7 Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of MSME: A Comparison between Micro, Small and Medium Enterprises Using Multigroup Analysis

A multigroup SEM analysis was carried out to examine potential variations in measurement parameters and structural relationships of the proposed model in relation to the impact of venture category. Measurement invariance was assessed using the chi-square difference test, where a p-value greater than 0.05 indicates that the measurement models are invariant. In this study, the chi-square test was applied to evaluate differences across venture categories (Micro, Small, and Medium). A significant chi-square difference between the models suggests the presence of group-level variations in the path coefficients. The results of the chi-square difference test are summarized in Table 5.8.

Table 5.8

Chi-Square Difference Test for Assessing the Significance of Multigroup Moderation

Overall Model	Chi-square	D.F	P-value	Invariant?
Unconstrained	2307.469	1176		
Fully constrained	2413.442	1246		
Number of groups		3		
Difference	105.973	70	<.001	YES

Source: Primary data

Within the Multi-Group Analysis, the Chi-square difference test results shown in Table 5.8 indicate a significant difference between the unconstrained and fully constrained models (p-value < .001). This suggests that the relationships among the factors vary across the three groups namely micro, small, and medium enterprises at the model level. Therefore, it is necessary to further examine the path differences within the model across these groups.

5.7.1 Results of Path Analysis for Testing Moderating Effects on Path Values in the Model Using Structural Invariance Test

The outcomes of the path analysis, conducted to assess the moderating effects on path values using the structural invariance test, are presented in Table 5.9. A detailed explanation of these results, along with separate CB-SEM models for micro, small, and medium enterprises shown in Figures 5.4, 5.5, and 5.6 respectively, is provided in the subsequent section.

Table 5.9

Results of the Structural Invariance Test

Model	CMIN	DF	Beta			P	Result
			Micro	Small	Medium		
Structural Weights	105.973	70	-	-	-	.004	Significant
Constraint_1 (IA → RA)	.517	2	.159	.190	.247	.772	Insignificant
Constraint_2 (IA → SS)	.878	2	.226	.023	.063	.645	Insignificant
Constraint_3 (IA → ES)	4.243	2	.355	.093	.009	.120	Insignificant
Constraint_4 (IB → RA)	.372	2	.161	.308	.133	.830	Insignificant
Constraint_5 (IC → SS)	8.329	2	.395	.685	.457	.016	Significant
Constraint_6 (IK → RA)	.001	2	-.007	-.011	-.010	.999	Insignificant
Constraint_7 (IB → ES)	8.952	2	.152	.200	.581	.011	Significant
Constraint_8 (IC → ES)	1.427	2	.462	.694	.504	.490	Insignificant
Constraint_9 (IK → ES)	.168	2	-.157	-.116	-.108	.919	Insignificant
Constraint_10 (IB → SS)	.722	2	.055	-.059	-.215	.697	Insignificant
Constraint_11 (IK → SS)	1.189	2	-.035	-.131	-.115	.552	Insignificant
Constraint_12 (IC → RA)	2.417	2	.407	.396	.233	.299	Insignificant
Constraint_13 (RA → PB)	7.801	2	.184	.447	.288	.020	Significant

Source: Primary Data

Constraints indicate the equality of regression coefficients ($\beta_1 = \beta_2 = \beta_3$)

Figure 5.4

CB-SEM for Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of MSME – Micro Enterprises

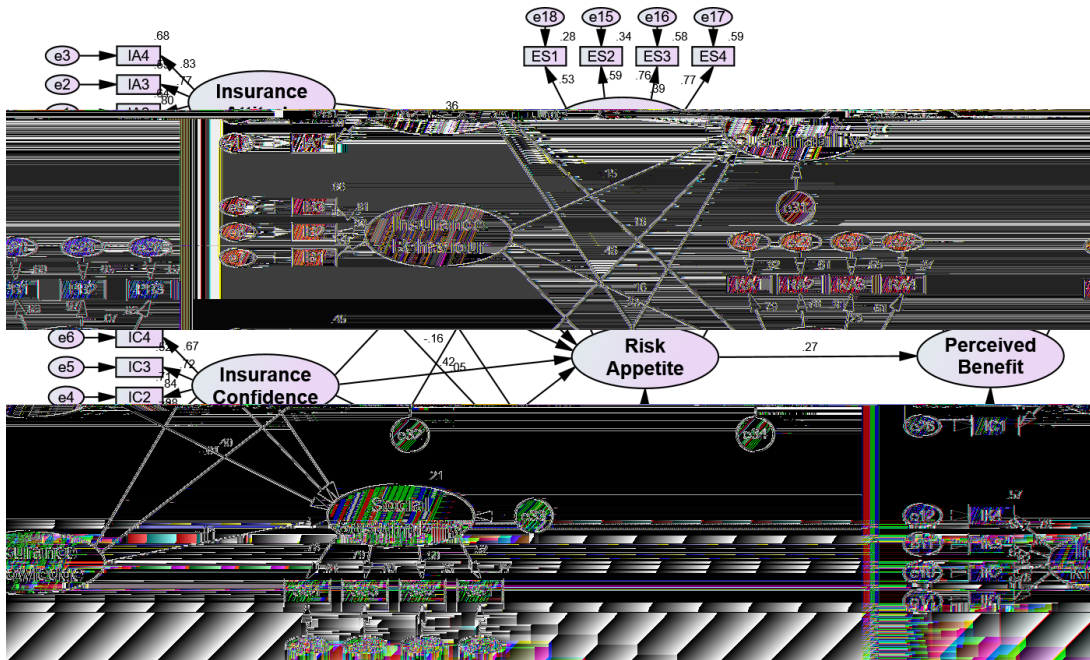


Figure 5.5

CB-SEM for Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of MSME – Small Enterprises

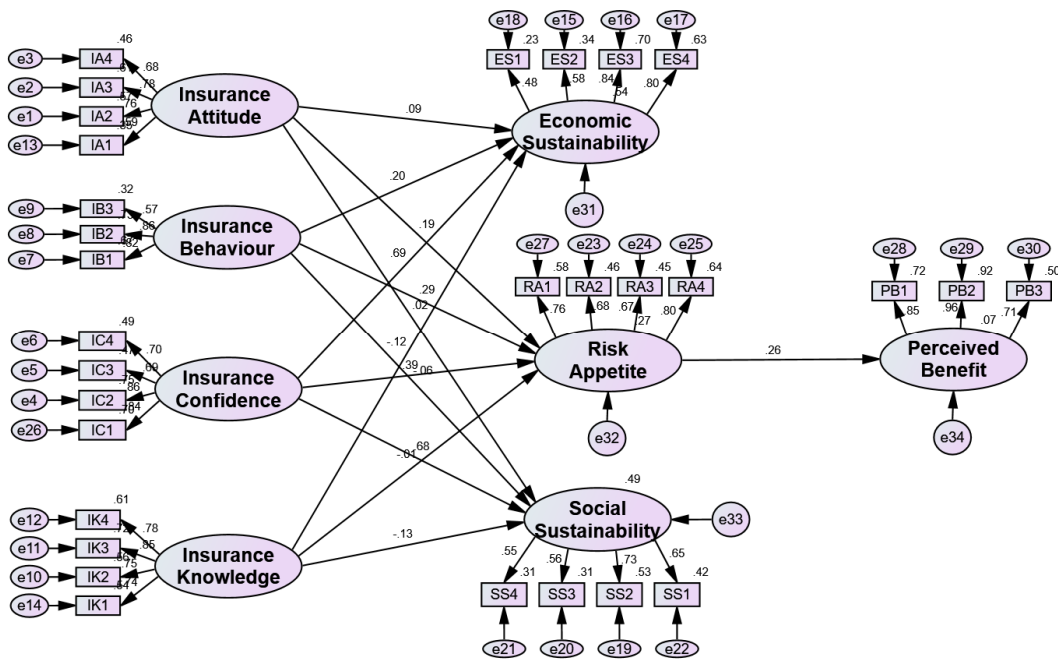
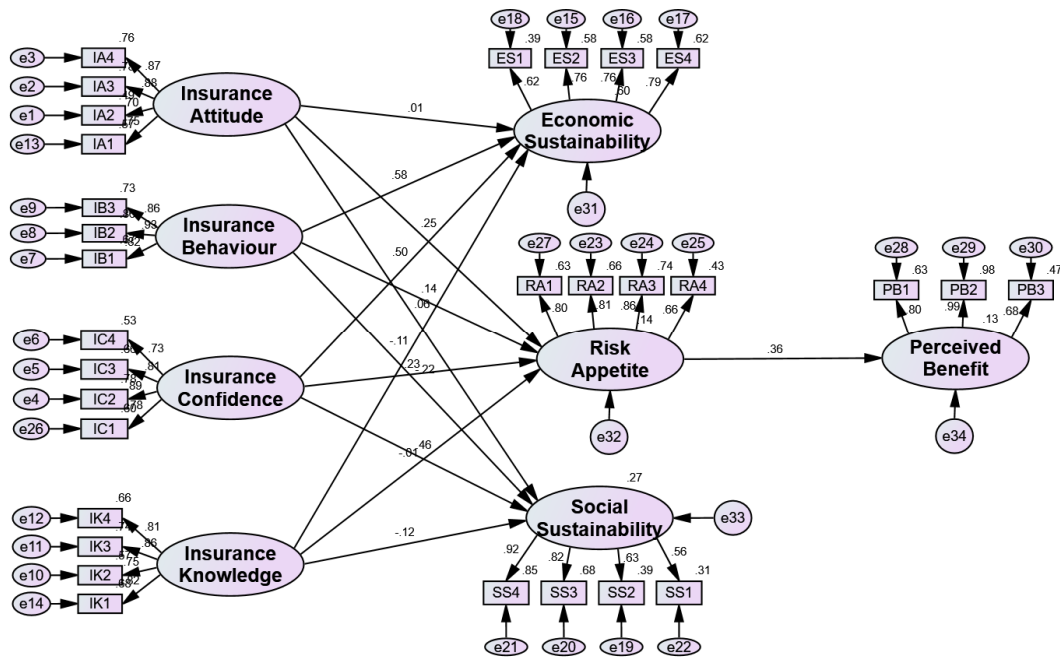


Figure 5.6

CB-SEM for Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of MSME –Medium Enterprises



MG.H1: *Venture category has a significant impact on the relationships among Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance*

The structural invariance test results from the multi-group analysis, presented in Table 5.9, demonstrate significant differences in the overall model across micro, small, and medium enterprises (CMIN = 105.973, df = 70, p < .001). Thus, the MG.H1 hypothesis is confirmed. This suggests that the predictive model is not uniform across the three venture categories, indicating that the relationships among insurance literacy, risk appetite, sustainability and perceived benefits are influenced by the type of venture.

MG.H1a: *Venture category moderates the relationship between Insurance Attitude and MSME Risk Appetite*

As the chi-square p-value exceeds .05, the relationship between insurance attitude and MSME risk appetite does not differ significantly across micro, small, and medium

enterprises (CMIN = .517, $p = .772$). Hence, the MG.H1a hypothesis is not supported. This indicates that the type of enterprise does not moderate the effect of insurance attitude on MSME risk appetite.

MG.H1b: Venture category moderates the relationship between Insurance Behaviour and MSME Risk Appetite

Since the chi-square p-value is above .05, no significant differences are observed in the relationship between insurance behaviour and MSME risk appetite across micro, small, and medium enterprises (CMIN = .372, $p = .830$). This indicates that MG.H1b is not supported, suggesting that the type of enterprise does not moderate the effect of insurance behaviour on MSME risk appetite.

MG.H1c: Venture category moderates the relationship between Insurance Confidence and MSME Risk Appetite

The chi-square p-value being greater than .05 (CMIN = 2.417, $p = .299$) shows that the relationship between insurance confidence and MSME risk appetite does not differ significantly across micro, small, and medium enterprises. Thus, MG.H1c is not supported, indicating that the impact of insurance confidence on MSME risk appetite remains consistent regardless of enterprise type.

MG.H1d: Venture category moderates the relationship between Insurance Knowledge and MSME Risk Appetite

Since the chi-square p-value is greater than .05 (CMIN = .001, $p = .999$), the relationship between insurance knowledge and MSME risk appetite does not differ significantly across micro, small, and medium enterprises. Therefore, MG.H1d is not supported, suggesting that the effect of insurance knowledge on MSME risk appetite is consistent across all enterprise types.

MG.H1e: Venture category moderates the relationship between Insurance Attitude and MSME Economic Sustainability

As the chi-square p-value exceeds .05 (CMIN = 4.243, $p = .120$), no significant differences are found across micro, small, and medium enterprises in the relationship

between insurance attitude and MSME economic sustainability. Consequently, MG.H1e is not supported, indicating that the influence of insurance attitude on MSME economic sustainability is consistent regardless of enterprise size.

MG.H1f: Venture category moderates the relationship between Insurance Behaviour and MSME Economic Sustainability

Since the chi-square p-value is less than .05 (CMIN = 8.952, p = .011), significant differences exist among micro, small, and medium enterprises in the relationship between insurance behaviour and MSME economic sustainability. Hence, MG.H1f is supported. This indicates a moderating effect of enterprise type on the impact of insurance behaviour on economic sustainability. Based on the standardized beta coefficients, the effect is strongest for medium enterprises ($\beta = .581$), followed by small enterprises ($\beta = .200$) and micro enterprises ($\beta = .152$).

MG.H1g: Venture category moderates the relationship between Insurance Confidence and MSME Economic Sustainability

In this case, the chi-square p-value exceeds .05 (CMIN = 1.427, p = .490), indicating no significant differences among micro, small, and medium enterprises in the relationship between insurance confidence and MSME economic sustainability. Therefore, MG.H1g is not supported, suggesting that the effect of insurance confidence on MSME economic sustainability is consistent across all enterprise types.

MG.H1h: Venture category moderates the relationship between Insurance Knowledge MSME Economic Sustainability

As the chi-square p-value is greater than .05 (CMIN = .168, p = .919), no significant differences are observed among micro, small, and medium enterprises in the relationship between insurance knowledge and MSME economic sustainability. Therefore, MG.H1h is not supported, indicating that the impact of insurance knowledge on MSME economic sustainability is consistent across all enterprise types.

MG.H1i: Venture category moderates the relationship between Insurance Attitude and MSME Social Sustainability

Since the chi-square p-value is greater than .05 (CMIN = .878, $p = .645$), no significant differences exist among micro, small, and medium enterprises in the relationship between insurance attitude and MSME social sustainability. Thus, MG.H1i is not supported, indicating that the effect of insurance attitude on MSME social sustainability is consistent across all enterprise types.

MG.H1j: Venture category moderates the relationship between Insurance Behaviour and MSME Social Sustainability

In this case, the chi-square p-value exceeds .05 (CMIN = .722, $p = .697$), indicating no significant differences among micro, small, and medium enterprises in the relationship between insurance behaviour and MSME social sustainability. Therefore, MG.H1j is not supported, suggesting that the effect of insurance behaviour on MSME social sustainability is consistent across all enterprise types.

MG.H1k: Venture category moderates the relationship between Insurance Confidence and MSME Social Sustainability

The relationship between insurance confidence and MSME social sustainability differs significantly among micro, small, and medium enterprises, as the chi-square p-value is less than .05 (CMIN = 8.329, $p = .016$). Therefore, MG.H1k is supported, indicating a moderating effect of enterprise type on this relationship. Based on the standardized beta coefficients, the impact is strongest for small enterprises ($\beta = .685$), followed by medium enterprises ($\beta = .457$) and micro enterprises ($\beta = .395$).

MG.H1l: Venture category moderates the relationship between Insurance Knowledge and MSME Social Sustainability

The relationship between insurance knowledge and MSME social sustainability does not differ significantly across micro, small, and medium enterprises, as the chi-square

p-value is greater than .05 (CMIN = 1.189, $p = .552$). Therefore, MG.H11 is not supported, indicating that the effect of insurance knowledge on MSME social sustainability is consistent across all enterprise types.

MG.H1m: Venture category moderates the relationship between Risk appetite and MSME Perceived Benefits of Insurance

The relationship between risk appetite and MSME perceived benefits of insurance differs significantly among micro, small, and medium enterprises, as the chi-square p-value is less than .05 (CMIN = 7.801, $p = .020$). Therefore, MG.H1m is supported, indicating a moderating effect of enterprise type on this relationship. Based on the standardized beta coefficients, the impact is strongest for medium enterprises ($\beta = .447$), followed by small enterprises ($\beta = .288$) and micro enterprises ($\beta = .184$).

5.7.2 Summary of the Comparative Analysis of the Interrelationship between Insurance Literacy, Risk Appetite, and the Sustainability of MSME among Micro, Small, and Medium Enterprises

The multigroup analysis indicates that, out of 13 structural relationships assessed through the structural invariance test, three paths show significant differences among micro, small, and medium enterprises. Thus, the type of enterprise serves as a moderator for these relationships. First, medium enterprises exhibit a stronger effect of insurance behaviour on MSME economic sustainability compared to small and micro enterprises. Second, small enterprises have a greater influence than medium and micro enterprises on the relationship between insurance confidence and MSME social sustainability. Finally, risk appetite impacts the perceived benefits of insurance more for small enterprises than for medium and micro enterprises.

5.8 Hypotheses Results: Summary

Table 5.10 presents the results of the structural invariance test, while Table 5.11 displays the findings of the multigroup hypotheses

Table 5.10

Summary of the Results of the Structural Invariance Test

Construct path index			Chi-square p value	Result
Insurance Attitude	→	Risk Appetite	.004	No moderation effects
Insurance Behaviour	→	Risk Appetite	.830	No moderation effects
Insurance Confidence	→	Risk Appetite	.299	No moderation effects
Insurance Knowledge	→	Risk Appetite	.999	No moderation effects
Insurance Attitude	→	Economic Sustainability	.120	No moderation effects
Insurance Behaviour	→	Economic Sustainability	.011	Moderation effects
Insurance Confidence	→	Economic Sustainability	.490	No moderation effects
Insurance Knowledge	→	Economic Sustainability	.919	No moderation effects
Insurance Attitude	→	Social Sustainability	.645	No moderation effects
Insurance Behaviour	→	Social Sustainability	.697	No moderation effects
Insurance Confidence	→	Social Sustainability	.016	Moderation effects
Insurance Knowledge	→	Social Sustainability	.552	No moderation effects
Risk Appetite	→	Perceived Benefits	.020	Moderation effects

Table 5.11*Summary of Results of Multigroup Hypotheses*

Hypotheses No.	Multigroup Hypotheses	Result
MG.H1	Venture category has a significant impact on the relationships among Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance	Supported
MG.H1a	Venture category moderates the relationship between Insurance Attitude and MSME Risk Appetite.	Not Supported
MG.H1b	Venture category moderates the relationship between Insurance Behaviour and MSME Risk Appetite.	Not Supported
MG.H1c	Venture category moderates the relationship between Insurance Confidence and MSME Risk Appetite.	Not Supported
MG.H1d	Venture category moderates the relationship between Insurance Knowledge and MSME Risk Appetite.	Not Supported
MG.H1e	Venture category moderates the relationship between Insurance Attitude and MSME Economic Sustainability	Not Supported
MG.H1f	Venture category moderates the relationship between Insurance Behaviour and MSME Economic Sustainability	Supported
MG.H1g	Venture category moderates the relationship between Insurance Confidence and MSME Economic Sustainability	Not Supported
MG.H1h	Venture category moderates the relationship between Insurance Knowledge MSME Economic Sustainability	Not Supported
MG.H1i	Venture category moderates the relationship between Insurance Attitude and MSME Social Sustainability	Not Supported
MG.H1j	Venture category moderates the relationship between Insurance Behaviour and MSME Social Sustainability	Not Supported

MG.H1k	Venture category moderates the relationship between Insurance Confidence and MSME Social Sustainability	Supported
MG.H1l	Venture category moderates the relationship between Insurance Knowledge and MSME Social Sustainability	Not Supported
MG.H1m	Venture category moderates the relationship between Risk Appetite and MSME Perceived Benefits of Insurance	Supported

5.9 Conclusion

This chapter addresses the four main objectives of the research. Based on the findings, the researcher concluded that insurance attitude, insurance behaviour, and insurance confidence are key determinants of MSME risk appetite. Among the dimensions of insurance literacy, insurance attitude, insurance behaviour, insurance confidence, and insurance knowledge were found to have a direct impact on MSME economic sustainability. Additionally, insurance attitude and insurance confidence were shown to exert a significant and positive influence on MSME social sustainability. Finally, MSME risk appetite was found to positively affect the perceived benefits of insurance.

Additionally, a multigroup moderation analysis was conducted to address the final objective of examining whether differences exist in the interrelationships among insurance literacy, risk appetite, sustainability and perceived benefits across micro, small, and medium enterprises. The structural invariance test was employed to evaluate the main hypothesis. The findings indicate significant differences among micro, small, and medium enterprises in the relationships between insurance literacy, risk appetite, sustainability and perceived benefits. Furthermore, 13 sub-hypotheses were tested using the structural invariance approach. Based on the results, it was concluded that three structural relationships exhibit significant differences across enterprise category. Specifically, the category of enterprise moderately influences the relationships between insurance behaviour and MSME economic sustainability, insurance confidence and MSME social sustainability, and risk appetite and MSME perceived benefits of insurance.

Chapter 6

SUMMARY, FINDINGS AND CONCLUSION

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6.1 Introduction

The Micro, Small and Medium Enterprises (MSME) has been playing predominant role in Indian Economy by strengthening India's GDP and exports. As per the data from National Statistical Office (NSO) during the financial year 2022-23 the contribution of MSME towards Gross Domestic Product (GDP) was 30.1% and contribution towards manufacturing output was 36%. This indicates that the MSME in India become the backbone of Indias industrial growth. As per the data from Directorate General of Commercial Intelligence and Statistics (DGCI & S) during the financial year 2023-24 the contribution of MSME towards Indian Exports was 45%. This indicates that the products and services of MSME sector meets international pricing and quality standards. Apart from these macroeconomic indicators, MSME ensures balanced development of the country by generating large number of employment opportunities outside of agriculture especially in unprivileged sectors and areas. This key role is amplified by fostering entrepreneurship at lower capital cost. As per the statistics of Udyam Portal of Ministry of MSME Government of India, 5.77 crore MSME were registered as on 31st December 2024. Through this 24.4 crore employment opportunities were generated. Through these MSME ensures rapid industrialization especially in rural and backward areas.

MSME in Kerala were growing in toon with the growth in the national level. As per the registration statistics of Udyam Portal (September 2025), there are 16.74 lakhs units. Kerala host 15th largest number of MSME in India and its growth deeply interwoven with Kerala Model of development which is characterized by high literacy rate, high skilled workforce, high human development indicators and a history of community development through cooperative societies. According to Kerala

Economic Review (2024) MSME playing a pivotal role by providing employment opportunities to more than 4 million people and also ensuring regional economic development of the state.

Despite of this crucial role of employment creation and balanced development, MSME sector in Kerala yet remains vulnerable to wide variety of risks – market volatility, uncertainty in climates and financial shocks (Thomas, J., & Suresh, R, 2022). In the scenario of destructive floods in Kerala during the year 2018 and 2019 followed by the COVID-19 pandemic proved the vulnerability of MSME sector. Such risks can lead to closure of business, catastrophic losses and other socio-economic consequences. This promotes a culture of risk aversion among MSME owners and it create a tendency to forgo potential growth opportunity of the organisation. It ultimately affects the sustainability of the business. In this context it is essential to conceptualise the risk appetite and sustainability of MSME. In the case of an MSME owners, risk appetite optimises strategic business decisions like entry in to new markets, product diversification, investing in new technology etc. In this scenario understanding how improved insurance literacy results in MSME risk appetite and sustainability especially in the context of Kerala’s MSME ecosystem which is featured by high rate of literacy but moderate risk tolerance. Therefore, understanding owner and venture characteristics, insurance literacy, risk appetite and sustainability of MSME is crucial for effective policy interventions and for design tailor-made products for MSME sector in Kerala.

6.2 Problem in Brief

The key highlights of Keala’s Economy were the substantial contribution of MSME sector and the higher MSME density. MSME sector in Kerala is contributing more than 30% of GSDP and significant portion of employment opportunities. Despite of these vital parameters there exists paradoxical scenario of vulnerability which resulted high churn rate and fragile sustainability (Kerala State Economic Review,2023). This fragility is magnified by devastating floods of 2018 & 2019 and Covid 19 pandemic. Many MSME never recovered out if this. The crux of these problems in MSME sector were due to the adoption of traditional and informal risk mitigation tools which has

proved inefficient against systematic and clustered risk (Nair & Pillai,2022). Insurance is the formal mechanism which safeguard the survival of these ventures. The result of this literacy gap is a suppressed risk appetite, which prevents growth and innovation. Theoretically insurance act as a catalyst for entrepreneurial risk taking which remains unfulfilled. Instead of enabling calculated risks for expansion, diversification, or technological adoption, the absence of insurance fosters a culture of risk aversion. Recent research by Mathew & George (2024) found that Kerala's MSMEs, particularly in the post-pandemic era, exhibit a "survivalist" mindset, prioritizing short-term operational continuity over long-term strategic growth which is known as risk appetite paralysis. It implies that potential economic opportunities are lost, and the sector's overall developmental potential remains capped, as firms are unwilling to undertake the very projects that could enhance their competitiveness and sustainability.

Furthermore, the existing body of knowledge suffers from significant fragmentation and contextual gaps. Studies on insurance adoption, risk perception, and firm sustainability often run in parallel streams, with limited research investigating their synergistic interplay. There is a critical lack of an integrated model that examines how owner and firm characteristics drive insurance literacy, which in turn influences risk appetite and sustainability, and ultimately, how this transformed appetite related with perceived benefits of insurance. Compounding this, the prevailing homogeneity in policy design fails to account for the vast differences between a micro-enterprise in a rural panchayat and a small manufacturing unit in an industrial estate, necessitating an investigation into how these dynamics vary across enterprise categories. For this purpose, the following research questions have been developed based on the literature review.

1. How do the MSME owner characteristics and firm characteristics influences on the awareness of insurance products and insurance literacy in Kerala?
2. What is the interrelationship between different dimensions of insurance literacy and perception on risk appetite among MSME in Kerala?
3. How do the various dimensions of insurance literacy impact the perceived sustainability of MSME in Kerala?

4. What is the role of risk appetite on the perceived benefits of insurance among MSME in Kerala?
5. Is there any group difference among insurance literacy, risk appetite and MSME sustainability across different categories of MSME in Kerala?

6.3 Objectives

The main purpose of the study to analyses numerous factors that affect insurance awareness and the insurance literacy for the risk appetite and the sustainability of MSME in Kerala. To achieve this fundamental goal the following objectives were formulated.

- 1 To examine the influence of MSME owner and firm characteristics on the awareness of insurance products and insurance literacy in Kerala.
- 2 To analyse the relationship between different dimensions of insurance literacy and MSME perception of risk appetite.
- 3 To explore the impact of various dimensions of insurance literacy on the sustainability of MSME in Kerala.
- 4 To assess the role of risk appetite in contributing to perceived benefits of insurance among MSME in Kerala.
- 5 To investigate whether the interrelationships among insurance literacy, risk appetite, sustainability and perceived benefits differ significantly across various categories of enterprises.

6.4 Hypotheses

This section describes the list of hypotheses is formulated based on the objectives of the study. Sub hypotheses and detailed explanation is showed on the chapter 4.

Hypotheses for examining the Influence of MSME Founder Characteristics on Various Aspects of Insurance Literacy and Awareness.

H1: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the age of the respondents.

H2: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the educational background of the respondents.

H3: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the Prior experience of the respondents.

Hypotheses for examining the Influence of Firm Characteristics on Various Aspects of Insurance Literacy and Awareness.

H4: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the location of their venture.

H5: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the business category.

H6: There is a significant difference in the various aspects of insurance literacy and insurance awareness based on the sector of business.

Hypotheses for investigating the extent of relationship between Various Dimensions of Insurance Literacy, Risk Appetite and Sustainability of MSME.

SM.H1: Insurance Attitude significantly influences MSME Risk Appetite.

SM.H2: Insurance Behaviour significantly influences MSME Risk Appetite.

SM.H3: Insurance Confidence significantly influences MSME Risk Appetite.

SM.H4: Insurance Knowledge significantly influences MSME Risk Appetite.

SM.H5: Insurance Attitude significantly influences MSME Economic Sustainability

SM.H6: Insurance Behaviour significantly influences MSME Economic Sustainability

SM.H7: Insurance Confidence significantly influences MSME Economic Sustainability

SM.H8: Insurance Knowledge significantly influences MSME Economic Sustainability

SM.H9: Insurance Attitude significantly influences MSME Social Sustainability

SM.H10: Insurance Behaviour significantly influences MSME Social Sustainability

SM.H11: Insurance Confidence significantly influences MSME Social Sustainability

SM.H12: Insurance Knowledge significantly influences MSME Social Sustainability

SM.H13: Risk appetite significantly influences MSME Perceived Benefits of Insurance

Hypotheses for exploring the variations in the relationships among the variables across different Venture Categories namely Micro, Small, and Medium.

MG.H1: Venture category has a significant impact on the relationships among Dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance

MG.H1a: Venture category moderates the relationship between Insurance Attitude and MSME Risk Appetite.

MG.H1b: Venture category moderates the relationship between Insurance Behaviour and MSME Risk Appetite.

MG.H1c: Venture category moderates the relationship between Insurance Confidence and MSME Risk Appetite.

MG.H1d: Venture category moderates the relationship between Insurance Knowledge and MSME Risk Appetite.

MG.H1e: Venture category moderates the relationship between Insurance Attitude and MSME Economic Sustainability

MG.H1f: Venture category moderates the relationship between Insurance Behaviour and MSME Economic Sustainability

MG.H1g: Venture category moderates the relationship between Insurance Confidence and MSME Economic Sustainability

MG.H1h: Venture category moderates the relationship between Insurance Knowledge and MSME Economic Sustainability

MG.H1i: Venture category moderates the relationship between Insurance Attitude and MSME Social Sustainability

MG.H1j: Venture category moderates the relationship between Insurance Behaviour and MSME Social Sustainability

MG.H1k: Venture category moderates the relationship between Insurance Confidence and MSME Social Sustainability

MG.H1l: Venture category moderates the relationship between Insurance Knowledge and MSME Social Sustainability

MG.H1m: Venture category moderates the relationship between Risk appetite and MSME Perceived Benefits of Insurance

6.5 Methodological Design

The research design of this study is descriptive and analytical. Since the study describes the characteristics and the facts of the population it is descriptive and analyses the data by using different statistical tools then it is analytical one. Both primary data and secondary data is used in this study. Secondary data is collected from Reports from Government Ministries /Bodies / Agencies, Research Thesis / Dissertation, Udyam Portal, Journals, Magazines, News Papers, LinkedIn profiles, Reports of International Agencies, Websites of IRDA, Industry etc. It is utilised for drafting theoretical framework, literature review, identification of variables and for model development. Structured questionnaire is used to collect the primary data from MSME owners registered under Udyam Portal in the state of Kerala. Samples were selected from each district in proportion to the total number of MSME registered in that district. List of MSME for each district is downloaded from data.gov.in. Simple random sampling is applied for the selection of 385 samples. Structured questionnaire is divided in to six divisions. Namely Part I: Demographic Characteristics of MSME owner and firm, Part II: Awareness level of insurance products available for MSME, Part III: Different Dimensions of Insurance Literacy, Part IV: Aspects of

Organisational Risk Appetite, Part V: Perceived Benefits of Insurance Products Available for MSME and Part VI: Aspects of sustainable performance. Pretesting and pilot study is conducted before the final data collection. Data were analysed using IBM SPSS 26.0, IBM AMOS 23.0, and the Stats Tools package. Various tools like percentage, mean standard deviation, one way ANOVA, post hoc test, CB-CFA, CB-Structural Equation Model and Multigroup moderation analysis were applied in this study.

6.6 Summary of Chapters

The study report is divided in two seven chapters. Chapter I introduction contains background of the study, statement of the problem, significance of the study, scope of the study, objectives, hypotheses, research methodology, limitations of study and the overall layout of the report. In the second chapter research gap is identified through review of existing literature. Chapter III deals with theoretical framework for the study. Fourth chapter examines the Influence of MSME owners and firm Characteristics on their Awareness of Insurance Products and Insurance Literacy in Kerala. Fifth chapter analyses the Interrelationship between Insurance Literacy, Risk Appetite and Sustainability of MSME – A Structural Equation Modelling Framework. It also deals with multigroup moderation analysis. Summary, Findings and Conclusions is dealt in sixth chapter. Seventh chapter considers recommendations, implications and scope for further research.

6.7 Findings of the Study

Findings of this study is summarized in five parts. (1) Frequency distribution of MSME owner and Firm characteristics; (2) Descriptive statistics of Insurance Awareness, Insurance Literacy dimensions, Risk Appetite, MSME Sustainability constructs and the Perceived Benefits of Insurance; (3) Relationship between MSME Owner and Firm Characteristics on various dimensions of Insurance Literacy and Awareness; (4) Interrelationship between Insurance Literacy, Risk Appetite and Sustainability of MSME through SEM Framework; (5) Moderating role of venture category among the relationships between dimensions of Insurance Literacy, Risk Appetite, Sustainability and Perceived Benefits of Insurance.

6.7.1 Frequency distribution

This part deals with the frequency distribution of owner and firm characteristics of MSME in Kerala. Percentage analysis is used to describe the features of this categorical variable. It is further divided into two parts: the frequency distribution of owner characteristics and the frequency distribution of the firm characteristics.

6.7.1.1 Frequency Distribution of Owner Characteristics.

1. Majority of MSME owners in Kerala fall within the age of 40 years (71.7%). Owners in the above 40-year category become minority (28.3%). This indicates that young people prefer to start Micro, Small and Medium Enterprises in Kerala.
2. Out of 385 respondents, 45.2% MSME owners have undergraduate qualification, 26.2% attained post-graduation qualification, 14.5% having plus two qualification and the remaining 14% have SSLC qualification. Thus, it indicates a significant percentage of MSME owners are well-educated.
3. Based on the data collected from 385 respondents, it is clear that 5 to 10 years of experience has the highest percentage of respondents (43.4%). It is also clear that, above 10 years category of experience ranked in the second position (27.5%). Thus, it is interpreted that the majority of MSME owners possess prior experience.

6.7.1.2 Frequency Distribution of Firm Characteristics.

1. The majority of the ventures in the sample are located in municipal areas (42.6%), followed by those in corporation areas (30.4%) and panchayats (27%). Thus, most of the MSME in Kerala were located at urban areas.
2. Regarding venture category of MSME, majority are categorized as micro enterprises (60%), followed by small enterprises (25%) and medium enterprises (15%). Therefore, Micro enterprises were dominating out of three categories of MSME.
3. Out of 385 samples 36.9% MSME owners formed their organization as Limited Liability Partnership, 23.1% as Private Limited company, 22.9% as sole

proprietorship and 17.1% as Partnership Firm. It indicates MSME owners were shifted from traditional forms of organization to newer forms of organization.

4. It is found that the majority of the respondents fall under the category of Below 5 Crore investment category (65.7%), followed by enterprises with an investment of ₹5 Crore - ₹20 Crore (21.3%). Likewise, organization with investments between ₹20 Crore – ₹35 Crore consists of 8.3% and the above ₹35 Crore category comprises 4.7% of the sample.
5. The source of investment of 385 MSME consists of the 46.2 % Equities and 53.8% loans. It indicates MSME in Kerala more rely upon the loans from the financial institutions than equity as source of investment.
6. The result indicates that the highest proportion of respondents belongs to the below ₹5Crore turnover category (62.6%) since the majority enterprises come under Micro category. The smallest group, representing 4.9%, comprises ventures with an annual turnover of above ₹100 Crore.
7. The sample enterprises were classified based on the number of employees. The largest group, 28.3%, consists of enterprises with 1–10 employees. This is followed by enterprises with 11–50 employees (26.2%) and those employing more than 100 employees (23.6%). The smallest proportion, 21.8%, represents enterprises with 51–100 employees.

6.7.2 Descriptive statistics of Insurance Awareness, Insurance Literacy dimensions, Risk Appetite, MSME Sustainability constructs and the Perceived Benefits of Insurance

This section explains the descriptive statistics for all the variables used in the current study. Based on the mean score and standard deviation, ranking of each statement in the questionnaire is done and it is further explained. Various scaled items used in this study consists of Insurance Awareness, Insurance Literacy dimensions, Risk Appetite, MSME Sustainability constructs and the Perceived Benefits of Insurance.

6.7.2.1 Insurance Awareness

- The study found that there were moderate to high level of Insurance Awareness among MSME owners in Kerala (Mean score ranging from 3.519 to 3.891). Out of eight variables of awareness “Insurance Awareness provided by Banks and Financial institutions” scored highest rank with mean score of 3.891 and SD of 0.759.
- It is also understood that government plays a significant role in offering insurance awareness among MSME (Mean: 3.844, SD: 0.768). In contrary, MSME owners agreed that information about the insurance products were not readily available, which scored lowest Mean Score of 3.519 and SD of 0.933.
- Thus, the results imply that there is a need for more information dissemination and awareness campaigns by both insurance providers and government bodies.

6.7.2.2 Insurance Literacy Dimensions

As per the current study, there are four different dimensions of insurance literacy: Insurance attitude, insurance behaviour, insurance confidence, and insurance knowledge. All the items for measuring these constructs were taken from prior literature

- The researcher used four different items for measuring insurance attitude. Most of the respondents had a positive attitude toward insurance, since it is considered an important tool for financial safety. Among these four items, “willing to make insurance by taking risk” is placed first rank with a mean and SD of 3.91 and 0.876, respectively.
- Insurance behaviour is measured by using three indicators; respondents are financially cautious and deliberate in decision-making (Mean = 4.01, SD = 0.873), carefully consider their options before financial decisions (Mean = 3.90), and moderate control over budgeting for major expenditures (Mean = 3.87).
- Insurance confidence items showed the confidence level of MSME owners in making investment decisions. From the table, it is clear that consulting an expert

for taking insurance decisions placed the lowest rank with a mean and SD of 3.48 and 0.971, respectively

- Finally, the researcher used four items for measuring insurance knowledge. Among these four, “some care in taking insurance decision” placed first position (Mean = 2.91).
- In summary, the insurance literacy among MSME in Kerala is highly important for making their investment decisions and reducing risks.

6.7.2.3 Risk Appetite

- The current study used eight different items for measuring risk appetite. Among these, pressure from stakeholders placed first in risk tolerance decisions (Mean 3.891, SD = 0.759). Likewise, the company’s risk-taking capacity and the owner’s tendency to take risks were the important factors in taking risk tolerance decisions (Mean: 3.844 and 3.873 respectively).
- On the other hand, past risk experiences have less influence on current risk decisions (Mean: 3.519 and SD: 0.933). Overall, the findings show that pressures from external actors and internal risk tolerance level have a stronger influence on risk appetite than prior experiences.

6.7.2.4 Sustainability Constructs

Two different constructs were used to measure the sustainability of MSME, namely financial sustainability and social sustainability. Four indicators were used to assess each construct.

- In the case of Financial Sustainability, company’s increased profits ranked first with mean score 3.92 and SD = 0.842. Improved position in the marketplace (Mean = 3.67, SD = 0.921), increased market share (Mean = 3.37, SD = 1.005) and business firms need to distribute goods and services (Mean = 3.37, SD = 0.887) were the other positions respectively.

- Similarly, responsibility towards stakeholders ranked first in measuring social sustainability (Mean = 3.96, SD = 0.708).

6.7.2.5 Perceived Benefits

- Three items were used to measure perceived benefits of insurance among MSME. All three items show a moderate agreement among MSME, with mean scores ranging from 3.23 to 3.57. Among these, respondents' feelings in evaluating insurance products placed the highest rank (Mean = 3.57, SD = 1.203).
- Conversely, respondents are somewhat less consistent in examining how their feelings impact their insurance decisions, placing a lower rank (Mean = 3.23, SD 1.199).

6.7.3 Relationship between MSME Owner and Firm Characteristics on various dimensions of Insurance Literacy and Awareness

Four dimensions of insurance literacy—namely, Insurance Attitude, Insurance Behaviour, Insurance Confidence, and Insurance Knowledge—as well as Insurance Awareness Levels among MSME were analysed with various owner characteristics and firm characteristics of MSME. To achieve this first objective, one-way ANOVA is applied.

6.7.3.1 Influence of MSME Owner Characteristics on Various Aspects of Insurance Literacy and Awareness.

In the present study, the researcher examined owner characteristics—specifically age of the owner, educational qualifications, and prior experience—with the dimensions of insurance literacy and the insurance awareness levels of MSME Owners in Kerala.

6.7.3.1.1 Influence of age of respondent on Various Aspects of Insurance Literacy and Awareness.

- Out of the four dimensions of Insurance Literacy, age has no significant relationship between Insurance Attitude ($p = 0.394$) and Insurance Behaviour ($p = 0.735$) as the p -value exceeds 0.05.

- The results revealed a significant relationship between the respondents' age and their Insurance Confidence level. Among the groups, respondents aged 40–45 years recorded the highest mean score for insurance confidence (Mean = 15.05), followed by those aged 35–40 years (Mean = 14.51, SD = 3.04). This suggests a positive relationship between age and the Insurance Confidence level of MSME owners.
- Similarly, age of respondents had significant relationship with Insurance Knowledge. The analysis indicated a significant relationship, with respondents in the 30–35 age group were showing the highest mean score (Mean = 11.88, SD = 5.05) compared to other groups. Insurance Knowledge is significantly different across the age groups of those under 30 and the 30-35 age group, with a p value of less than 0.05 ($p = .010$). MSME Owners between the ages of 30-35 have a mean rating of 2.6004, which is greater than those who are in the below 30-year age group.
- The relationship between age and Insurance Awareness of MSME owners were assessed using one-way ANOVA. The result showed no significant relationship between the age of the respondents and their level of Insurance Awareness.

6.7.3.1.2 Influence of the educational qualification of the respondent on Various Aspects of Insurance Literacy Dimensions and Awareness

- There is no significant relationship between educational background of respondents with Insurance Attitude ($p = 0.082$), Insurance Behaviour ($p = 0.108$) and Insurance Knowledge ($p = 0.87$) as the p-value exceeds 0.05. Out of four dimensions of Insurance literacy only Insurance Confidence having significant relationship.
- Then the researcher evaluated the interconnection between insurance confidence and education of the respondents using one-way ANOVA, and the results show a significant relationship between these two variables (F value 2.968 and $p = 0.032$). It is also clear that postgraduate scholars possess more confidence towards insurance products (Mean=14.90 and SD=3.01) and show the lowest confidence

among SSLC qualified founders (Mean=13.73 and SD=3.43). Thus, there is a positive correlation between the educational qualification of the respondent and insurance confidence level.

- The result shows that there is a significant connection between the Awareness level of insurance products and their educational qualifications. Further, it is inferred that the insurance awareness is most possessed by the post-graduate scholars rather than other educational groups (Mean=30.86, SD=4.76). Thus, it can be inferred that there is a significant relationship exists between the educational background and the insurance awareness level of the MSME owners.

6.7.3.1.3 Influence of the Prior Experience of the Respondent on Various Aspects of Insurance Literacy Dimensions and Awareness.

- For Insurance Attitude, the findings show a statistically significant difference across various prior experiences ($F = 4.030$, $p = 0.008$). Founders with more than 10 years of experience show the highest mean score (Mean = 16.160), indicating that more experienced individuals tend to have a more positive attitude toward insurance.
- There is no interconnection between Insurance Behaviour and prior experience of owners, since its p value is more than 0.05 ($p = 0.439$), indicating that the level of prior experience does not significantly influence how owners behave towards insurance practices.
- For Insurance Confidence, there is a significant difference across various prior experiences ($F = 2.678$, $p = 0.047$). Here also, respondents with above 10 years of experience show the highest confidence (Mean = 14.943), while those with no experience have the lowest (Mean = 13.804). This suggests that there is a positive correlation exists between prior experience and insurance confidence.
- In the case of Insurance Knowledge, no significant differences were found across various groups ($p = 0.325$). This shows that the prior experience does not have a significant effect on insurance knowledge.

- In the case of Insurance Awareness, the results show a statistically significant difference ($F = 3.742$, $p = 0.011$). Respondents with more than 10 years of experience again have the highest awareness level (Mean = 30.849), whereas those with no experience show the lowest (Mean = 27.982).
- The post hoc test on Insurance Attitude and prior experience reveals that, among the various group differences, only the comparison between owners with 5 to 10 years of prior experience and those with more than 10 years of experience is statistically significant ($p = 0.009$). Moreover, owners with above 10 years of experience indicated significantly higher mean scores compared to those with 5 to 10 years of experience (Mean=1.292).
- The post hoc test on Insurance Awareness and prior experience reveals that only one relationship is statistically significant. Specifically, owners with more than 10 years of previous experience scored significantly higher than those with no prior experience (Mean=2.867). This indicates that a person with higher prior experience (more than 10 years) has a significant positive influence on the insurance awareness.

6.7.3.2 Influence of Firm Characteristics on Various Aspects of Insurance Literacy and Awareness.

In the present study, the researcher examined firm characteristics—specifically location of business, category, and business sector—with the dimensions of insurance literacy and the insurance awareness levels of SME founders in Kerala.

6.7.3.2.1 Influence of location of business on Various Aspects of Insurance Literacy and Awareness.

- There is different confidence level exhibited by the owners based on the location of business ($F=4.808$ and $p=0.009$). Further, it is interpreted that respondents from corporation areas demonstrated the highest mean score (14.96) compared to those from panchayats (14.10) and municipalities (13.88). Thus, individuals urbanized and administratively developed areas (like corporations) tend to feel more Confidence towards Insurance.

- Insurance Knowledge also shows significantly across region ($F=3.618$ and $p=0.028$), with panchayat respondents scoring the highest (mean = 11.49), followed by corporation (10.26) and municipality (9.96).
- The relationship between Insurance Attitude and Behaviour exhibited by the owners located in different region shows insignificant results ($p = 0.213$ and $p = 0.185$ respectively).
- In the case of post hoc test for the relationship between Insurance Confidence and location, the group differences from each category shows that, founders located in corporation reported higher Insurance Confidence compared to those from municipalities (Mean=1.073). Whereas in the case of Insurance Knowledge and location, the group differences from each category shows that, owners located in panchayat reported higher insurance Knowledge compared to those from municipalities (Mean=1.526).

6.7.3.2.2 Influence of Venture Category on Various Aspects of Insurance Literacy and Awareness.

- There is no significant relationship between Venture Category and Insurance Attitude as the p-value exceeds 0.05 ($p = 0.055$).
- Venture Category has significant relationship with Insurance Behaviour as the p-value was less than 0.05 ($F=3.374$, $P=0.035$). It is also clear that Medium category venture owners possess more behaviour towards insurance (Mean=12.12 and $SD=2.24$), followed by Small enterprises (Mean=11.79 and $SD=2.56$) and Micro enterprises (Mean=11.16 and $SD=2.87$). Thus, it can be summarized that there is significant connection exists between category of venture and insurance behaviour exhibited by the ventures.
- The results revealed a significant relationship between the category of MSME and their Insurance Confidence level. Among the groups, Medium enterprises recorded the highest mean score for Insurance Confidence (Mean = 15.16), followed by Small enterprises (Mean = 13.99, $SD = 3.21$). This suggests a positive relationship between category and the Insurance Confidence level of MSME

owners. Owners from Medium-sized enterprises exhibit higher levels of Insurance Confidence compared to those from Micro enterprises (Mean difference = 1.8053). Owners from Medium-sized enterprises exhibit higher levels of Insurance Confidence compared to those from micro enterprises (Mean difference = 1.1670)

- The analysis indicated a significant relationship between Insurance Knowledge and venture category, with Micro enterprises showing the highest mean score (Mean = 11.97, SD = 5.09) compared to other groups. MSME Owners from micro enterprises exhibit higher levels of Insurance Knowledge compared to those from small enterprises (Mean difference = 1.846). Likewise, owners from micro enterprises exhibit higher levels of Insurance Knowledge compared to those from medium enterprises (Mean difference = 1.880).
- The result showed no significant relationship between the business category and their level of Insurance Awareness ($p = 0.312$).

6.7.3.2.3 Influence of Sector on Various Aspects of Insurance Literacy and Awareness.

- Results show that there is significant relationship between sector of enterprise and Insurance Attitude, as the p-value was less than 0.05 ($F = 5.517$, $p = 0.002$). It is evident that owners from the "Other" category exhibit a higher attitude towards insurance (Mean = 16.02, SD = 2.68), followed by those in the service sector (Mean = 15.89, SD = 3.35) and the manufacturing sector (Mean = 15.69, SD = 2.80). Therefore, it can be concluded that a significant association exists between sector and insurance attitude. Post hoc-test results shows that a statistically significant difference was observed only between the Agro and Others sectors (Mean = -1.35, $p = 0.006$)
- There is a significant relationship between the sector of enterprise and their level of Insurance Confidence ($F = 4.454$, $p = 0.004$). Among the sectors, the service sector recorded the highest mean score for Insurance Confidence (Mean = 12.17), followed by the "Other" category (Mean = 11.96, SD = 2.43). Post-hoc test revealed that a statistically significant difference was observed only between the Agro-based and others sectors (Mean Difference = 1.27, $p = 0.024$), with the

others sector reporting a higher mean score than the Agro-based sector. The results also indicate a notable mean difference between the Services and Agro-based sectors, with the p-value being less than 0.05.

- The analysis revealed that Awareness levels vary according to sector. Specifically, MSME in the service sector demonstrated the highest levels of insurance awareness, followed by those in the "Other" category, and finally, the manufacturing sector. The results of the Scheffé post-hoc test conducted to evaluate the mean differences among the different sectors in relation to the insurance awareness level exhibited by the Owners. The analysis revealed that no statistically significant difference was observed between the paths, since its p value is more than 0.05 for all the cases.

6.7.4 Covariance-Based Structural Equation Model for Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of MSME and Path Analysis of SEM

The Covariance-Based Structural Equation Modeling (SEM) approach is a confirmatory technique mainly used to validate hypotheses and examine phenomena linked to structural theory. In this study, IBM SPSS AMOS 21 was employed to conduct the SEM analysis. CB-SEM model is developed for illustrating the relationship between Insurance Literacy, Risk Appetite, and SME Sustainability. It is further analysed the interrelationship between Risk Appetite and Perceived Benefits of Insurance. The analysis first tested the overall measurement model, followed by the structural model test in, which was developed based on the hypotheses.

6.7.4.1 Relationship between various dimensions of Insurance Literacy and Risk Appetite

- The standardized beta coefficient of insurance attitude on MSME Risk Appetite is 0.814, indicating its partial effect while keeping other path variables constant. The positive sign of the estimate shows that an increase in Insurance Attitude leads to a corresponding rise in MSME Risk Appetite. Specifically, for every one-unit increase in the standard deviation of Insurance Attitude, risk appetite increases by 0.814. This coefficient is statistically significant at the 1% level, suggesting that

as business owners develop a more positive outlook on insurance, their capacity to accept business risks grows significantly.

- It has been discovered that higher levels of Insurance Behaviour are associated with an increase in Risk Appetite ($\beta = 0.146$, $p\text{-value} < 0.002$). In precise terms, MSME Risk Appetite rises by 0.146 for every one standard deviation increase in Insurance Behaviour. This effect is statistically significant at the 1% level, indicating that active engagement in insurance practices is associated with a marginal increase in willingness to take risks.
- The significant standardized beta coefficient of 0.284 indicating its partial relationship between Insurance Confidence and MSME Risk Appetite when other path variables are held constant. The positive coefficient shows that a rise in Insurance Confidence contributes to an increase in risk appetite. In particular, MSME Risk Appetite grows by 0.284 for every one standard deviation increase in Insurance Confidence implying that as MSME owners gain greater trust in the efficacy of insurance, their propensity to accept business risks increases.
- Since the p -value exceeds 0.05, the results reveal that there is no significant relationship between Insurance Knowledge and MSME Risk Appetite ($p = 0.977$). Hence, the result indicates that Insurance Knowledge of MSME Owners will not support for enhancing entrepreneurs' willingness to assume calculated risks.

Based on the above result it can be derived as the Insurance Attitude ($\beta = 0.814$) are the most important factor influencing Risk Appetite, followed by Insurance Confidence ($\beta = 0.284$) and Insurance Behaviour ($\beta = 0.146$). But Insurance Knowledge do not affect MSME Risk Appetite ($p = 0.977$). Out of four dimensions of Insurance Literacy, Insurance Knowledge only has no connection with MSME Risk Appetite. This suggests that positive mindset, practical experience and confidence in insurance are more critical than theoretical understanding in enhancing entrepreneurs' willingness to assume calculated risks.

6.7.4.2 Relationship between various dimensions of Insurance Literacy and MSME Sustainability

- The positive beta coefficient ($\beta = 0.165$) indicates that higher Insurance Attitude contributes to greater Economic Sustainability, with MSME Economic Sustainability increasing by 0.165 for every one standard deviation rise in Insurance Attitude. This relationship is statistically significant at the 1% level, suggesting that enterprises with a proactive insurance mindset achieve greater economic viability.
- The positive beta coefficient ($\beta = 0.196$) shows that higher Insurance Behaviour is associated with greater Economic Sustainability, with MSME Economic Sustainability rising by 0.196 for each one standard deviation increase in insurance behaviour. This effect is statistically significant at the 1% level, indicating that as MSME demonstrate higher levels of engagement with insurance practices, their economic sustainability improves proportionately.
- The significant standardized beta coefficient of 0.388 indicates that higher insurance confidence leads to increased economic sustainability, with MSME economic sustainability rising by 0.388 for every one standard deviation increase in insurance confidence. It implies that as confidence in risk transfer mechanisms grows, the economic viability of the MSME improves substantially.
- The standardized beta coefficient of Insurance Knowledge on MSME Economic Sustainability is -0.064, indicating its partial effect while controlling for other path variables. The negative sign suggests an inverse relationship, meaning that MSME Economic Sustainability decreases by 0.064 for every one standard deviation increase in Insurance Knowledge. This coefficient is statistically significant at the 5% level, indicating that higher Insurance Knowledge is associated with a slight reduction in MSME Economic Sustainability.
- Insurance Attitude exerts a positive and significant influence on Social Sustainability ($\beta = 0.089$, $p < 0.010$), suggesting that enhancing the general outlook toward insurance contributes to improvements in the social welfare of the MSME.

- Since the p-value exceeds 0.05, the results reveal that Influence of Insurance Behaviour on Social Sustainability is statistically insignificant ($p = 0.344$). This indicates that insurance behaviour has no effect on MSME social sustainability.
- The standardized beta coefficient of insurance confidence on MSME social sustainability is 0.215, reflecting its partial effect while controlling for other path variables. The positive sign indicates that higher insurance confidence is associated with greater social sustainability, with MSME social sustainability increasing by 0.215 for every one standard deviation rise in insurance confidence. This coefficient is statistically significant at the 1% level, identifying confidence as a key driver of the social dimension of sustainability.
- The relationship between Insurance Knowledge and social sustainability is not statistically significant ($\beta = -0.015$, $p < 0.454$). This indicates that insurance knowledge has no effect on MSME social sustainability.

MSME Sustainability is analysed through Economic Sustainability and Social Sustainability. First part of above analysis indicates the relationship between different dimensions of Insurance Literacy and Economic Sustainability. Insurance Confidence ($\beta = 0.388$) are the most important factor influencing Risk Appetite, followed by Insurance Behaviour ($\beta = 0.196$) and Insurance Attitude ($\beta = 0.165$). Whereas Insurance Knowledge has inverse relationship ($\beta = -0.064$) with MSME Risk Appetite. Secondly the researcher analysed the relationship between different dimensions of Insurance Literacy and Social Sustainability. In this case out of four dimensions of Insurance Literacy, Insurance Confidence ($\beta = 0.215$) and Insurance Attitude ($\beta = 0.089$) have significant relationship. Whereas Insurance Behaviour and Insurance Knowledge showed insignificant relationship. These findings demonstrate that Insurance Attitude, Behaviour, and Confidence significantly contribute to both Economic and Social Sustainability of MSME, whereas Insurance Knowledge shows a weak or insignificant relationship. This implies that active participation in insurance and positive perceptions toward it strengthen long-term business viability and social responsibility.

6.7.4.3 Relationship between Risk Appetite and MSME Perceived Benefits of Insurance

The standardized beta coefficient of risk appetite on perceived benefits of insurance is 0.419, indicating its partial effect while controlling for other path variables. The positive coefficient suggests that higher risk appetite is associated with increased perceived benefits of insurance, with these benefits rising by 0.419 for every one standard deviation increase in risk appetite. This effect is statistically significant at the 1% level, indicating that enhancing risk appetite can improve the perceived benefits of insurance. The Result confirms that risk appetite has a strong positive impact on perceived benefits of insurance, highlighting that MSME owners who are more open to taking risks view insurance as a strategic tool for growth and resilience rather than merely a protective measure.

6.7.5 Interrelationship between Insurance Literacy, Risk Appetite, and Sustainability of SMEs: A Comparison between Micro, Small and Medium Enterprises Using Multigroup Analysis.

A multigroup SEM analysis was carried out to examine potential variations in measurement parameters and structural relationships of the proposed model in relation to the impact of venture category. Measurement invariance was assessed using the chi-square difference test, where a p-value greater than 0.05 indicates that the measurement models are invariant. In this study, the chi-square test was applied to evaluate differences across venture categories (Micro, Small, and Medium). A significant chi-square difference between the models suggests the presence of group-level variations in the path coefficients.

The structural invariance test results from the multi-group analysis, demonstrate significant differences in the overall model across Micro, Small, and Medium Enterprises (CMIN = 105.973, df = 70, $p < .001$). This suggests that the predictive model is not uniform across the three venture categories, indicating that the relationships among Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits of Insurance are influenced by the Category of venture.

- As the chi-square p-value exceeds 0.05, the relationship between Insurance Attitude and MSME Risk Appetite does not differ significantly across Micro,

Small, and Medium Enterprises (CMIN = 0.517, $p = 0.772$). This indicates that the type of enterprise does not moderate the effect of Insurance Attitude on MSME Risk Appetite.

- Since the chi-square p-value is above 0.05, no significant differences are observed in the relationship between Insurance Behaviour and MSME Risk Appetite across Micro, Small, and Medium enterprises (CMIN = 0.372, $p = 0.830$). This Indicates that the type of enterprise does not moderate the effect of Insurance Behaviour on MSME Risk Appetite
- The chi-square p-value being greater than 0.05 (CMIN = 2.417, $p = 0.299$) shows that the relationship between Insurance Confidence and MSME Risk Appetite does not differ significantly across micro, small, and medium enterprises. It Indicates that the impact of Insurance Confidence on MSME Risk Appetite remains consistent regardless of enterprise type.
- Since the chi-square p-value is greater than 0.05 (CMIN = 0.001, $p = 0.999$), the relationship between Insurance Knowledge and MSME Risk Appetite does not differ significantly across Micro, Small, and Medium Enterprises.
- As the chi-square p-value exceeds 0.05 (CMIN = 4.243, $p = 0.120$), no significant differences are found across Micro, Small, and Medium Enterprises in the relationship between Insurance Attitude and MSME Economic Sustainability.
- Since the chi-square p-value is less than .05 (CMIN = 8.952, $p = .011$), significant differences exist among Micro, Small, and Medium Enterprises in the relationship between Insurance Behaviour and MSME Economic Sustainability. This indicates a moderating effect of enterprise type on the impact of Insurance Behaviour on Economic Sustainability. Based on the standardized beta coefficients, the effect is strongest for medium enterprises ($\beta = 0.581$), followed by small enterprises ($\beta = 0.200$) and micro enterprises ($\beta = 0.152$).
- As the chi-square p-value exceeds 0.05 (CMIN = 1.427, $p = 0.490$), indicating no significant differences among Micro, Small, and Medium Enterprises in the relationship between Insurance Confidence and MSME Economic Sustainability.

- As the chi-square p-value is greater than 0.05 (CMIN = 0.168, $p = 0.919$), no significant differences are observed among Micro, Small, and Medium Enterprises in the relationship between Insurance Knowledge and MSME Economic Sustainability.
- There are no significant differences exist among Micro, Small, and Medium Enterprises in the relationship between Insurance Attitude and MSME Social Sustainability (CMIN = 0.878, $p = 0.645$), indicating that the effect of Insurance Attitude on MSME Social Sustainability is consistent across all enterprise categories.
- Since, the chi-square p-value exceeds 0.05 (CMIN = 0.722, $p = 0.697$), indicating no significant differences among Micro, Small, and Medium Enterprises in the relationship between Insurance Behaviour and MSME Social Sustainability.
- The relationship between Insurance Confidence and MSME Social Sustainability differs significantly among Micro, Small, and Medium Enterprises, as the chi-square p-value is less than 0.05 (CMIN = 8.329, $p = 0.016$), indicating a moderating effect of enterprise category on this relationship. Based on the standardized beta coefficients, the impact is strongest for small enterprises ($\beta = 0.685$), followed by medium enterprises ($\beta = 0.457$) and micro enterprises ($\beta = 0.395$).
- The relationship between insurance knowledge and MSME Social Sustainability does not differ significantly across Micro, Small, and Medium Enterprises, as the chi-square p-value is greater than 0.05 (CMIN = 1.189, $p = 0.552$).
- The relationship between risk appetite and MSME Perceived Benefits of Insurance differs significantly among Micro, Small, and Medium Enterprises, as the chi-square p-value is less than 0.05 (CMIN = 7.801, $p = 0.020$), indicating a moderating effect of enterprise type on this relationship. Based on the standardized beta coefficients, the impact is strongest for medium enterprises ($\beta = 0.447$), followed by small enterprises ($\beta = 0.288$) and micro enterprises ($\beta = 0.184$).

The multigroup analysis indicates that, out of 13 structural relationships assessed through the structural invariance test, three paths show significant differences among

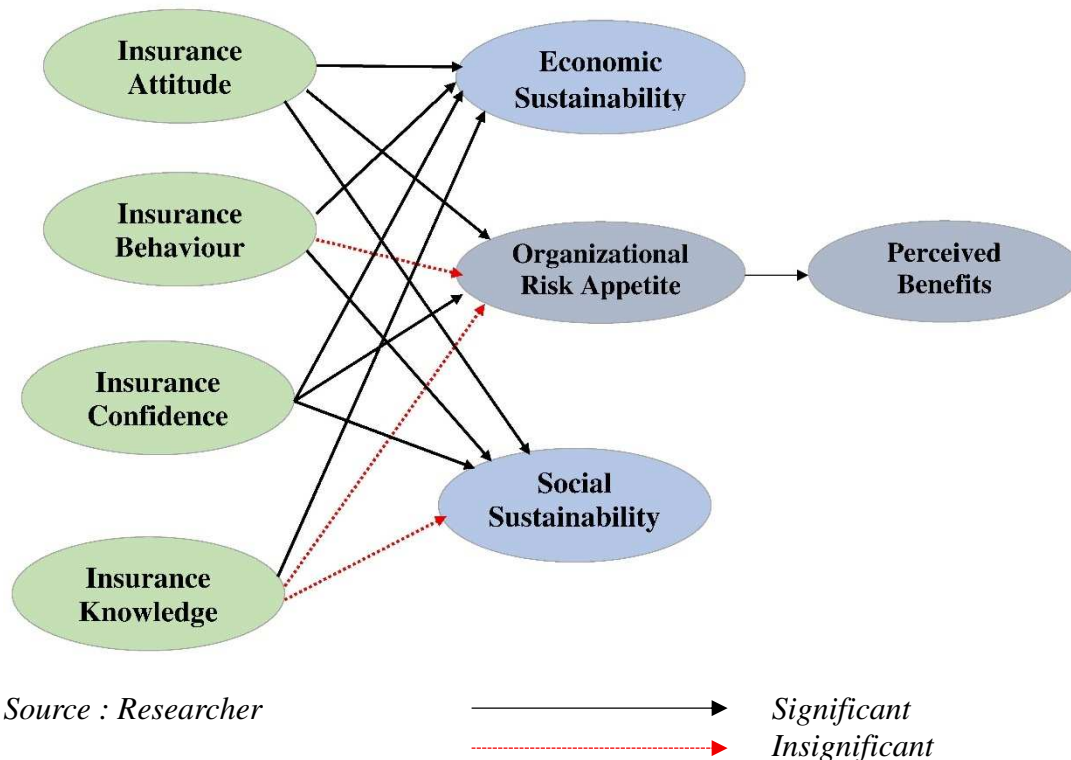
Micro, Small, and Medium Enterprises. Thus, the type of enterprise serves as a moderator for these relationships. First, Medium enterprises exhibit a stronger effect of Insurance Behaviour on MSME Economic Sustainability compared to Small and Micro enterprises. Second, Small enterprises have a greater influence than Medium and Micro enterprises on the relationship between Insurance Confidence and MSME Social Sustainability. Finally, Risk Appetite impacts the Perceived Benefits of Insurance more for Small enterprises than for Medium and Micro enterprises. Finally Multi group analysis concluded that the relationships among Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits of Insurance are influenced by the Category of venture. These differences underscore that the effectiveness of insurance-driven strategies is contingent upon enterprise size, suggesting the need for differentiated policy and financial literacy interventions.

6.8 Research Model developed from the study

From the study the following research model is developed

Figure 6.1

Research Model



The study evaluated the conceptual model by focusing the interrelationship between different dimensions of Insurance Literacy, Risk Appetite, MSME Sustainability and Perceived Benefits of Insurance. After the analysis the researcher has refined and finalized the model in the light of statistical analysis result. This will be a reference point for the researchers for the studies connected with MSME Insurance Literacy, Risk Appetite and Sustainability.

6.9 Conclusion

This study begins by examining the influence of MSME Owner and Firm characteristics on the Awareness of insurance products and Insurance Literacy in Kerala. As per the analysis, it is clear that the age significantly affects Insurance Confidence and Insurance Knowledge, but does not impact Attitude, Behavior, or Awareness. Similarly, educational qualification has a significant influence on Insurance Confidence and Awareness, but not on Attitude, Behavior, or Knowledge. Prior experience plays a critical role in shaping Insurance Attitude, Confidence, and Awareness, while it does not significantly affect Behaviour or Knowledge. Location impacts Insurance Confidence and Knowledge, but not Attitude, behaviour, or Awareness. Category influences Insurance Behaviour, Confidence, and Knowledge, with no significant effect on Attitude or Awareness. Lastly, sector is associated with differences in Insurance Attitude, Confidence, and Awareness, while Behavior and Knowledge remain not affected. The study concludes that both owner and firm characteristics significantly influence various dimensions of Insurance Literacy among MSME in Kerala.

A SEM model was constructed to evaluate the relationship between different dimensions of Insurance Literacy and MSME perception of Risk Appetite. It further investigates how various dimensions of Insurance Literacy influence the Sustainability of MSME and assesses the role of Risk Appetite in shaping the Perceived Benefits of Insurance among MSME in Kerala. Based on the findings, Insurance Literacy positively influences MSME Risk Appetite, particularly through Attitude, Behaviour, and Confidence, while Insurance Knowledge alone does not significantly affect risk-taking capacity. This suggests that positive mindset, practical

experience and confidence in insurance are more critical than theoretical understanding in enhancing entrepreneurs' willingness to assume calculated risks. All four dimensions of Insurance Literacy have a direct impact on MSME Economic Sustainability. Additionally, Insurance Attitude and Insurance Confidence were shown to exert a significant and positive influence on MSME Social Sustainability. This implies that active participation in insurance and positive perceptions toward it strengthen long-term business viability and social responsibility. Finally, the study confirms that Risk Appetite has a strong positive impact on Perceived Benefits of Insurance, highlighting that MSME owners who are more open to taking risks view insurance as a strategic tool for growth and resilience rather than merely a protective measure.

Additionally, a multigroup moderation analysis was conducted for examining whether differences exist in the interrelationships among Insurance Literacy, Risk Appetite, and MSME Sustainability across Micro, Small, and Medium Enterprises. The findings indicate significant differences among Micro, Small, and Medium Enterprises in the relationships between Insurance Literacy, Risk Appetite, and MSME Sustainability. Based on the results, it was concluded that three structural relationships exhibit significant differences across enterprise Categories. Specifically, the category of enterprise moderately influences the relationships between Insurance Behaviour and MSME Economic Sustainability, Insurance Confidence and MSME Social Sustainability, and Risk Appetite and MSME Perceived Benefits of Insurance. These differences underscore that the effectiveness of insurance-driven strategies is contingent upon enterprise category, suggesting the need for differentiated policy and financial literacy interventions.

The research establishes that psychological factors—specifically Insurance Attitude and Confidence—are the decisive drivers of MSME Risk Appetite and Sustainability, whereas theoretical knowledge plays an insignificant role. Furthermore, these dynamics are highly context-dependent, as the impact of insurance engagement varies significantly across Micro, Small, and Medium enterprises, necessitating tailored strategies rather than a uniform approach.

Chapter 7

RECOMMENDATIONS, IMPLICATIONS AND SCOPE FOR FURTHER RESEARCH

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7.1 Recommendations

Based on the detailed analysis, findings and conclusion described in the former chapters, following recommendations are made. Recommendations for this research work is categorized in to three – for Policymakers and Regulatory Bodies, for Insurance Companies and Marketers and for MSME Associations and Business Chambers.

7.1.1 For Policymakers and Regulatory Bodies

1. Shift the focus of public awareness campaigns from technical "insurance literacy" to "confidence-building" measures, as the study proves that trust determines sustainability outcomes far more than theoretical knowledge.
2. Implement segmented support schemes that offer simplified, jargon-free micro-insurance products for micro-enterprises, recognizing that their needs and behaviour differ significantly from medium enterprises.
3. Introduce fiscal incentives or subsidies specifically linked to active "Insurance Behaviour," encouraging MSME to move beyond passive awareness to actual policy purchase and renewal.
4. Integrate insurance attitude-building modules into government-sponsored Entrepreneurship Development Programs (EDPs) to foster a positive risk mindset among new business owners.

7.1.2 For Insurance Companies and Marketers

1. Rebrand insurance products as "Strategic Growth Enablers" rather than "Disaster Recovery Tools" to align with the finding that high-risk-appetite entrepreneurs view insurance as a means to seize opportunities.
2. Develop targeted outreach strategies for younger entrepreneurs (under 30) and those with lower educational qualifications, as these demographics currently exhibit the significant deficits in insurance confidence.
3. Simplify policy documentation and claims procedures to close the "Knowledge-Action Gap" ensuring that high awareness levels are not nullified by complex bureaucratic hurdles.
4. Leverage testimonials from experienced business owners (10+ years experience) in marketing materials, utilizing the "peer influence" effect to boost the confidence of newer entrants.

7.1.3 For MSME Associations and Business Chambers

1. Organize peer-mentoring sessions where successful medium-enterprise owners share how insurance confidence secured their social and economic sustainability, promoting a cultural shift among micro-units.
2. Lobby for sector-specific insurance packages that address the unique risk profiles of different industries, as the study confirms that insurance attitude varies significantly across business sectors.
3. Encourage members to view insurance as a component of "Social Sustainability" (employee welfare and reputation), moving the conversation beyond just financial cost-benefit analysis.

7.2 Implications

Implications of this research work is divided in to two categories. Theoretical and Practical Implications

7.2.1 Theoretical Implications

1. The study extends existing literature by integrating insurance literacy, risk appetite, and sustainability into a single conceptual model, offering a behavioural finance perspective on MSME resilience.
2. It provides empirical evidence that insurance confidence and attitude are stronger predictors of sustainability than mere knowledge, challenging traditional literacy-based frameworks.
3. The findings contribute to entrepreneurship and risk management theory, demonstrating the relationship between insurance literacy, risk appetite and perceived benefits

7.2.2 Practical Implications

1. The results highlight the importance of transforming insurance from a reactive safeguard to a proactive strategic tool for MSME.
2. Insights can help insurance firms design awareness and trust-building campaigns aimed at developing long-term relationships with MSME.
3. For MSME owners, the study emphasizes that insurance engagement fosters business continuity and sustainability, not just protection from uncertainty.
4. Policymakers can use these insights to formulate inclusive risk management frameworks that strengthen MSME competitiveness in Kerala.

7.3 Scope for Further Research

This section gives the insights to the future researchers.

1. Since the study focused on Kerala, future researchers could replicate this model in other states with different literacy levels to see if the "Knowledge-Action Gap" persists
2. The quantitative finding that Insurance Knowledge has a negative impact on sustainability is intriguing. Future research could employ qualitative methods

(interviews) to understand why increased knowledge leads to skepticism or inaction among Kerala's MSME.

3. Deeper comparative analysis between Manufacturing vs. Service sectors could yield specific insights, given the demographic variances observed.
4. With the rise of InsurTech, further research is needed to see if digital platforms bridge the gap between "Knowledge" and "Behaviour" more effectively than traditional channels.
5. A longitudinal study could examine whether a positive Insurance Attitude actually leads to higher claim settlements and survival rates during a real-world crisis (e.g., natural disasters or market crashes) over a 5-year period.
6. Future research can incorporate constructs such as risk perception, trust in insurers, and financial self-efficacy to deepen the understanding of entrepreneurial decision-making.
7. Future research can examine the mediating role of risk appetite between Insurance Literacy and Sustainability of MSME.

BIBLIOGRAPHY

- 5paisa Capital Ltd. (2024). India's Insurance Penetration Drops to 3.7% in FY24. <https://www.5paisa.com/news/indias-insurance-penetration-drops-to-37-in-fy24-highlights-challenges>
- Abatecola, G., Cristofaro, M., Giannetti, F., & Kask, J. (2022). How can biases affect entrepreneurial decision making? Toward a behavioral approach to unicorns. *International Entrepreneurship and Management Journal*, 18(2), 693-711. <https://doi.org/10.1007/s11365-021-00772-4>
- Abdallah, W., Harraf, A., Ghura, H., & Abrar, M. (2024). Financial literacy and small and medium enterprises performance: The moderating role of financial access. *Journal of Financial Reporting and Accounting*. Advance online publication. <https://doi.org/10.1108/JFRA-06-2024-0337>
- Abdul-Rashid, S. H., Sakundarini, N., Raja Ghazilla, R. A., & Thurasamy, R. (2017). The drivers of sustainable manufacturing practices in Egyptian SMEs and their impact on competitive capabilities: A PLS-SEM model. *Journal of Cleaner Production*, 166, 207-219.
- Acko. (n.d.). Group Health Insurance Plans. <https://www.acko.com/group-health-insurance/>
- Adetayo, J. O., & Oseni, I. O. (2019). Insurance awareness and business sustainability among SMEs in Lagos State, Nigeria. *International Journal of Management Studies and Research*, 7(5), 45–54
- Adeyele, J. S., & Omorokunwa, O. G. (2017). Risk appetite and strategic decision making in Nigerian firms. *International Journal of Economics and Finance*, 9(5), 112–123.

-
- Adeyele, J. S., & Omorokunwa, O. G. (2017). Risk appetites and empirical survival pattern of small and medium enterprises in Nigeria. *The Journal of Entrepreneurial Finance*, 18(2), 1–22. <http://digitalcommons.pepperdine.edu/jef/vol18/iss2/2>
- Adeyele, J. S., Osemene, O. F., & Olubodun, I. E. (2017). Property and pecuniary risk exposures: An investigation into SMEs' shutdown and mitigation methods in Nigeria. *The Journal of Entrepreneurial Finance*, 19(2), 1–18.
- Adriko, R., & Nurse, J. R. C. (2024). Cybersecurity, cyber insurance and small-to-medium-sized enterprises: A systematic review. *Information and Computer Security*, 32(5), 691–710. <https://doi.org/10.1108/ICS-01-2024-0025>
- Aduloju, K., & Ajemunigbohun, S. (2018). Insurance Awareness and Acceptance among Small and Medium Enterprises in Lagos Metropolis. *Trends Economics and Management*, 32(1), 47-58. <https://doi.org/10.13164/trends.2018.32.9>
- Agyapong, D., & Attram, A. B. (2019). Effect of owner-manager's financial literacy on the performance of SMEs in the Cape Coast Metropolis in Ghana. *Journal of Global Entrepreneurship Research*, 9(67), 1-13. <https://doi.org/10.1186/s40497-019-0191-1>
- Agyekum, B., & Ansong, A. (2023). Insurance literacy and risk mitigation behavior among SMEs: Evidence from developing economies. *Journal of Small Business Management*, 61(2), 317–339.
- Ahmad, S. A., & Teo, P.-C. (2024). The implementation of enterprise risk management (ERM) frameworks in small and medium enterprises (SMEs): A literature review. *International Journal of Academic Research in Business and Social Sciences*, 14(9), 290–307. <https://doi.org/10.6007/IJARBSS/v14-i9/22353>
- Ahmad, S., Tayachi, T., Haq, S. G., Wang'ombe, W., & Ahmad, F. (2022). Entrepreneurial-Specific Characteristics and Access to Finance of SMEs in

- Khyber Pakhtunkhwa, Pakistan. *Sustainability*, 14(16). <https://doi.org/10.3390/su141610189>
- Ajemunigbohun, S. S., & Adeoye, A. O. (2018). Risk management practices in SMEs: A review. *Journal of Risk Research*, 21(4), 1–15. <https://doi.org/10.26458/2314>
- Ajemunigbohun, S. S., Banjo, K. A., & Saka, T. S. (2022). Insurance literacy and risk appetite: Evidence from selected small and medium-sized enterprises in Lagos, Nigeria. *Acta Universitatis Danubius Œconomica*, 18(5), 123-140.
- Ajemunigbohun, S. S., Banjo, K. A., & Saka, T. S. (2022). Insurance literacy and risk appetite: Evidence from selected small and medium-sized enterprises in Lagos, Nigeria. *Annals of Spiru Haret University. Economic Series*, 22(1), 529-550. <https://doi.org/10.26458/22134>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Alaeddin, O., Bashir, M., & Alzoubi, H. (2022). Insurance literacy and entrepreneurial resilience: Evidence from emerging markets. *Journal of Risk and Financial Management*, 15(7), 310.
- Ali, H., Chen, T., & Hao, Y. (2021). Sustainable manufacturing practices, competitive capabilities, and sustainable performance: Moderating role of environmental regulations. *Sustainability*, 13(18), 10051. <https://doi.org/10.3390/su131810051>
- Allianz. (n.d.). Directors and Officers (D&O) Insurance Explained. <https://commercial.allianz.com/news-and-insights/expert-risk-articles/d-o-insurance-explained.html>
- Alyamani, R., Long, S., & Nurunnabi, M. (2021). Evaluating decision making in sustainable project selection between literature and practice. *Sustainability*, 13(15), 8216. <https://doi.org/10.3390/su13158216>

-
- Antony, J. P. (2023). Mapping the intellectual structure of risk management in SMEs: A bibliometric analysis. *Journal of Small Business and Enterprise Development*, 30(1), 145-167.
- Arya, Anshika & Singla, Anju. (2022). Financial literacy of entrepreneurs: a systematic review. *Managerial Finance*. 48. 1352-1371. 10.1108/MF-06-2021-0260.
- Asmare, A., & Worku, A. (2018). Determinants of micro-insurance demand in Jimma zone. *International Research Journal of Business Studies*, 11(3), 145–157. <https://doi.org/10.21632/irjbs.11.3.145-157>
- Aven, T. (2013). On the Meaning and Use of the Risk Appetite Concept. *Risk Analysis*, 33(3), 462-468.
- Ayyagari, M., Beck, T., & Demircuc-Kunt, A. (2007). Small and medium enterprises across the globe. *Small Business Economics*, 29(4), 415-434.
- Badri, B., Aziz, A., & Daud, J. M. (2024). Awareness of Group Personal Accident Takaful protection among students. *Politeknik Student Journal*, 3(1), 12-20.
- Bajaj General Insurance. (n.d.-a). Workmen's Compensation Act 1923. <https://www.bajajgeneralinsurance.com/blog/msme-insurance-articles/workmens-compensation-act-1923.html>
- Bajaj General Insurance. (n.d.-b). Product Liability Insurance. <https://www.bajajgeneralinsurance.com/commercial-insurance/product-liability.html>
- Bajaj General Insurance. (n.d.-c). Marine Open Insurance Policy. <https://www.bajajgeneralinsurance.com/commercial-insurance/marine-open-insurance.html>
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9-44.

- Bapat, D., Mazumdar, D. (2023). A hierarchical component model for measuring insurance literacy in emerging economies. *International Journal of Emerging Markets*, 50-62.
- Barnes, A. J., Hanoch, Y., & Rice, T. (2015). Self-efficacy in insurance decision making among older adults. *The American Journal of Managed Care*, 21(1), 16–22.
- Bhat, M. A., & Choudhary, S. (2023). Financial and insurance literacy as determinants of MSME sustainability in India. *International Journal of Management and Business Research*, 13(1), 45–61.
- Bhatia, S., & Singh, R. (2023). Risk perception and insurance adoption among Indian SMEs. *Small Business Economics*, 61(2), 545–563.
- Bhoyar, R. M., Gohad, V. V., & Chachere, G. S. (2018). Farmers perception towards crop insurance as a risk management tool. *Agriculture Update*, 13(3), 370–372. <https://doi.org/10.15740/HAS/AU/13.3/370-372>
- Bi, Q., Boh, W. F., & Christopoulos, G. (2021). Trust, fast and slow: A comparison study of the trust behaviors of entrepreneurs and non-entrepreneurs. *Journal of Business Venturing*, 36(6). <https://doi.org/10.1016/j.jbusvent.2021.106160>
- BimaKavach. (n.d.-a). Directors and Officers Insurance for Small Business. <https://www.bimakavach.com/blog/do-insurance-small-business/>
- BimaKavach. (n.d.-b). Guide to Marine Open Insurance Policy. <https://www.bimakavach.com/blog/guide-to-marine-open-insurance-policy-for-business-shipments/>
- Bleady, A., Ali, A., & Ibrahim, S. (2024). Dynamic Capabilities and Organizational Resilience: A Review of the Literature. *Journal of Management Reviews*, 26(1), 45-68.

-
- Bongini, P., Cucinelli, D., & Soana, M. G. (2023). Insurance holdings: Does individual insurance literacy matter? *Finance Research Letters*, 58, 104511. <https://doi.org/10.1016/j.frl.2023.104511>
- Braumann, E. C., Grabner, I., & Posch, A. (2020). Tone from the top in risk management: A complementarity perspective on how control systems influence risk awareness. *Accounting, Organizations and Society*, 84, 101128.
- Bromiley, P., McShane, M., Nair, A., & Rustambekov, E. (2015). Enterprise risk management: Review, critique, and research directions. *Long Range Planning*, 48(4), 265–276.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.
- Buchdadi, A. D., Sholeha, A., & Ahmad, G. N. (2020). The influence of financial literacy on SMEs performance through access to finance and financial risk attitude as mediation variables. *Academy of Accounting and Financial Studies Journal*, 24(5), 1-15.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*.
- Centobelli, P., Cerchione, R., & Esposito, E. (2021). Determinants of the transition towards circular economy in SMEs: A sustainable supply chain management perspective. *International Journal of Production Economics*, 242, 108297. <https://doi.org/10.1016/j.ijpe.2021.108297>
- Centre for Development Studies. (2022). *Economy of Kerala: A macroeconomic overview*. Thiruvananthapuram: CDS.
- Centre for Public Policy Research. (2023). *Risk perception and insurance uptake among MSMEs in Kerala*. CPPR.
- Chakraborty, A. (2025). Small and medium enterprises and sustainable development. In *Sustainable Civil Engineering* (pp. 116–132). Taylor & Francis.

- Chakraborty, A., & Das, A. K. (2019). Role of insurance in the development of India's micro, small and medium enterprises (MSMEs). *Journal of International Business, Economics and Entrepreneurship*, 4(2), 60–66.
- Chakraborty, A., De, D., & Dey, P. K. (2025). Circular economy in small and medium-sized enterprises—current trends, practical challenges and future research agenda. *Systems*, 13(3), 200.
- Chatterjee, S., Wehrhahn, R., & Gupta, A. (2022). Barriers to insurance adoption in SMEs: A qualitative study. *Journal of SME Development*, 13(2), 145-160.
- Chen, L., Li, Z., & Zhao, W. (2023). Perceived insurance benefits and entrepreneurial resilience: Evidence from Asian SMEs. *Asia Pacific Journal of Risk and Insurance*, 17(1), 85–102.
- Chiara., Santoro, G., & Ossola, G. (2021). How to reconsider risk management in SMEs? An Advanced, Reasoned and Organised Literature Review. *European Management Journal*, 39(3), 450–460. <https://doi.org/10.1016/j.emj.2020.11.002>
- Chipunza, N. (2023). Awareness and willingness to pay for a national health insurance scheme among informal sector workers in Harare, Zimbabwe. *PLOS ONE*, 18(5), e0286374. <https://doi.org/10.1371/journal.pone.0286374>
- Collier, J. E. (2020). *Applied structural equation modeling using AMOS: Basic to advanced techniques*. Routledge.
- Comcover. (2016). *Risk appetite: Better practice guide*. Canberra, Australia: Department of Finance.
- Committee of Sponsoring Organizations of the Treadway Commission (COSO). (2017). *Enterprise Risk Management—Integrating with Strategy and Performance*.
- Committee of Sponsoring Organizations of the Treadway Commission. (2004). *Enterprise risk management — Integrated framework*. New York, NY: AICPA.

-
- Crovini C, Santoro G, Ossola G (2021), "Rethinking risk management in entrepreneurial SMEs: towards the integration with the decision-making process". *Management Decision*, Vol. 59 No. 5 pp. 1085–1113, doi: <https://doi.org/10.1108/MD-10-2019-1402>
- Crovini, C., Ossola, G., & Britzelmaier, B. (2021). How to reconsider risk management in SMEs? An advanced, reasoned and organised literature review. *European Management Journal*, 39(1), 118-134. <https://doi.org/10.1016/j.emj.2020.11.002>
- Dansu, F. S., & Olubusade, T. J. (2023). Determinants of insurance uptake among selected small and medium scale enterprises in Lagos State, Nigeria. *International Journal of Innovative Research in Accounting and Sustainability*, 8(1), 14–27.
- Darwin, D., & Gularso, K. (2024). The influence of perceived benefits, financial literacy, and demographics on health insurance purchase intention by Gen Z which is mediated by attitude. *Return: Study of Management, Economic and Business*, 3(9), 648–664.
- Das, M., Krish, R., & Dutta, G. (2019). Corporate sustainability in small and medium-sized enterprises: A literature analysis and road ahead. *Journal of Indian Business Research*. . doi:10.1108/JIBR-09-2017-0166
- Dayour, F., Adongo, C. A., & Kimbu, A. N. (2020). Insurance uptake among small and medium-sized tourism and hospitality enterprises. *Tourism Management Perspectives*, 34, 100674. <https://doi.org/10.1016/j.tmp.2020.100674>
- de Araújo Lima, P. F., Crema, M., & Verbano, C. (2020). Risk management in SMEs: A systematic literature review and future directions. *European Management Journal*, 38(1), 78-94. <https://doi.org/10.1016/j.emj.2019.06.005>
- Demerjian, P. R., Lev, B., & McVay, S. E. (2012). Quantifying managerial ability. *Management Science*, 58(7), 1229–1248.

- Dey, P. K., Malesios, C., De, D., Budhwar, P., Chowdhury, S., & Cheffi, W. (2020). Circular economy to enhance sustainability of small and medium-sized enterprises. *Business Strategy and the Environment*, 29(6), 2145–2169. <https://doi.org/10.1002/bse.2492>
- Dickman, A., Langley, E., Silman, T., & Harrold, P. (2015). Affordability and availability of flood insurance: Findings from research with businesses (Final Report FD2689). Department for Environment, Food and Rural Affairs (Defra).
- Directorate General of Commercial Intelligence and Statistics. (2025). Foreign trade statistics of India (Principal commodities & countries). Retrieved from <http://www.dgciskol.gov.in/>
- Drip Capital. (2025). Export Credit Insurance (ECGC). <https://www.dripcapital.com/en-in/resources/finance-guides/export-credit-insurance-ecgc>
- Dvorsky, J., Petrakova, Z., Ajaz Khan, K., & Formanek, I. (2021). Impact of the COVID-19 crisis on the perception of business risks in SMEs. *Journal of International Studies*, 14(4), 235–249
- Economic Times. (2024). India's insurance penetration declines for second consecutive fiscal year. <https://m.economictimes.com/industry/banking/finance/insure/indias-insurance-penetration-declines-for-second-consecutive-fiscal-year/articleshow/116649538.cms>
- Elangovan, R., & Michel, M. (2025). Life insurance purchasing behavior: A study using the Theory of Planned Behavior. *Journal of Management Research and Analysis*, 12(3), 213–219.
- Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Oxford, England: Capstone.
- Expert Committee on MSMEs. (2019). Report of the Expert Committee on Micro, Small and Medium Enterprises. Reserve Bank of India.

-
- Export Credit Guarantee Corporation of India (ECGC). (n.d.). Schemes for Exporters. <https://www.ecgc.in/>
- Filmina , A. ., & Mayangsari, L. . (2020). The Influence of Risk Attitude towards the Entrepreneurial Intention. *KnE Social Sciences*, 4(6), 555–565. <https://doi.org/10.18502/kss.v4i6.6626>
- Financial Stability Board. (2013). Principles for an effective risk appetite framework. Basel, Switzerland: Author.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Garba, M., Salleh, F., & Hafiz, U. A. (2024). Investigating the effect of insurance literacy on sustainable performance in small and medium enterprises. *Asia-Pacific Management Accounting Journal (APMAJ)*, 19(2), 287-312.
- Garba, M., Salleh, F., Hafiz, U. A., & Bakar, N. M. A. (2022). Insurance Literacy, Risk Knowledge Management, Risk-Taking Propensity and Economic Sustainability among SMEs: The Moderating Effect of Financial Inclusion. *Journal of Social Economics Research*, 9(2), 92–110. <https://doi.org/10.18488/35.v9i2.3120>
- Garba, M., Salleh, M. C. M., Hafiz, U. A., & Bakar, N. M. A. (2022). The impact of insurance literacy on the sustainable performance of SMEs in Nigeria. *Asia-Pacific Management Accounting Journal*, 17(2), 275–298.
- Garefalakis, A., Dimitras, A., Floros, C., & Lemonakis, C. (2018). Business continuity management and risk management: An integrated framework. *Annals of Operations Research*, 294, 1–23.
- Garefalakis, A., Toudas, K., Ballas, P., Spinthiropoulos, K., & Zisopoulos, A. (2019). Managing the establishment of Business Continuity Planning by Greek SMEs: can it safeguard strategic viability of courier services during turbulent times?. *Interdisciplinary Journal of Economics and Business Law*, 8(3), 93-113.

- George, J., Mathew, R., & Joseph, M. (2022). Risk appetite and sustainability in Indian MSMEs: A structural equation modeling approach. *South Asian Journal of Business Studies*, 11(3), 450–470.
- Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2019). The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. *Sustainable Development*, 27(1), 35-49.
- Giri, M. (2019). Behavioral aspects of insurance purchase decisions in India (Doctoral dissertation). Indian Institute of Technology Kanpur.
- Glanz, K., Rimer, B. K., & Viswanath, K. (2015). *Health behavior: Theory, research, and practice* (5th ed.). Jossey-Bass.
- Golden, S. D., & Earp, J. A. L. (2012). Social ecological approaches to individuals and their contexts: Twenty years of health education & behavior health promotion interventions. *Health Education & Behavior*, 39(3), 364-372.
- Gosal, G. G., & Nainggolan, R. (2023). The influence of digital financial literacy on Indonesian SMEs' financial behavior and financial well-being. *International Journal of Professional Business Review*, 8(12), 1-13. <https://doi.org/10.26668/businessreview/2023.v8i12.4164>
- Government of India. (1923). *The Employees' Compensation Act, 1923*.
- Government of India. (1991). *The Public Liability Insurance Act, 1991*. <https://moef.gov.in/uploads/2018/03/330.pdf>
- Government of Kerala. (2023). *Economic Review 2022*. Thiruvananthapuram: Kerala State Planning Board.
- Government of Kerala. (2025). *Year of Enterprises: MSME Facilitation Dashboard*. Department of Industries & Commerce.
- Goyal, K., & Yadav, S. S. (2022). Understanding insurance attitude and behavior among Indian entrepreneurs. *Journal of Behavioral Finance*, 23(4), 329–344.

-
- Gulati, M., & Kumar, S. (2020). Women entrepreneurs in MSME sector: Challenges and opportunities. *Journal of Entrepreneurship and Management*, 9(2), 23-35.
- Gunawan, A. F. (2024). The impact of entrepreneurial characteristics and competencies on business performance in the creative industry in Indonesia. *Asia Pacific Journal of Innovation and Entrepreneurship*. vol. 18(3), pages 300-317. <https://doi.org/10.1108/APJIE-09-2023-0172>
- Gunawan, S., et al. (2024). Financial literacy and sustainability in SMEs: Do financial risk attitude, access to finance, and organizational risk-taking tolerance mediate? *Asian Economic and Financial Review*, 14(1), 43–58.
- Gurenko, E., & Nielson, S. (2007). Making insurance work for the poor: A review of the literature on risk, insurance, and the poor. Washington, DC: The World Bank.
- Gurudiwan, P., Sehgal, R., & Sharma, G. (2025). Eco-Innovation as a Competitive Advantage in SMEs. *International Journal of Environmental Sciences*, 11(6S), 82–88.
- Gutierrez, C., Åstebro, T., & Obloj, T. (2020). The Impact of Overconfidence and Ambiguity Attitude on Market Entry. *Organization Science*, 31(2), 308–329. <https://doi.org/10.2139/ssrn.2924381>
- Hafiz, U. A., & Bakar, N. M. A. (2022). Insurance literacy, risk knowledge management, risk-taking propensity and economic sustainability among SMEs. *Journal of Social Economics Research*, 9(2), 92–110.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Pearson Prentice Hall.

- Hanggraeni, D., Slusarczyk, B., Sulung, L. A. K., & Subroto, A. (2019). The impact of enterprise risk management on firm performance. *Polish Journal of Management Studies*, 19(2), 184–196. <https://doi.org/10.17512/pjms.2019.19.2.15>
- Hernita, H., Surya, B., Perwira, I., Abubakar, H., & Idris, M. (2021). Economic business sustainability and strengthening human resource capacity based on increasing the productivity of small and medium enterprises (SMEs) in Makassar City, Indonesia. *Sustainability*, 13(6), 3177. <https://doi.org/10.3390/su13063177>
- Hillson, D. (2012, October). How much risk is too much risk? Understanding risk appetite. Paper presented at PMI Global Congress 2012—North America, Vancouver, BC, Canada.
- Hinton, P., Brownlow, C., McMurray, I., & Cozens, B. (2004). *Spss Explained*. <https://doi.org/10.4324/9780203642597>
- Hopkin, P. (2018). *Fundamentals of risk management: Understanding, evaluating and implementing effective risk management* (5th ed.). London, England: Kogan Page.
- Hoyle, R. H. (2000). Confirmatory factor analysis. In H. E. A. Tinsley & S. D. Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 465–497). San Diego, CA: Academic Press.
- Hsieh, C. T., & Olken, B. A. (2014). The missing "missing middle". *Journal of Economic Perspectives*, 28(3), 89-108.
- Hu, L.-t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- IANS. (2025, December 15). Over 7.28 crore MSMEs have registered on Udyam Registration Portal. IANS Live.

-
- IBEF. (2025). Explore the Booming MSME Industry in India: Key Insights & Growth. India Brand Equity Foundation.
- ICICI Lombard. (n.d.-a). Workmen Compensation Insurance. <https://www.icicilombard.com/blogs/online-insurance/article/workmen-compensation-insurance---eligibility-and-coverage>
- ICICI Lombard. (n.d.-b). Group Health Insurance for Small Business. <https://www.icicilombard.com/blogs/online-insurance/article/group-health-insurance-small-business>
- ILO. (2025). The power of small: Unlocking the potential of SMEs. Geneva, Switzerland: ILO. International Labour Organization.
- India Brand Equity Foundation [IBEF]. (2025). MSME Industry in India: Growth and trends.
- Indiana Business Research Center. (2011). The triple bottom line: What is it and how does it work? *Indiana Business Review*, 86(1), 4-8.
- Institute of Risk Management. (2011). Risk appetite and tolerance: Guidance paper. London, England: Author.
- Institute of Risk Management. (2012). Risk culture: Under the microscope guidance paper. London, England: Author.
- Insurance Authority. (2025). Conduct in Focus: Insurance Literacy Tracking Survey. Hong Kong Insurance Authority.
- Insurance Regulatory and Development Authority of India [IRDAI]. (2023). Annual Report 2022-23.
- Insurance Regulatory and Development Authority of India. (2021). Bharat Sookshma Udyam Suraksha Policy Wording. https://policyholder.gov.in/documents/38105/0/Bharat_Sookshma_Udyam_Suraksha1.pdf

- International Finance Corporation. (2024). MSME finance gap: Assessment of the shortfalls and opportunities in financing micro, small, and medium enterprises in emerging markets. Washington, DC: International Finance Corporation.
- International Organization for Standardization (ISO). (2018). Risk management — Guidelines (ISO 31000:2018).
- International Organization for Standardization. (2009). Risk management — Vocabulary (ISO Guide 73:2009). Geneva, Switzerland: Author.
- International Organization for Standardization. (2012). Societal security — Business continuity management systems — Requirements (ISO 22301:2012). Geneva, Switzerland: Author.
- International Organization for Standardization. (2018). Risk management — Guidelines (ISO 31000:2018). Geneva, Switzerland: Author.
- Iqbal, N., Javed, F., & Shahzad, F. (2025). Sustainable business practices in SMEs: A retrospective insight on catalysts and hurdles. *International Journal of Sustainable Development & World Ecology*, 32(1), 45-62.
- Iqbal, U. P., Nooney, L. K., Al Ghafri, F. S. S., & Daniel, T. M. (2025). Sustainable business practices in SMEs: a retrospective insight on catalysts and hurdles. *Cogent Business & Management*.
- Ismail, N., Husin, M. M. M., Ishak, I., & Manaf, N. A. (2018). Insurance awareness: A literature review. *International Journal of Asian Social Science*, 8(1), 28–33. <https://doi.org/10.18488/journal.1.2018.81.28.33>
- Javed, F., Yusheng, K., Iqbal, N., Fareed, Z., & Shahzad, F. (2022). A systematic review of barriers in adoption of environmental management accounting in Chinese SMEs for sustainable performance. *Frontiers in Public Health*, 10, 832711.
- Jayasree, K. (2022). The rising awareness of insurance post-COVID-19 pandemic. *International Journal of Social Science and Economic Research*, 7(1), 12–19.

-
- Jonker, A. (2024). What is the triple bottom line? IBM Think.
- Jonker, J. (2024). The intrinsic links of economic complexity with sustainability dimensions: A systematic review and agenda for future research. *Sustainability*, 16(1), 391.
- Kan, K., Barnes, A. J., Hanoch, Y., & Federman, A. D. (2015). Self-efficacy in insurance decision making among older adults. *The American Journal of Managed Care*, 21(4), e247–e254.
- Kerala State Planning Board. (2023). Fourteenth Five-Year Plan (2022-2027). Thiruvananthapuram: Government of Kerala.
- Kerala State Planning Board. (2023). Kerala State Economic Review 2023. Government of Kerala.
- Khurana, S., Haleem, A., & Mannan, B. (2019). Determinants for integration of sustainability with innovation for Indian manufacturing enterprises: Empirical evidence in MSMEs. *Journal of Cleaner Production*, 229, 374–386. <https://doi.org/10.1016/j.jclepro.2019.04.022>
- Kiwanuka, A., & Sibindi, A. B. (2023). Insurance literacy: Significance of its dimensions for insurance inclusion in Uganda. *Economies*, 11(2), 33. <https://doi.org/10.3390/economies11020033>
- Kiwanuka, A., & Sibindi, A. B. (2024). Digital literacy, insurtech adoption and insurance inclusion in Uganda. *Journal of Risk and Financial Management*, 17(3), 119. <https://doi.org/10.3390/jrfm17030119>
- Kleindorfer, P. R., & Saad, G. H. (2005). Managing disruption risks in supply chains. *Production and Operations Management*, 14(1), 53-68.
- Kraft, P. S., Günther, C., Kammerlander, N. H., & Lampe, J. (2022). Overconfidence and entrepreneurship: A meta-analysis of different types of overconfidence in the entrepreneurial process. *Journal of Business Venturing*, 37(4). <https://doi.org/10.1016/j.jbusvent.2022.106207>

- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610.
- Kumar, P., & Joseph, R. (2024). Economic resilience and insurance adoption among small enterprises in Kerala. *Journal of Entrepreneurship and Sustainability Issues*, 12(2), 65–81.
- Kumar, P., & Rani, D. (2023). The role of insurance in financial inclusion of SMEs. *Journal of Business Economics and Management*, 24(4), 734–752.
- Kurniasih, A., & Tobing, D. S. (2022). Risk management in creative SMEs: Risk appetite and dynamic capabilities. *Journal of Asian Finance, Economics and Business*, 9(2), 245–256.
- Kurniawan, A. M., & Iskandar, Y. (2023). The effect of technology adaptation and government financial support on sustainable performance of MSMEs during the COVID-19 pandemic. *Cogent Business & Management*, 10(1), 2177400. <https://doi.org/10.1080/23311975.2023.2177400>
- Kwasniok, S. (2025). Planned behavior, insurance knowledge and the demand for private disability insurance – Evidence from Germany. *EconStor Preprints*.
- Læssøe, H. (2021, May 5). Risk appetite and risk tolerance – Which definitions do you use? *Strategic Decision Solutions*. Retrieved from <https://strategicdecisionsolutions.com/risk-appetite-tolerance-definitions/>
- Lambert, E., Deyganto, K. O., & Algasse, K. (2023). The role of financial literacy on sustainable development of micro, small and medium enterprises (MSMEs) in Africa. *Qeios*. <https://doi.org/10.32388/A0KEDT>
- Lee, S., & Jung, H. (2025). The role of buying firms in enhancing sustainability innovation management in the South Korean automobile industry. *Business Strategy and the Environment*, 34(2), 567-582.
- Lee, S.-Y., & Jung, S. (2025). Internal and External Drivers of Sustainable Business Models in SMEs. *Sustainability*, 17(18), 8458.

-
- Leyeza, R. S., Boado, M. M., Butacan, O., Moreno, D. E., & Deocariza, L. (2023). The Role of Loan-Related Risk Appetite in the Relationship between Financial Risk Considerations and MSME Growth Decision: A Mediation Analysis. *Journal of Risk and Financial Management*, 16(5), 261. <https://doi.org/10.3390/jrfm16050261>
- Lin, C., Hsiao, Y. J., & Yeh, C. Y. (2017). Financial literacy, financial advisors, and information sources on demand for life insurance. *Pacific-Basin Finance Journal*, 43, 218-237.
- Lin, X., Bruhn, A., & William, J. (2019). Extending financial literacy to insurance literacy: A survey approach. *Accounting and Finance*, 59(S1), 685–713. <https://doi.org/10.1111/acfi.12353>
- Liu, X., Liu, Y., & Liang, H. (2023). Perceptions of the benefits of the basic medical insurance system among the insured: A mixed methods research of a northern city in China. *Frontiers in Public Health*, 11, 1043153.
- Lubis, A., Jamilah, S., & Mardiana, S. (2024). Community based marketing strategies: A case study of a home-based microenterprise in expanding market. *Journal of Business and Management*, 5(6), 3345-3352.
- Lubis, N., Harahap, A. Y., & Faridy, N. (2024). Implementing Triple Bottom Line Accounting to Transform MSME Sustainability. *International Journal of Trends in Accounting Research*, 5(2), 92-104.
- Lusardi, A., & Mitchell, O. S. (2020). The importance of financial literacy for economic sustainability. *Journal of Economic Literature*, 58(4), 1234–1279.
- Machado, E. A., Scavarda, L. F., Caiado, R. G. G., & Santos, R. S. (2024). Industry 4.0 and sustainability integration in the supply chains of micro, small, and medium enterprises through people, process, and technology within the triple bottom line perspective. *Sustainability*, 16(3), 1141.
- Marcelino-Sádaba, S., Pérez-Ezcurdia, A., Echeverría Lazcano, A. M., & Villanueva, P. (2014). Project risk management methodology for small firms. *International*

- Journal of Project Management, 32(2), 327-340. <https://doi.org/10.1016/j.ijproman.2013.05.009>
- Markowska, M., Grichnik, D., Brinckmann, J., & Kapsa, D. (2018). Strategic orientations of nascent entrepreneurs: antecedents and consequences. *Small Business Economics*. <https://doi.org/10.1007/s11187-018-0107-4>
- Masdupi, E., Firman, Rasyid, R., & Darni, M. O. (2024). Financial literacy and sustainability in SMEs: Do financial risk attitude, access to finance, and organizational risk-taking tolerance mediate? *Asian Economic and Financial Review*, 14(1), 43-58. doi:10.55493/5002.01411.4959
- Mathew, S., George, R. (2024). Post-pandemic strategic shifts in MSMEs: A study on risk appetite and survivalist mindset in South India. *Journal of Asian Business Strategy*, 14(1), 55-70.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709-734.
- McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly*, 15(4), 351-377.
- Ministry of Finance. (2025). Union Budget 2025-26: Key Features and Amendments to MSME Criteria. Government of India.
- Ministry of Finance. (2025). Union Budget 2025-26: Speech of the Minister of Finance. Government of India.
- Ministry of Law and Justice. (2006). The Micro, Small and Medium Enterprises Development Act, 2006. The Gazette of India.
- Ministry of Micro, Small and Medium Enterprises [MoMSME]. (2024). Annual Report 2023-24. Government of India.
- Ministry of Micro, Small and Medium Enterprises [MoMSME]. (2025). State-wise Distribution of Registered MSMEs and IMEs. Government of India.

-
- Ministry of Micro, Small and Medium Enterprises. (2020). Gazette Notification S.O. 2119(E). Government of India.
- Ministry of Micro, Small and Medium Enterprises. (2024). Annual report 2023-24. Retrieved from <https://msme.gov.in/>
- Ministry of Micro, Small and Medium Enterprises. (2024/2025). List of MSME registered units under Udyam Portal. Open Government Data (OGD) Platform India. Retrieved from <https://data.gov.in/resource/list-msme-registered-units-under-udyam>
- Ministry of Micro, Small and Medium Enterprises. (2024/2025). Udyam registration portal. New Delhi, India: Government of India. Retrieved from <https://udyamregistration.gov.in>
- Ministry of Micro, Small and Medium Enterprises. (2025). State-wise Distribution of Registered MSMEs and IMEs (UAP). Government of India.
- Mishra, P. K., et al. (2017). Unlocking smallholder credit: Does credit-linked agricultural insurance work? World Bank & ILO.
- Mishra, R., Singh, R. K., & Govindan, K. (2022). Barriers to the adoption of circular economy practices in micro, small and medium enterprises: Instrument development, measurement and validation. *Journal of Cleaner Production*, 351, 131389. <https://doi.org/10.1016/j.jclepro.2022.131389>
- Morgan, Peter J. & Long, Trinh Quang, 2020. "Financial literacy, financial inclusion, and savings behavior in Laos," *Journal of Asian Economics*, Elsevier, vol. 68(C). [10.1016/j.asieco.2020.101197](https://doi.org/10.1016/j.asieco.2020.101197)
- Mousa, A., Rashid, A., & Ahmed, S. (2022). Insurance literacy, confidence, and entrepreneurial risk-taking: Evidence from emerging markets. *International Journal of Finance & Economics*, 27(5), 6541–6558.
- Musah, A., & Duker, E. K. (2020). Insurance uptake among SMEs in Ghana and factors that influence SMEs demand for insurance products in Ghana. *Indo-Asian Journal of Finance and Accounting*, 1(2), 79-106.

- N. P. Abdul Azeez & S. M. Jawed Akhtar. (2021). Digital Financial Literacy and Its Determinants: An Empirical Evidences from Rural India. *South Asian Journal of Social Studies and Economics*, 11(2), 8–22. <https://doi.org/10.9734/sajsse/2021/v11i230279>
- Naciri, R. (2024). Effectiveness of insurance coverage in managing business interruption risks in Morocco. *International Journal of Modern Risk Management*, 2(2), 30-44. DOI:10.47604/ijmrm.2948
- Nair, L. R., Pillai, D. (2022). Vulnerability and resilience of MSMEs in Kerala: A study of post-flood recovery challenges. *Indian Journal of Labour Economics*, 65(2), 455-474.
- Namukasa, J., Ssekakubo, J., & Bagenda, B. (2019). Awareness and perception of motor third party insurance in Kampala, Uganda. *Journal of Insurance Law*, 10(2), 55-68.
- Nanda, P., & Panda, R. (2021). Insurance literacy and financial inclusion among Indian MSMEs. *Indian Journal of Finance*, 15(8), 25–41.
- Narahdita, A. (2023). The influence of perceived benefit, customer trust, service quality, and price perception on customer satisfaction and repurchase intention on Cigna Insurance. *International Journal of Creative Research Thoughts*, 11(3).
- National Insurance Company. (n.d.). Bharat Laghu Udyam Suraksha Policy. <https://nationalinsurance.nic.co.in/products/all-products/fire/national-bharat-laghu-udyam-suraksha-policy>
- National Statistical Office. (2023). Annual report 2022-2023. Retrieved from <http://www.mospi.gov.in/>
- Naude, M. J., & Chiweshe, N. (2017). A proposed operational risk management framework for small and medium enterprises. *South African Journal of Economic and Management Sciences*, 20(1), 1–10. <https://doi.org/10.4102/sajems.v20i1.1621>

-
- New India Assurance. (n.d.). Bharat Sookshma Udyam Suraksha. <https://www.newindia.co.in/fire-insurance/bharat-sookshma-udyam-suraksha-insurance>
- Nica, I., Chiriță, N., & Georgescu, I. (2025). Triple bottom line in sustainable development: A comprehensive bibliometric analysis. *Sustainability*, 17(5), 1932.
- Nursiana, A., et al. (2024). Impact of consumer perceived benefit and risk towards the purchase intention of life insurance products with consumer perceived fear as a mediating variable on Bank Jatim Jember branch. *Journal of Innovations in Business and Industry*, 2(3).
- Nustini, Y., Arwani, A., Budiana, E., Maidani, Wahyundaru, S. D., & Putra, R. A. (2024). CSR in MSMEs: A systematic literature review and future research agenda. *Compendium by paperASIA*, 1, 1-15. <https://doi.org/10.59953/paperasia.v40i3b.28>
- Nwosu, C., & Okonkwo, E. (2023). Entrepreneurial confidence and insurance uptake in SMEs. *Journal of Economic and Financial Studies*, 11(3), 112–126.
- Nyman, J. A. (2003). *The theory of demand for health insurance*. Stanford, CA: Stanford University Press.
- OECD. (2023). *OECD SME and entrepreneurship outlook 2023*. Paris, France: OECD Publishing.
- Ofori, G., & Mensah, S. (2020). Insurance literacy and small business sustainability. *African Journal of Economic Review*, 8(2), 77–99.
- Okello Candiya Bongomin, G., & Ntayi, J. M. (2020). Mobile money adoption and usage and financial inclusion: Mediating effect of digital consumer protection. *Digital Policy, Regulation and Governance*, 22(3), 157–176. <https://doi.org/10.1108/DPRG-01-2019-0005>
- Paez, K. A., Mallery, C. J., Noel, H., Pugliese, C., McSorley, V. E., & Lucado, J. L. (2014). Development of the Health Insurance Literacy Measure (HILM):

- Conceptualizing and Measuring Consumer Ability to Choose and Use Private Health Insurance. *Journal of Health Communication*, 19(sup2), 225-239.
- Patel, D., & Singh, C. B. (2024). A bibliometric analysis of sustainability in MSME. *Involvement International Journal of Business*, 1(4). <https://doi.org/10.62569/ijb.v1i4.70>
- Plum Insurance. (n.d.-a). Directors and Officers Insurance. <https://www.plumhq.com/directors-and-officers-insurance>
- Plum Insurance. (n.d.-b). Group Health Insurance Eligibility. <https://www.plumhq.com/blog/group-health-insurance-eligibility>
- Policepatil, S. (2021). An empirical study of risk management at micro, small and medium enterprises (MSMEs) in Karnataka: A case study of Dharwad district [Doctoral thesis, Karnatak University].
- Policybazaar. (2025). Bharat Laghu Udyam Suraksha Insurance Policy. <https://www.policybazaar.com/corporate-insurance/articles/bharat-laghu-udyam-suraksha-insurance-policy/>
- Policybazaar. (n.d.-b). Product Liability Insurance. <https://www.policybazaar.com/commercial-insurance/product-liability-insurance/>
- Policybazaar. (n.d.-c). Group Health Insurance Plans Requirements for Small Businesses. <https://www.policybazaar.com/corporate-insurance/articles/what-are-group-health-insurance-plans-requirements-for-small-businesses/>
- Policywings. (2025). Cyber Insurance in India 2025: Essential Trends for SMEs. <https://policywings.com/blog/cyber-insurance-in-india-2025-essential-trends-for-smes-startups/>
- Poonkodi, T. (2016). A study on customers' awareness and satisfaction of products and service offered by the general insurance companies in the Nilgiris District [Doctoral thesis, Bharathiar University].
- Pradnyani, N. L. P. S. P., Wasita, P. A. A., & Mendra, N. P. Y. (2024). Sustainable strategy and fintech integration for MSMEs. *International Journal of*

-
- Sustainable Agricultural Management, 10(1), 112–128. <https://doi.org/10.20448/ijSAM.v9i1.7259>
- Putra, A. T., Inanna, Tahir, T., Mustari, & Hasan, M. (2023). Analysis of financial literacy and digital literacy on the sustainability of micro, small and medium enterprises (MSMEs). *International Journal of Asian Business and Management*, 2(6), 977-992. <https://doi.org/10.55927/ijabm.v2i6.6978>
- PwC. (2024). Unlocking growth opportunities: India's insurance sector. <https://www.pwc.in/assets/pdfs/unlocking-growth-opportunities-indias-insurance-sector.pdf>
- Rahman, F., Das, S., & Chowdhury, R. (2021). Risk appetite, innovation, and business sustainability: Evidence from South Asian SMEs. *Global Business Review*, 22(6), 1378–1395.
- Ramezani, M., & Khazaei, M. (2020). Internationalization of small and medium enterprises (SME's): Dimensions and strategies. *Journal of Logistics, Informatics and Service Science*, 7(2), 65–84. <https://doi.org/10.33168/JLISS.2020.0205>
- Rana, M., & Mishra, S. (2023). Social sustainability and MSME resilience: The mediating role of risk management practices. *Journal of Sustainable Business and Society*, 5(2), 98–114.
- Reliance General Insurance. (n.d.). Public Liability Act Insurance Policy. <https://www.reliancegeneral.co.in/smes-insurance/public-liability-act-insurance-policy>
- Renukappa, S., Suresh, S., & Al-Suleiman, T. (2025). Harnessing Industry 4.0 for SMEs: Advancing smart manufacturing and logistics for sustainable supply chains. *Sustainability*, 17(3), 813.
- Reserve Bank of India [RBI]. (2024). Report on Trend and Progress of Banking in India.

- Ricci, O., & Santilli, G. (2024). Exploring the link between financial literacy and business interruption insurance: Evidence from Italian micro-enterprises. *The Geneva Papers on Risk and Insurance - Issues and Practice*, 49(4), 663–681. <https://doi.org/10.1057/s41288-024-00312-5>
- Richter, A., Schiller, J., & Schlesinger, H. (2014). Behavioral insurance: Theory and evidence. *Journal of Risk and Insurance*, 81(3), 533–558. <https://doi.org/10.1007/s11166-014-9188-x>
- Riskconnect. (2017). *Risk appetite and business continuity: A strategic alignment*. Kennesaw, GA: Author.
- Rodrigues, M., & Franco, M. (2023). Green innovation in small and medium-sized enterprises (SMEs): A qualitative approach. *Sustainability*, 15(5), 4510. <https://doi.org/10.3390/su15054510>
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology*, 91(1), 93-114.
- Ron, R., Feder-Bubis, P., & Trocha, K. (2025). A new integrated conceptual framework of health insurance literacy: Results of a critical interpretive synthesis. *Health Policy*.
- Sabri, T. (2019). Green supply chain management methods to enhance sustainable supply chain: A literature review. *Journal of Pharmaceutical Negative Results*, 10(2), 1-8.
- Saeidi, P., et al. (2020). The influence of enterprise risk management on firm performance. *Economic Research-Ekonomska Istraživanja*, 34(1), 122–151. <https://doi.org/10.1080/1331677X.2020.1776140>
- Salmony, F. U., & Kanbach, D. K. (2022). Changes in entrepreneurs' risk-taking propensity across venture phases. *Journal of Enterprising Culture*, 30(1), 1–31. [doi:10.1142/S0218495822500017](https://doi.org/10.1142/S0218495822500017)
- Salzberger, A. (2024). An empirical analysis of the behavioral influences and information sources affecting the cyber insurance decisions of German SMEs.

-
- Journal of Risk Finance, 25(2), 1–22. <https://doi.org/10.1108/jrf-05-2024-0151>
- Sanjeewa, W. S., Ouyang, H., Gao, Y., & Liu, Y. (2019). Decision Making in Personal Insurance: Impact of Insurance Literacy. *Sustainability*, 11(23), 6795.
- Santhiya, S. E. (2018). Awareness and assessment about health insurance in Madurai District, Tamil Nadu [Doctoral thesis, Madurai Kamaraj University].
- Sara, Y. (2022). Empowering MSMEs through financial literacy and management skills. *Proceeding of The International Conference on Economics and Business*, 1(1), 293–299. <https://doi.org/10.55606/iceb.v1i1.394>
- Sari, R., Hasibuan, R., & Panggabean, S. (2025). Circular economy in agriculture: Examining factors affecting people's intention to use organic fertilizer. *Jurnal Pembelajaran Dan Biologi Nukleus*, 11(1), 259–267.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Harlow, England: Pearson Education.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323–338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Shabiq, A., & Hassan, Z. (2016). Factors affecting adoption of Takaful (Islamic insurance) in the Maldives. *International Journal of Accounting & Business Management*, 4(1), 86–97. <https://doi.org/10.24924/ijabm/2016.04/v4.iss1/86.97>
- Sharma, N., & Bansal, P. (2021). Risk management behavior of Indian MSMEs: The insurance gap. *Journal of Small Business and Enterprise Development*, 28(3), 469–487.
- Shaw, G. L., & Harrald, J. R. (2004). Identification of the core competencies of the business crisis and continuity manager. *Journal of Homeland Security and Emergency Management*, 1(1), Article 1.

- Shetty, A. S., & Rodrigues, L. L. . (2024). Behavioral barriers to microinsurance adoption among small business owners: Evidence from India. *Journal of Behavioral and Experimental Finance*.
- Shevlin, M., & Miles, J. N. V. (1998). Effects of sample size, model specification and factor loadings on the GFI in confirmatory factor analysis. *Personality and Individual Differences*, 25(1), 85–90. [https://doi.org/10.1016/S0191-8869\(98\)00055-5](https://doi.org/10.1016/S0191-8869(98)00055-5)
- Shiu, J.Y. (2021). Consumer confusion and decision postponement in the private health insurance sector. *Journal of Hospitality and Tourism Insights*.
- SIDBI. (2024). Understanding Indian MSME Sector: Progress and Challenges. https://www.sidbi.in/uploads/Understanding_Indian_MSME_sector_Progress_and_Challenges_13_05_25_Final.pdf
- Sifumba, C. M., Kotoso, K., & Mbuya, J. (2017). Risk management practices and performance of SMEs in South Africa. *Risk Governance and Control: Financial Markets & Institutions*, 7(3), 48–60. [https://doi.org/10.21511/ppm.15\(2-2\).2017.08](https://doi.org/10.21511/ppm.15(2-2).2017.08)
- Star Health. (n.d.). Group Health Insurance. <https://www.starhealth.in/group-health-insurance/>
- Subashini, G. (2011). Awareness and selection of general insurance products in small scale sector [Doctoral thesis, Sri Venkateswara University].
- Suhr, D. D. (2009). Principal component analysis vs. exploratory factor analysis. *SUGI 30 Proceedings*. Retrieved April 5, 2012
- Supriya, P., & Gunasegari, N. (2025). Affordability As A Challenge To Insurance Inclusion Among MSMEs. *The Review of Diabetic Studies*, 43-52. <https://diabeticstudies.org/index.php/RDS/article/view/717>
- Suresh, V., & Thomas, M. (2024). Insurance awareness and MSME performance in Kerala. *Kerala Economic Review*, 17(1), 67–84.

-
- Swiss Re Institute. (2017). Insurance: A contributor to development and resilience (sigma No 4/2017). Swiss Re.
- Tan, C., & Lee, S. Z. (2022). Adoption of enterprise risk management (ERM) in small and medium-sized enterprises: Evidence from Malaysia. *Journal of Accounting & Organizational Change*, 18(1), 100-131. <https://doi.org/10.1108/JAOC-11-2020-0181>
- Tata AIG. (n.d.). Statutory Requirements for Workers. <https://www.tataaig.com/knowledge-center/workmen-compensation-insurance/statutory-requirements-for-workers>
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Tennyson, S. (2011). Consumers' Insurance Literacy: Evidence from Survey Data. *Financial Services Review*, 20(3), 165-179.
- The Cyber Express. (2024). India's DPDP Act Reshaping Cyber Insurance. <https://thecyberexpress.com/indias-dpdp-act-reshaping-cyber-insurance/>
- The Global Fund. (2018). Risk appetite framework. Geneva, Switzerland: Author.
- Thomas, J., & Suresh, R. (2022). MSMEs and economic resilience in Kerala: Post-COVID analysis. *Asia Pacific Journal of Innovation and Entrepreneurship*, 16(1), 14–32.
- Touratier-Muller, N., Koporcic, N., Markovic, S., & Damnjanović, V. (2025). Drivers and barriers to the adoption of circular business models in small- and medium-sized enterprises: A comparison study between developed and developing economies. *Business Strategy and the Environment*, 34(8), 10349-10372.
- Troise, C., Santoro, G., Jones, P., & Bresciani, S. (2023). Small and medium enterprises and sustainable business models: Exploring enabling factors for adoption. *Journal of Management & Organization*, 30(3), 452-465.

- Twum-Barima, L. (2019). An assessment of fire insurance awareness in the informal sector: A case study of the Kumasi central market. *Journal of Risk Management*, 12(3), 45-56.
- Union Bank of India. (2025). MSME Definition and Classification Guidelines. Retrieved from <https://www.unionbankofindia.bank.in>
- United Nations. (2024). Global micro, small and medium-sized enterprises (MSMEs) report 2024. New York: United Nations.
- Wang, P., Li, S., Wang, Z., Jiao, M., Zhang, Y., Huang, W., ... & Wu, Q. (2023). Perceptions of the benefits of the basic medical insurance system among the insured: A mixed methods research of a northern city in China. *Frontiers in Public Health*, 11, 1043153. <https://doi.org/10.3389/fpubh.2023.1043153>
- World Bank. (2022). Small and medium enterprises (SMEs) finance. Retrieved from <https://www.worldbank.org/en/topic/smefinance>
- World Bank. (2025). Small and medium enterprises (SMEs) finance: Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital. Washington, DC: World Bank Group.
- Xiao, J. J., & Porto, N. (2017). Financial education and financial satisfaction: Financial literacy, behavior, and capability as mediators. *International Journal of Bank Marketing*, 35(5), 805-817.
- Yari, F., Mehrazeen, A., Yarifard, R., & Masihabadi, A. (2021). Risk Appetite, Risks of Business Continuity, managerial Ability and Accountability. *Journal of Accounting and Social Interests*, 11(2), 1-20.
- Zaimovic, A., Torlakovic, A., Arnaut-Berilo, A., Zaimovic, T., Dedovic, L., & Meskovic, M. N. (2023). Mapping financial literacy: A systematic literature review of determinants and recent trends. *Sustainability*, 15(12), 9576. <https://doi.org/10.3390/su15129358>

Zhang, H., Paraskevas, A., & Altinay, L. (2018). Factors shaping hotel risk appetite. *International Journal of Contemporary Hospitality Management*, 30(5), 2176–2193. <https://doi.org/10.1016/j.ijhm.2018.07.001>

Zusrina, K., & Indrajaya, S. (2023). The influence of perceived benefit, customer trust, service quality, and price perception on customer satisfaction and repurchase intention on Cigna Insurance. *International Journal of Creative Research Thoughts*, 11(3), a233–a249.

APPENDIX

Insurance as a Catalyst for Risk Appetite and Sustainability of MSME in Kerala

QUESTIONNAIRE

I am a Research Scholar at the Research Department of Commerce and Management Studies, Farook College (Autonomous), Calicut. This questionnaire relates to my research work on the topic titled as “Insurance as a Catalyst for Risk Appetite and sustainability of MSME in Kerala” conducted as part of Ph.D. Program. I assure you that all responses remain kept strictly confidential.

Thank you for your valuable time extended and opinion marked on this.

Section I: Demographic and SMEs Characteristics

1. Name:
2. Age:
 - Less than 30
 - 30-35
 - 35-40
 - 40-45
 - Above 45
3. Educational Qualification:
 - SSLC
 - Plus-Two
 - Under Graduation
 - Post-Graduation
4. Prior Experience
 - None
 - Less than 5 years
 - 5 years to 10 Years
 - Above 10 Years
5. Name of Venture:
6. Location of your venture
 - Panchayath
 - Municipality
 - Corporation

7. Category of venture:

- Micro
- Small
- Medium

8. Business Sector:

- Manufacturing
- Services
- Agro-based
- Other (please specify): _____

9. Form of Organisation

- Sole Proprietorship
- Partnership
- LLP
- Private Limited

10. Total Investment

- Below ₹ 5 Crore
- ₹ 5 Crore - ₹ 20Crore
- ₹ 20 Crore - ₹ 35 Crore
- Above ₹ 35 Crore

11. Major source of finance

- Equity
- Loans

12. Annual Turnover

- Below ₹ 5 Crore
- ₹ 5 Crore - ₹ 50 Crore
- ₹50 Crore - ₹100 Crore
- Above ₹100 Crore

13. Number of employees

- 1-10
- 11-50
- 51-100
- Above 100

Section II: Awareness level of insurance products available for SMEs

Read each item carefully, and then rate how much you agree with each item using a five-point Likert-type scale. Please mark your responses as **SA** for Strongly Agree, **A** for Agree, **N** for Neither agree nor disagree, **D** for Disagree and **SD** for Strongly Disagree.

Sl.No.	statements	SA	A	N	D	SD
2.1	I am aware of the insurance products available for MSMEs.					
2.2	Information about MSME insurance options is readily available.					
2.3	I understand the benefits of using insurance for risk mitigation.					
2.4	I am aware of the various types of insurance, such as property, liability, and health insurance.					
2.5	Government programs have effectively raised awareness about MSME insurance.					
2.6	Banks and financial institutions provide sufficient guidance on MSME insurance.					
2.7	Insurance providers conduct adequate awareness campaigns for MSMEs.					
2.8	Peers and colleagues in my industry have discussed the importance of insurance.					
2.9	I believe that my business would benefit from a better understanding of insurance policies.					
2.10	The complexity of insurance products limits my understanding of their benefits.					

Section III: Different Dimensions of Insurance Literacy

Schedule for assessing the perceived dimensions of insurance literacy of SMEs in Kerala. Please indicate your level of agreement with the following statements by marking a tick in the relevant column. SA for Strongly Agree, A for Agree, N for Neither agree nor disagree, D for Disagree and SD for Strongly Disagree.

		Statements	SA	A	N	D	SD
Insurance Attitude	3.11	When it comes to making a financial investment like insurance, I prefer it as safety to risk					
	3.12	The amount of return from insurance has nothing to do with my willingness to take risk					
	3.13	I am happy with any financial investment like insurance as long as the risk is minimal					
	3.14	I do not agree with the idea that greater risk leads to a higher rate of return from insurance					
Insurance Behaviour	3.21	I usually have control over my budget (like buying insurance) for the major spending of the year					
	3.22	Before taking any financial decision like insurance, I would consider my options multiple times					
	3.23	I have never spent my income on buying financial product like insurance					
	3.24	I have no plan for how to handle financial risk through insurance compared to other people					
Insurance Confidence	3.31	I am afraid to making financial decisions like insurance no matter how good I think my decisions are					
	3.32	I am not confident in planning my financial budget in buying insurance product for the year					
	3.33	I do not feel confident making insurance decisions, even when I have the knowledge to do so					

	3.34	I prefer consulting experts in managing my losses through purchase of insurance other than managing it myself					
Insurance Knowledge	3.41	I am more comfortable with living a life that does not involve high financial risk thereby buy insurance					
	3.42	When making financial decisions like insurance, I am being very careful					
	3.43	When it comes to financial spending like insurance, I am financially more conservative					
	3.44	Because I believe in luck, my understanding of a financial instrument like insurance is not necessary					

Section IV: Aspects of Organisational Risk Appetite

Schedule for assessing Organisational Risk Appetite. Please specify your level of agreement against each statement by putting tick mark. SA for Strongly Agree, A for Agree, N for Neither agree nor disagree, D for Disagree and SD for Strongly Disagree.

		Statements	SA	A	N	D	SD
Organisational Risk Appetite	4.1	The owner's or operator's tendency to take risks influences our decision for risk tolerance					
	4.2	Our company's past risk experience influences our decision to accept risk					
	4.3	The awareness and knowledge of our business environment influence our decision for risk tolerance					
	4.4	perceived riskiness in our kind of business influence our decision for some level of risk tolerance					
	4.5	Our company risk capacity influences our desire for risk acceptance					

		Statements	SA	A	N	D	SD
	4.6	other stakeholders' pressures influence our risk tolerance decision at times					
	4.7	Frequency of risk reporting determines the amount and type of risk my organisation wishes to accept					
	4.8	My company's size influences our risk tolerance level					

Section V: Perceived Benefits of Insurance Products Available for SMEs

Read each item carefully, then rate how much you agree with each item using a five-point Likert-type scale. Please mark your responses as **SA** for Strongly Agree, **A** for Agree, **N** for Neither agree nor disagree, **D** for Disagree, and **SD** for Strongly Disagree.

		Statements	SA	A	N	D	SD
Perceived Benefits	5.1	When evaluating insurance, I relied on my feelings and expectations of its benefits.					
	5.2	I thought my feelings were necessary for my evaluation of the insurance policy.					
	5.3	I always try to discover whether my feelings or expected benefits influenced my choice of insurance patronage.					

Section VI: Aspects of sustainable performance

Schedule for assessing Organisational Risk Appetite. Please specify your level of agreement with each statement by putting a tick mark. SA for Strongly Agree, A for Agree, N for Neither agree nor disagree, D for Disagree, and SD for Strongly Disagree.

		Statements	SA	A	N	D	SD
Economic Sustainability	6.11	Business firms need to distribute goods and services fairly among people worldwide.					
	6.12	Our company has improved its market share					
	6.13	Our company has improved its position in the marketplace.					
	6.14	Our company has increased its profits.					
	6.15	Our company has increased its return on investments					
Social Sustainability	6.21	Companies need to act responsibly towards their employees, customers and suppliers					
	6.22	Our company has improved or enhanced the overall stakeholder welfare					
	6.23	Our company has improved the occupational health and safety of employees.					
	6.24	Our company has improved the awareness and protection of the claims and rights of the community served					
	6.25	Our company has improved customer satisfaction.					
	6.26	Our company rapidly responds to customers' complaints.					