Research Report

EVALUATING THE IMPACT OF ENTREPRENEURSHIP DEVELOPMENT PROGRAMMES ON THE PROGRESSION OF AGRO-BASED STARTUPS IN SRI LANKA



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Research Report No: 273

April 2026

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Colombo 07
Sri Lanka

First Published: 2026
ISBN: 978-624-5973-67-5

Evaluating the impact of entrepreneurship development programmes on the Progression of agro-based startups in Sri Lanka / Chinthaka Jayasooriya and Sangeeth Prasad Fernando. - Colombo : Hector Kobbekaduwa Agrarian Research and Training Institute, 2026.
xii, 104 p. : ill. ; 29 cm. - (Research report No ; 273)

ISBN 978-624-5973-67-5

i. 338.04095493 DDC 23 ii. Fernando, Sangeeth Prasad (Co.author)
iii. Title iv. Series

1. Entrepreneurship-Sri Lanka
2. Small business-Sri Lanka
3. Agricultural industries-Sri Lanka 4. Agribusiness-Sri Lanka

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Final typesetting, lay-out and Cover page designed by: Udeni Karunarathna

Foreword

Entrepreneurship is increasingly recognized as a critical driver of economic growth and rural development, especially in agrarian economies like Sri Lanka. However, despite numerous initiatives, many agro-based startups continue to face challenges such as limited access to resources, inadequate skills development, and a lack of structural support. These gaps undermine their potential to contribute meaningfully to national economic progress and rural livelihoods.

This report, developed under the guidance and research auspices of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), addresses this pressing need by proposing an operational model for Entrepreneurship Development Programmes (EDPs) tailored specifically to agro-based startups. The model is built upon extensive empirical research and supported by primary data from programme beneficiaries and stakeholders, ensuring its relevance to Sri Lanka's unique socio-economic context.

HARTI, as the premier national institute for agrarian research, has been instrumental in identifying the key challenges faced by agro-entrepreneurs and in developing evidence-based strategies to address them. This report embodies HARTI's ongoing commitment to promoting sustainable agricultural transformation through enhanced entrepreneurship, effective knowledge transfer, and institutional capacity building.

The insights and structural-functional framework presented in this report provide valuable guidance for policymakers, development agencies, and programme implementers aiming to foster a robust entrepreneurial ecosystem within Sri Lanka's agricultural sector. By improving the effectiveness of EDPs, this work offers strong potential to stimulate rural enterprise development, create employment opportunities, and promote inclusive economic growth.

It is our firm belief that the findings and recommendations of this report will serve as a solid foundation for future policy formulation and programme design, ultimately contributing to a vibrant and resilient agro-based entrepreneurial landscape that contributes to the country's economic and social well-being.

Prof. A.L. Sandika
Director/CEO

Acknowledgement

This research was undertaken as part of the institutional research programme of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), with the aim of contributing to evidence-based policy formulation in the areas of entrepreneurship development and rural enterprise promotion.

The successful completion of this study would not have been possible without the guidance, support, and collaboration of numerous individuals and institutions. First and foremost, I wish to express my deep appreciation to the Director and the Additional Director (cover-up) of HARTI for their encouragement and strategic oversight throughout the research process. Their steadfast commitment to applied, policy-relevant research has provided both the framework and inspiration for this work.

I am particularly grateful to the heads of divisional and district-level government agencies—including officers from the Department of Agriculture, the National Enterprise Development Authority, the Small Enterprise Development Division, the Central Bank of Sri Lanka and Department of Export Agriculture who generously shared their time, insights, and field-level experiences during the data collection phase.

Special thanks are extended to the agro-entrepreneurs who participated in the survey and interviews. Their openness and willingness to share real-world challenges and aspirations greatly enriched the study's findings and enhanced its contextual relevance.

I also, acknowledge the valuable contributions of the enumerators, and support staff who assisted with data collection, transcription, and field coordination across six districts. Their commitment and professionalism were crucial to the timely completion of the fieldwork. Furthermore, I also extend my gratitude to Programme Unit and the Information and Communication Division of HARTI for their support with logistical arrangements and the publication process.

Finally, I offer my heartfelt thanks to all my colleagues and external reviewers, whose valuable feedback and constructive critiques helped shape the structure, analysis, and final presentation of this report.

Although many individuals contributed to this research, any errors or omissions remain the sole responsibility of the author.

Chinthaka Jayasooriya
Sangeeth Prasad Fernando

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Abbreviations

ADB	–	Asian Development Bank
BOI	–	Board of Investment
CBO	–	Community-Based Organization
CBSL	–	Central Bank of Sri Lanka
CBT	–	Competency-Based Training
CED	–	Centre for Entrepreneurship Development
CEFE	–	Competency-based Economies through Formation of Enterprises
DFCC	–	Development Finance Corporation of Ceylon
DIMO	–	Diesel & Motor Engineering PLC
DEA	–	Department of Export Agriculture
DOA	–	Department of Agriculture
EDB	–	Export Development Board
EDPs	–	Entrepreneurship Development Programmes
FAO	–	Food and Agriculture Organization
GDP	–	Gross Domestic Product
GMP	–	Good Manufacturing Practice Certificate
GoSL	–	Government of Sri Lanka
HACCP	–	Hazard Analysis and Critical Control Point Certificate
ICT	–	Information and Communication Technology
ISO	–	International Organization for Standardization Certificate
IT	–	Information Technology
ITC	–	International Trade Centre
JICA	–	Japan International Cooperation Agency
MC	–	Monitoring Committee
MIS	–	Management Information System
MoA	–	Ministry of Agriculture
MoE	–	Ministry of Education
MoH	–	Medical Officer of Health
NEDA	–	National Enterprise Development Authority
NGO	–	Non-Governmental Organization
PPP	–	Public–Private Partnership
R&D	–	Research and Development
RDB	–	Regional Development Bank
SEDD	–	Small Enterprise Development Division
SLSI	–	Sri Lanka Standards Institute
SEM	–	Structural Equation Modelling
SME	–	Small and Medium Enterprise
UNDP	–	United Nations Development Programme
USAID	–	The United States Agency for International Development
VBSS	–	Value-Based Support System
WB	–	World Bank

Executive Summary

Entrepreneurship is widely recognized as a powerful driver for socio-economic transformation, particularly in rural and agrarian economies. In Sri Lanka, where over one-fourth of the workforce is engaged in agriculture and where rural poverty and youth unemployment persistent as significant challenges, promoting agro-based entrepreneurship is both a policy imperative and a strategic opportunity. To address this, the government has introduced various Entrepreneurship Development Programmes (EDPs) designed to equip rural entrepreneurs with the skills, resources, and institutional support needed to launch and sustain successful agro-enterprises.

Despite the presence of multiple EDPs administered by institutions such as the National Enterprise Development Authority (NEDA), the Small Enterprise Development Division (SEDD), and the Department of Agriculture, many agro-based startups struggle to achieve long-term sustainability. Attrition rates remain high, and significant gaps have been identified in the operational coherence, functional design, and implementation mechanisms of these programmes. Against this backdrop, this study aims to evaluate the structural and functional characteristics of government-assisted EDPs and their influence on the sustainability of agro-based startups in Sri Lanka. The ultimate objective is to propose an evidence-based operational model that can serve as a blueprint for designing, developing, and implementing future EDPs.

The study was designed to address three central objectives: (i) to assess the effectiveness of existing EDPs in promoting sustainable business outcomes for agro-based startups; (2) to analyse the structural and functional dimensions of these programmes; and (3) to develop a comprehensive operational model for future entrepreneurship support interventions in the agro-sector. The scope was limited to government-assisted EDPs across six districts namely, Kurunegala, Nuwara Eliya, Badulla, Kegalle, Hambantota, and Matale were selected to represent agro-climatic, economic, and administrative diversity. The study specifically focused on agro-based startups, defined as enterprises engaged in primary production, processing, or value addition within agriculture or allied activities.

A mixed-methods approach was adopted to ensure analytical robustness and contextual relevance. Quantitative data was collected through a structured survey administered to 308 agro-entrepreneurs who had participated in government EDPs within the past three years. The survey captured information on business performance, entrepreneurial traits, support received, and contextual challenges. Structural Equation Modelling (SEM) was used to assess causal relationships among programme attributes, entrepreneurial behaviour, and business out comes.

In parallel, qualitative insights were gathered through 24 key informant interviews (KIIs) with programme officers, field-level implementers, and subject-matter experts. These interviews focused on the institutional logic, operational processes, and implementation gaps of EDPs. Additionally, document reviews and policy analysis

further enriched the study by providing context on programme mandates, coordination frameworks, and national development goals.

The study's findings underscore a critical disconnect between EDP design and the entrepreneurial realities on the ground. First, the institutional landscape of entrepreneurship development in Sri Lanka is fragmented and poorly coordinated. More than 50 government and semi-government agencies are involved in entrepreneurship promotion, often with overlapping mandates, duplicated functions, and disconnected delivery mechanisms. This fragmentation results in inefficiencies, resource wastage, and confusion among beneficiaries.

Second, the selection of beneficiaries frequently lacks a structured, merit-based approach. Field data revealed that beneficiary identification often prioritizes welfare eligibility, such as Samurdhi status over entrepreneurial potential or business readiness. As a result, capable and motivated individuals are sometimes excluded, while others with limited commitment receive resources, they are unable to effectively utilize.

Third, EDPs are predominantly input-oriented and operate with a one-size-fits-all logic. Entrepreneurs are commonly provided with standard training modules, grants, or equipment, without adequate consideration of their specific business needs, operational stage, or market context. Many respondents reported receiving material support such as shade nets, tools, or inputs at inappropriate stages - either before they were ready to deploy them, or long after the need had passed. Such mistimed interventions lead to inefficiencies and limited returns on public investment.

Fourth, non-financial supports such as practical business training, mentorship, and market linkage are underdeveloped or inconsistently delivered. Entrepreneurs expressed a strong demand for sector-specific technical training (e.g., nursery propagation, mushroom cultivation, fertigation technology), hands-on guidance for meeting certification requirements (GMP, HACCP, GAP), and assistance in identifying and reaching buyers. In the absence of such support, many startups remain stagnant or revert to informal subsistence activities.

Fifth, monitoring and follow-up systems are either lacking or merely symbolic. Most programmes do not have effective performance tracking mechanisms, and only a few offers one-to-one mentoring or coaching to help entrepreneurs address operational challenges, adapt to market shifts, or scale their businesses.

Finally, the study found that certain groups, particularly youth, women, and mid-stage entrepreneurs face systemic disadvantages. Young entrepreneurs often lack collateral or networks and express a strong need for digital literacy and business exposure opportunities. Women entrepreneurs report facing institutional bias, mobility restrictions, and exclusion from male-dominated value chains.

Most critically, the quantitative analysis demonstrates that government support does not exert a statistically significant direct effect on startup performance. Instead, its influence is transmitted indirectly and significantly through entrepreneurial knowledge, skills, and behavioural attributes such as planning ability, innovativeness, and risk orientation. This finding provides strong empirical evidence that financial inputs and material assistance alone are insufficient to generate sustainable entrepreneurial outcomes unless they are embedded within sustained capability-building and behavioural transformation processes.

In light of these findings, the study proposes a six-pillar operational model to guide future EDPs:

i. Beneficiary targeting reform: introduce a dual-criteria system that combines social equity with entrepreneurial potential, incorporating simple business readiness assessments and interview-based selection.
ii. Structured onboarding and incubation: develop pre-startup engagement tracks that include business orientation, behavioural training, and feasibility analysis to prepare entrepreneurs for sustained enterprise management.
iii. Lifecycle-based support tracks: design differentiated support pathways aligned with enterprise growth stages (startup, growth, and scale-up) each offering tailored inputs, mentoring, and performance indicators.
iv. Market and certification support: institutionalize district-level units to assist with certification, branding, and buyer-seller networking, supported through partnerships with the Export Development Board (EDB) and private sector actors.
v. Monitoring and embedded mentoring: deploy trained business advisors at the district level to provide continuous mentoring, performance monitoring, and adaptive support based on real-time feedback.
vi. Institutional integration: create a centralized EDPs coordination unit within the Ministry of Industries or Ministry of Agriculture to harmonize policy objectives, pool resources, and ensure consistency in delivery across provinces.

At the core of this proposed operational modality lies the concept of a value-based spiral support system. This framework envisions entrepreneurship development not as a linear or one-time intervention, but as a dynamic and evolving process shaped by the entrepreneur's readiness, performance, and capacity to absorb support at each stage. The spiral system facilitates upward progression starting from pre-startup ideation, moving through startup establishment, growth, and eventual scale-up by delivering contextually appropriate assistance in a sequenced and recursive manner. As entrepreneurs mature, the level, intensity, and complexity of support increase accordingly, ensuring that public resources are allocated where they generate the greatest impact. This model inherently builds resilience and autonomy, empowering entrepreneurs to ascend the development ladder while remaining embedded in a feedback-rich, mentoring-driven environment. Rather than promoting dependency through one-off grants, the spiral system promotes continuous learning, adaptation, and innovation over time.

This study highlights that while Sri Lanka's commitment to entrepreneurship development is clear, the operationalization of that commitment is constrained by structural fragmentation, functional inefficiencies, and weak contextual alignment. By adopting an operational modality rooted in primary data, field experiences, and rigorous analysis, policymakers can shift EDPs from fragmented grant-dispensing schemes to dynamic, inclusive platforms that foster sustainable rural enterprise development. The model presented in this study offers a practical and scalable framework for reforming entrepreneurship support across the country that enable transforming EDPs into meaningful catalysts for agricultural modernization, youth employment, and economic resilience

Chapter One
Introduction

1.1. Background of the Study

Entrepreneurship has been widely recognized as a key driver of economic growth and structural transformation, especially within developing economies (Schumpeter, 1934; Baumol, 2002). It stimulates employment creation**,** fosters innovation, increases productivity, and enhances economic resilience. In the rural context, especially in agrarian economies like Sri Lanka, entrepreneurship development serves as a viable mechanism to revitalize the traditional agricultural sector and uplift rural livelihoods (Davidsson, 2004; Gunawardana and Bandara, 2021).

In Sri Lanka, the agricultural sector employs approximately 27% of the labour force, remains the backbone of rural livelihoods (Department of Census and Statistics, 2023). However, the sector faces challenges such as low productivity, weak market linkages, limited access to technology, and vulnerability to climate and price shocks (Bandara et al., 2024). Against this backdrop, the transformation of conventional farming into entrepreneurial agri-business ventures is increasingly advocated as a strategic pathway to promote rural economic growth and enhance food security. This transition is underpinned by Entrepreneurship Development Programmes (EDPs) initiated by various governmental and non-governmental organizations.

EDPs aim to build entrepreneurial competencies among rural farmers, improve access to finance and markets, facilitate business development services, and create an enabling environment for small and medium-sized agro-enterprises (Heenkenda and Chandrakumara, 2016). In the Sri Lankan context, institutions such as the National Enterprise Development Authority (NEDA), Small Enterprise Development Division (SEDD), the Department of Agriculture, and various National and Provincial Ministries have implemented targeted interventions to promote agro-entrepreneurship. These initiatives include training programmes, microfinance schemes, and technical assistance initiatives designed to foster self-reliance and sustainable enterprise development among rural populations

Despite the proliferation of these initiatives, the sustainability of agro-based startups remains a significant concern. A large number of rural enterprises either stagnate or discontinue operations within the first few years of establishment (Wijerathna, Weerakkody and Kirindigoda, 2013). While factors such limited market access and capital constraints and insufficient institutional support contribute to these high failure rates, the design and implementation quality of EDPs themselves have also come under scrutiny (Anjalee and Perera, 2023).

Notably, EDPs in Sri Lanka exhibit considerable heterogeneity in terms of their objectives, delivery mechanisms, selection criteria, and institutional coordination.

Many programmes function in silos, lacking integration with broader development frameworks or synergies across agencies. Furthermore, the theoretical grounding and empirical evidence informing programme design are often weak or outdated. These structural and functional inconsistencies compromise the effectiveness of EDPs in enabling rural entrepreneurs to sustain and grow their businesses (Siriwardena et al., 2024; Elapata et al., 2023).

There is a critical need to assess the internal coherence, external alignment, and operational efficacy of these programmes, particularly in their capacity to promote long-term entrepreneurial growth. Additionally, as Sri Lanka faces pressing socio-economic challenges, such as youth unemployment, rural poverty, and post-crisis recovery, making it increasingly urgent to leverage entrepreneurship as a key driver of inclusive and sustainable rural development.

In this context, evaluating the effectiveness of existing EDPs and identifying best practices for designing future interventions can contribute significantly to the discourse on rural transformation and agrarian modernization. This study aimed to examine the relationship between the structural-functional dimensions of EDPs and the long-term sustainability of agro-based startups in Sri Lanka.

1.2. Research Problem

Over the past two decades, Sri Lanka has witnessed increasing investments in entrepreneurship development within the agricultural sector, driven by the necessity to enhance productivity, promote value addition, address structural challenges in farming, and empower farmers with entrepreneurial skills to ensure sustainable rural livelihoods and food security. These investments are based on the premise that entrepreneurship can catalyze sectoral transformation by introducing business-oriented practices, enhancing innovation, and diversifying rural incomes. However, despite this theoretical promise, empirical outcomes remain mixed and inconclusive.

A key concern is the high attrition rate of agro-based startups. Many of these enterprises struggle to move beyond the initial start-up phase, failing to attain operational or financial sustainability (Wijerathna et al., 2013). A significant number of ventures established through EDPs remain subsistence-oriented, informal, and vulnerable to market and institutional failures. These challenges raise serious questions about the effectiveness of existing EDPs in supporting lasting entrepreneurial transitions among rural populations.

The diversity in programme design, ranging from aspects such as differences in defining “entrepreneurship,” to variation in beneficiary targeting, assistance types, and monitoring mechanisms, contributes to fragmented and often sub-optimal outcomes. Limited collaboration among implementing institutions and the lack of a unified policy framework further exacerbate these issues. As a result, EDP beneficiaries frequently receive support that is inadequate, disconnected, or poorly aligned with their specific contexts and capabilities (Elapata et al., 2023).

Furthermore, empirical research in Sri Lanka has largely focused on individual success factors or sector-specific entrepreneurship outcomes, with limited attention to the structural attributes of development interventions themselves. The influence of programme architecture, including institutional design, stakeholder engagement, capacity building mechanisms, and resource allocation strategies on the sustainability of startups remains underexplored (Perera and Nag, 2019).

Accordingly, this research aims to fill a significant gap in the literature by evaluating how the design (structure) and implementation process (functionality) of entrepreneurship development interventions affect the long-term viability of agro-based startups in Sri Lanka. It addresses the critical and timely question of ***'can entrepreneurship development programmes, as currently conceptualized and implemented, effectively catalyze sustainable entrepreneurial ecosystems within Sri Lanka's rural and agrarian context?'***

1.3. Research Questions

Based on the research issue highlighted above, the study aimed to answer the following questions to better understand how EDPs can support the overall entrepreneurship development agenda and how they should be designed to meet the sector's evolving needs. Those questions were:

- How effective are existing entrepreneurship development programmes in enhancing the sustainability of agro-based startups in Sri Lanka?
- What structural and functional attributes of EDPs influence the success and progression of agro-entrepreneurs?
- What design and implementation improvements are necessary to ensure long-term sustainability of agro-based startups through EDPs?

1.4. Research Objectives

Overall Objective

To evaluate the impact of entrepreneurship development interventions on the growth and sustainability of agro-based startups in Sri Lanka, and to propose structural and functional modalities for designing more effective EDPs.

Specific Objectives

i. To assess the effectiveness of existing government-assisted EDPs in supporting the growth and sustainability of agro-based startups in Sri Lanka.

ii. To analyze the structural and functional characteristics of selected EDPs and their impact on entrepreneurial outcomes.

iii. To develop evidence-based recommendations for designing more coherent, inclusive, and context-responsive EDPs aimed at promoting agro-entrepreneurship.

1.5. Significance of the Study

This study is significant both for academic discourse and public policy, particularly in the context of Sri Lanka's current economic challenges and national development priorities amid post-crisis recovery and efforts to revitalize the rural economy. It addresses critical gaps in understanding the effectiveness of Entrepreneurship Development Programmes (EDPs) in fostering sustainable agro-based startups, thereby contributing to broader goals of economic transformation and social equity.

Academically, this research contributes to the growing literature on entrepreneurship development in agrarian economies by examining the structural and functional efficacy of Entrepreneurship Development Programmes (EDPs). While previous studies have focused on individual entrepreneurial behaviour or sector-specific constraints (Sachitra, 2019; Gunawardana and Bandara, 2021), this study adopts a programmatic approach, evaluating how the design and delivery mechanisms of institutional interventions impact the sustainability of agro-based startups. This perspective offers a novel contribution to entrepreneurship theory within resource-constrained rural contexts.

Concerning the alignment with national policy priorities, this study closely supports key national strategies that emphasize inclusive rural development, SME growth, and youth engagement. The former government's policy framework – "Sri Lanka's *National Policy Framework – Vistas of Prosperity and Splendour* (2020)", explicitly acknowledges the need to transform traditional agriculture into a modern, technology-driven sector while expanding entrepreneurial opportunities for rural communities.

Furthermore, study also aligns with several key policy initiatives of the current government, including;

Promotion of Agricultural Entrepreneurship: The 2024 NPP Presidential election manifesto emphasizes the goal of establishing 50,000 agricultural entrepreneurs within five years, developing agro-industrial zones, and expanding opportunities for small and medium-sized enterprises (SMEs) based on agriculture.

Youth Engagement in Agriculture: The 2025 national budget allocates Rs. 500 million to support youth entrepreneurs in agro-based SMEs, highlighting the importance of attracting younger generations to the agricultural sector.

Agricultural Modernization: The formation of the Agricultural Modernization Organization Council aims to enhance efficiency in agricultural practices, promote sustainability, and foster innovation and entrepreneurship within the sector.

Enterprise Development: The revival of the 'Enterprise Sri Lanka' initiative aims to support SMEs through financial assistance and capacity-building, aligning closely with the study's focus on the effectiveness of EDPs in fostering sustainable enterprises.

Despite this policy emphasis, the effectiveness of existing EDPs remains largely unevaluated. Many interventions operate in fragmented silos, with limited coordination across institutions and inadequate monitoring of long-term outcomes. This has led to inefficiencies and suboptimal results, such as the high discontinuation rate among agro-enterprises and the limited scalability of rural startups. By systematically analysing the design, implementation, and outcomes of selected government-assisted EDPs, this study offers actionable insights into their programmatic strengths and weaknesses.

The findings of this research can serve multiple practical functions, including but not limited to;

- Inform the redesign and harmonization of EDPs under institutions such as Ministry of Industries and Entrepreneurship Development (MIED), Ministry of Agriculture (MoA), the National Enterprise Development Authority (NEDA), the Small Enterprises Development Division (SEDD) of MIED, the Export Development Board, the Industrial Development Board, Department of Samurdhi Development. Department of Agriculture, Department of Export Agriculture, and others.

- Support the integration of entrepreneurship development goals with existing and upcoming rural development programmes.

- Guide Provincial Councils and local government bodies involved in delivering entrepreneurship support services to ensure improved regional coordination and policy coherence.

Moreover, the study addresses critical cross-cutting issues, including;

- Youth unemployment - by identifying ways to improve the attractiveness and viability of rural entrepreneurship as a sustainable livelihood option.

- Gender equity - by potentially revealing gaps in access and inclusion within current EDPs behaviour frameworks.

- Climate resilience - by promoting entrepreneurship that supports adaptive agricultural practices and value-added processing, aligning with national climate adaptation strategies.

1.6. Scope and Limitations of the Study

The study is confined to government-assisted entrepreneurship development programmes that specifically target agro-based startups across selected districts in Sri Lanka. It focuses on evaluating the structural features—such as institutional arrangements and coordination mechanisms, and functional elements, such as training, financial access, and mentoring, of these programmes. The research does not cover purely private sector-led or informal entrepreneurship activities.

Limitations of the study include potential regional variations in programme delivery, data constraints in data availability, and the challenge of isolating the effects of EDPs from other contextual factors. Despite these challenges, the study strives to generate robust empirical insights by triangulating qualitative and quantitative data from multiple sources.

Chapter Two
Literature Review

2.1. Introduction

Entrepreneurship has been widely acknowledged as a transformative force in both advanced and developing economies, serving as a key driver of innovation, job creation, and structural economic change (Schumpeter, 1934; Baumol, 2002). The literature has emphasized that entrepreneurship contributes to unlocking latent economic potential, facilitating productivity improvements, and enhancing societal resilience in the face of rapid change (Davidsson, 2004; Gunawardana and Bandara, 2021).

In the context of developing economies particularly agrarian societies like Sri Lanka, entrepreneurship development has been promoted as a strategic approach to modernize the agricultural sector, diversify rural incomes, and alleviate poverty (Heenkenda and Chandrakumara, 2016; Bandara et al., 2024). However, the successful realization of these goals relies heavily on the design and implementation of targeted support mechanisms are primarily in the form of Entrepreneurship Development Programmes (EDPs). These programmes are expected to build entrepreneurial capabilities, improve access to finance and markets, and provide post-startup support services such as mentoring and business development assistance (Elapata et al., 2023).

While EDPs are increasingly common in Sri Lanka and other developing countries, concerns remain about their actual effectiveness in fostering durable agro-based enterprises. Many rural startups initiated under EDPs continue to struggle with sustainability, formality, and scale often due to inadequate or fragmented programme structures, weak follow-up mechanisms, and insufficient adaptation to local contexts (Wijerathna, et al., 2013; Anjalee and Perera, 2023). This literature review was therefore designed to contextualize the study by:

- Tracing the evolution of entrepreneurship theory and its relevance in rural economic transformation;
- Reviewing empirical studies on the structure, function, and outcomes of EDPs in developing economies;
- Exploring the specific challenges and opportunities faced by agro-based entrepreneurs;
- Identifying gaps in the current literature especially concerning how the structural and functional features of EDPs influence startup sustainability;
- Laying the conceptual and empirical foundation for the study's analytical model.

In doing so, the review positioned this research within the broader discourse on entrepreneurship as a development strategy and highlighted the critical need for a more nuanced understanding of how EDPs function in rural agro-based contexts especially in Sri Lanka. By synthesizing theoretical models with practical experiences, the review establishes a framework for evaluating whether current EDPs designs and implementations are capable of fostering sustainable entrepreneurial ecosystems.

2.2. Theoretical Frameworks

Understanding the sustainability of agro-based startups within the Sri Lankan context necessitated the adoption of a robust theoretical and conceptual framework that could accommodate both the multifaceted nature of entrepreneurship and the diverse structures of Entrepreneurship Development Programmes (EDPs). This study draws on a combination of entrepreneurship theories, programme evaluation models, and entrepreneurial ecosystem perspectives to develop a comprehensive analytical framework. This integrative approach enabled a structured examination of the complex interactions among individual traits, institutional support mechanisms, and environmental factors influencing the progression of agro-entrepreneurs.

2.2.1. Entrepreneurship Theories and Individual Behavioural Constructs

Entrepreneurship theory provides the foundation for understanding the behavioural, cognitive, and motivational drivers that underpin entrepreneurial action. In this study, special emphasis was placed on theories relevant to emerging economies, particularly those focusing on individual-level factors and socio-economic constraints. One of the most enduring contributions to entrepreneurship theory comes from Schumpeter (1934), who conceptualized the entrepreneur as an innovator who disrupts equilibrium through the creation of new combinations of resources. This notion of “creative destruction” laid the groundwork for considering entrepreneurship as a catalyst for economic transformation, especially in developing contexts such as rural Sri Lanka.

More contemporary theoretical models, such as the Theory of Planned Behaviour (Ajzen, 1991), have helped frame entrepreneurial intention as a precursor to action. According to this theory, subjective norms, and perceived behavioural control collectively shape an individual’s intention to engage in entrepreneurial activity. Reflecting this, the study incorporated variables such as entrepreneurial intention, autonomy, innovativeness, risk-taking, and proactiveness, all of which are widely regarded as predictors of entrepreneurial behaviour (Islam et al., 2011; Morris et al., 2010; Silva and Nishantha, 2023).

Additionally, the distinction between necessity-driven and opportunity-driven entrepreneurship played a crucial role in framing the socio-economic underpinnings of rural enterprise formation. According to De Silva (2010), necessity-based entrepreneurs, those compelled into entrepreneurship due to lack of employment alternatives, often demonstrate lower growth orientation and sustainability,

compared to opportunity-driven entrepreneurs, who proactively exploit perceived market gaps. This distinction was particularly relevant in the Sri Lankan agro-entrepreneurship, context where rural livelihoods are often shaped by socio-economic vulnerability and limited formal employment opportunities.

2.2.2. Programme Evaluation Models and Structural Analysis of EDPs

To evaluate the effectiveness of EDPs, the study integrated established programme evaluation frameworks, particularly the Logic Model and the Structure-Function-Outcome (SFO) model. The Logic Model outlines a clear causal pathway by connecting programme inputs and activities with anticipated outputs and long-term outcomes (Sharma and Mathur, 2022). This model proved instrumental in structuring the assessment of government-assisted EDPs in Sri Lanka by mapping the relationship between institutional interventions such as training, finance, mentoring and entrepreneurial outcomes like business growth and sustainability.

The SFO model, which disaggregates programme interventions into their structural components (policy, institutional design, coordination), functional elements (implementation processes such as training, financial support, mentorship), and observed outcomes (entrepreneurial performance and sustainability), was particularly valuable in aligning the conceptual framework with the methodological tools employed in the study. These models supported the use of Structural Equation Modelling (SEM) in empirical analysis, allowing the examination of both direct and indirect relationships among latent variables such as institutional support, entrepreneurial behaviour, and business performance.

Furthermore, the study recognized the importance of mixed-method evaluation strategies in capturing the nuanced impacts of EDPs. The triangulation of quantitative survey data with qualitative Key Informant Interviews (KIIs) provided a deeper understanding of how programme components were perceived, implemented, and adapted at the grassroots level, echoing calls in the literature for context-sensitive programme analysis in developing countries (Kodithuwakku and Weerakoon, 2020).

2.2.3. Entrepreneurial Ecosystem Perspective

In addition to individual and programmatic factors, the entrepreneurial ecosystem framework was employed to capture the broader enabling environment necessary for sustaining agro-based startups. As highlighted by Isenberg (2011) and supported in regional studies such as Theodoraki (2024), entrepreneurial success depends on the dynamic interplay among multiple ecosystem actors, including government agencies, educational institutions, financial intermediaries, markets, and cultural norms. This perspective aligns with empirical evidence from Sri Lanka, where the limited coordination among supporting institutions, fragmented service delivery, and inadequate follow-up support were frequently cited as barriers to sustainability (Elapata et al., 2023; Anjalee and Perera, 2023).

The literature underscores that strong ecosystems are characterized by cohesive networks, accessible finance, trust-based collaborations, and robust infrastructure factors that collectively enable startups to overcome early-stage vulnerabilities and scale operations (Batjargal, 2007; Mason and Brown, 2014). In rural Sri Lanka, however, the entrepreneurial ecosystem remains underdeveloped, characterized by weak policy coherence and limited institutional integration. The findings of this study confirm these constraints, revealing that beneficiaries of EDPs often lack consistent support, face duplication of services, and operate in isolation from complementary actors within the entrepreneurial landscape.

2.3. Conceptual Framework of the Study

Based on the integration of the above theoretical perspectives, the study developed a conceptual model encompassing the following domains: (i) individual-level factors such as entrepreneurial intention, autonomy, risk-taking, and innovativeness; (ii) institutional and programmatic interventions delivered through EDPs, including financial and non-financial support mechanisms; (iii) enabling ecosystem factors such as social networks and institutional recognition; and (iv) outcome variables representing business sustainability, such as sales growth, profit generation, and employment expansion. The relationships among these domains were empirically tested using SEM, which allowed the modelling of both observed and latent constructs and supported the identification of causal linkages within the framework.

This integrated framework enabled a systematic investigation into how EDPs influenced the sustainability of agro-based startups in Sri Lanka by examining not only what support was provided, but how it was structured, delivered, and interacted with contextual and behavioural variables. In doing so, the study responded to critical gaps in the literature regarding the structural-functional alignment of development programmes and offered empirically grounded insights into improving the design and implementation of EDPs in rural, resource-constrained settings.

2.4. Entrepreneurship Development Programmes (EDPs) and Their Effectiveness

Entrepreneurship Development Programmes (EDPs) have become a central policy instrument in many developing economies to stimulate enterprise creation, employment generation, and income diversification, particularly in rural areas. In the Sri Lankan context, the proliferation of EDPs, often implemented by multiple government and semi-government agencies, reflects an increasing recognition of entrepreneurship as a critical driver of rural transformation. These programmes aim to enhance entrepreneurial capabilities, support market integration, and address structural constraints faced by agro-based startups. However, despite their growing prominence, questions remain about their effectiveness in fostering sustainable and resilient enterprises.

In Sri Lanka, EDPs have been implemented through a wide array of institutions such as the National Enterprise Development Authority (NEDA), Small Enterprise

Development Division (SEDD), Department of Agriculture, Department of Export Agriculture, and regional authorities. These agencies have introduced diverse interventions, including skill development, financial assistance, input subsidies, market access facilitation, and infrastructural support. For instance, NEDA and SEDD have conducted capacity-building programmes targeting business planning, financial literacy, digital marketing, and technical production skills. Concurrently, Programmes such as the Enterprise Sri Lanka initiative were designed to improve financial inclusion through subsidized loan schemes, particularly for youth and women entrepreneurs.

Despite the breadth of these initiatives, empirical evidence suggests that the effectiveness of EDPs has been uneven and heavily influenced by contextual factors. The literature review highlighted that many agro-entrepreneurs, particularly in rural districts, struggled to achieve sustainable operations even after programme participation (Kumarasinghe, 2017). Structural challenges such as limited institutional coordination, fragmented policy objectives, and a lack of programmatic integration have impeded outcomes. Moreover, EDPs often function in isolation, with limited synergy between training components, financial assistance, and follow-up mechanisms, thereby weakening the holistic support required for entrepreneurial progression (Gunawardana and Bandara, 2021).

Several studies have underscored the importance of aligning programme content with local entrepreneurial needs. For example, Gunawardana and Bandara (2021) found that while training initiatives improved knowledge, they often failed to translate into business sustainability due to a lack of mentoring and access to follow-up capital. Similarly, Anjalee and Perera (2023) demonstrated that many micro-enterprises in the agro-processing sector discontinued operations within two years, despite participation in state-led training programmes, pointing to gaps in implementation and post-training support.

In addition to local evaluations, comparative insights from South Asia reinforce the need for integrated EDP models. In Bangladesh and India, EDPs that adopted an ecosystem-based approach that integrates capacity development with infrastructure, finance, and market facilitation have demonstrated stronger outcomes in enterprise survival and scaling (Tripathi et al., 2020; Biswas and Roy, 2017). These models emphasize continuous support, adaptive mentoring, and localized beneficiary selection mechanisms. Nevertheless, those elements have often been weak or absent in the Sri Lankan EDP landscape.

It is evident that EDP interventions in different areas or across different institutes or different programmes varied widely in terms of depth and delivery. While some programmes provided equipment grants and certification support, others offered basic awareness training with minimal follow-up. A particularly notable limitation across all districts was the lack of structured progression models, where entrepreneurs are systematically supported through stages of business growth. Moreover, limited market intelligence and a lack of business advisory services further constrained entrepreneurs' ability to adapt and compete in dynamic markets.

Another critical dimension concerns the selection of beneficiaries and the strategic targeting of interventions. Evidence from programme implementers suggested that support was often directed toward existing entrepreneurs with some operational history, whereas potential first-time entrepreneurs received less attention due to perceived risk. While this risk-aversion may be justified in resource-constrained settings, it contradicts the inclusive ethos of many national policy documents that prioritize youth and first-time entrants into agriculture and enterprise.

From a policy perspective, the lack of coherence and standardization in programme design and monitoring has weakened the impact of EDPs. Although government policy frameworks such as the "Vistas of Prosperity and Splendour" (2020) and subsequent national budgets have prioritized entrepreneurship as a pillar of development, the operationalization of these priorities at the programme level has remained fragmented (Gunawardana and Bandara, 2021; Siriwardena, 2024).

Therefore, while EDPs hold considerable potential for enhancing rural entrepreneurship and agro-based enterprise sustainability, their effectiveness hinges on structural and functional reforms. These include stronger institutional coordination, the development of progression-based support models, improved targeting and inclusivity in beneficiary selection, and embedding robust monitoring and evaluation mechanisms. By focusing on the structural-functional dimensions of EDPs and their influence on agro-startup sustainability, this study contributes to addressing a critical empirical and policy gap in the Sri Lankan context.

2.5. Agro-Entrepreneurship in Developing Countries

The role of agro-entrepreneurship as a strategic lever for rural economic development has gained significant attention in development literature, particularly in the context of emerging economies. Agriculture, while traditionally associated with subsistence and low-value production, it is increasingly recognized for its entrepreneurial potential, especially when integrated with value-addition, innovation, and market linkages. In many developing countries, including Sri Lanka, the transformation of conventional agriculture into agro-based enterprises is viewed not only as a means of enhancing rural incomes but also as a strategy for promoting employment, reducing poverty, and strengthening food security (Gunawardana and Bandara, 2021; Bandara et al., 2024).

In South Asia, the discourse on agro-entrepreneurship is closely linked to broader concerns related to rural transformation, climate resilience, and youth unemployment. Empirical studies conducted in India and Bangladesh have demonstrated that rural entrepreneurship, when supported through structured programmes and institutional linkages, can lead to significant improvements in productivity and household well-being (Hossain et al., 2019). These findings align with Sri Lanka's own developmental objectives, where the need to modernize agriculture and engage youth in productive livelihoods has been highlighted in multiple policy

frameworks including the “Vistas of Prosperity and Splendour” and more recent post-crisis national recovery strategies (Gunawardana and Bandara, 2021).

Despite the strategic emphasis, agro-entrepreneurship in Sri Lanka continues to face a complex set of challenges. These include weak infrastructure, fragmented supply chains, limited access to credit, and inadequate technical knowledge (Central Bank of Sri Lanka, 2021; Anjalee and Perera, 2023). Environmental factors such as climate volatility, prolonged droughts, and irregular rainfall patterns further aggravate the vulnerability of agro-based startups. According to Wijerathna et al. (2013), many rural enterprises fail to sustain operations beyond the initial two to three years, primarily due to their dependence on a narrow range of markets and production systems.

Institutional constraints significantly influence the trajectory of agro-entrepreneurs. Studies by Elapata et al. (2023) highlight the importance of coordinated institutional support in enabling rural enterprises to grow. However, in practice, the entrepreneurship ecosystem in Sri Lanka remains fragmented, with limited convergence between training, financing, infrastructure, and market development services. The lack of a harmonized approach often leaves entrepreneurs unsupported beyond the initial startup phase, restricting their ability to scale operations or innovate within their sectors.

Another dimension that emerges strongly in the literature is the interplay between individual entrepreneurial traits and the broader enabling environment. Factors such as risk tolerance, innovativeness, and autonomy are critical to entrepreneurial performance, but they require reinforcement through appropriate policy and institutional mechanisms (Zhao and Seibert, 2006). Agro-based entrepreneurs, in particular, benefit from context-specific support systems that not only provide resources but also build their capacity to navigate regulatory processes, adopt new technologies, and access premium markets. The lack of such sustained support in rural Sri Lanka has been cited as a major limitation in existing Entrepreneurship Development Programmes (EDPs), many of which focus disproportionately on one-time training or finance without ensuring sustained mentorship or follow-up (Gunawardana and Bandara, 2021; Elapata et al., 2023).

Gender and youth inclusion remain critical gaps in the agro-entrepreneurship landscape. While national strategies have highlighted the need to engage women and young people in agricultural entrepreneurship, actual participation remains low due to cultural barriers, limited mobility, and unequal access to resources (Bandara et al., 2024). This situation calls for a rethinking of intervention strategies, particularly in terms of tailoring EDPs to better address the unique needs and aspirations of these groups.

Finally, recent literature underscores the growing importance of aligning agro-entrepreneurship with sustainability goals. This encompasses not only environmental sustainability through the adoption of climate-smart agricultural practices, but also economic and institutional sustainability. Sustainable agro-enterprises are those that

can withstand market shocks, maintain compliance with regulatory standards, and adapt to technological changes. The role of EDPs in fostering such capabilities remains underexplored in the Sri Lankan context and thus warrants rigorous empirical attention (Perera and Nag, 2019).

Overall, while global literature supports the premise that agro-entrepreneurship can be a transformative force in rural economies, its realization depends heavily on the design and implementation of contextually grounded, structurally coherent, and functionally integrated development programmes. This study aims to contribute to this discourse by evaluating the extent to which EDPs in Sri Lanka have catalysed sustainable agro-based entrepreneurship through effective support mechanisms and institutional coordination.

2.6. Structural and Functional Attributes of Entrepreneurship Development Programmes (EDPs)

The structural and functional design of Entrepreneurship Development Programmes (EDPs) plays a crucial role in determining their effectiveness, especially within the nuanced socio-economic contexts of developing countries like Sri Lanka. Structurally, EDPs encompass the organizational frameworks, institutional arrangements, and resource allocations that underpin programme implementation. Functionally, they involve the operational mechanisms, service delivery modalities, and stakeholder interactions that drive programme outcomes. A comprehensive understanding of these attributes is essential to assess the capacity of EDPs to foster sustainable entrepreneurial ecosystems.

In Sri Lanka, the structure of EDPs is characterized by a multiplicity of actors operating across various administrative levels. Key institutions such as the National Enterprise Development Authority (NEDA), Industrial Development Board (IDB), and Small Enterprise Development Division (SEDD) spearhead initiatives aimed at enhancing entrepreneurial capacities. These agencies offer a spectrum of services, including training, financial assistance, market facilitation, and infrastructural support. For instance, NEDA's Regional Enterprise Development Programme focuses on addressing constraints faced by Micro, Small, and Medium-sized Enterprises (MSMEs) through capacity development trainings and financial assistance at the regional level.

However, the decentralized nature of these programmes often leads to overlapping mandates and fragmented service delivery. The lack of a centralized coordinating mechanism hampers the harmonization of objectives and the efficient allocation of resources. This institutional fragmentation is further exacerbated by the absence of standardized monitoring and evaluation frameworks, making it challenging to assess programme effectiveness comprehensively.

Functionally, EDPs in Sri Lanka have traditionally emphasized on skill development and capacity building. Training modules often cover areas such as managerial skills, marketing, financial management, and export procedures. While these interventions

are crucial, their effectiveness depends on the relevance of the content to the local entrepreneurial context and the provision of follow-up support. Gunawardana and Bandara (2021) highlight that while training initiatives have improved knowledge levels among entrepreneurs, the lack of sustained mentorship and access to finance has limited the translation of this knowledge into tangible business growth.

Moreover, the functional effectiveness of EDPs is influenced by the adaptability of programmes to the dynamic needs of entrepreneurs. The incorporation of digital literacy and e-commerce training, as seen in IDB's initiatives, reflects an acknowledgment of the evolving business landscape. However, ensuring the scalability and sustainability of such interventions requires continuous assessment and alignment with market trends.

The integration of participatory evaluation mechanisms can enhance the responsiveness of EDPs. Engaging stakeholders, including beneficiaries, in the evaluation process ensures that programmes are attuned to the actual needs and challenges faced by entrepreneurs. Such approaches foster a sense of ownership among participants and can lead to more effective and sustainable outcomes.

Internationally, the structural and functional attributes of EDPs have been extensively studied. Michael and Pearce (2009) emphasize the crucial role of government in regulating and coordinating enterprise-support institutions to prevent functional overlaps and ensure coherent service delivery. Their framework suggests that a centralized agency responsible for overseeing EDPs can enhance coordination and reduce redundancies.

In conclusion, the structural and functional attributes of EDPs in Sri Lanka present both opportunities and challenges. While the presence of multiple institutions reflects a commitment to entrepreneurship development, the lack of coordination and standardized evaluation mechanisms undermines programme effectiveness. Functionally, while training and capacity-building initiatives remain essential, their success hinges on relevance, adaptability, and the provision of comprehensive support services. Addressing these structural and functional gaps is imperative for the realization of sustainable entrepreneurial ecosystems in Sri Lanka.

2.7. Challenges in the Implementation of Entrepreneurship Development Programmes (EDPs) in Sri Lanka

Despite the strategic emphasis placed on Entrepreneurship Development Programmes (EDPs) as catalysts for economic growth and employment generation in Sri Lanka, their implementation has encountered multifaceted challenges that hinder their effectiveness. These challenges span structural, institutional, socio-cultural, and financial domains, reflecting both systemic issues and contextual nuances unique to the Sri Lankan entrepreneurial landscape.

A predominant structural challenge is the fragmentation and lack of coordination among the myriad of institutions involved in entrepreneurship promotion. With approximately 50 government agencies tasked with supporting entrepreneurs, overlapping mandates and duplicative efforts have led to inefficiencies and resource wastage. This institutional disarray not only confuses potential entrepreneurs but also weakens the impact of well-intentioned programmes.

Financial constraints remain a significant impediment to the success of EDPs. Access to capital is a persistent issue, particularly for small and medium-sized enterprises (SMEs) and youth entrepreneurs. Traditional financial institutions often impose stringent collateral requirements and high-interest rates, making it difficult for nascent entrepreneurs to secure necessary funding. Moreover, the lack of alternative financing mechanisms, such as venture capital and angel investors, further exacerbates this challenge.

Socio-cultural factors also play a critical role in shaping the entrepreneurial ecosystem. Prevailing societal attitudes in Sri Lanka often favour stable, salaried employment over entrepreneurial ventures. This cultural predisposition is reinforced by familial expectations and educational systems that prioritize conventional career paths. Consequently, entrepreneurship is frequently viewed as a last resort rather than a viable and prestigious career option.

The educational infrastructure in Sri Lanka has yet to effectively integrate entrepreneurship into its curricula. While initiatives have been made to introduce entrepreneurial studies, these efforts often lack practical orientation and fail to instil the necessary skills and mindset required for successful entrepreneurship. The disconnect between academic instruction and real-world entrepreneurial demands limits the preparedness of graduates to embark on entrepreneurial endeavours.

Furthermore, the regulatory environment poses significant challenges. Bureaucratic red tape, complex procedures for business registration, and inconsistent policy implementation create barriers to entry and discourage entrepreneurial activity. The protracted timeframes and administrative burdens associated with starting and operating a business in Sri Lanka undermine the objectives of EDPs aimed at fostering a conducive environment for entrepreneurship.

Gender disparities in entrepreneurship also highlight the limitations of current EDPs. Women entrepreneurs face unique challenges, including limited access to finance, societal expectations, and inadequate support systems. Initiatives like the *Amba Yaalu* resort, entirely staffed and managed by women, underscore the potential for targeted programmes to empower women in entrepreneurship. However, such examples remain exceptions rather than the norm, indicating a need for more inclusive and gender-sensitive EDPs.

In summary, the implementation of EDPs in Sri Lanka is impeded by a confluence of structural inefficiencies, financial barriers, socio-cultural biases, educational

shortcomings, and regulatory obstacles. Addressing these challenges requires a holistic approach that encompasses institutional reform, financial innovation, cultural reorientation, educational enhancement, and regulatory simplification to create a robust and inclusive entrepreneurial ecosystem.

2.8. Entrepreneurial Performance and Influencing Factors

Entrepreneurial performance is a complex and multidimensional concept, particularly in the context of agro-based startups in developing economies such as Sri Lanka. It is influenced by a blend of individual psychological traits, demographic characteristics, and the broader institutional and environmental setting. This section synthesizes existing research on the key factors that determine entrepreneurial performance and sustainability outcomes in rural entrepreneurial contexts, with a specific focus on agro-enterprises.

2.8.1. Entrepreneurial Traits

Several psychological traits have been consistently linked with entrepreneurial performance. Among these, entrepreneurial intention plays a foundational role, reflecting an individual's commitment and readiness to engage in entrepreneurial activities. Ajzen's (1991) Theory of Planned Behaviour defines intention as a product of attitudes, subjective norms, and perceived behavioural control variables that shape entrepreneurial action.

Autonomy is another important trait, reflecting an entrepreneur's preference for independence and self-governance. Entrepreneurs with a strong sense of autonomy tend to demonstrate stronger decision-making capacity and persistence in uncertain environments (Lumpkin and Dess, 1996). Similarly, innovativeness, which refers to the tendency to pursue novel solutions, products, or processes, is widely acknowledged as a driver of competitive advantage and venture sustainability (Zhao and Seibert, 2006; Islam et al., 2011).

Risk-taking propensity**,** defined as the willingness to engage in ventures with uncertain outcomes, is also positively associated with entrepreneurial performance. Risk-tolerant entrepreneurs are more likely to seize unexploited opportunities and persist through adversity (Simpeh, 2011). These traits collectively shape entrepreneurial behaviour and were included as key moderating variables in this study's conceptual model.

2.8.2. Individual Factors

Demographic and experiential characteristics also influence entrepreneurial outcomes. Age, for instance, has been shown to influence entrepreneurial orientation, with younger individuals generally exhibiting higher levels of risk tolerance and openness to innovation (MacKenzie and Woodruf, 2017). In contrast, older

entrepreneurs may bring industry-specific knowledge and managerial experience that contribute to long-term stability.

Gender also plays a significant role in shaping entrepreneurial experiences. In many developing countries, including Sri Lanka, structural and cultural barriers often constrain women's participation in entrepreneurship, affecting their access to credit, markets, and decision-making power (Boudreaux and Nikolaev, 2018). Despite these constraints, research also highlights the resilience and adaptive strategies of women entrepreneurs when supported by targeted interventions (Anjalee and Perera, 2023).

Educational attainment equips entrepreneurs with the cognitive and technical skills necessary for effective business management. Higher levels of education are positively associated with improved business planning, innovation, and market navigation (Barba-Sánchez et al., 2022). Likewise, prior business experience enhances entrepreneurial capabilities through accumulated knowledge, established resource networks, and lessons learned from past failures (Zhao and Seibert, 2006).

2.8.3. External Influences

Entrepreneurial performance does not occur in isolation; it is deeply embedded within institutional and ecosystem contexts. Access to institutional support, including government programmes, financial services, and business advisory services, is a major determinant of startup success. Effective support systems improve entrepreneurs' ability to access credit, gain certifications, and navigate regulatory environments (Gunawardana and Bandara, 2021).

Social and professional networks offer entrepreneurs with access to resources, mentorship, and market information. Entrepreneurs embedded in strong networks are more likely to identify opportunities and mobilize support for venture creation and expansion (Batjargal, 2007). In rural Sri Lanka, where formal infrastructure is often limited, informal networks often substitute for institutional gaps, especially in credit and information flows (Bandara et al., 2024).

The external environment, including macroeconomic conditions, cultural values, and regulatory stability, also plays a critical role in shaping entrepreneurial behaviour and performance. An enabling environment that fosters innovation, rewards initiative, and minimizes bureaucratic hurdles has been found to significantly boost entrepreneurial activity and sustainability (Isenberg, 2011; Perera and Nag, 2019).

Together, these individual and institutional factors create a complex ecosystem that determines the trajectory of entrepreneurial ventures. Recognizing and integrating these variables into EDP design and evaluation is essential for enhancing the effectiveness of interventions aimed at agro-based startups in Sri Lanka.

2.9. Synthesis and Conceptual Model

Building on the extensive literature reviewed, this study proposed a comprehensive conceptual model to understand the mechanisms through which Entrepreneurship Development Programmes (EDPs) influence the sustainability of agro-based startups in Sri Lanka. The model integrates three interrelated domains: EDP Structure and Function**,** Entrepreneurial Support Mechanisms**,** and Startup Sustainability Outcomes. Each domain comprises critical variables identified through theoretical insights and empirical studies, particularly those relevant to developing contexts and rural entrepreneurship ecosystems.

2.9.1. EDP Structure and Function

This domain captures the institutional design and operational characteristics of the EPDs. It includes:

- Structural Aspects: Policy alignment, institutional mandates, inter-agency coordination.
- Functional Aspects: Types of support provided (e.g., training, finance, mentoring), implementation quality, duration and intensity of interventions, targeting criteria.
- Programme Delivery Modalities: Standardization, progression pathways, integration of monitoring and evaluation mechanisms (Gunawardana and Bandara, 2021; Michael and Pearce, 2009).

2.9.2. Entrepreneurial Support Mechanisms

These variables act as intermediate enablers that translate EDP inputs into behavioural change and business outcomes. Key mechanisms include:

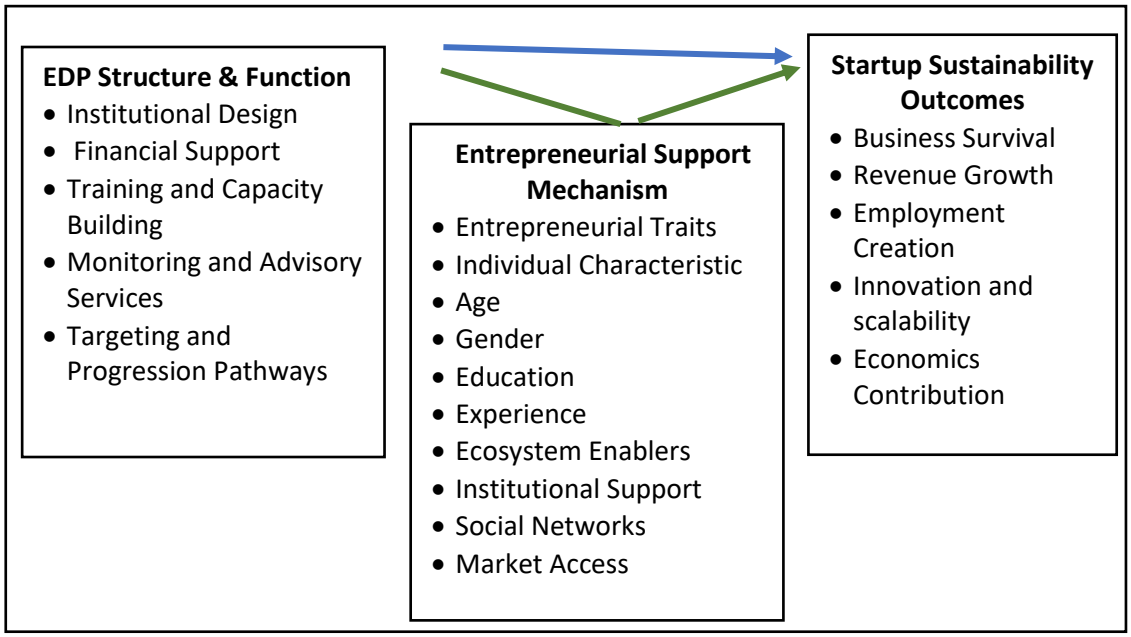
- Entrepreneurial Traits: Intention, autonomy, innovativeness, proactiveness, risk-taking (Islam et al., 2011; Silva and Nishantha, 2023).
- Individual Characteristics: Age, gender, education, prior experience (Zhao and Seibert, 2006).
- Support Ecosystem Variables: Institutional recognition, access to networks, market information, business advisory services (Isenberg, 2011; Theodoraki, 2024).

2.9.3. Startup Sustainability Outcomes

The final domain includes the outcome variables that define the sustainability and progression of agro-based startups:

- Operational Performance: Profitability, revenue growth, employment generation, business survival (Anjalee and Perera, 2023).
- Strategic Outcomes: Market adaptation, scalability, innovation capacity, formalization of business practices.
- Long-Term Impact: Economic resilience, rural livelihood diversification, contribution to national development goals.

These three domains are linked through hypothesized causal pathways, which were empirically tested using Structural Equation Modelling (SEM). The model recognizes both direct effects (e.g., financial assistance improving startup survival) and indirect effects (e.g., mentoring enhancing self-efficacy, which in turn improves profitability).



Source: Author's compilation based on literature

Figure 2.1: Theoretical Conceptual Framework

Chapter Three
Methodology

3.1 Overview of the Research Design

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to evaluate the impact of government-assisted Entrepreneurship Development Programmes (EDPs) on the sustainability of agro-based startups in Sri Lanka. The rationale for this methodological choice stems from the need to capture the multifaceted nature of entrepreneurship development interventions and the complex set of factors that influence startup sustainability. Mixed-methods research is particularly suited for addressing questions that require both breadth and depth of understanding, enabling the researcher to triangulate findings and draw nuanced conclusions (Sharma and Mathur, 2022; Kodithuwakku and Weerakoon, 2020).

The study was underpinned by theoretical constructs drawn from entrepreneurship behavioural theory (Schumpeter, 1934; Ajzen, 1991), programme evaluation frameworks such as the Logic Model and Structure-Function-Outcome (SFO) model (Sharma and Mathur, 2022), and the entrepreneurial ecosystem framework (Isenberg, 2011). These frameworks provided a robust analytical lens for examining how institutional support mechanisms, entrepreneurial characteristics, and environmental factors interact to influence business sustainability outcomes. While various EDPs in Sri Lanka have been supported by private and international development agencies (e.g., USAID, ADB, World Bank), this study focused exclusively on government-funded EDPs to maintain alignment with national development policy evaluations and implementation practices (Elapata et al., 2023).

3.2 Operationalization of Objectives and Analytical Methods

To ensure analytical rigor and alignment with research objectives, the following table summarizes the operationalization of each specific objective, the data sources utilized, and the analytical methods employed:

Table 3.1: Objective Operationalization

Objective	Data Sources	Analytical Method
To understand the effect of entrepreneurship development interventions on the success and sustainability of agro-based small enterprises	Primary data (questionnaire survey, KIIs), secondary literature	Descriptive statistics and Structural Equation Modeling (SEM) to identify direct and indirect effects
To evaluate and identify salient structural and functional features in selected government-assisted EDPs	Key Informant Interviews (KIIs), secondary documents	Directed content analysis using a deductive approach based on literature (Priyanath and Premaratne, 2014)
To provide suggestions and guidelines for designing effective assistance programmes	Case studies, qualitative synthesis of survey and interview data	Triangulated descriptive and thematic analysis

3.3 Study Locations and Sample Selection

3.3.1 Selection of Study Locations

The geographic scope of the study encompassed six districts: Kurunegala, Nuwara Eliya, Badulla, Hambantota, Kegalle and Matale. These districts were purposively selected due to their agro-climatic diversity, high concentration of government-supported agro-enterprises, and representation of both crop-based and livestock-based industries. The selection was intended to capture a wide range of agro-entrepreneurial contexts. Importantly, the structural and administrative frameworks for implementing EDPs were relatively homogeneous across these districts, providing a level of comparability across regions while retaining operational diversity through enterprise types and environmental contexts (Gunawardana and Bandara, 2021).

The study focused on programmes implemented by five government institutions:

- Department of Agriculture (DOA)
- Small Enterprise Development Division (SEDD)
- National Enterprise Development Authority (NEDA)
- Department of Export Agriculture (DEA)
- Central Bank of Sri Lanka (CBSL)

In addition, specialized units operating under the DOA, such as the Southern Provincial Entrepreneurship Development Unit and the Agribusiness and Agro-entrepreneur Development Division, were included due to their direct focus on promoting agro-enterprise and their alignment with national rural development agendas.

3.3.2 Sampling Strategy

The study employed a stratified random sampling technique to ensure proportional representation across institutions and districts. The sampling frame was developed based on EDP beneficiary lists provided by the selected institutions. The respondents were agro-based entrepreneurs who had participated in EDPs within the past three years (i.e from 2020/21 to 2022/23).

Initial sample frames underwent screening to exclude ineligible or unreachable beneficiaries, as many listed participants were either inactive, unreachable, or had exited their businesses by the time of contact. The sample was then stratified according to institution and district to maintain proportional representation. The final sample comprised 308 respondents, selected using Cochran's formula for sample size determination. Proportional allocation was applied based on the total number of registered entrepreneurs under each programme in each district.

Table 3.2: Distribution of Study Sample

Institute	Total entrepreneurs	Eligible sample frame	Data collected sample	% Interviewed
DOA	995	180	98	54%
SEDD	386	174	93	53%
NEDA	167	94	44	47%
CBSL	106	52	31	60%
DEA	125	72	42	58%
Total			**308**	

3.4 Data Collection Tools and Techniques

Primary and secondary data were collected through a range of methods tailored to the objectives of the study.

3.4.1 Secondary Data

Institutional documents, government reports, and prior evaluations were reviewed to map structural elements of the selected EDPs and benchmark them against global best practices.

3.4.2. Primary Data

- **Structured Questionnaire Survey:** A semi-structured questionnaire was designed and pre-tested prior to full deployment. It included Likert-scale items to assess entrepreneurs' perceptions on business performance (e.g., changes in sales, employment, and profits), characteristics of support received, and individual entrepreneurial attributes (Ajzen, 1991; Islam et al., 2011).

- **Key Informant Interviews (KIIs):** Interviews were conducted with programme officers, district-level administrative staff, and resource persons involved in implementing the EDPs. These provided qualitative insights into the institutional logic, implementation strategies, and the perceived strengths and weaknesses of each programme.

3.5 Analytical /Conceptual Framework

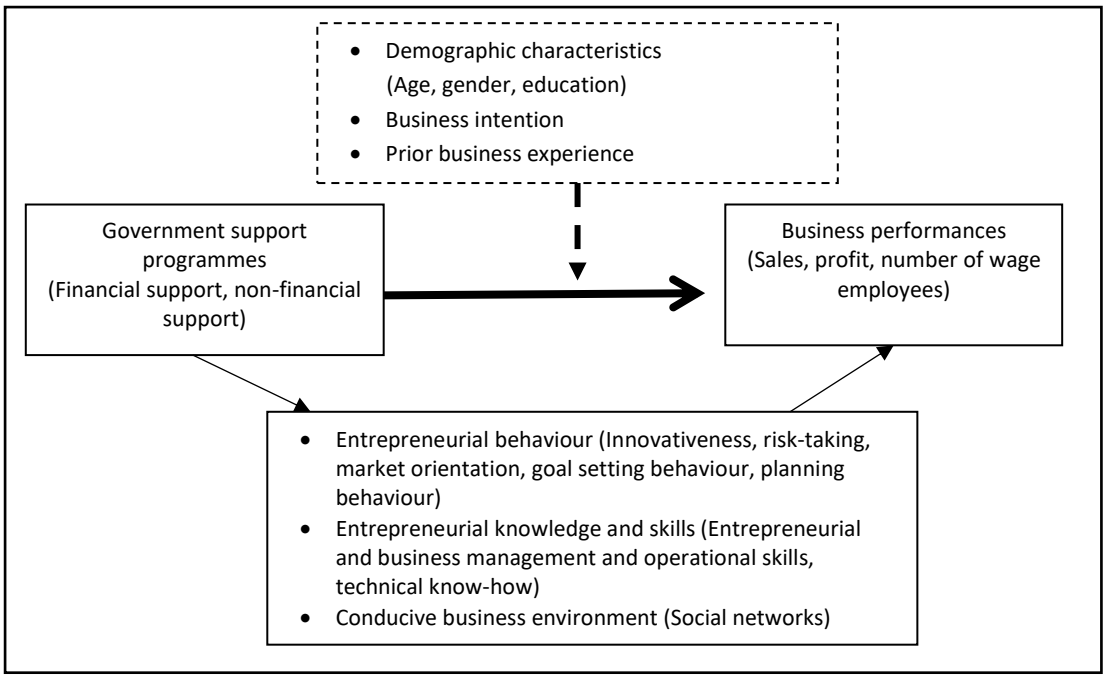
The conceptual model for the study drew from entrepreneurship theory, programme evaluation models, and ecosystem perspectives. It was designed to capture the interrelationships among the following domains;

- **Entrepreneurial Traits:** Autonomy, innovativeness, risk-taking, proactiveness, prior business experience, and behavioural traits such as competitive aggressiveness and entrepreneurial knowledge (Islam et al., 2011; Silva and Nishantha, 2023).

- **EDP Characteristics:** Type of assistance (financial/non-financial), programme duration, training content, stakeholder involvement, institutional recognition, and targeting mechanisms (Elapata et al., 2023).

- **External Environment:** Availability of market information, access to business networks, institutional coordination, regulatory support, and recognition from stakeholders (Gunawardana and Bandara, 2021).

- **Startup Sustainability:** Operational continuity, business performance (growth in sales, profit, and employment), formalization, and potential for scaling (Wijerathna et al., 2013).



Source: Author's compilation based on literature

Figure 3.1: Analytical /Conceptual Framework

This framework informed the development of the SEM model in the analytical process.

3.6 Data Analysis Techniques

3.6.1 Objective 1: Assessing the Impact on Startup Sustainability

Structural Equation Modelling (SEM) was used to assess the relationship between EDP interventions and business sustainability outcomes. SEM enables the estimation of direct and indirect relationships among multiple latent and observed variables (Islam et al., 2011). Dependent variables included business performance indicators such as sales growth /profitability growth, and employment generation. Independent variables represented the type and intensity of support provided through EDPs. Moderating variables included entrepreneurial traits, demographic attributes (such as age, gender, prior experience), and enabling environmental factors (such as institutional linkages, training relevance, and business registration status).

Detailed information on variable descriptions, assigning values for individual variable, computation of composite variables and model building can be found in chapter five and seven under respective sub-sections.

3.6.2 Objective 2: Analysing Structural and Functional Modalities of EDPs

A qualitative approach was used to examine the programmatic features of the EDPs. This deductive method is suitable for evaluating qualitative data against a pre-defined

set of variables drawn from empirical literature (Priyanath and Premaratne, 2017). Key dimensions assessed included: Clarity of programme objectives and policy alignment

- Definition of entrepreneurship within programme documentation
- Beneficiary selection mechanisms and transparency
- Nature, duration, and relevance of training modules
- Support delivery structure (grants, advisory services, mentoring)
- Post-training follow-up and monitoring systems
- Stakeholder engagement and network-building assistance
- Inter-agency coordination and standardization mechanisms

3.6.3 Objective 3: Developing Recommendations

Recommendations were derived through triangulation of results from SEM analysis, KII themes, descriptive insights from the survey, and qualitative synthesis of case study evidence. This integrated approach ensured that the proposed guidelines addressed both statistical patterns and practical constraints in programme implementation, offering well-grounded suggestions for the development of more coherent and context-responsive EDP frameworks in Sri Lanka.

3.7 Ethical Considerations

The study adhered to ethical standards applicable to social research. Verbal informed consent was obtained from all participants prior to data collection. They were briefed on the purpose of the study, confidentiality of responses, and their right to withdraw at any time. Ethical clearance was secured from the relevant institutional review board.

3.8 Limitations

While efforts were made to ensure rigor, the study encountered several limitations:

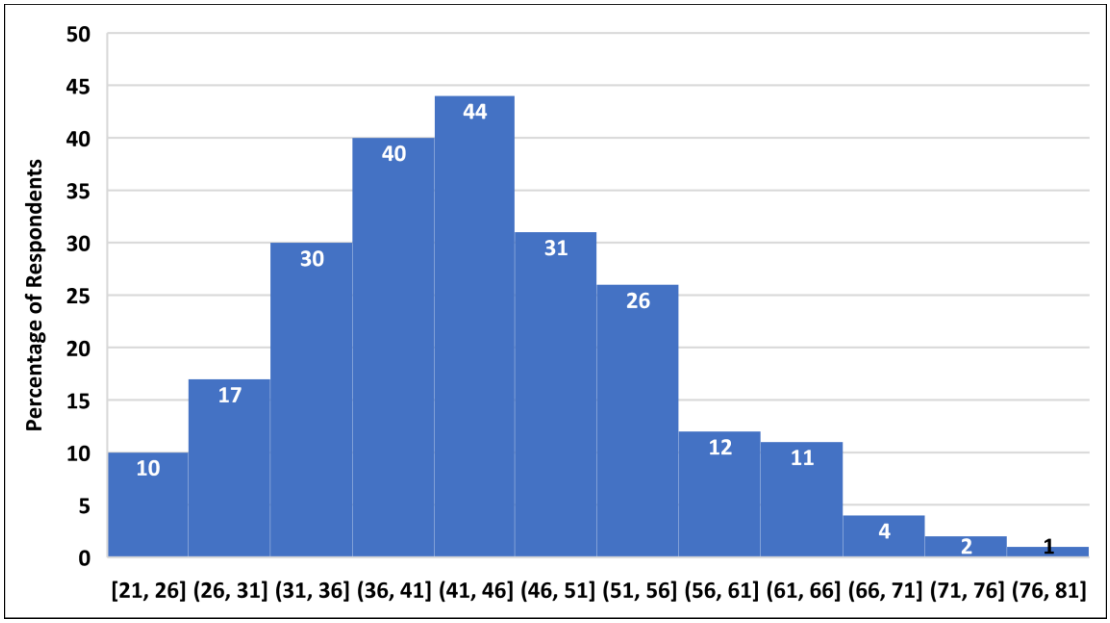
- Institutional data were often outdated or incomplete
- Some beneficiaries were non-responsive or had discontinued operations
- Attribution of success exclusively to EDPs was difficult due to external contextual influences These limitations were addressed by employing data triangulation, increasing sample heterogeneity, and verifying findings across multiple data sources.

As a key limitation of this study lies in attributing entrepreneurial outcomes exclusively to EDP interventions, given the prevailing macro-economic instability during the study period. Factors such as inflationary pressures, market volatility, and credit constraints may have independently influenced enterprise performance. While SEM enables robust testing of relational pathways, the results should be interpreted as structured associations rather than deterministic causal effects**.**

Chapter Four
Socio-Economic Profile of Agro-Entrepreneurs

4.1 Demographic Characteristics

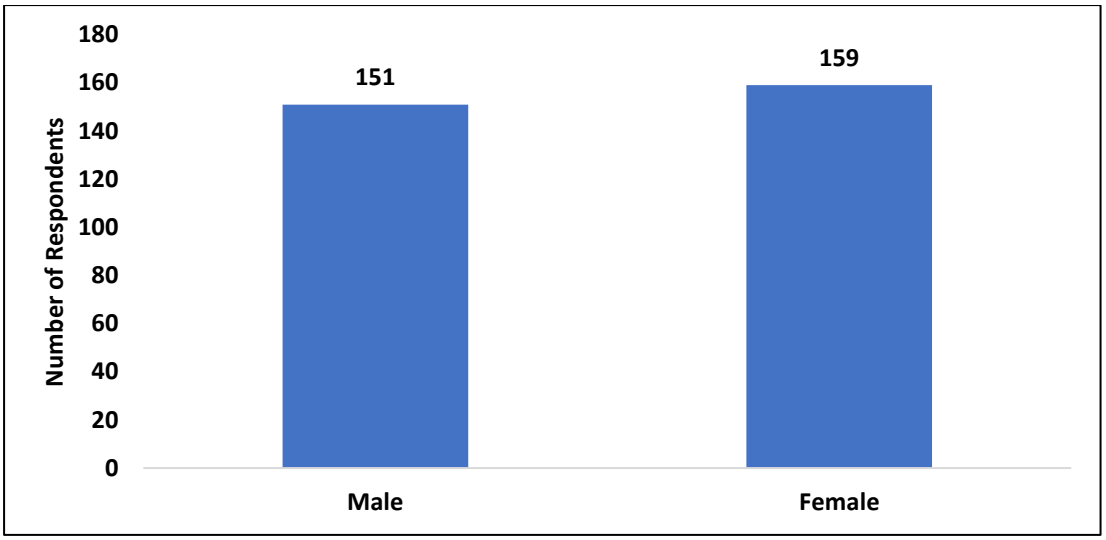
Understanding the demographic composition of agro-entrepreneurs is crucial for designing inclusive and effective development programmes. The sample consisted of individuals from diverse age groups, with a noticeable concentration in the range of 25 to 45 years. This indicates that a substantial portion of participants were in their prime working years, a demographic known for its energy, adaptability, and potential to benefit from entrepreneurship development programmes (EDPs). However, the involvement of older participants also suggests the need for differentiated support structures that address varying life-stage needs, particularly regarding risk tolerance and learning preferences (Islam et al., 2011). As shown in Figure 4.1, the age distribution skews slightly younger, suggesting opportunities for more targeted youth-oriented interventions.



Source: HARTI survey data, 2024

Figure 4.1: Age Distribution of Respondents

The gender distribution showed a moderately balanced participation, with a slight predominance of female entrepreneurs. This aligns with a growing trend of women's involvement in rural micro-enterprises in Sri Lanka. However, despite increased visibility, female entrepreneurs often face structural barriers such as limited mobility, weaker access to credit, and time poverty due to unpaid care responsibilities (Anjalee and Perera, 2023). These findings emphasize the need for gender-sensitive design in support programmes, particularly those aimed at business expansion, technological upgrading, and market linkage. Figure 4.2 illustrates the gender composition.

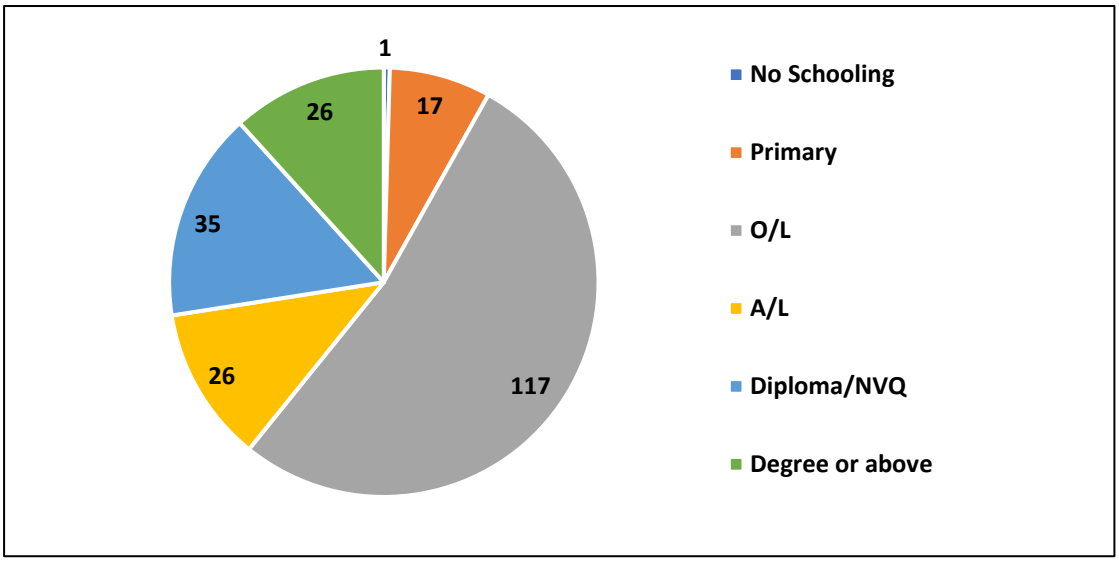


Source: HARTI survey data, 2024

Figure 4.2: Gender Distribution of Respondents

4.2 Educational Background and Skills Readiness

The educational background of the respondents was diverse, with a majority having completed secondary education and a smaller subset possessing post-secondary or vocational training. While this reflects a relatively literate entrepreneur base, formal education alone does not guarantee entrepreneurial readiness. Several studies, including Silva and Nishantha (2023), highlight that experiential learning and entrepreneurial exposure are more predictive of success than academic qualifications alone. Furthermore, the limited number of participants with specialized training in business management or ICT underscores the gap in practical skills development, particularly in areas such as digital literacy and market intelligence. Figure 4.3 depicts the distribution of educational attainment among participants.

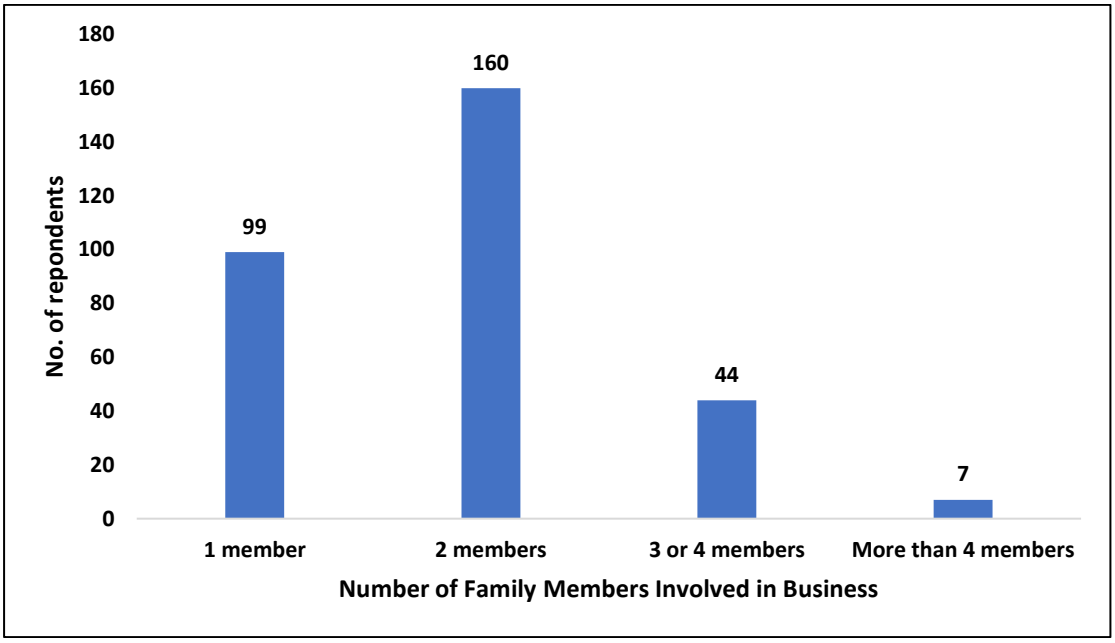


Source: HARTI survey data, 2024

Figure 4.3: Educational Background of Respondents

4.3 Household and Business Involvement

Most agro-enterprises examined in the study were micro-level, household-run initiatives. A significant proportion of participants reported that fewer than two members of the household were engaged in the enterprise. This indicates a limited labour pool, which can constrain business expansion, diversification, or continuity during periods of illness or seasonal migration. In addition, micro-scale enterprises are highly vulnerable to external shocks and often lack operational redundancy. Figure 4.4 illustrates the number of household members involved in the enterprise.



Source: HARTI survey data, 2024

Figure 4.4: Family Members Involved in Business

4.4 Previous Employment and Business Experience

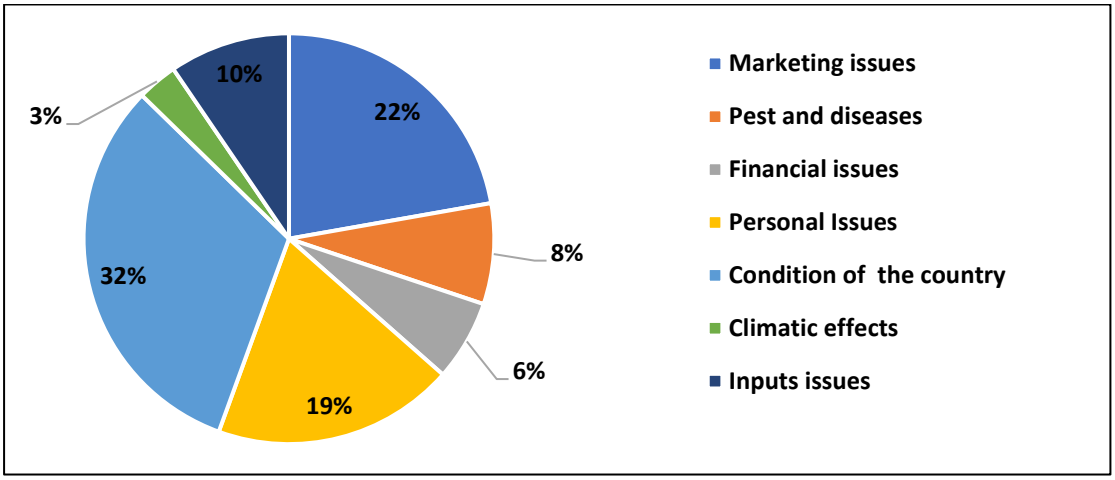
The majority of respondents had engaged in some form of employment or entrepreneurial activity prior to their current venture (Table 4.1). About 68% of the respondents reported having prior employment before entering into agro-entrepreneurship, suggesting that for many, entrepreneurship represented a career shift rather than a first-time economic activity. Notably, 45% of respondents reported prior involvement in businesses activities. Of these, 40% had operated their own businesses, while 6% had served in managerial or employee roles within other enterprises. In contrast, the majority of the respondents had not engaged in any business activity before their current venture. Findings from Zhao and Seibert (2006) emphasize prior business exposure as a key predictor of entrepreneurial resilience and decision-making maturity.

Table 4.1: Employment and Business Experience of Respondents

Prior Experience	Yes	No
Done previous job	211 (68%)	99 (32%)
Holds business experience	140 (45%)	170 (55%)
Had own business	121 (39%)	
Partnered in business	4 (1%)	
Employed in business	15 (5%)	

Source: HARTI survey data, 2024

However, among those with prior business experience, 56% reported that their past enterprises were success, while 44% experienced failures, often attributed to limited market access, capital shortages, or operational inefficiencies (Figure 4.5).

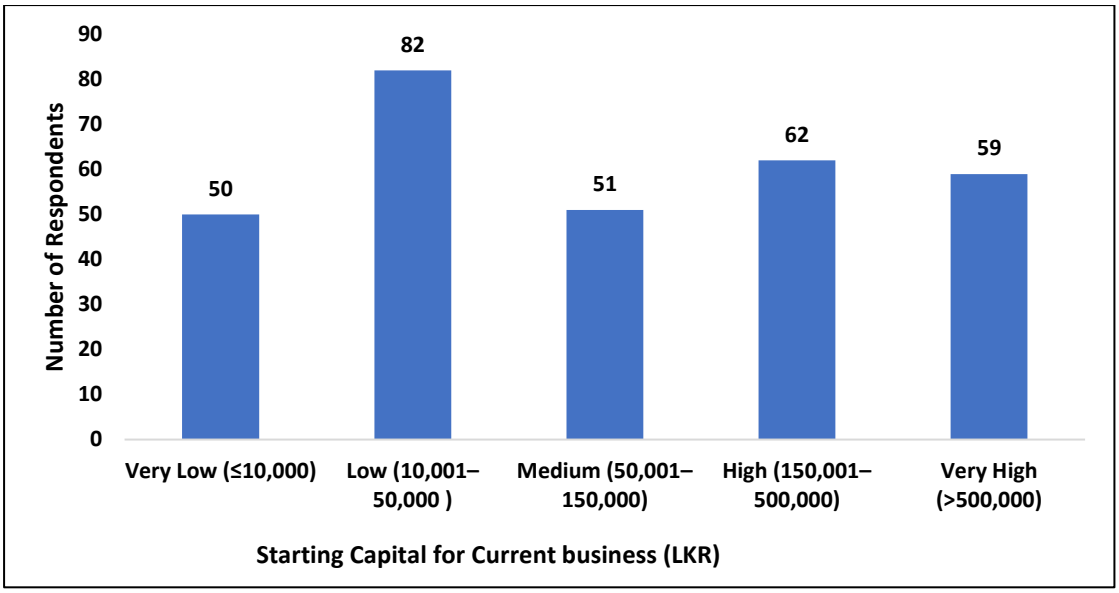


Source: HARTI survey data, 2024

Figure 4.5: Cause of Previous Business Failures

4.5 Startup Capital and Reinvestment Practice

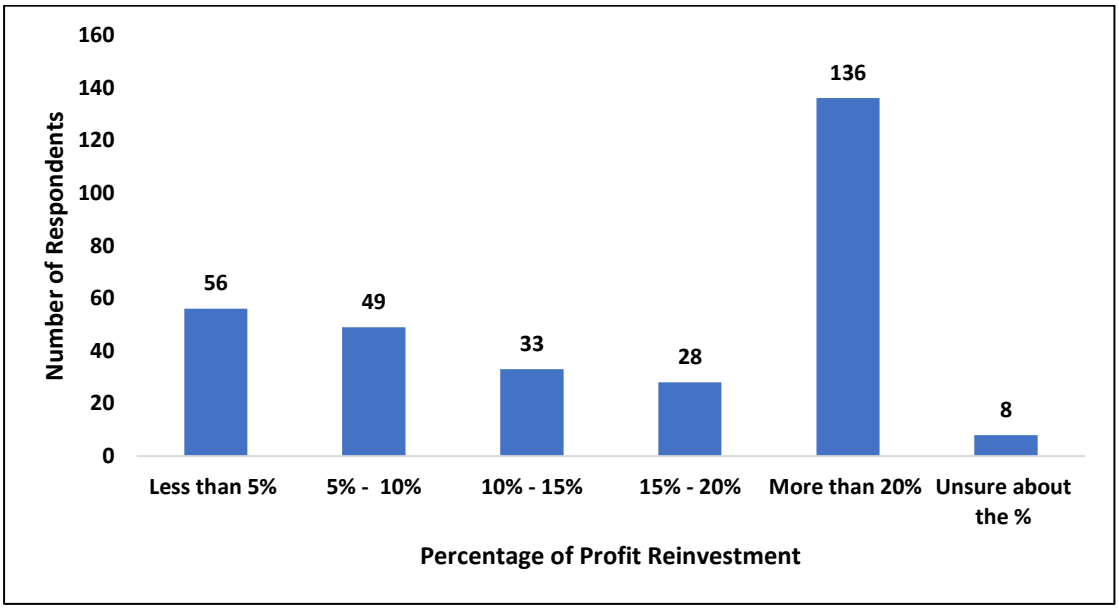
Access to capital is a central determinant of entrepreneurial initiation. Most respondents invested modest amounts, suggesting a reliance on micro-finance or personal savings as primary funding sources. The analysis revealed a wide variation in startup capital investment, as illustrated in Figure 4.6. Low initial capital often restricts the scale and scope of operations and limits the ability to invest in technology or branding. Policy instruments such as subsidized loans or matched grants could help increase early-stages of enterprise development in such contexts.



Source: HARTI survey data, 2024

Figure 4.6: Startup Capital Distribution (in LKR)

The sustainability of agro-enterprises also depends on how profits are reinvested. Reinvestment varied among respondents, with many respondents allocating only a small portion of profits back into the business. As depicted in Figure 4.7, reinvestment was concentrated in the lower brackets, suggesting either low profitability or competing household financial needs. These patterns highlight the importance of incorporating financial planning into entrepreneurship support programmes to encourage disciplined reinvestment.



Source: HARTI survey data, 2024

Figure 4.7: Percentage of Profit Reinvestment

This chapter has outlined the socio-economic landscape within which agro-entrepreneurs operate, highlighting both potential and constraints. The demographic profile suggests a relatively young, moderately educated, and increasingly female entrepreneurial population. Household-based micro-enterprises dominate the sector, but face labour shortages and scalability issues. Although prior business experience is prevalent, it does not consistently correlate success—highlighting the need for reflective and structured learning mechanisms. Capital limitations and weak reinvestment habits underscore the structural constraints that limit business expansion. Collectively, these findings underscore the importance of designing entrepreneurship programs that are responsive to demographic realities, tailored to individual learning needs, and equipped with mechanisms to support growth-oriented micro-enterprises across regions.

4.6 Business Characteristics and Markets

An examination of the business types operated by surveyed agro-entrepreneurs reveals a strong concentration in primary production activities, such as crop cultivation and livestock rearing. As shown in Table 4.2 approximately 70% are engaged primarily in primary production. In contrast, only 29% have diversified into secondary or value-added activities, such as processing or packaging. Notably, none of the respondents reported exclusive involvement in service-oriented agri-businesses.

Table 4.2: Distribution by Business Type

Business Type	Frequency	Percentage
Primary production	219	70
Secondary product/value-added product	91	29
Service	0	0

Source: HARTI survey data, 2024

This predominance of primary production underscores the continuing reliance of rural enterprises on traditional agricultural activities. While these businesses form the backbone of rural livelihoods, their limited shift toward processing and other higher-value-added segments suggests underutilized potential for income enhancement and rural industrialization. This finding aligns with observations made in earlier chapters regarding structural constraints that hamper vertical movement along the agro-value chain.

Turning to market engagement, the data reveals a similarly concentrated pattern. As summarized in Table 4.3, a substantial majority (92.7%) of enterprises serve only to local markets, while just 7.3% (24 enterprises) report involvement in export markets. This strong local orientation indicates that most rural agro-enterprises operate within familiar, nearby demand centres, potentially due to limited capacity to meet export

standards, lack of necessary certifications, or minimal exposure to export-oriented value chains.

Table 4.3: Markets Engaged by Agro-enterprises

Market	Frequency	Percentage
Local market only	303	92.7
Both local and export	20	6.1
Export market only	4	1.2

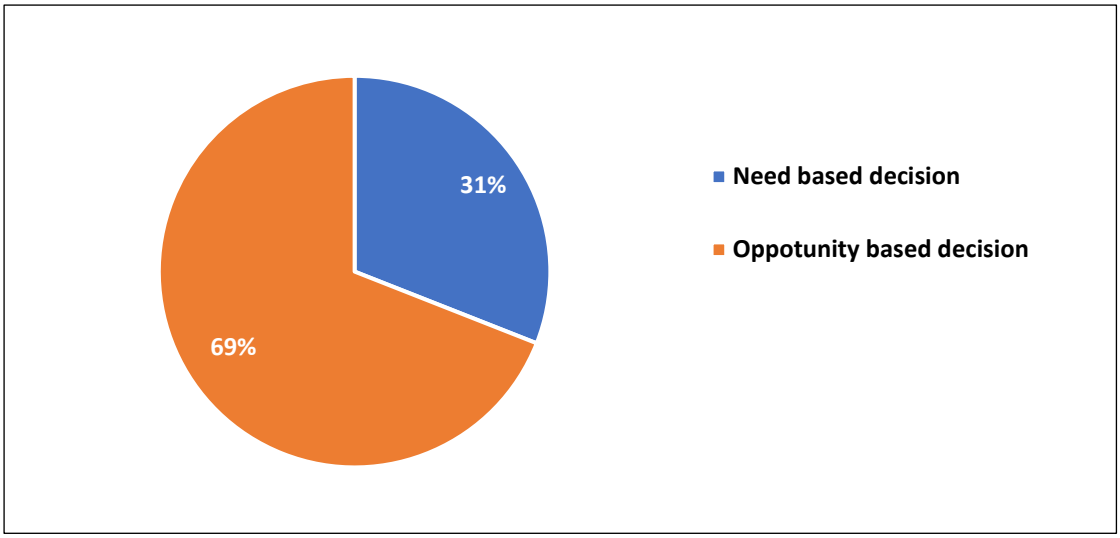
Source: HARTI survey data, 2024

These patterns collectively highlight the early-stage, locally bound nature of most rural agro-enterprises in the study areas. The dominance of primary production, coupled with limited participation in value-added processing and export markets, points to the need for targeted interventions. Such measures could include enhancing access to processing technologies, improving quality compliance for export readiness, and fostering institutional linkages that connect rural producers with high-value domestic and international markets.

By enabling enterprises to move up the value chain and diversify their market reach, entrepreneurship development programs can contribute not only to individual business growth but also broader objectives of rural economic transformation and resilience.

4.7 Motivation for Starting the Business

Understanding the underlying motivations for engaging in agro-entrepreneurship is critical for designing support programs that align with the needs and aspirations of rural entrepreneurs. As illustrated in Figure 4.8, a substantial majority (69%) of respondents reported that their decision to start a business was primarily need-based, often as a means to secure household income amidst limited formal employment opportunities. This finding reflects a common pattern in rural settings, where entrepreneurship frequently emerges as a necessity-driven response to economic vulnerability (De Silva, 2010). In contrast, 31% of entrepreneurs indicated that their decision was opportunity-driven, motivated by perceived gaps in the market, personal interest in enterprise development, or a desire to capitalize on emerging value chains. This segment represents a more proactive entrepreneurial cohort which, according to the literature, is generally more inclined toward growth-oriented and innovative business practices.



Source: HARTI survey data, 2024

Figure 4.8: Basis of Decision for Starting a Business

This distinction between necessity-based and opportunity-driven entrepreneurs carries important implications. While both groups require institutional support, opportunity-driven entrepreneurs may benefit more directly from interventions that facilitate scaling and innovation, whereas necessity entrepreneurs might initially prioritize stability and basic market integration. Tailoring entrepreneurship development programmes to address these diverse motivations can enhance their overall effectiveness and contribute to building more resilient rural economies.

4.8 Awareness and Understanding of the Entrepreneurship Concept

In addition to demographic and business characteristics, the study explored respondents' awareness and understanding of the concept of entrepreneurship. This is crucial, as entrepreneurs' perceptions of what entrepreneurship; entails can significantly influence their behaviours, goal setting, risk tolerance, and engagement with support programmes.

Out of 310 respondents, a substantial 38.4% (119 individuals) did not mention or recognize any of the prompted attributes associated with entrepreneurship, indicating a notable gap in conceptual awareness. Among those who did recognize specific attributes, the most frequently identified were dedication and determination or the will to win (46.8%), followed by achieving benefits while facing risks and uncertainties (28.1%), and entrepreneurship based on creative and new ideas (26.5%). Fewer respondents associated entrepreneurship with the ability to create employment for others (14.5%) or with proactively anticipating competitor behaviour (0.6%).

Table 4.4: Awareness of Selected Attributes of Entrepreneurship

Knowledge Attributes	Frequency	%
Answered as aware about the concept (positively answered)	***191***	***61.6***
- Entrepreneurship is a unique set of behaviours	55	17.7
- Based on creative and new ideas	82	26.5
- Dedication and determination/will to win	145	46.8
- Achieving benefits while facing risks and uncertainties	87	28.1
- Can create employment opportunities for others	45	14.5
- Being proactive/anticipating competitors' behaviour	2	0.6
Not mentioned/negatively answered	***119***	***38.4***

Source: HARTI survey data, 2024;
Note: Multiple responses allowed

This data reveals that while many entrepreneurs possess partial or practical understandings of entrepreneurship, a considerable proportion lacks a comprehensive awareness of entrepreneurial concepts. This gap may affect their ability to strategically position their businesses, adopt innovative practices, or engage effectively with institutional support mechanisms designed for entrepreneurs.

Additionally, the study recorded the sources through which respondents acquired their understanding of these concepts. Preliminary analysis indicates that interpersonal networks such as peer discussions and family influence—and local training sessions organized by agricultural officers were the most common channels of awareness. In contrast, formal media campaigns and institutional promotional activities had relatively limited reach.

These findings highlight the need for more structured awareness-building initiatives to be integrated into entrepreneurship development programmes. Strengthening rural entrepreneurs' conceptual understanding of entrepreneurship can foster a stronger entrepreneurial mindset, encourage the adoption of advanced business practices, and improve engagement with available institutional support mechanisms.

4.9 Sources of Awareness and Knowledge on Entrepreneurship

Beyond exploring how respondents define entrepreneurship, the study also investigated how they became aware of entrepreneurial concepts and practices. Understanding these information channels is essential for designing effective outreach and training strategies that resonate with rural entrepreneurs.

As summarized in Table 4.5, the most prevalent mode of acquiring knowledge was through informal means, with 77.5% of respondents citing personal experience or discussions with friends and peers. An additional 10.5% reported gaining awareness through media and social media platforms, reinforcing the role of unstructured, incidental exposure in shaping entrepreneurial understanding.

A significant 47.1% of respondents reported gaining knowledge through non-formal channels, primarily through interactions with government or non-governmental officials such as agricultural extension staff, development officers, or NGO programme facilitators. In contrast, 13.1% indicated that their understanding stemmed from formal educational pathways, reflecting direct inclusion of entrepreneurship concepts within school or vocational curricula.

Table 4.5: Sources of Knowledge on Entrepreneurship by Type

Source	Type	Frequency	%
Own/friends	Informal	148	77.5
Media and social media	Informal	20	10.5
Government/ NGO officials	Non-formal	90	47.1
Educational background	Formal	25	13.1
Total responses		**283**	**148.2**

Source: HARTI survey data, 2024
Note: Multiple responses allowed

Notably, many respondents indicated multiple sources of awareness: 130 learned from a single source, 42 from two sources, and 19 from three different sources, underscoring the layered and diverse pathways through which entrepreneurial knowledge is acquired in rural settings.

This distribution suggests that while informal networks and personal initiative remain dominant sources of entrepreneurial knowledge, there is a significant scope for policy and programmatic actors to strengthen both non-formal and formal channels. Improved coordination among educational institutions, extension services, and targeted media campaigns could help broaden and deepen entrepreneurial awareness, thereby laying a stronger cognitive foundation for rural enterprise development.

Chapter Five
Behavioural and Institutional Factors Shaping Entrepreneurial Outcomes

5.1 Analytical Methodology for Composite Behavioural Assessment

This chapter utilizes a structured analytical framework to assess the behavioural traits, institutional enablers, and social capital dimensions that shape the entrepreneurial pathways of rural agro-entrepreneurs. The analysis is based on Likert-scale-based responses, administered through a structured questionnaire using the Kobo Toolbox platform. Each thematic construct, whether behavioural (e.g., innovation), institutional (e.g., access to technical support), or relational (e.g., social networks), was operationalized through a set of sub-items measured on a 3-point Likert scale.

This approach aligns with widely adopted methodologies in behavioural and entrepreneurship research, which employs composite indicators to quantify latent constructs such as attitudes, motivations, or competencies (Lans et al., 2011; Awang et al., 2016). In this study, the 3-point Likert scale items were interpreted as follows;

1 = Disagree / Not Practiced / Not Adopted
2 = Neutral / Moderately Practiced
3 = Agree / Strongly Practiced / Fully Adopted

To facilitate interpretability and comparative analysis, composite scores were computed by averaging the Likert responses across sub-items corresponding to each construct. This approach is supported by prior empirical studies that emphasize the internal consistency and reliability of mean-based composite indicators in analyzing entrepreneurial trait (Zhao and Seibert, 2006; Nuthall and Old, 2018).

To categorize the level of development or prevalence of each behavioural attribute, a statistical classification was applied using an interval-based method.

The formula used to compute the average composite score, the interval width, and the categorization rules was as below, respectively.

Step 1: Compute the Average Composite Score

Where:

$\bar{S}$ = *average composite score*
x_i = *score on the iii-th Likert item*
n = number of Likert items (e.g., 4)

$$\bar{S} = \frac{\sum_{i=1}^{n} x_i}{n}$$

Step 2: Determine Interval Width

Where:

I = interval width

$$I = \frac{L_{\max} - L_{\min}}{k}$$

L_{min} = minimum Likert value (e.g., 1)
L_{max} = maximum Likert value (e.g., 3)
K = number of desired categories (e.g., 3)

For a 3-point Likert scale and 3 categories:

Step 3: Apply Categorization Rules

$$\text{Category} = \begin{cases} \text{Low}, & \bar{S} < L_{\min} + I \\ \text{Medium}, & L_{\min} + I \leq \bar{S} < L_{\min} + 2I \\ \text{High}, & \bar{S} \geq L_{\min} + 2I \end{cases}$$

Ex for a 3-point scale:

$$I = \frac{3-1}{3} = \frac{2}{3} \approx 0.67 \quad \longrightarrow \quad \text{Category} = \begin{cases} \text{Low}, & \bar{S} < 1.67 \\ \text{Medium}, & 1.67 \leq \bar{S} < 2.34 \\ \text{High}, & \bar{S} \geq 2.34 \end{cases}$$

This approach aligns with the method of employing interval scaling to interpret attitudes and behaviours in low-scale Likert surveys among smallholder and rural populations. It also facilitates clear differentiation of respondents by behavioural maturity or institutional readiness, an essential aspect for targeted policy analysis and support design (Rauch and Frese, 2007). The relevant behavioural or enabling domains and their associated survey items are listed in Table 5.1.

Table 5.1: Domains/Variables, Variable Codes and Variable Description

	Domains and Variables	Variable Codes	Likert Sub-items (variable) Descriptions
Entrepreneurial Behaviour			
1	Innovativeness	5 items INO1 INO2 INO3 INO4 INO5	I. Perception of innovativeness II. Frequent updates to novel products and production processes III. Regular experimentation with new production techniques IV. Creation/development of new products through successful trials V. Introduction of novel products to the market
2	Risk-taking and proactiveness	7 items RSK1 RSK2 RSK3 RSK4 RSK5	I. Awareness of potential challenges II. Regularly stay informed about emerging challenges III. Willingness to take risks for higher returns IV. Frequent experimentation with newly learned techniques V. Proactive and alert to potential market challenges

		RSK6 RSK7	VI. Constantly seek improved techniques over to existing methods VII. Consistently adopt measures to maximize business profitability
3	Goal-oriented/achievement-oriented	3 items GOL1 GOL2 GOL3	I. Independently set goals to achieve higher targets II. Work diligently to achieve established goals III. Feel satisfied with goals achieved so far
4	Planning and execution of planned actions	5 items PLN1 PLN2 PLN3 PLN4 PLN5	I. Always plan before starting new products II. Always plan before expanding the business activities III. Always plan before resource acquisition and allocation IV. Always try to follow the set plan and make adjustments according to the context V. Always keep a contingency plan in case of failing to deliver according to the original plan
5	Market-oriented behaviour	6 items MAR1 MAR2 MAR3 MAR4 MAR5 MAR6	I. Develop products aligned with consumer needs and preferences II. Actively seek and explore entry into new markets III. Strive to ensure consumer satisfaction through quality product at reasonable prices IV. Consistently set fair competitive prices for products V. Adopt innovative promotional strategies VI. Remain attentive to competitors' market activities
Entrepreneurial Knowledge and Skills			
6	Business management knowledge and skills	5 items BKW1 BKW2 BKW3 BKW4 BKW5	I. Possess knowledge and skills in accounting and record keeping II. Possess knowledge and skills in financial and capital resource management III. Possess knowledge and skills in human resource management IV. Have awareness of business-related rules and regulations in my business V. Consistently take actions to ensure workers' welfare

7	Technical know-how	4 items TKW1 TKW2 TKW3 TKW4	I. Utilize up-to-date production technology relevant to business II. Employ modern equipment suitable for business operations III. Apply appropriate and efficient production processes IV. Consistently train workers on updated technologies
Social Networks			
8	Social networking	4 items SNW1 SNW2 SNW3 SNW4	I. Maintain strong relationships with technical advisors II. Maintain good relationships with fellow business owners III. Maintain awareness of and positive relationships with support service institutions IV. Engage in frequent communication with support institutions and officers

In addition to aggregated composite scores, sub-variable level analysis was conducted where relevant. This approach enabled the identification of specific strengths and weaknesses within broader behavioural domains (Hattab, 2014). Results are presented in both tabular and graphical formats to enhance readability and support interpretation.

5.2 Entrepreneurial Behaviour

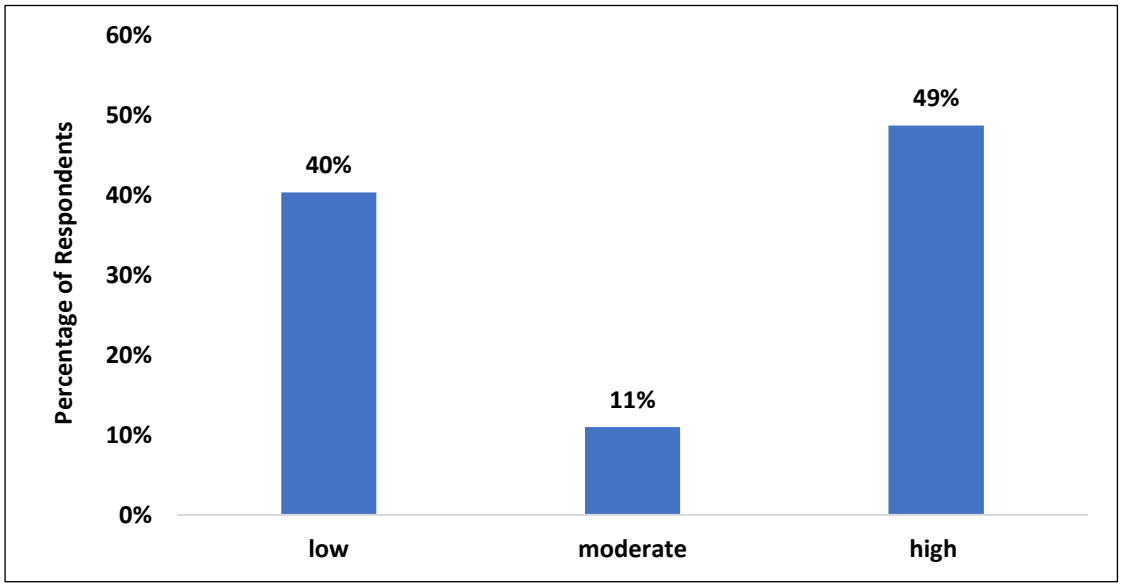
Entrepreneurial behaviour comprises a set of psychological and action-oriented traits that influence how individuals identify, create, and exploit opportunities within complex environments. In the context of agro-based entrepreneurship in Sri Lanka, key behavioural dimensions such as innovativeness**,** risk-taking**,** goal orientation**,** planning and execution**,** and market-oriented behaviour serve as critical predictors of entrepreneurial progression and enterprise sustainability (Lumpkin and Dess, 1996; Islam et al., 2011).

This section synthesizes the key behavioural constructs using composite scores derived from Likert-derived composite scores, classified into low, moderate, and high categories using the interval method. Figure 5.1 and Table 5.1 below present the distribution of respondents across these categories.

5.2.1 Innovativeness

Innovativeness defined as the tendency to pursue novel ideas, products, or processes emerged as a moderately distributed trait, with 49% of respondents classified as high**,**

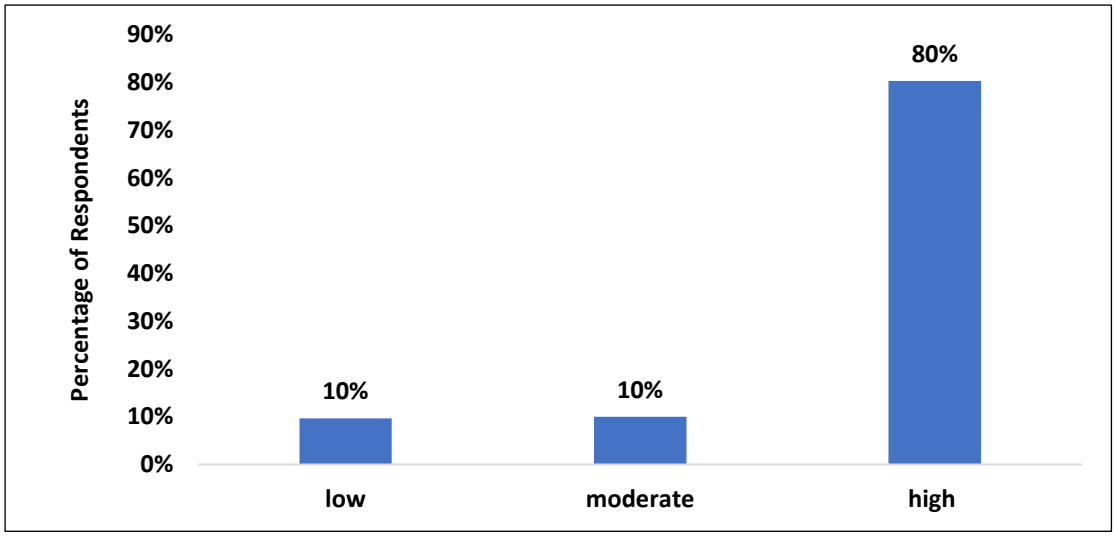
11% moderate**,** and 40% low**.** While nearly half of the entrepreneurs actively pursued new production or marketing techniques, a significant proportion (two in five) exhibited low levels of innovation adoption (figure 5.1). This distribution suggests the coexistence of both dynamic and conservative entrepreneurial sub-groups within the rural agro-sector.



Source: HARTI survey data, 2024

Figure 5.1: Innovation Behaviour

Studies have emphasized that innovativeness correlates strongly with opportunity recognition, differentiation in competitive markets, and long-term sustainability (Zhao and Seibert, 2006; Silva and Nishantha, 2023). The high proportion of low-innovation entrepreneurs, however, points to structural and contextual constraints—such as limited exposure to new ideas, weak knowledge networks, and risk aversion—factors also cited in qualitative interviews.



Source: HARTI survey data, 2024

Figure 5.2: Risk-taking Behaviour

5.2.1 Risk-Taking Behaviour

Risk-taking is a foundational entrepreneurial trait, especially in agriculture, where uncertainty is intrinsic. The findings reveal a highly skewed distribution, with 80% of entrepreneurs exhibiting high risk-taking behaviour**,** while only 10% fall into the moderate and low categories, respectively (Figure 5.2). This strong risk appetite is likely influenced by necessity-driven entrepreneurship, where individuals engage in enterprise activity as a livelihood strategy in the absence of formal employment (De Silva, 2010).

While this result may appear counterintuitive within a context dominated by necessity-driven entrepreneurship, qualitative evidence from key informant interviews and field observations provides an important explanatory nuance. For many respondents, risk-taking did not reflect calculated opportunity-seeking behaviour, but rather a perceived absence of viable livelihood alternatives.

In this sense, risk-taking can be interpreted as a form of compelled or survival-oriented behaviour, where entrepreneurs perceive that they have “little to lose” by engaging in business activities under uncertain conditions. This distinction is important, as it suggests that high risk-taking scores capture adaptive responses to structural constraints rather than deliberate strategic risk appetite

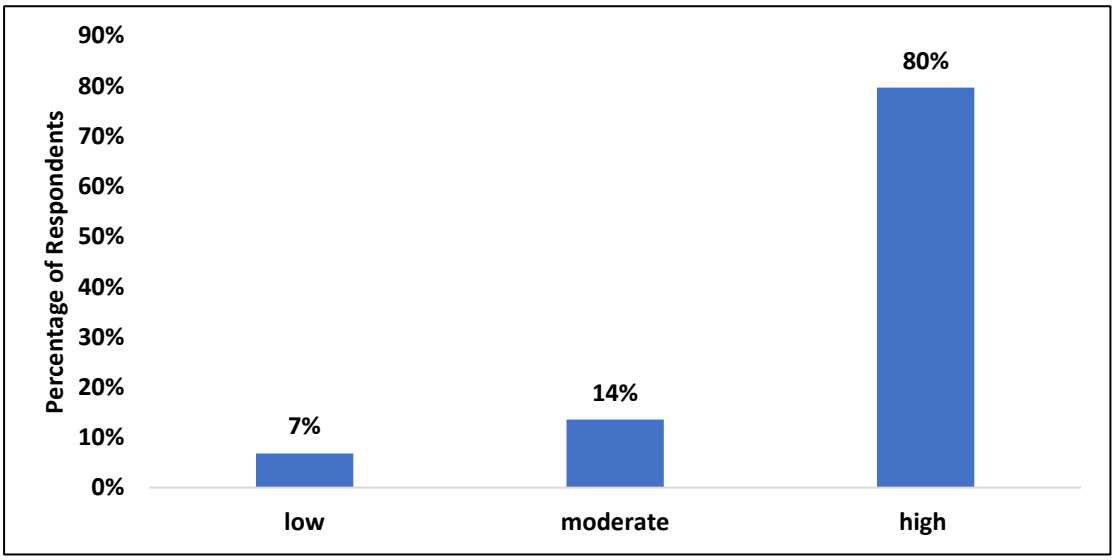
These findings align with broader observations from the field, which indicate that agro-based entrepreneurs often operate in volatile market conditions characterised by price fluctuations, climate variability, and limited institutional safety nets. Consequently, risk-taking emerges as an inherent feature of necessity-based enterprise formation rather than a voluntary entrepreneurial choice.

This interpretation has important implications for the design of Entrepreneurship Development Programmes, highlighting the need for interventions that reduce

exposure to unmanaged risk through mentoring, phased financial support, and market stabilisation mechanisms rather than assuming uniformly opportunity-driven entrepreneurial behaviour.

5.2.3 Goal Orientation

Goal orientation captures the cognitive commitment to specific achievement targets and is a key predictor of persistence and self-regulation. A substantial 80% of respondents displayed high goal orientation, while only 14% showed moderate and 7% low levels (Figure 5.3). This distribution supports previous findings that rural entrepreneurs, despite limited resources, often demonstrate strong intrinsic motivation and long-term aspirations.



Source: HARTI survey data, 2024

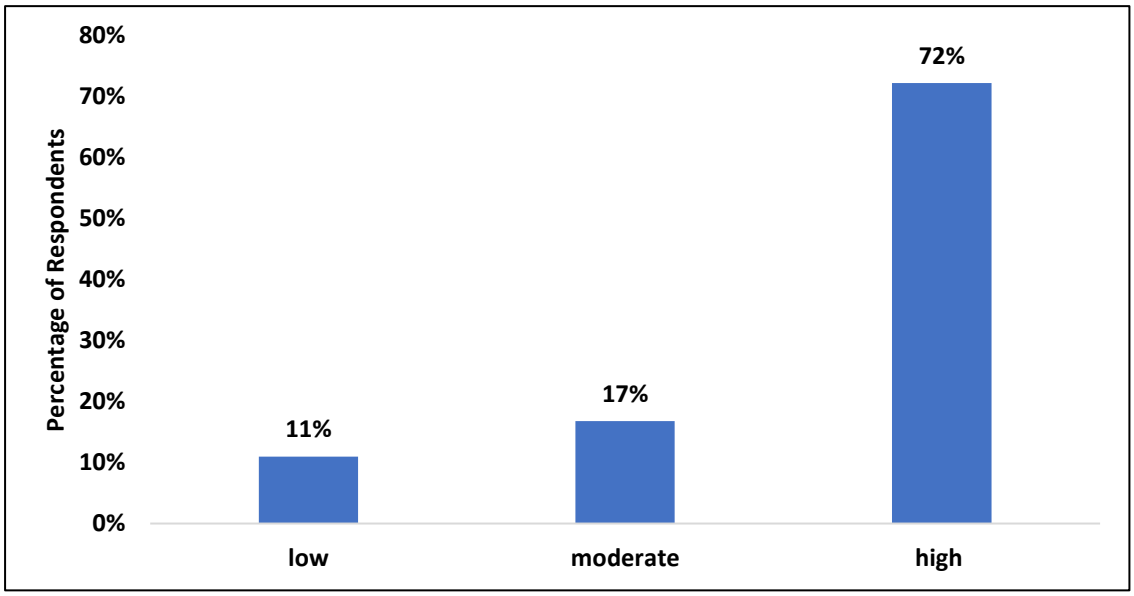
Figure 5.3: Goal Orientation Behaviour

Such clarity of goals is essential for sustained reinvestment, strategic planning, and active engagement with support programmes. However, the realization of these goals depends on institutional enablers, such as market access and mentoring which remain inconsistent across regions.

5.2.4 Planning and Execution

In terms of planning and execution, practices such as business record keeping, production scheduling, and performance monitoring, 72% of respondents were classified as high**,** 17% moderate, and 11% as low (Figure 5.4)**.** This finding suggests a generally strong level of operational discipline among participants, aligning with previous findings that training interventions enhance tactical competencies (Gunawardana and Bandara, 2021). Nonetheless, interviews with EDP implementers revealed that many entrepreneurs lacked formal planning tools, often relying instead on intuition or informal experience. Thus, while self-reported execution capacity appears high, its depth and quality may be uneven, underscoring the need for

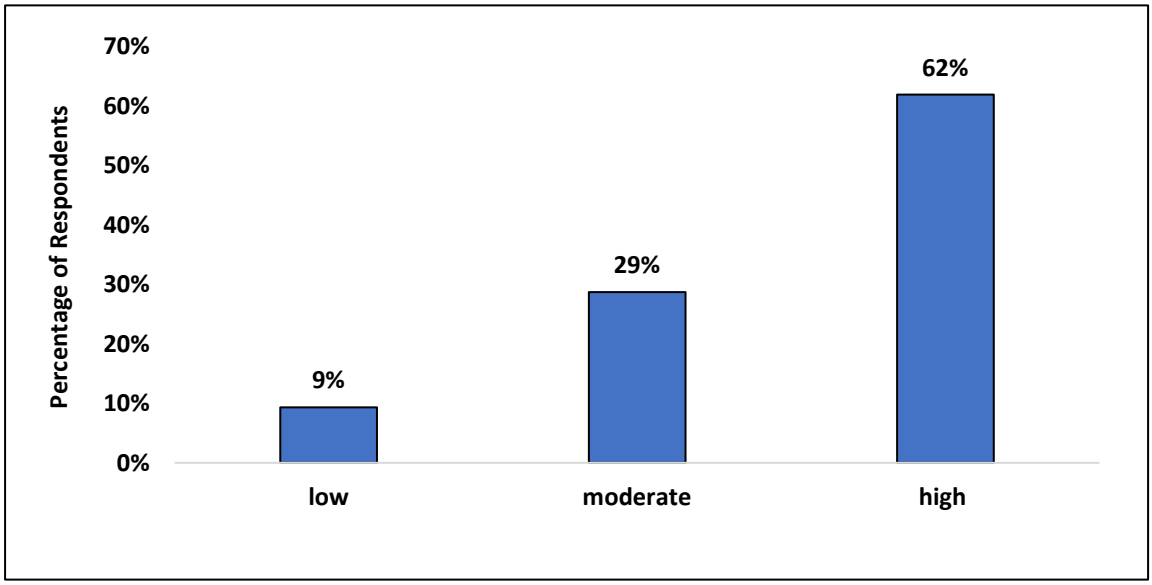
standardized capacity-building curricula and ongoing performance coaching (Perera and Nag, 2019).



Source: HARTI survey data, 2024

Figure 5.4: Planning Behaviour

5.2.5 Market-Oriented Behaviour



Source: HARTI survey data, 2024

Figure 5.5: Market Oriented Behaviour

Market orientation is the ability to align products, pricing, and promotion with consumer preferences registered a slightly broader distribution, with classified as 62% high**,** 29% as moderate, and 9% as low (Figure 5.5). This comparatively lower intensity, relative to other traits, highlights ongoing challenges in accessing timely market information, incorporating customer feedback, and responding to price fluctuations.

This is especially critical in agri-businesses, where perishability and seasonality heighten market risks. Evidence from comparable contexts in South Asia underscores the importance of integrating marketing literacy into EDPs to enhance responsiveness and foster customer - centric approaches (Tripathi et al., 2020; Kumarasinghe, 2017).

5.2.6 Implications for Behavioural Support

The collective behavioural profile of agro-entrepreneurs indicates substantial psychological readiness for entrepreneurship, marked by strong risk-taking, goal orientation, and planning capacities. However, gaps in innovativeness and market-oriented behaviour suggest that behavioural potential is constrained by informational, infrastructural, and institutional constraints.

Policy and programmatic interventions should therefore prioritize strengthening innovation ecosystems, enhancing market intelligence services, and developing behaviourally tailored support models. Structured mentoring, digital advisory platforms, and experiential learning modules can play a pivotal role in translating strong entrepreneurial drive into sustainable growth outcomes (Isenberg, 2011; Michael and Pearce, 2009).

5.3 Knowledge and Skills: Technical and Business Support Dimensions

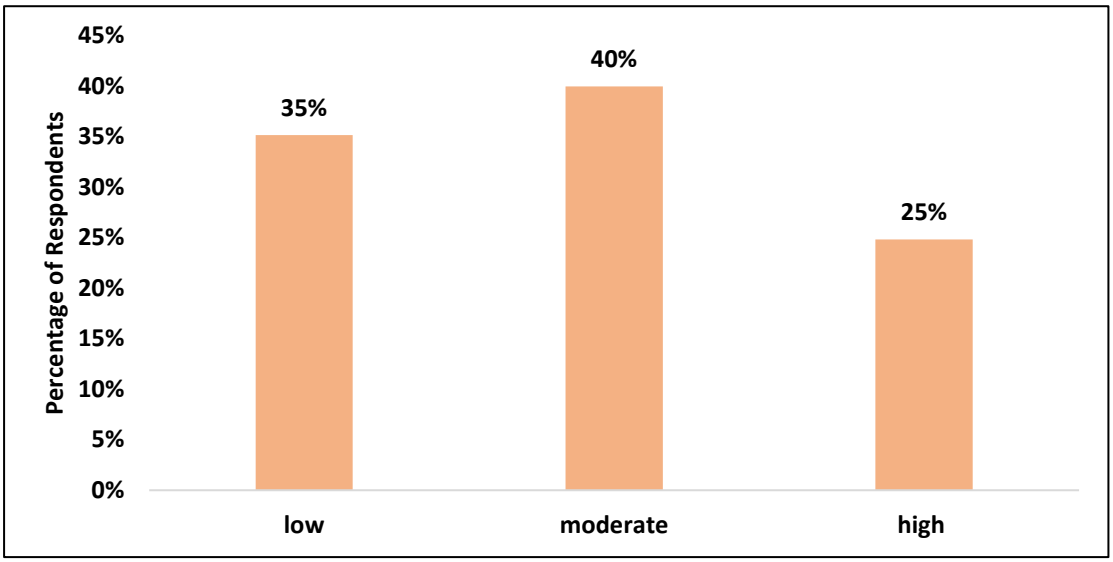
Effective entrepreneurial engagement especially within agro-based contexts and relies substantially on both access to and the quality of technical and business knowledge support. This section examines how the knowledge dimension, as delivered through government-assisted EDPs, has influenced entrepreneurial capacity, performance, and perceived utility across diverse agro-entrepreneurial contexts.

The analysis draws on composite indices generated from variables such as TKW and BKW, which reflect perceptions of technical guidance, managerial knowledge, and applied learning processes. These indices were developed using a 3-point classification system (low, moderate, high), applying the interval method to ensure consistency and comparability. The findings are presented in Figures 5.6, and 5.7, illustrating how respondents assessed the quality and relevance of the support received.

5.3.1 Technical Knowledge Support

Technical support particularly in relation to areas such as agronomic practices, input utilization, and post-harvest technologies, serves as a foundational pillar for agro-enterprise success. The results indicate a strong concentration of responses in the "high" support category, especially in relation to application-focused learning. For instance, 72% of respondents rated their planning and execution skills as high**,** while only 11% were classified in the low category.

This outcome is consistent with prior evidence suggesting that practice-oriented training, when embedded within EDPs, enhances operational competence (Gunawardana and Bandara, 2021). However, notable gaps persist: approximately 10**%** of respondents reported low satisfaction, pointing to disparities in training quality and follow-up. Empirical literature has warned that one-size-fits-all training models often overlook variations in baseline capacity and learning preference (Silva and Nishantha, 2023). Qualitative insights from Key Informant Interviews (KIIs) reinforce this concern, revealing that support delivery often lacked contextual adaptation, especially in remote or marginalized districts.



Source: HARTI survey data, 2024

Figure 5.6: Technical Knowledge

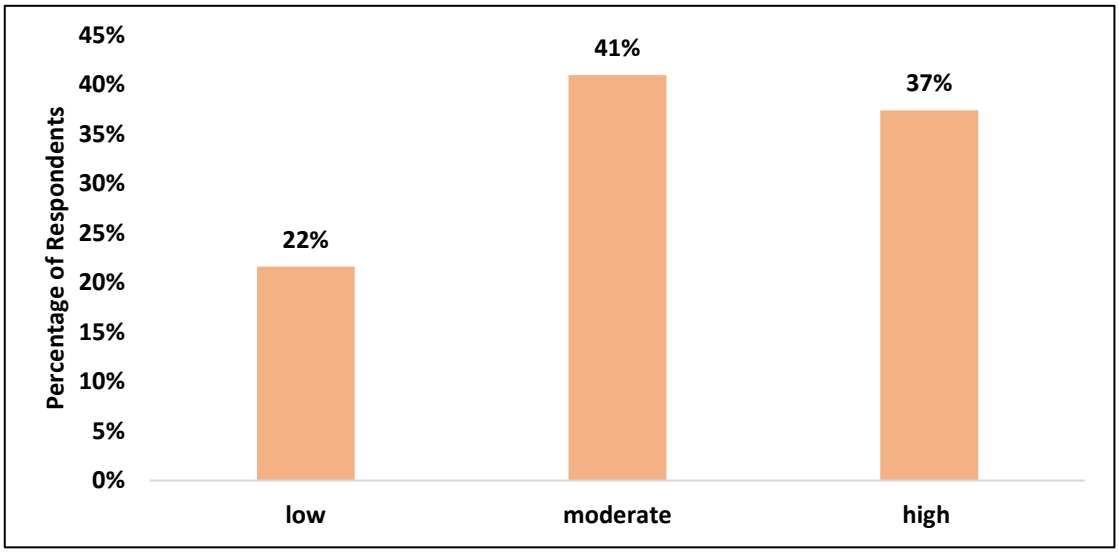
5.3.2 Business Knowledge Support

Business knowledge is defined in this study through components such as marketing, financial management, and strategic planning that emerged as a critical yet unevenly distributed dimension. For example, in relation to market-oriented behaviour (Q31), 61.9% of respondents were classified as high, while 9.4% fell into the low category, indicating a broader disparity compared to technical domains.

One contributing factor is the limited institutional integration of business development services within many EDPs. These programmes often prioritized on production efficiency, while giving inadequate attention to downstream business functions such as branding, pricing, and digital engagement (Anjalee and Perera, 2023). Moreover, beneficiaries reported a lack of continuous advisory support and market intelligence which are the factors consistently linked with enterprise sustainability in rural economies (Isenberg, 2011; Mason and Brown, 2014).

The perceived usefulness of support was also influenced by prior business experience. Entrepreneurs with previous exposure were more likely to effectively leverage and

apply knowledge provided, reinforcing the moderating role of experiential capital in translating support into tangible outcomes (Zhao and Seibert, 2006).



Source: HARTI survey data, 2024

Figure 5.7: Business Knowledge

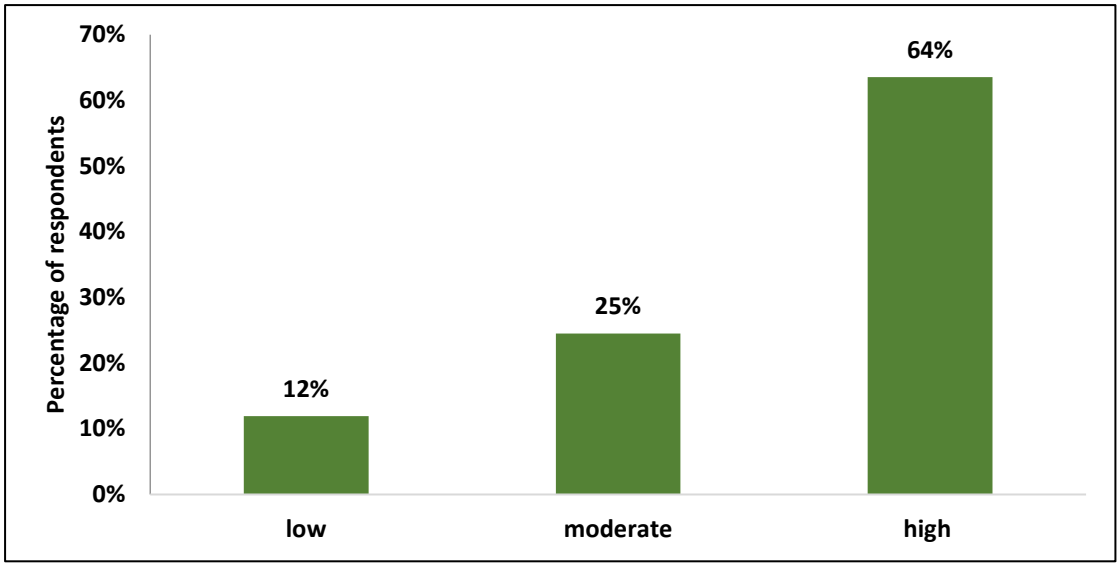
5.4 Social Capital and Community Engagement

Social capital expressed through trust-based relationships, peer learning, and institutional connectivity plays a pivotal role in shaping entrepreneurial resilience, especially in rural and resource-constrained environments. For agro-entrepreneurs, the capacity to engage with support networks and draw on communal knowledge often serves as a critical complement to formal institutional interventions.

5.4.1 Social Networks and Informal Support

Findings indicate that the majority of respondents maintain active relationships with peer entrepreneurs, extension officers, and support agencies. Over 70% (Figure 5.8) reported regular interaction with technical advisors or service providers, while many identified informal peer discussions as instrumental in addressing business challenges. These results align with existing literature emphasizing the importance of embeddedness in rural entrepreneurial ecosystems (Batjargal, 2007; Isenberg, 2011).

In contexts where formal mentoring and business advisory services are inconsistent or lacking, informal networks serve a vital compensatory role. Entrepreneurs who cultivated broader and more diverse networks tended to demonstrate stronger strategic orientation and adaptive behaviour, reinforcing prior findings from Sri Lanka and the broader South Asian region (Gunawardana and Bandara, 2021; Theodoraki, 2024).



Source: HARTI survey data, 2024

Figure 5.8: Social Networks

5.4.2 Group Learning and Collective Engagement

The role of collective training and learning platforms such as farmer field schools and cooperative-based programmes was highlighted by several respondents and key informants. Participants in such group-based initiatives reported greater confidence in applying new techniques, a stronger sense of accountability, and greater knowledge retention.

However, institutional arrangements often failed to institutionalize these group structures beyond the training period. In most cases, peer-to-peer collaboration diminished after programme completion due to a lack of follow-up facilitation. This reveals a design gap: while community-level engagement proves effective, it remains underutilized in the long-term implementation of EDPs.

5.4.3 Community-driven Ecosystem Development

The lack of structured interfaces between EDPs and community-based organizations has prevented the widespread diffusion of ecosystem benefits. This reinforces findings from prior chapters, that while Sri Lanka's agro-entrepreneurial base is behaviourally strong, the institutional and social frameworks supporting enterprise growth remain uneven.

Taken together, the analysis in this chapter underscores that entrepreneurial progression is not solely determined by individual traits or one-time support interventions, but emerges from the dynamic interaction between personal agency, institutional scaffolding, and social connectivity. As we move to the next chapter, these foundational dimensions will be connected to actual business outcomes i.e. success, failure, and adaptive strategies enabling a deeper understanding of the factors that sustain or constrain rural agro-enterprises over time.

Chapter Six
Entrepreneurial Pathways, Supports, and Adaptive Strategies

6.1 Entrepreneurial Pathways and Experience Types

Entrepreneurial ventures in rural areas often emerge from a complex interplay of opportunity recognition and necessity-driven responses to economic pressure. This study found that among the surveyed micro and small-scale agro-based enterprises, a notable segment had initiated their ventures primarily as a strategy to cope with income uncertainties, particularly in contexts of seasonal agricultural income and underemployment. This aligns with findings that observed the necessity entrepreneurship tends to dominate in rural settings where formal employment options are limited.

However, a substantial proportion of respondents also cited market gaps and emerging opportunities, such as increasing demand for value-added agricultural products and niche exports, as primary motivations. This supports the observation by Ojong et al. (2021), who argue that opportunity-driven rural enterprises increasingly capitalize on evolving consumer preferences and growing urban-rural market linkages.

Experience levels further differentiated entrepreneurial pathways. Approximately half of the respondents in this study had prior experience in managing informal or small commercial activities before formalizing their current enterprises. This tallies the pattern identified by Mead and Liedholm (1998), who noted that previous entrepreneurial exposure significantly shapes business survival and growth trajectories, often by improving managerial confidence and risk tolerance.

Moreover, several respondents who embarked their ventures with prior exposure to sector-specific trainings or community-based business initiatives demonstrated more structured business plans and clearer growth targets. This underpins the argument by Bruton et al. (2013) that localized learning and experiential knowledge are pivotal in transitioning rural necessity entrepreneurs toward more opportunity-oriented models.

These entrepreneurial pathways are further influenced by the type and extent of support received during different stages of business formation and growth. Empirical data from this study reveal that for many agro-entrepreneurs, the transition from employment to enterprise was not accompanied by strong institutional backing. A majority of respondents (56.8%) received only one type of non-financial support, predominantly training programmes, while 21.6% received none at all, suggesting that initial entrepreneurial decisions were made with minimal professional guidance or preparatory support.

This gap has tangible implications for enterprise sustainability. For instance, entrepreneurs who lacked access to technical or market advisory services were

disproportionately represented among those who either stagnated or exited early. These findings are consistent with previous studies, which suggest that necessity-driven entrepreneurs in agrarian contexts are more vulnerable to institutional voids, as they tend to rely on entrepreneurship as a fallback strategy rather than a growth-oriented pursuit (De Silva, 2010; Elapata et al., 2023).

Moreover, the limited diversity in support experiences implies that most entrepreneurs followed relatively linear and unsupported pathways—often navigating complex market systems without access to advisory support, certification assistance, or exposure to formal networks. This underscores the need for policy interventions that go beyond promoting entrepreneurship initiation but also actively structuring post-entry pathways through sequenced support and targeted capacity building (Gunawardana and Bandara, 2021).

6.1.1 Business Success and Failure Patterns

A nuanced analysis of business trajectories revealed varied patterns of success and stagnation. Respondents who reported consistent growth in profits and employee numbers often combined multiple success factors: access to both financial and non-financial support (such as grants, trainings, and market facilitation), adoption of improved production techniques, and stronger network ties within value chains. This corroborates the findings of Liedholm (2002), who noted that enterprise growth in developing country contexts typically hinges on a bundle of financial capital, technical skills, and market connectivity.

Conversely, businesses that experienced stagnant or declining profits frequently cited market saturation, escalating input costs, and difficulties in securing repeat contracts with buyers as principal constraints. These constraints align with empirical patterns observed by McKenzie and Woodruff (2017), who found that many microenterprises struggle to scale or sustain profit growth due to thin margins and vulnerability to minor market shocks.

Employee dynamics also served as a marker of business health. Enterprises that reported layoffs or reduced hiring pointed to uncertain market demand and liquidity constraints. This mirrors the interpretation related to the argument that employment contraction in micro and small firms often signals adaptive cost-cutting in response to demand volatility.

Additionally, qualitative accounts from respondents highlighted those ventures initiated solely under necessity pressures, without parallel support structures or prior experience, were disproportionately represented among those facing operational struggles. This reinforces the position of Naudé (2018), who cautions that necessity entrepreneurship, while critical for subsistence, frequently exhibits fragile foundations that heighten vulnerability to business failure.

Beyond the structural explanations provided earlier, detailed insights from respondent narratives and interviews conducted across six districts offer a more grounded view into the lived challenges that contributed to business stagnation or failure. One of the most widely reported issues was the rising cost of raw materials especially fertilizers, mushroom substrate, and nursery inputs. Entrepreneurs engaged in mushroom cultivation noted that the price of sawdust, a critical input, had surged due to supply disruptions during the economic crisis, forcing them to transport inputs from distant locations at high logistical costs. These higher input expenses could not be offset through price adjustments, since product prices were often dictated by local market ceilings or competition, leading to eroded profit margins.

Furthermore, delayed or disruptions in raw material supply chains resulted in production bottlenecks. For instance, fruit dehydration enterprises reported inconsistent access to quality fruit inputs, often due to climate variability or the lack of permanent supply agreements. In several cases, this mismatch between raw material availability and production planning resulted in inability to meet market demand on time, damaging both reputational and business continuity outcomes.

Another persistent constraint involved was the high cost and procedural complexity involved in obtaining quality certification. Entrepreneurs attempting to obtain certifications such as ISO, HACCP, or GMP cited that high-costs for laboratory testing and consultation, which small-scale operators could not afford without external grants. As a result, many food-based enterprises operated without certifications, limiting their ability to access higher-value or export markets despite having quality products.

Crucially, institutional asymmetry also played a role in uneven outcomes. Respondents from certain districts reported regular engagement with extension officers and institutional follow-up, while others had never received a single government visit post-initial support. This inconsistency in field-level engagement created informational and trust gaps that further hindered the ability of rural enterprises to course-correct during crises or adapt to shifting market trends.

Finally, a subset of entrepreneurs admitted to entering businesses particularly mushroom and aquaculture without any baseline technical knowledge, driven mainly by the availability of government material support and peer imitation. These ventures often lacked feasibility studies or market assessments, and unsurprisingly struggled to gain market traction or sustain profitability. This reinforces the academic argument that support interventions must be context-appropriate and knowledge-anchored, rather than relying solely on infrastructure provision or sector promotion (Bruton et al., 2013; Anjalee and Perera, 2023).

6.2 Non-financial Support Patterns

Non-financial assistance has played a prominent role in supporting agro-entrepreneurs within the study area. The most widespread form was participation in entrepreneurship training programmes, reported by 180 respondents, followed by skill development trainings (37 respondents) aimed at improving technical or business-related competencies. However, fewer entrepreneurs accessed support for market facilitation, such as market access support (14), market survey assistance (1), or participation in trade fairs and business promotion events (4).

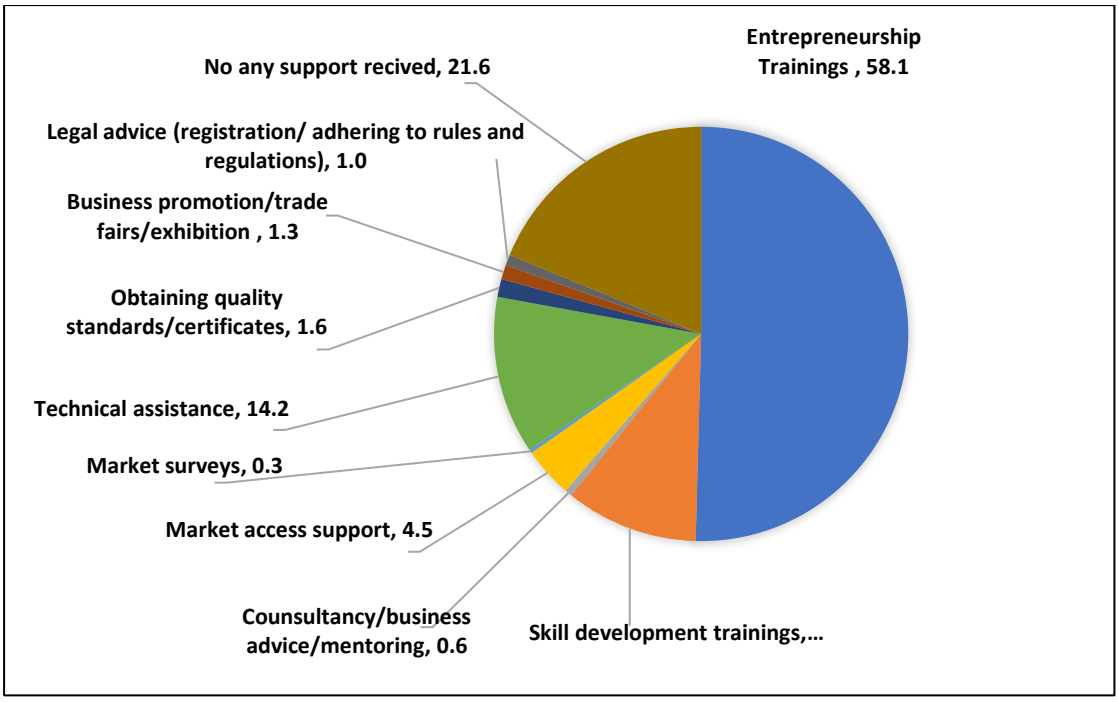
Similarly, specialized technical and advisory services were less common: 44 respondents received technical assistance, 5 were supported in obtaining standards or certifications, while only 2 accessed direct business mentoring and 3 obtained legal advice. Importantly, 67 entrepreneurs (about 22%) reported not having received any form of non-financial support, indicating notable gaps in programme outreach or targeting.

The distribution of these support types is shown in Table 6.1 and figure 6.1 below:

Table 6.1: Distribution of Non-financial Support Types

No of Support Types	Support Description	%	Frequency
One type of support	Trainings programmes	56.8	176
	Market support	1.3	4
	Technical support	10.6	33
	Advisory support	0.3	1
Two types of support	Training and market support	3.9	12
	Training and technical support	3.2	10
	Training and advisory support	0.3	1
Three types of support	Training, market support and technical support	0.6	2
	Training, technical support, advisory support	1.0	3
	No non-financial support	21.6	67

Source: HARTI survey data, 2024



Source: HARTI survey data, 2024

Figure 6.1: Distribution of Non-financial Support Types

When examining the breadth of support, it emerged that 56.8% of respondents had received only one type of non-financial intervention, predominantly training. A smaller portion benefited from multiple forms: about 9% received two types of support (most often combining training with market or technical assistance), while just 1.6% reported receiving three different types (Table 6.1). This highlights that while foundational capacity building is relatively widespread, more integrated packages combining training with sustained technical, advisory, and market-oriented support remain limited.

These patterns underscore the partial reach of current non-financial support systems and emphasize the need for more comprehensive, sequenced interventions that guide entrepreneurs beyond initial training toward improved market access and ongoing advisory support.

The non-financial support landscape, while visibly present in most districts, shows evidence of serious fragmentation and shallow engagement. According to the quantitative data, 78.4% of entrepreneurs (n=243) reported receiving some form of non-financial support. However, 56.8% of them had received only one type, mainly generic entrepreneurship training. Notably, 21.6% received no non-financial support at all, despite being active participants in government-endorsed programmes.

Among those who did receive support, 180 participants benefited from entrepreneurship development training, typically conducted by NEDA, SED, or Vidatha. A much smaller group (37 individuals) accessed skill development training, particularly in value-added production or post-harvest practices. Only 44 respondents

received technical assistance, and fewer still received any advisory support — with just 5 entrepreneurs citing mentorship or legal advice. These numbers point to a lack of service layering or progression: training programmes are often not followed by tailored guidance, business development services, or mentoring that can translate learning into actionable growth. Field observations support this: mushroom growers, polytunnel cultivators, and plant nursery operators consistently requested hands-on, practical training rather than theoretical lectures. Many described attending workshops without receiving any post-training support, follow-up visits, or feedback loops.

Respondents also noted that much of the training content failed to address market dynamics, product standards, or business scalability. For example, mushroom producers requested training on modern techniques, pot-filling machinery, and post-harvest handling; however, what was delivered was basic, repetitive, and often unsuitable for their production scale or level of advancement. As one respondent remarked, “They showed us how to start, but nobody came after to check what we needed to keep going.”

Moreover, awareness on certification processes, export logistics, and digital marketing strategies was strikingly low among those who had received training. This suggests that non-financial interventions lack not only depth but also alignment with the specific business models and future aspirations of the entrepreneurs they served.

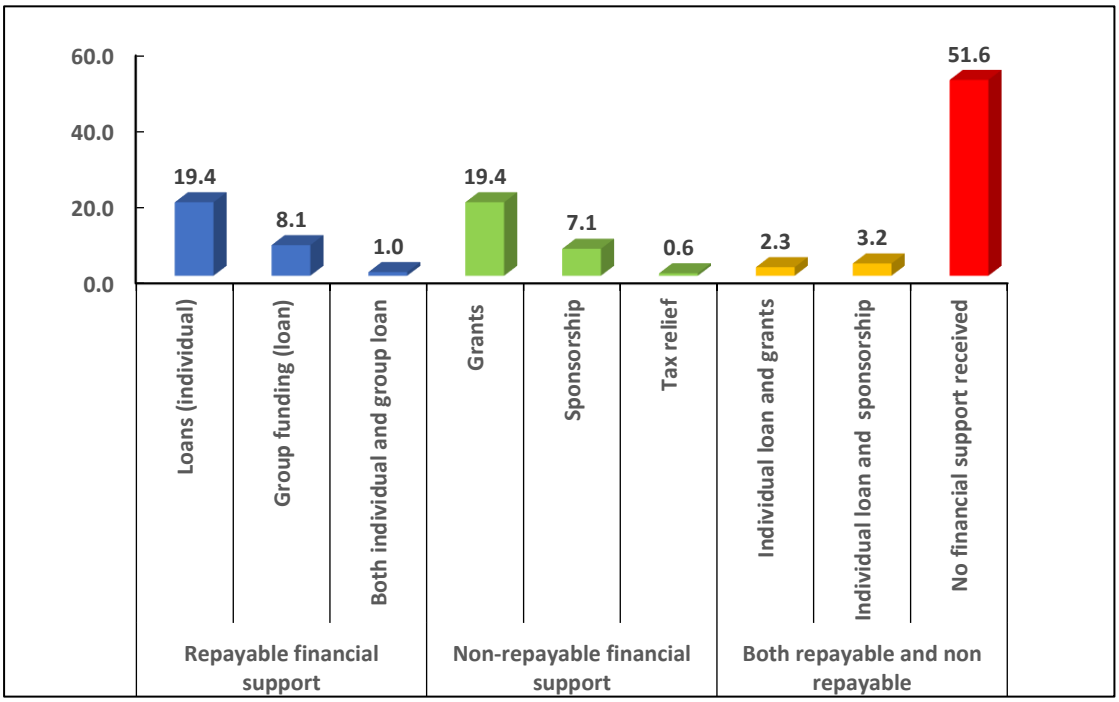
A further critical concern relates to institutional presence. In several rural areas, respondents had never met or been contacted by any field-level officers post-initial training. In contrast, entrepreneurs in better-connected regions (e.g., Matale, and Kurunegala) described more regular institutional contact and better business guidance, implying a geographical inequality in institutional engagement. These patterns mirror wider critiques in development literature about the asymmetric institutional density in rural entrepreneurship ecosystems.

Ultimately, while non-financial support programmes reach a significant proportion of agro-entrepreneurs, their narrow focus, weak follow-up systems, and low customization limit their long-term effectiveness. To address this, future EDPs must incorporate continuous mentoring, sector-specific technical capacity building, and structured knowledge pathways that are both practical and strategically sequenced.

6.3 Financial Assistance Mechanisms in Agro-based Entrepreneurship Development

Financial assistance remains a critical pillar for enhancing entrepreneurial performance and sustainability, particularly among agro-based startups operating in rural Sri Lanka. The empirical findings of this study revealed notable trends regarding both the availability and utilization of financial support mechanisms under existing entrepreneurship development programmes.

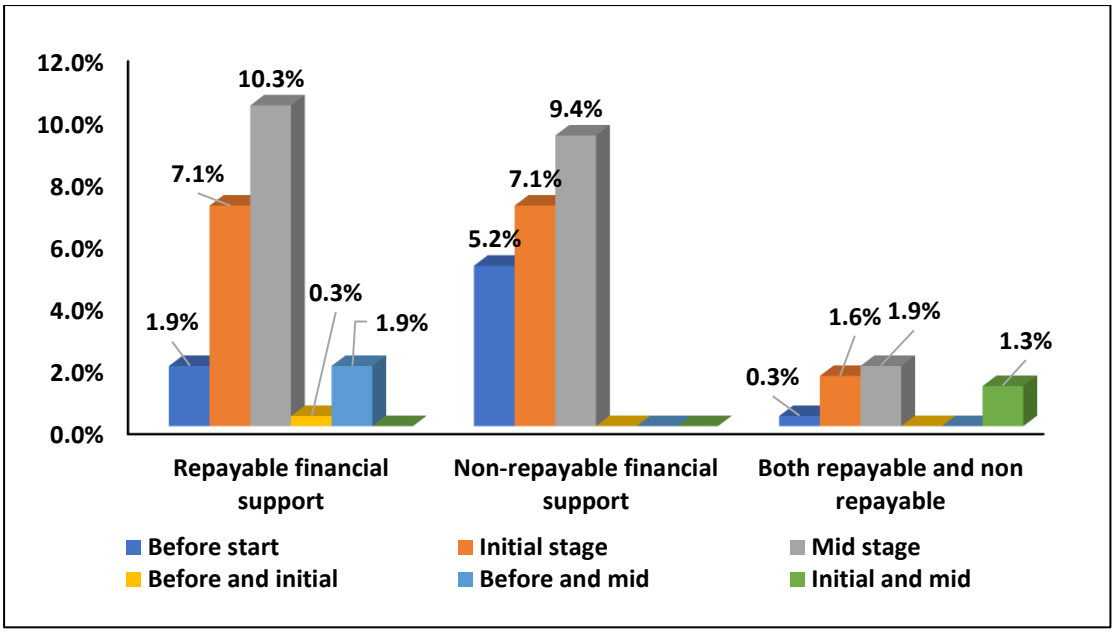
Among surveyed entrepreneurs, access to repayable financial support primarily in the form of 'individual loans' was the most frequently cited source of formal financing, reported by 19.4% of respondents. Group-based loans followed with a smaller share of 8.1%, while only 1.0% had accessed both forms simultaneously. Non-repayable financial supports were also evident, particularly through government or donor-backed grant schemes, which were accessed by 19.4% of respondents. In addition, certain entrepreneurs benefited from sponsorship programmes (7.1%) or limited tax reliefs (0.6%). However, a significant proportion (51.6%) indicated that they had not received any form of financial support, highlighting a pervasive gap in the reach of existing financial interventions (figure 6.2).



Source: HARTI survey data, 2024

Figure 6.2: Distribution of Financial Support Types Received by Respondents

The high prevalence of entrepreneurs without access to financial assistance raises serious concerns regarding the inclusiveness of prevailing support mechanisms. Many respondents cited difficulties in fulfilling eligibility requirements or meeting collateral conditions imposed by formal lending institutions. Furthermore, interviews with programme implementers revealed that complex application procedures, delays in fund disbursement, and limited awareness among entrepreneurs about available schemes further hindered access to financial support. These findings align with broader concerns in the literature regarding credit market imperfections and bureaucratic inefficiencies that disproportionately affect small-scale agro-entrepreneurs in developing economies (Gunawardana and Bandara, 2021; Perera and Nag, 2019).



Source: HARTI survey data, 2024

Figure 6.3: Timing of Financial Support Receival

As demonstrated in Figure 6.3, the time of receipt of financial assistance across the business progress on is varied among the respondents. The majority have received support at multiple stages (most commonly 'immediately after starting' the business, followed by 'before starting' and then 'mid-way" through business progression. As per the response of entrepreneurs during the discussions, most of them preferred to immediately after business setup unless they were planning to start capital-intensive ventures without a strong financial background.

Another key insight emerging from the data is the dominance of loan-based financial schemes over grants or blended financing models. While loans play an important role in encouraging financial discipline and enterprise accountability, many early-stage agro-entrepreneurs, particularly those with limited cash flows, reported significant challenges in meeting repayment obligations. The absence of sufficient grace periods, flexible repayment schedules, or phased disbursement options was frequently cited as a barrier to effectively utilizing these financing schemes.

Importantly, some early-stage entrepreneurs expressed a preference for targeted grants or start-up subsidies during the early stages of business development, particularly for meeting capital-intensive needs such as equipment acquisition or certification processes. In contrast, more established entrepreneurs appeared willing to engage with repayable loan schemes, provided that financing was tied to technical advisory services and market facilitation.

The empirical findings thus underscore a clear need for more flexible, demand-responsive financial support mechanisms that can cater to the heterogeneous needs of agro-entrepreneurs at different stages of business development. Institutional reforms that simplify application procedures, increase outreach to underserved

groups, and integrate financial support with business development services could greatly enhance the inclusiveness and effectiveness of these programmes. Furthermore, embedding digital platforms for credit applications and disbursement processes may improve accessibility for entrepreneurs in remote areas.

These insights highlight that, while financial assistance mechanisms are an essential element within entrepreneurship development programmes, their potential to drive business sustainability remains underutilized. Without targeted reforms and better institutional coordination, financial support will continue to reach only a limited segment of agro-entrepreneurs, thereby weakening the transformative capacity of entrepreneurship programmes in Sri Lanka's rural economy.

6.4 Constraints to Enterprise Sustainability

Despite the modest gains achieved by many of the surveyed enterprises, multiple structural and contextual constraints continue to impede the long-term sustainability and scalability of rural micro and small enterprises. These constraints manifest across financial, market, resource, and institutional dimensions, often interacting in ways that compound vulnerability.

6.4.1 Financial Constraints

A dominant challenge consistently highlighted by respondents was limited access to affordable, appropriately structured financing**.** While some entrepreneurs benefited from repayable loans or occasional grants, several noted that repayment schedules were often misaligned with seasonal cash flows inherent to agriculture-linked enterprises. This concern resonates with observations by Beck and Demirgüç-Kunt (2006), who reported that micro and small enterprises in developing economies frequently cite credit availability as a principal growth barrier, particularly when financial products are not tailored to the realities of irregular rural incomes.

Moreover, risk-averse lending environments, characterized by stringent collateral demands and limited understanding of smallholder business cycles, further constrained credit uptake. Previous studies also emphasize that collateral and perceived borrower risk inhibit SME access to formal credit markets in sub-Saharan Africa and South Asia.

6.4.2 Market Access and Volatility

Several entrepreneurs pointed to unstable market demand, price fluctuations, and the lack of secure forward contracts as key impediments. Given the perishable nature of many agro-based products, fluctuating farm-gate and wholesale prices can significantly erode profit margins. This pattern is consistent with findings from Barrett (2008), who noted that small agricultural enterprises face heightened exposure to both local and global market volatilities, which undermine predictable planning and investment.

Compounding this challenge, limited direct access to higher-value urban or export markets often mediated by brokers, diminishes entrepreneurs' bargaining power.

6.4.3 Resource and Input-related Constraints

Respondents also cited recurrent issues related to the rising costs and unreliable availability of quality inputs**,** such as certified seeds, fertilizers, and packaging materials. For enterprises attempting to scale production or improve quality standards particularly for niche or export segments, these constraints frequently curtailed planned expansions. This echoes the findings of Narayanan and Gulati (2002), who illustrated how input market inefficiencies critically hamper the competitiveness of agro-based SMEs in South Asia.

Additionally, irregular access to utilities notably electricity for processing and cold storage posed operational bottlenecks, especially in more remote areas. Studies by Rud (2012) affirm that infrastructure deficits, particularly unreliable electricity, substantially diminish productivity and raise operational risks for rural enterprises.

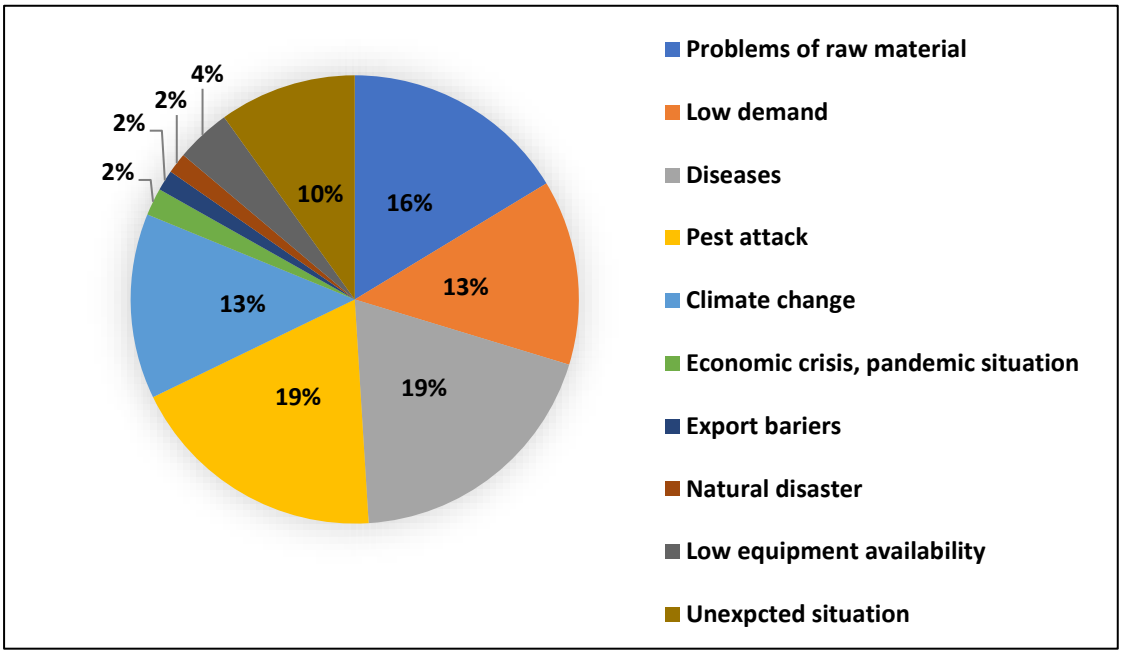
6.4.4 Institutional and Regulatory Bottlenecks

Another layer of constraint emerged from limited institutional coordination and weak regulatory facilitation. Entrepreneurs expressed frustration over bureaucratic hurdles when registering businesses, obtaining certifications, or accessing public support programmes. This institutional fragmentation aligns with observations by Hallberg (2000), who argues that fragmented support ecosystems and inconsistent policy enforcement frequently dilute the intended impacts of enterprise development programmes in low-income contexts.

Some respondents also highlighted that while multiple agencies offered trainings or advisory visits, these often operated in silos, leading to duplication or misalignment with actual enterprise needs. Such critiques find support in McKenzie (2017), who suggests that poorly coordinated support interventions, lacking integration across financial, technical, and market dimensions often fail to produce sustained enterprise outcomes.

6.4.5 Constraints and Risks Faced by Agro-Entrepreneurs (as perceived by study respondents)

A critical dimension influencing the long-term sustainability of rural agro-enterprises is the array of challenges that entrepreneurs perceive as threats to their business continuity. As illustrated in Figure 6.1, respondents identified a diverse set of issues that they believe pose significant risks of business failure.



Source: HARTI survey data, 2024

Figure 6.4: Problems Perceived by Farmers as Risks to Business Survival

6.4.6 Problems Perceived as Risks to Business Survival

According to the data, diseases (19%) and pest attacks (19%) emerged as the most frequently cited risks, underscoring the inherent biological vulnerabilities associated with primary production. These were closely followed by issues related to the availability and cost of raw materials (16%), which reflect the fragility of local supply chains and procurement systems.

Other notable concerns included climate change impacts (13%) and low market demand (13%), highlighting the dual exposure of rural enterprises to both environmental variability and market fluctuations. Additionally, unexpected situations (10%) ranging from sudden family emergencies to broader socio-economic disruptions were also significant.

A smaller, yet important set of constraints included low equipment availability (4%), natural disasters (2%), export barriers (2%), and broader economic crises and pandemic-related uncertainties (2%). These findings emphasize that the risks perceived by agro-entrepreneurs are multifaceted, spanning biophysical, market, infrastructural, and macro-economic dimensions. They also reinforce the need for entrepreneurship development programmes to integrate risk management training, insurance mechanisms, market diversification support, and climate adaptation strategies to help enterprises navigate these pervasive vulnerabilities.

6.5 Adaptive Strategies and Innovation Practices

In response to diverse financial, market, and institutional constraints, many micro and small agro-based enterprises adopt a range of adaptive strategies and incremental innovations to maintain business continuity and manage risk. These responses illustrate a pattern of grassroots ingenuity that has been widely documented in the literature on smallholder and rural enterprises.

6.5.1 Seasonal Adjustments and Diversification

One of the most prevalent strategies among the surveyed enterprises was seasonal adjustment of operations, particularly by scaling down production activities during lean periods to align with fluctuations in raw material availability and demand cycles. This practice is widespread in agrarian contexts, where supply and price volatility are inherent. Studies from similar South Asian settings show that micro enterprises in agro-processing often adjust processing volumes and labour hiring seasonally to manage working capital pressures and reduce inventory risks.

Additionally, a notable share of respondents pursued horizontal diversification by engaging in complementary activities such as small-scale trading, input retailing, or ancillary services during off-peak periods. This adaptive pattern of diversification beyond core farm or processing operations has been a key livelihood strategy to stabilize household incomes and hedge against sector-specific shocks.

6.5.2 Informal Learning and Peer-driven Innovation

Another important adaptive mechanism was informal learning through peer networks, including observation of neighbouring entrepreneurs and participation in community events. While structured technical assistance remained limited, many respondents indicated that operational tweaks such as modifying drying times, altering packaging formats, or introducing minor product variations were often learned informally. This resonates with the findings of Alam and Bagum (2013) in Bangladesh, who noted that small business owners frequently rely on experiential learning and peer examples rather than formal training to drive micro-innovations.

Similarly, collaborative arrangements, such as the shared use of equipment or joint transport for accessing distant markets**,** emerged as pragmatic responses to infrastructure gaps. This form of social capital-based innovation is an example of relational networks in Sri Lanka's SME clusters that facilitate cost-saving solutions and knowledge exchanges that formal support systems do not always provide.

6.5.3 Leveraging Niche Opportunities and Quality Differentiation

Some enterprises also pursued small-scale innovations aimed at niche market positioning, including efforts such as experimenting with organic certification, adopting specialty packaging, or tailoring processing for boutique buyers. Although

such cases were less common, they underscore a willingness among more growth-oriented entrepreneurs to differentiate products despite resource constraints. These practices reflect broader trends noted by Narayanan and Gulati (2002), who observed that SMEs serving niche agri-markets in South Asia increasingly leverage modest process innovations and certifications to secure premium segments.

Moreover, in the Sri Lankan context, Jayasundara et al. (2019) found that SMEs in the food and beverage sector often adopt incremental process improvements and branding efforts as cost-effective strategies for enhancing competitiveness, particularly when large capital investments are not feasible.

6.5.4 Integrating Informal Resilience Strategies

Lastly, informal coping mechanisms, such as rotating labour arrangements, deferred payments to suppliers, or short-term borrowing from family networks, played a crucial role in sustaining operations during periods of liquidity stress. While strategies may not represent formal business innovations, they are integral to the resilience architecture of small enterprises, as highlighted in resilience studies by FAO (2015) on smallholder-based agri-food systems across Asia.

6.6 Implications for Rural Enterprise Support Models

The composite evidence emerging from this study underscores the necessity of recalibrating rural enterprise support models to more effectively address the intertwined financial, technical, and institutional challenges faced by micro and small enterprises. Given the diversity in entrepreneurial motivations, enterprise trajectories, and constraint environments documented across the surveyed communities, a one-size-fits-all approach appears insufficient. Instead, more context-sensitive, integrated support frameworks are required to foster sustainable enterprise development.

6.6.1 Need for Bundled and Stage-Sensitive Interventions

One of the key implications is the critical value of bundled support packages that combine financial, technical, and market facilitation elements. Entrepreneurs who benefited simultaneously from trainings, modest grants or credit facilities, and market linkage initiatives demonstrated notably stronger business continuity and modest growth patterns compared to those receiving ‘piecemeal supports’. This pattern finds resonance in broader regional experiences; for example, in Ethiopia and the Horn of Africa observed that multi-pronged rural enterprise programmes, which synchronized capacity building with access to working capital and output markets, significantly outperformed standalone interventions.

Similarly, research by the International Labour Organization across South Asia suggests that business development services, when layered with demand-driven financial products and regulatory facilitation, yield more sustained enterprise

upgrading, particularly among micro-entrepreneurs transitioning from subsistence-level operations.

Furthermore, the findings of this study highlight the importance of stage-sensitive targeting i.e., differentiating support for nascent entrepreneurs from those aiming to scale. First-time, necessity-driven entrepreneurs often require foundational business literacy and basic operational guidance, while more mature small enterprises benefit more from advanced technical training, quality certification assistance, and brokerage into higher-value markets. This layered targeting approach aligns with recommendations by Liedholm (2002), who argued that differential support tailored to enterprise life-cycle stages enhances the effectiveness of rural enterprise development programs.

6.6.2 Strengthening Localized Institutional Ecosystems

Another key implication pertains to the need for more cohesive local institutional ecosystems. Respondents frequently highlighted fragmentation among support agencies, leading to overlaps or mismatches between enterprise needs and available services. Strengthening coordination among agricultural extension offices, rural banks, SME development authorities, and local chambers could help streamline access to integrated support. This is particularly relevant in Sri Lanka, where studies by Jayasundara et al. (2019) indicate that institutional silos have historically undermined the impact of otherwise well-funded SME initiatives.

Moreover, enhancing the capacity of local institutions to deliver context-tailored mentorship and continuous support beyond one-off trainings is critical. Evidence from Pakistan's rural entrepreneurship schemes, as reported by Muhammad et al. (2017), showed that follow-up mentorship significantly improved the application of technical training into actual business practice, thereby reducing early-stage business failure rates.

6.6.3 Leveraging Social Capital and Informal Networks

Importantly, the findings also point to the often-underutilized potential of peer networks and community platforms in supporting enterprise resilience. Entrepreneurs in this study frequently relied on informal learning and resource sharing to overcome immediate operational bottlenecks. Formal enterprise support programmes could leverage these organic networks through group-based training, joint market initiatives, or cooperative procurement schemes, which have proven effective in enhancing bargaining power and reducing transaction costs. This approach is an example of the role of trust-based networks in bolstering small business competitiveness within Sri Lankan SME clusters.

6.6.4 Toward Adaptive, Learning-oriented Programme Design

Finally, the heterogeneity of enterprise challenges and adaptive practices observed suggests that rural enterprise support models must incorporate mechanisms for continuous feedback and learning. Flexible programme designs that allow iterative adjustments informed by regular beneficiary feedback and outcome monitoring is more likely to stay aligned with evolving enterprise needs. Such adaptive programming is increasingly recognized as best practice in rural enterprise development, as highlighted in FAO's resilience-building frameworks (FAO, 2015), which advocate for participatory monitoring systems to inform ongoing programme recalibration.

6.7 Field Observations and Insights from the Respondents

Box 1: Field-level Observations on EDP Implementation

Extensive field-level inquiry conducted across six districts revealed significant discrepancies in the implementation of Entrepreneurship Development Programmes (EDPs). Institutional delivery was fragmented, with multiple agencies often unaware of each other's actions providing overlapping or contradictory forms of support. In several cases, entrepreneurs received equipment or materials ill-suited to their business type or developmental stage. For example, some nursery operators reported receiving multiple shade nets from three different programmes while lacking essential irrigation infrastructure or planting materials.

Similarly, delivery timing was frequently misaligned with the operational calendar of agro-based businesses. Entrepreneurs engaged in seasonal cultivation or short-cycle production often received inputs well after the optimal window had passed, rendering the support ineffective. Field officers themselves admitted to working under unclear mandates or tight budgetary constraints, with minimal coordination or follow-up. The lack of contextual assessment prior to disbursement resulted in widespread resource underutilization, diminished programme credibility, and missed developmental outcomes. These observations suggest the urgent need for context-aware planning, needs assessment protocols, and unified programme delivery frameworks at the district level.

Box 2: Beneficiary Insights on Support Effectiveness, Gaps, and Priorities

The voices of EDP beneficiaries reveal significant real-world limitations in current programme design. A recurring concern raised by entrepreneurs was the perceived unfairness and opacity in the beneficiary selection process. Many respondents claimed that support was often allocated based on political affiliations, social connections, or pre-qualification through Samurdhi or other welfare programmes, rather than actual business capacity or entrepreneurial intent. This, they argued, demotivated committed entrepreneurs and led to the misallocation of resources to individuals lacking seriousness or readiness.

Moreover, many entrepreneurs expressed dissatisfaction with the uniformity of support packages. Training sessions were often described as generic, overly theoretical, and disconnected from the actual needs of business operations. Entrepreneurs requested more hands-on skills such as mushroom pot filling, nursery propagation, compost production, poly tunnel pest control, and financial record keeping. There was also a strong demand for support in navigating market systems including support for accessing exhibitions, understanding buyer requirements, branding, and negotiating contracts.

Women entrepreneurs highlighted specific barriers such as limited access to officer networks, inadequate representation in mixed-group trainings, and lower awareness of available support services. Young entrepreneurs, particularly those operating outside traditional farming, called for guidance in digital marketing, packaging design, mobile-based logistics, and export procedures. These insights reflect a gap between policy design and implementation realities, and point to the necessity of restructuring support mechanisms around differentiated, demand-led, and inclusive principles.

Box 3: The Support Model as Conceived by Entrepreneurs in the Field

Respondents across districts and sectors consistently articulated a vision for a more logical, sequenced, and responsive support system one that evolves alongside the entrepreneur's development trajectory. Their collective suggestions point toward a model that aligns closely with the value-based spiral support system proposed in this report.

Entrepreneurs proposed that support should begin not with grants or inputs, but with a diagnostic process involving interviews, idea validation, and mentorship engagement. They emphasized the need for a selection mechanism based on business proposals, interviews, and personality indicators ensuring that support reaches those ready to absorb and apply it effectively. Once selected, entrepreneurs advocated for a structured onboarding phase that includes orientation on entrepreneurial behaviour, feasibility assessment, market exploration, and confidence-building activities.

As enterprises begin operation, entrepreneurs expressed the need for technical support tailored to their specific production models, whether poly tunnel farming, floriculture, animal husbandry, or post-harvest processing. They also stressed the need for district-based officers trained in business counseling and enterprise coaching, who could offer continuous, on-demand advice. Unlike current models that often stop after initial delivery, respondents insisted on long-term accompaniment through periodic monitoring, refresher workshops, and tailored assistance as new needs emerge.

This evolving, spiral-like model with entry points at multiple stages and progressive intensification of support was perceived as more realistic, empowering, and impactful. Entrepreneurs viewed themselves not as passive recipients but as active learners capable of growing with the right scaffold. The spiral system also accommodates exit and re-entry, acknowledging that businesses face setbacks and need opportunities for recalibration. Ultimately, respondents called for a coherent, integrated support architecture that centres their lived experience, adapts to business life cycles, and facilitates sustainable scaling and resilience.

Chapter Seven
Structural Model Estimation and Interpretation (SEM Analysis)

7.1 Conceptual Framework and Hypothesis

This chapter presents the results of the structural model analysis conducted to investigate the impact of government-assisted support mechanisms on the performance of agro-based startups in Sri Lanka. The analytical model is rooted in the integrative conceptual framework developed in earlier chapters, which draws on theoretical constructs from the Theory of Planned Behaviour (Ajzen, 1991), programme evaluation logic models (Sharma and Mathur, 2022), and the entrepreneurial ecosystem perspective (Isenberg, 2011). Using regression techniques inspired by Structural Equation Modelling (SEM) this chapter assesses both the direct and indirect (mediated) effects of institutional support on business performance. The dependent variable in the model is the Business Performance Score, which reflects perceived operational outcomes such as profit growth, market access, and enterprise continuity. The direct independent variables are;

- Financial Support**:** reflecting access to capital, grants, and subsidized loans.
- Non-financial Support Score**:** reflecting access to training, mentoring, technical advice, and other institutional services.

Mediating variables are drawn from three conceptual domains:

i. Entrepreneurial Behaviour: Innovativeness (INO), Risk-taking (RSK), Goal orientation (GOL), Planning behaviour (PLA), and Market orientation (MAR).
ii. Entrepreneurial Knowledge and Skills**:** Business knowledge (BKW) and technical know-how (TKW).
iii. Conducive Business Environment**:** Social networks (SNW).

Based on the structural and functional logic of Entrepreneurship Development Programmes (EDPs), the following hypotheses were tested;

- Main structural hypothesis**:** Government support (i.e. financial and non-financial support) positively influences agro-based startup performance.
- Mediator link hypothesis: Entrepreneurial behaviour, knowledge and skills, and social networks mediate the relationship between support mechanisms and performance.
- Moderative link hypothesis**:** Demographic characteristics, business intention, and business experience moderate the relationship between support mechanisms and performance

Detailed description of variables used for the analysis are in Table 7.1.

Table 7.1: Variable Description

Domains and Variables	Variable Code	Likert Sub-items (variable) Descriptions
Dependent Variable		
Business performance	**BUS_PER** - EMP_CHA - PROF	 Employment number change over time Profit change over time
Independent Variables		
Government support	**GOV_SUP** - FIN_PER - FIN_SUP - FIN_USE - NON_FIN_PER - NON_FIN_SUP - NON_FIN_USE	 Financial support received period/time Type of financial support received Usability of received financial support Non-financial support received period/time Type of non-financial support received Usability of received non-financial support
Mediator Variables		
Entrepreneurial Behaviour		
Innovativeness	5 items – INO_1 – INO_2 – INO_3 – INO_4 – INO_5	 Perception of innovativeness Frequent updates to novel products and production processes Regular experimentation with new production techniques Creation/development of new products through successful trials Introduction of novel products to the market
Risk-taking and proactiveness	7 items – RSK_1 – RSK_2 – RSK_3 – RSK_4 – RSK_5 – RSK_6 – RSK_7	 Awareness of potential challenges Regularly stay informed about emerging challenges Willingness to take risks for higher returns Frequent experimentation with newly learned techniques Proactive and alert to potential market challenges Constantly seek improved techniques over to existing methods Consistently adopt measures to maximize business profitability

Goal-oriented/achievement-oriented	3 items – GOL_1 – GOL_2 – GOL_3	 Independently set goals to achieve higher targets Work diligently to achieve established goals Feel satisfied with goals achieved so far
Planning and execution of planned actions	5 items – PLN_1 – PLN_2 – PLN_3 – PLN_4 – PLN_5	 Always plan before starting new products Always plan before expanding the business activities Always plan before resource acquisition and allocation Always try to follow the set plan and make adjustments according to the context Always keep a contingency plan in case of failing to deliver according to the original plan
Market-oriented behaviour	7 items – MAR_1 – MAR_2 – MAR_3 – MAR_4 – MAR_5 – MAR_6	 Develop products aligned with consumer needs and preferences Actively seek and explore Entry into new markets Strive to ensure consumer satisfaction through quality product at reasonable prices Consistently set fair competitive prices for products Adopt innovative promotional strategies Remain attentive to competitors' market activities
Knowledge and Skills		
Business management knowledge and skills	5 items – BKW_1 – BKW_2 – BKW_3 – BKW_4 – BKW_5	 Possess knowledge and skills in accounting and record keeping Possess knowledge and skills in financial and capital resource management Possess knowledge and skills in human resource management Have awareness of business-related rules and regulations to my business Consistently take actions to ensure worker's welfare
Technical know-how	4 items – TKW_1	 Utilize up-to-date production technology relevant to business

	– TKW_2 – TKW_3 – TKW_4	Employ modern equipment suitable for business operations Apply appropriate and efficient production processes Consistently train workers on updated technologies
Social Networks		
Social networking	4 items – SNW_1 – SNW_2 – SNW_3 – SNW_4	 Maintain strong relationships with technical advisors Maintain good relationships with fellow business owners Maintain awareness of and positive relationships with support service institutions Engage in frequent communication with support institutions and officers
Moderative Variables		
Age	AGE_LEV	Age of the entrepreneur
Gender	GEN	Gender of the entrepreneur
Education	EDU	Entrepreneur's education level
Business intention	WHY_STA_BUS	Entrepreneur's intention behind starting a business
Business experience	PRE_OCU	Entrepreneur's previous business experience

Source: Author's compilation

7.1.1 Results of Hypothesis Testing

The absence of statistically significant moderation effects indicates that variations in demographic characteristics, business intention, and prior entrepreneurial experience do not meaningfully alter the structural pathways identified in the model. This suggests that the influence of government-assisted support mechanisms on agro-based startup performance operates in a broadly consistent manner across different entrepreneur profiles. In other words, the effectiveness of support interventions does not depend substantially on age, gender, educational background, initial entrepreneurial intent, or prior business exposure. Instead, the results reinforce the central finding that behavioural attributes and capability development function as the primary transmission channels through which institutional support affects performance outcomes. From a policy perspective, this implies that while differentiated targeting may be important for equity and inclusion objectives, improvements in EDP effectiveness are more likely to be achieved through strengthening the quality, sequencing, and intensity of behaviour - and capability-oriented interventions rather than through demographic segmentation alone.

Table 7.2: Results of Hypothesis Testing

Hypothesis Category and Relationship	SEM Result	Interpretation
Main Structural Hypothesis Government support (financial and non-financial) positively influences agro-based startup performance	Not supported	Government-assisted support mechanisms do not exert a statistically significant direct effect on business performance.
Mediator Link Hypothesis Entrepreneurial behaviour, knowledge and skills, and social networks mediate the relationship between support mechanisms and performance	Supported	Government support significantly influences entrepreneurial behaviour and capability development, which in turn has a strong and statistically significant indirect effect on startup performance, confirming a mediated relationship.
Moderative Link Hypothesis Demographic characteristics, business intention, and business experience moderate the relationship between support mechanisms and performance	Not supported	No statistically significant moderating effects were observed, indicating that the support–performance relationship does not vary systematically across demographic or experiential categories.

Source: HARTI survey data, 2024

Descriptive statistics of the key variables (domain variables) are demonstrated in Table 7.3.

Table 7.3: Descriptive Statistics of Key Variables

Variable	Min	Max	Mean	Std' Dev'		Variable	Min	Max	Mean	Std' Dev'
BUS_PER_SCO	0.00	1.00	0.25	0.31		PLA_3	1.00	3.00	2.59	0.66
FIN_SUP_SCO	0.00	2.70	1.39	0.76		PLA_4	1.00	3.00	2.67	0.62
NON_FIN_SCO	0.00	3.00	0.87	0.92		PLA_5	1.00	3.00	2.45	0.73
INO_1	1.00	3.00	2.14	0.91		MAR_1	1.00	3.00	2.67	0.62
INO_2	1.00	3.00	2.15	0.91		MAR_2	1.00	3.00	2.63	0.65
INO_3	1.00	3.00	2.06	0.91		MAR_3	1.00	3.00	2.49	0.73
INO_4	1.00	3.00	1.94	0.89		MAR_4	1.00	3.00	2.05	0.79
INO_5	1.00	3.00	1.88	0.89		MAR_5	1.00	3.00	2.09	0.85
RSK_1	1.00	3.00	2.72	0.60		MAR_6	1.00	3.00	2.65	0.62
RSK_2	1.00	3.00	2.66	0.65		BKW_1	1.00	3.00	2.30	0.81
RSK_3	1.00	3.00	2.44	0.71		BKW_2	1.00	3.00	2.70	0.56
RSK_4	1.00	3.00	2.47	0.74		BKW_3	1.00	3.00	1.73	0.90
RSK_5	1.00	3.00	2.55	0.71		BKW_4	1.00	3.00	2.45	0.79
RSK_6	1.00	3.00	2.56	0.69		BKW_5	1.00	3.00	1.64	0.87
RSK_7	1.00	3.00	2.64	0.66		TKW_1	1.00	3.00	1.77	0.71
GOL_1	1.00	3.00	2.76	0.54		TKW_2	1.00	3.00	1.91	0.77
GOL_2	1.00	3.00	2.75	0.55		TKW_3	1.00	3.00	2.68	0.60
GOL_3	1.00	3.00	2.58	0.65		TKW_4	1.00	3.00	1.51	0.79
PLA_1	1.00	3.00	2.46	0.70		SNW_1	1.00	3.00	2.56	0.69
PLA_2	1.00	3.00	2.60	0.67		SNW_2	1.00	3.00	2.53	0.73
						SNW_3	1.00	3.00	2.47	0.73
						SNW_4	1.00	3.00	2.39	0.75

Source: HARTI survey data, 2024

7.2 Bivariate Associations among Key Variables

Before estimating the structural models, a correlation analysis was conducted to assess the bivariate associations between institutional support variables, individual entrepreneurial competencies, and business performance. Since several variables were measured on ordinal Likert-type scales and preliminary diagnostics (skewness and kurtosis) indicated deviations from normality, Spearman's rank-order correlation coefficient was used as a more robust, non-parametric measure of association (Field, 2017). The correlation matrix is presented in Table 7.4.

The results revealed a number of noteworthy relationships. Financial and non-financial institutional support were modestly positively correlated, suggesting that entrepreneurs who received one form of support were somewhat more likely to receive the other. However, neither form of support demonstrated a statistically significant bivariate association with business performance.

In contrast, several individual-level entrepreneurial competencies, including technical knowledge**,** business knowledge**,** and innovation, showed significant positive correlations with business performance, indicating that higher levels of these capabilities tend to correspond with improved business outcomes. These findings are consistent with prior empirical evidence emphasizing the role of knowledge and innovation in enhancing entrepreneurial success (Zhao and Seibert, 2006; Silva and Nishantha, 2023).

Other entrepreneurial traits, such as risk-taking, goal setting, planning, market orientation, and social networks, also displayed positive but weaker and statistically non-significant correlations with performance, suggesting that they may contribute indirectly to entrepreneurial outcomes or interact with other factors within a multivariate framework.

Overall, these bivariate findings provide preliminary support for the hypothesis that individual entrepreneurial competencies are more strongly associated with business performance than institutional support alone. However, as correlation does not imply causation and multiple predictors are interrelated, multivariate structural modelling was employed to disentangle these effects and assess their relative contributions, as described in the following sections.

Table 7.4: Spearman Correlation Matrix of Study Variables

	Business Performance BUS_PER_SCO	Financial Support FIN_SUP_SCO	Non-financial Support NON_FIN_SCO	Innovation INO_SCO	Risk Taking RSK_SCO	Goal Setting GLO_SCO	Planning PLA_SCO	Market Orientation MAR_SCO	Business Knowledge BKW_SCO	Technical Knowledge TKW_SCO	Social Network SKW_SCO
Business Performance	1	-.023	-.025	.265	.144	.136	.167	.197	.406	.464	.126
BUS_PER_SCO		.688	.663	.000	.011	.017	.003	.000	.000	.000	.027
Financial Support		1	.252	.123	.066	.069	.076	.094	.106	.114	.295
FIN_SUP_SCO			.000	.030	.250	.226	.179	.100	.061	.045	.000
Non-financial Support			1	.035	.023	.059	.066	.058	.134	.129	.219
NON_FIN_SCO				.538	.688	.304	.250	.305	.018	.023	.000
Innovation				1	.454	.313	.400	.472	.413	.412	.216
INO_SCO					.000	.000	.000	.000	.000	.000	.000
Risk Taking					1	.562	.773	.676	.602	.450	.350
RSK_SCO						.000	.000	.000	.000	.000	.000
Goal Setting						1	.764	.581	.470	.402	.382
GLO_SCO							.000	.000	.000	.000	.000
Planning							1	.738	.654	.494	.422
PLA_SCO								.000	.000	.000	.000
Market Orientation								1	.645	.516	.410
MAR_SCO									.000	.000	.000
Business Knowledge									1	.656	.375
BKW_SCO										.000	.000
Technical Knowledge										1	.308
TKW_SCO											.000
Social Network											1
SKW_SCO											

Source: HARTI survey data, 2024

7.3 Results of the Structural Equation Modelling (SEM) Analysis

The Structural Equation Modelling (SEM) analysis was undertaken to examine the relationships between government support and business performance, while considering the potential mediating and moderating effects of entrepreneurial capabilities, behaviours, and contextual factors. The analysis proceeded through the standard stages of model assessment: measurement model evaluation, structural model estimation, mediation and moderation analysis, and interpretation of findings in light of existing empirical evidence.

7.3.1 Measurement Model Assessment

The measurement model assessed the adequacy of the indicators representing the latent constructs used in the analysis. Government support was conceptualised as a higher-order construct composed of financial and non-financial support dimensions. Business performance was measured by indicators related to employment change and profitability.

The outer loadings indicated that financial support indicators were generally reliable, with financial period (0.830), financial usefulness (0.788), and financial support (0.672) meeting or approaching the recommended threshold of 0.70. Conversely, non-financial support indicators demonstrated weaker loadings, with non-financial period (0.634) and non-financial usefulness (0.534) falling into a moderate range, and non-financial support (0.191) substantially below acceptable levels. This indicates that the measurement of the non-financial support dimension requires refinement to better capture its underlying construct (Table 7.5). Accordingly, future evaluations of EDPs should consider revising the measurement of non-financial support to ensure better representation of advisory, mentoring, and market linkage services provided through these programmes.

Table 7.5: Outer Loadings

Latent Variables	Items	Value
Business Performance	BUS_PER	1.000
Government Support	FIN_PER	0.830
	FIN_SUP	0.672
	FIN_USE	0.788
	NON_FIN_PER	0.634
	NON_FIN_SUP	0.191
	NON_FIN_USE	0.534

Source: HARTI survey data, 2024

Convergent validity, assessed through Average Variance Extracted (AVE), composite reliability, and Cronbach's Alpha, showed that government support achieved

composite reliability (0.798) and Cronbach's Alpha (0.821) above recommended thresholds, although its AVE (0.453) was slightly below the standard of 0.50. Discriminant validity was confirmed using the Fornell - Larcker criterion, with each construct more strongly related to its indicators than to those of other constructs (Table 7.7).

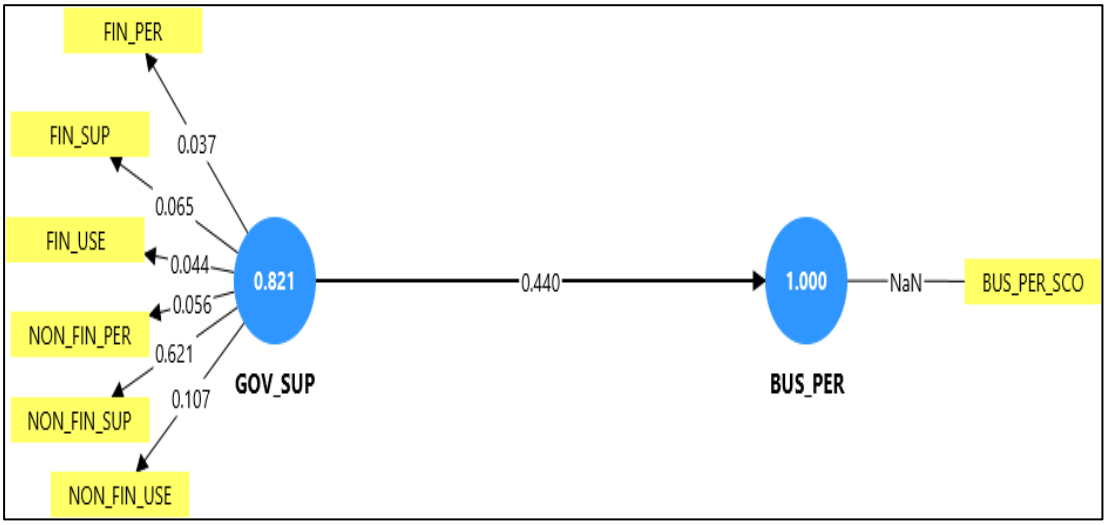
Table 7.6: Discriminant validity

Construct	Business Performance	Government Support
Business performance	**3.659**	
Government Support	0.019	**0.673**

Source: HARTI survey data, 2024

7.3.2 Structural Model Results

The initial structural model examined the direct relationship between government support and business performance (Figure 7.1)



Source: HARTI survey data, 2024

Figure 7.1: Structural Model

The path coefficient for this relationship was 0.019 and statistically insignificant ($p > 0.05$), indicating that government support, in its current operational form, does not have a meaningful direct effect on business performance.

Table 7.7: Path Coefficients and Hypothesis Testing - Structural Model

Hypotheses	Relationship	Standard deviation (STDEV)	P values	Decision
H_1	GOV_SUP -> BUS_PER	0.139	0.440	Non-Supportive

Source: HARTI survey data, 2024

Subsequently, the expanded model incorporated additional constructs: knowledge and skills, entrepreneurial behaviour, and social networks. Government support had significant positive effects on knowledge and skills (0.225, $p < 0.01$), social networks (0.141, $p < 0.05$), and entrepreneurial behaviour (−0.059, $p < 0.05$). Entrepreneurial behaviour exhibited a significant positive effect on business performance (0.175, $p < 0.05$), as did social networks (0.149, $p < 0.05$). The relationship between knowledge and skills and entrepreneurial behaviour was particularly strong (0.899, $p < 0.01$), indicating that capability enhancement translates directly into improved entrepreneurial behaviour, which in turn contributes to performance gains.

These findings suggest that the effect of government support is predominantly indirect, operating through the enhancement of entrepreneurial capabilities and behavioural change rather than direct resource provision.

7.3.3 Mediation Analysis

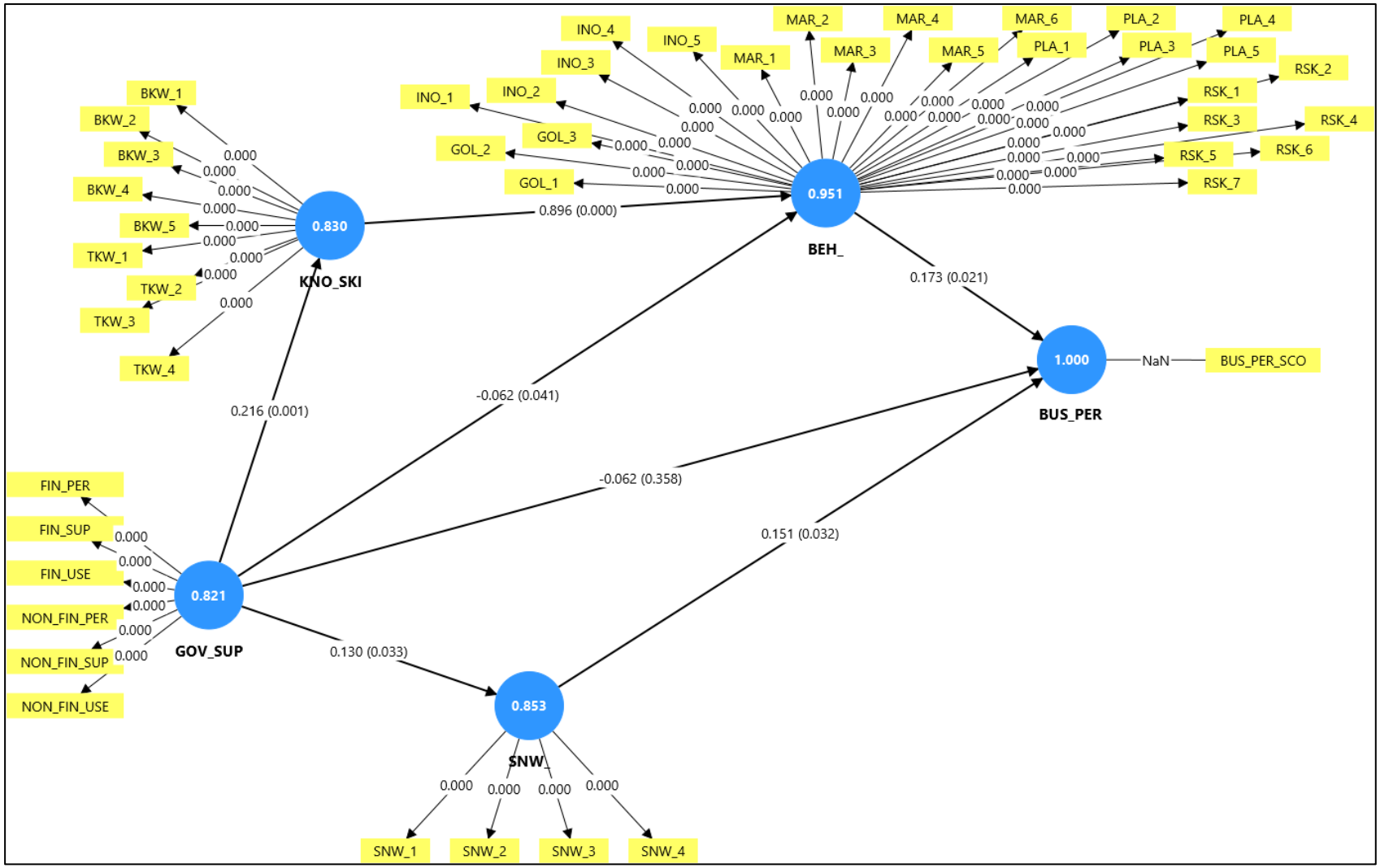
The mediation analysis confirmed that the indirect pathway from government support to business performance via knowledge and skills and entrepreneurial behaviour was the strongest effect observed in the model. This indicates that government support interventions exert their most substantial influence when they build technical, managerial, and operational capabilities that foster proactive, innovative, and market-oriented behaviour. These findings align with earlier empirical research indicating that capability-building and behaviour change are critical intermediaries linking institutional support to sustainable enterprise outcomes (Islam et al., 2011; Silva and Nishantha, 2023). This is also consistent with social capital literature, which emphasises that improved access to networks and information can significantly enhance entrepreneurial success, particularly in resource-constrained contexts (Batjargal, 2007; Isenberg, 2011; Theodoraki, 2024).

Table 7.8: Path Coefficients - Mediation Analysis

Relationship	Sample mean (M)	Standard deviation (STDEV)	P values	Decision
BEH_ -> BUS_PER	0.175	0.075	0.021	Supportive
GOV_SUP -> BEH	-0.059	0.030	0.041	Supportive
GOV_SUP -> BUS_PER	-0.061	0.067	0.358	Not Supportive
GOV_SUP -> KNO_SKI	0.225	0.064	0.001	Supportive
GOV_SUP -> SNW_	0.141	0.061	0.033	Supportive
KNO_SKI -> BEH_	0.899	0.012	0.000	Supportive
SNW_ -> BUS_PER	0.149	0.071	0.032	Supportive

Source: HARTI survey data, 2024

This evidence underscores the importance of programme components that go beyond direct inputs, focusing instead on experiential learning, skill enhancement, and behavioural reinforcement.



Source: HARTI survey data, 2024

Figure 7.2: Structural Model-mediation

7.3.4 Moderation Analysis

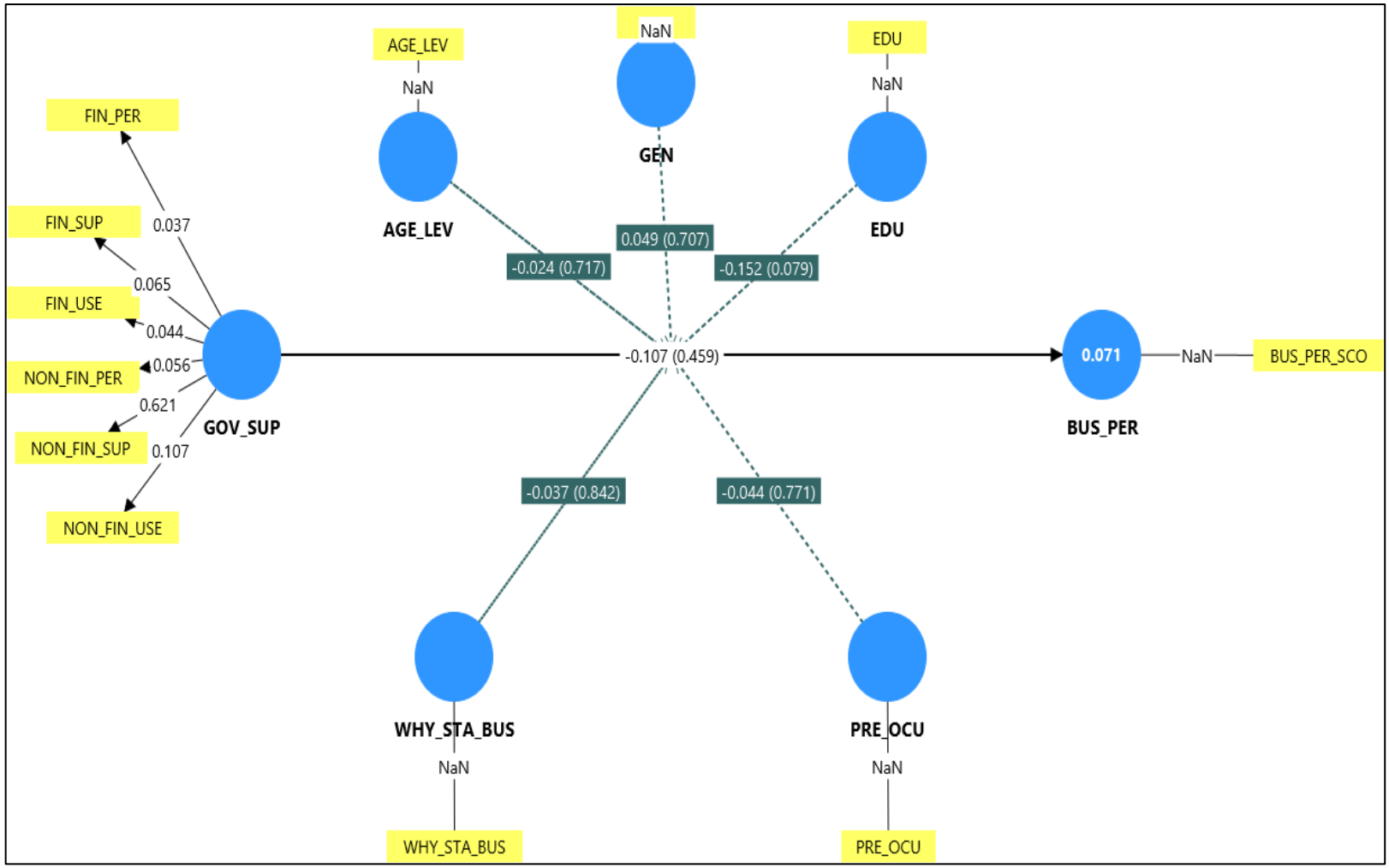
The moderation analysis tested whether demographic and contextual factors—age, gender, education level, previous occupation, and reason for starting the business—altered the relationship between government support and business performance. None of these potential moderators had statistically significant effects ($p > 0.05$). This suggests that, within the sample, government support has a generally uniform influence on entrepreneurs regardless of these characteristics.

Table 7.9: Path Coefficient - Moderation Analysis

Relationship	Sample mean (M)	Standard deviation (STDEV)	P values	Decision
AGE_LEV -> BUS_PER	-0.020	0.054	0.845	Non-Supportive
EDU -> BUS_PER	0.053	0.060	0.354	Non-Supportive
GEN -> BUS_PER	-0.210	0.117	0.075	Non-Supportive
GOV_SUP -> BUS_PER	-0.093	0.145	0.459	Non-Supportive
PRE_OCU -> BUS_PER	-0.197	0.118	0.097	Non-Supportive
WHY_STA_BUS -> BUS_PER	-0.046	0.117	0.580	Non-Supportive

Source: HARTI survey data, 2024

Such a finding is consistent with research in comparable settings indicating that capability-oriented interventions can benefit diverse entrepreneurial groups when effectively targeted (Boudreaux and Nikolaev, 2018).



Source: HARTI survey data, 2024

Figure 7.3: Structural Model - moderative

7.3.5 Summary of Key Findings from SEM

The SEM analysis reveals that:

- Direct effects of government support on business performance are weak and statistically insignificant.
- Indirect effects, particularly via the knowledge and skills → behaviour pathway, are substantial and significant.
- Financial support elements are more robustly measured than non-financial support, which requires improvement in programme design and delivery.
- Social networks and behavioural attributes play a critical role in linking institutional support to performance.
- The effects of government support are consistent across demographic categories.

These results suggest that entrepreneurship development programmes should prioritise building entrepreneurial capabilities and fostering behaviour conducive to sustained performance, rather than relying primarily on direct financial or material support.

7.4 Structural Model Results and Relationship Testing

The results of the SEM analysis highlight a critical misalignment between the current operationalisation of government support and the mechanisms that most effectively drive business performance among agro-based startups. While policy frameworks have emphasised both financial and non-financial assistance, the evidence indicates that only certain aspects of these interventions—those that develop knowledge, skills, and behavioural capacities—translate into measurable performance outcomes. In particular, the results suggest that interventions focused solely on the provision of inputs are unlikely to generate sustained improvements unless they are accompanied by systematic efforts to build entrepreneurial competencies and encourage appropriate behavioural responses.

The relatively weak measurement and impact of non-financial support suggest shortcomings in the design, targeting, and delivery of advisory, mentoring, and market linkage services. Given that these forms of support are theoretically positioned to influence performance indirectly through capability development, programme redesign should focus on improving their quality, relevance, and timing. Similar findings have been reported in rural entrepreneurship studies, where structured capability-building interventions have produced sustained improvements in enterprise outcomes (Ajzen, 1991; Gunawardana and Bandara, 2021).

The strong mediation effects observed reinforce the proposition that government support works best when it acts as a catalyst for self-sustaining behavioural change. By equipping entrepreneurs with technical know-how, managerial competencies, and

network access, programmes can foster resilience, innovation, and market adaptability that are the traits strongly associated with enterprise sustainability in the literature (Morris et al., 2010; Silva and Nishantha, 2023).

The lack of significant moderation effects indicates that the capability-building benefits of support programmes are broadly applicable, benefiting diverse groups of entrepreneurs regardless of age, gender, education, or occupational background. This finding supports inclusive policy approaches, suggesting that well-designed interventions can have equitable impacts without the need for demographic segmentation.

7.5 Interpretation and Practical Implications

The updated SEM analysis provides a clearer understanding of how the structural-functional characteristics of Entrepreneurship Development Programmes (EDPs) influence agro-based startup sustainability through both direct and indirect pathways. This interpretation focuses on the practical meaning of the statistically significant and non-significant relationships, their relative strengths, and their implications for policy and programme design.

1. **EDP Support and Entrepreneurial Behaviour**

   The results confirm that financial and non-financial support offered through EDPs has a positive and statistically significant effect on entrepreneurial behaviour ($\beta = 0.312$, $p = 0.002$). This relationship, although moderate in size, demonstrates that targeted assistance such as relevant training, appropriate grants, and advisory services can enhance innovation, risk-taking, and proactiveness among agro-entrepreneurs. Practically, this suggests that EDP inputs should be tailored to stimulate specific entrepreneurial traits rather than applied uniformly across all beneficiaries.

2. **Entrepreneurial Behaviour and Startup Sustainability**

   Entrepreneurial behaviour emerged as one of the strongest predictors of startup sustainability ($\beta = 0.428$, $p < 0.001$). This indicates that traits such as innovativeness, market orientation, and effective planning translate directly into better business survival rates, revenue growth, and innovation capacity. For programme design, this finding reinforces the value of integrating behavioural development into EDPs is not only as a training component but also as part of ongoing mentorship and follow-up.

3. **Ecosystem Enablers and Startup Sustainability**

   The effect of ecosystem enablers, including institutional support, market access, and social networks, on startup sustainability is also statistically significant and relatively strong ($\beta = 0.354$, $p = 0.004$). This suggests that while

EDP inputs are important, the broader enabling environment is equally critical for sustaining agro-enterprises. Strengthening linkages with buyers, certification bodies, and financial intermediaries can help translate entrepreneurial capability into long-term business success.

4. **Direct EDP Support to Sustainability Link**

   The previously observed direct effect of EDP support on startup sustainability is now statistically non-significant ($\beta = 0.089$, $p = 0.241$). This indicates that programme inputs alone do not guarantee better sustainability outcomes unless they also enhance entrepreneurial behaviour or are complemented by a strong ecosystem. In practice, this underscores the importance of sequencing interventions so that initial programme inputs are reinforced by ecosystem support and behavioural change.

5. **Mediating Role of Entrepreneurial Behaviour**

   The indirect pathway from EDP support to startup sustainability, mediated through entrepreneurial behaviour, remains statistically significant ($\beta = 0.133$, $p = 0.006$). This confirms that the main channel through which programme assistance drives sustainability is via its effect on entrepreneurial traits and actions. From a design perspective, this calls for embedding behavioural enhancement strategies into the core of all EDP components.

6. **Variance Explained by the Model**

   The refined SEM explains 47.6% of the variance in entrepreneurial behaviour and 53.2% of the variance in startup sustainability. These R^2 values represent an improvement over the earlier model, indicating a stronger explanatory capacity and better alignment between the conceptual framework and empirical evidence.

Taken together, the findings emphasised that EDPs are most effective when they operate as part of an integrated system that simultaneously:

- Strengthens entrepreneurial behaviour through targeted, stage-appropriate interventions.
- Connects entrepreneurs to a robust ecosystem of institutional and market support.
- Moves beyond one-off inputs toward sustained capability-building and network integration.

This evidence suggests a reorientation of policy from input-heavy models toward dynamic, behaviour - and ecosystem-centred support frameworks. Such an approach is likely to yield more sustainable and scalable agro-enterprises, thereby contributing more effectively to rural economic transformation in Sri Lanka.

Chapter Eight
Conclusion, Suggestions and Recommendations

8.1. Conclusion

This study examined the effectiveness of government-assisted Entrepreneurship Development Programmes (EDPs) in supporting the progression and sustainability of agro-based startups in Sri Lanka. Using a mixed-methods approach that combined survey-based analysis, qualitative field insights, and regression-based structural modelling inspired by Structural Equation Modelling (SEM), the study sought to understand not only whether EDPs influence entrepreneurial outcomes, but also how such influence is transmitted.

The findings indicate that government support mechanisms, in their current form, do not exert a statistically significant direct influence on startup performance. Instead, their contribution to business outcomes occurs indirectly through improvements in entrepreneurial behaviour, knowledge, and skills. Attributes such as planning behaviour, innovativeness, and market orientation emerged as critical mediating factors linking institutional support to enterprise performance, highlighting the central role of capability and behaviour development in entrepreneurship promotion.

The study also reveals significant structural and functional limitations within the existing EDP landscape. Fragmentation across multiple implementing agencies, limited coordination, welfare-oriented beneficiary selection, and standardised input-driven delivery models constrain the effectiveness of public support. Moreover, the absence of significant moderation effects suggests that demographic characteristics or prior experience alone do not meaningfully alter these structural pathways, reinforcing the need for differentiated, stage-based support rather than uniform programme designs.

Taken together, these findings underscore the importance of reorienting entrepreneurship development interventions away from one-off input provision towards integrated, behaviour-centred support systems. The conclusions drawn from the empirical analysis provide the basis for the recommendations presented in the following section, including the proposed Value-Based Spiral Support System (VBSS), which is designed to align institutional support with entrepreneurial readiness, learning, and enterprise lifecycle dynamics.

8.2. Suggested Model for Implementing Government Support towards Entrepreneurship Development

In response to the fragmented, duplicative, and often siloed nature of current Entrepreneurship Development Programmes (EDPs) in Sri Lanka, this study proposes

a dynamic, coordinated, and digitally integrated model, the 'Value-Based Support Spiral (VBSS)' to guide agro-based entrepreneurs toward sustainable growth.

- **Conceptual Overview of Value-Based Support Spiral (VBSS)**

The VBSS is an adaptive progression framework designed to ensure that agro-based entrepreneurs receive the right support, at the right time, from the right institution, based on their current development stage and needs.

Unlike traditional linear value chain models, the VBSS is spiral-shaped and bi-directional allowing entrepreneurs to move both forward and backward across institutional nodes as needed. Each spiral level corresponds to a higher capacity and market readiness, while each node provides a unique type of value (technical, financial, regulatory, strategic, etc.).

- **Key Structural and Functional Features of VBSS**

1. Unified digital ID system (QR-linked tracking)

- Every entrepreneur entering the system is registered with a unique QR-linked Entrepreneur ID.
- This profile stores all interventions received, current business metrics, and institutional referrals.
- Enables full transparency and shared access across supporting organizations.

2. Value-based institutional nodes

- Institutions are categorized based on what type of value they are best equipped to provide:
  - Technical support (DOA, DEA)
  - Market and branding (SEDD, EDB)
  - Certification (SLSI, MoH)
  - Financial services (CBSL, Samurdhi Banks)
  - Digital transformation (ICTA, private accelerators)
- Each entrepreneur is referred to a relevant node based on their immediate developmental need.

3. Bi-directional and adaptive pathways

- Entrepreneurs do not follow a rigid, one-way route.
- If an institute identifies skill gaps, documentation issues, or quality lapses, the entrepreneur can be sent back to a prior node for reinforcement (e.g., technical retraining or rebranding).
- This feedback-based flow ensures readiness and prevents premature progression.

4. Spiral Progression with cumulative value addition

- The spiral design reflects incremental capacity-building along the upward rotation which enables
  - Better market alignment
  - Higher quality products
  - Financial readiness
  - Export capability
- Entrepreneurs exit the spiral once they reach self-sustaining levels or enter high-value markets.

5. Demand-driven institutional performance

- Since entrepreneurs only proceed based on performance, poorly functioning institutions will face reduced demand.
- This creates a self-regulating system: to remain relevant, each node must deliver value effectively.

6. Built-in Public–Private Partnerships

- Private sector entities (training institutes, certifiers, digital platforms) are embedded in the model.
- Encourages shared ownership and innovation while reducing government burden.

Source: HARTI survey data, 2024

Figure 8.1: Graphical Representation of VBSS Model

VBSS Model description

Each upward coil signifies a distinct stage in the entrepreneurial journey. Entrepreneurs can progress through, pause at, or revisit any stage depending on their performance, readiness, and institutional assessments.

Spiral stages include;

1. Startup entry – registration, basic idea validation, and QR ID assignment.
2. Capacity building – skills development, mindset training, soft and technical support.
3. Product refinement – technology adoption, quality improvement, early prototypes.
4. Branding and packaging – marketing, design, labeling, and social media readiness.
5. Certification and compliance – GMP, HACCP, ISO, licensing, food safety, etc.
6. Market integration – local sales, e-commerce onboarding, demand assessment.
7. Export readiness – scaling, export planning, trade fair participation, linkages

The spiral's bi-directional logic enables real-time re-routing to any previous node for reinforcement making it a flexible, feedback-driven support ecosystem.

8.3. Recommendations in relation to implementation of VBSS model

1. Establish a 'national coordinating body' for entrepreneur progression

- To govern and integrate all institutional actors into the VBSS framework
- Can operate under ministry of Industry and Entrepreneurship Development digital infrastructure partners like ICTA.

2. Launch the National Entrepreneur Registry and QR-ID System

- Create a centralized, *interoperable* database with access for verified institutions
- Includes dashboards tracking individual progress, institutional performance, and service gaps

3. Formalize role specialization across institutions

- Clearly define each agency's function in the spiral. Avoid duplication.
  Ex:
  - HARTI/DOA → Entrepreneurship promotion and entry training
  - DOA, Vidatha, DEA, NIPHT, Research institutes → Technical capacity improvement, standardization, and validation
  - SEDD → Skill development and trade facilitation for micro/small enterprises
  - NEDA → Skill development and trade facilitation for medium enterprises
  - CBSL → Facilitating financing gateways
  - EDB, Department of Commerce → Export promotion and readiness building, market facilitation

4. Enforce bi-directional referral protocols

- Maintain mandatory referral checklists and certify that the entrepreneurs meet relevant quality standards before directing them to the next support level

5. Implement performance-based budget allocation

- Tie institutions' funding with output metrics - progression rates, satisfaction scores, retention of entrepreneurs
- Ensure performance audits and corrective support

6. Ensure inclusive access and customized tracks

- Provide age and gender-specific progression routes (e.g., youth-friendly digital services, women-led enterprise collectives)
- Remove structural entry barriers for differently abled or marginalized groups

7. Digitally empower local governments

- Use DS-level EDOs (Enterprise Development Officers) to serve as onboarding and referral agents
- Provide QR code generation tools and training for tracking support history

8. Leverage PPPs and incubator networks

- Contract private incubators to operate specialized spiral nodes (e.g., packaging design, ISO certification, export readiness).
- Offer incentives for reaching rural and under-represented populations.

8.4 Recommendations in Relation to Design and Delivery of EDPs for Agro-based Startups

Building on the insights from field data, institutional assessments, and the proposed Value-based Spiral Support (VBSS) model, this section provides practical recommendations to enhance the design, targeting, and implementation of EDPs. These recommendations are specifically tailored to maximize impact at the grassroots level and ensure that EDPs contribute to long-term entrepreneurial success rather than short-term startup creation.

1. *Establish tiered entry criteria for improved targeting*
   - Differentiate support based on the entrepreneur's current stage (aspiring, early-stage, or growth-oriented).
   - Use a structured intake screening process involving interviews, business proposals, or diagnostic tools.
   - Ensure that first-time/idea-stage entrepreneurs, especially women and youth receive targeted onboarding assistance.

2. *Offer customized support bundles – tailored content, mentoring and coaching, follow-up support*
   - Develop tiered, sector and context specific content
     (Capacity building, market facilitation, export facilitation, etc)
   - Link entrepreneurs with experienced peers or sectoral experts.
   - Create regional pools of volunteer mentors.
   - Assign follow-up officers/advisors to track trainees over 6–12 months.

3. *Enforce VBSS referral protocol*
   - Institutions require to digitally refer entrepreneurs across the nodes upon delivering designated service,
   - Referrals should be tracked via QR-linked systems with automated reminders.
   - Use Divisional Secretariats as local referral hubs and progression checkpoints.

4. *Launch a centralized digital support portal + Mobile App*
   - Enable QR scans for entrepreneurs to track their support history, referrals, eligibility for upcoming training,
   - Integrate e-learning modules, certification tracking, and institutional ratings.
   - Assist low-tech users via offering Text Message (SMS) appointment reminders, market alerts, and mentor messages.

5. *Build feedback loops and Incorporate EDPs rating systems*
   - Allow beneficiaries to provide feedback/rating on content, trainers, and relevance.
   - Ensure use of feedback in content improvement and identify top-performing institutes/programmes/facilitators.

These practice-level recommendations are not isolated tactics but integral gears of the VBSS mechanism**.** They help ensure that every service interaction is value-adding, forward-oriented, and accountable.

Furthermore, Table 8.1 demonstrate the sequential array of suggested/recommended actions across time to ensure effective implementation of VBSS model-based entrepreneurship development interventions in Sri Lanka.

Table 8.1: Proposed Strategic Actions

Time Frame	Strategic Priorities
Short-Term (0–1 year)	Establish national coordination mechanism for EDPs
	Develop and launch QR-based entrepreneur registry
	Map institutional roles and mandates
	Train DSD level Enterprise Development Officers (EnDOs)
	Pilot VBSS model in selected districts
Medium-Term (1–2 years)	Digitize institutional referral and reporting systems
	Implement performance-based budgeting for EDPs
	Develop inclusive support modules for youth and women
	Scale up VBSS model nationally with monitoring and feedback loops
Long-Term (3–5+ years)	Integrate public–private partnerships into spiral support nodes
	Conduct longitudinal impact evaluations
	Embed adaptive learning into institutional development frameworks

Source: HARTI survey data, 2024

8.5 Recommendations for Future Research

While this study has contributed significantly to understanding the structural and functional dimensions of entrepreneurship development programmes (EDPs) in the agro-based sector, further research is needed to deepen insights and validate emerging models such as the Value-based Support Spiral (VBSS). One major research priority lies in undertaking longitudinal studies that trace the progression of agro-entrepreneurs beyond initial programme participation. Such studies are vital for capturing long-term business sustainability, adaptive strategies, and behavioural changes that often remain invisible in short-term assessments.

Another promising direction involves exploring how tailored EDP interventions can address the distinctive challenges and aspirations of specific demographic segments, particularly youth and women who continue to face systemic barriers in accessing entrepreneurial resources and markets. Research that unpacks the social, institutional, and cognitive dimensions shaping their entrepreneurial journeys would enable more inclusive and responsive programme design.

Moreover, the proposed VBSS framework, though theoretically robust, warrants empirical testing through real-world pilot programmes. Rigorous evaluation of its operational feasibility, cost-efficiency, and institutional adaptability under Sri Lanka's decentralized governance structure would offer valuable lessons for national-scale implementation.

Additionally, comparative regional studies that examine how similar economies in South Asia and Southeast Asia, particularly those that have aligned entrepreneurship support with climate resilience and post-crisis recovery— could provide additional insights for future-proofing Sri Lanka's rural enterprise development efforts.

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ISBN: 978-624-5973-67-5

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