

MOSHI CO-OPERATIVE UNIVERSITY

**LOGISTICS MANAGEMENT PRACTICES AND PERFORMANCE OF
SMALL-SCALE GRAPE PROCESSING FIRMS IN DODOMA, TANZANIA**

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SMALL-SCALE GRAPE PROCESSING FIRMS IN DODOMA, TANZANIA**

BY

DEBORA CHELESTINO KISINGA

**A THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY OF MOSHI CO-OPERATIVE
UNIVERSITY, MOSHI TANZANIA**

DECEMBER, 2025

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I, **Debora Chelestino Kisinga**, declare that this thesis is my own original work and that it has not been presented and will not be presented to any other higher learning Institution for a similar or any other academic award.

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CERTIFICATION

The undersigned certify that they have read and recommend for acceptance by the Moshi Co-operative University a thesis titled **“Logistics Management Practices and Performance of Small-scale Grape Processing Firms in Dodoma, Tanzania”** in fulfilment of the requirements for the award of the degree of Doctor of Philosophy of the Moshi Co-operative University.

Prof. Alban Dismas Mchopa
(Main Supervisor's Name)

Signature _____
(Main Supervisor's Signature)

Date _____

Prof. Leonada Raphael Mwagike
(Co-Supervisor's Name)

Signature  _____
(Co-Supervisor's Signature)

Date _____

DEDICATION

I am honoured to dedicate this doctoral dissertation to my beloved family: my dear mother, Grace Rwechungura Kisinga; my late father, Chelestino Boniphase Kisinga; my husband, Godfrey Justin Moshi; and my sons, Alvin, Austin, and Abrams. Your unwavering love, support, and encouragement have been the foundation of this journey.

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TABLE OF CONTENTS

DECLARATION AND COPYRIGHT	i
CERTIFICATION	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF APPENDICES	x
LIST OF ABBREVIATIONS AND ACRONYMS	xi
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Background to the Study.....	1
1.2 Statement of the Problem.....	8
1.3 Research Objectives.....	10
1.3.1 Main Objective.....	10
1.3.2 Specific Objectives	10
1.4 Justification of the Study	10
1.5 Literature review	12
1.5.1 Definitions of Terms	12
1.6 Theoretical Literature Review	16
1.6.1 Resource Dependency Theory	17
1.6.2 Resource-Based View	18
1.6.3 Dynamic Capabilities Theory	20
1.6.4 Transaction Cost Theory	21
1.7 Empirical Literature Review.....	22
1.7.1 Warehouse Management Practices and Performance	22
1.7.2 Supplier Relationship Management Practices and Performance	23
1.7.3 Order Management Practices and Performance.....	24
1.7.4 Transportation Management Practices and Performance	25
1.7.5 Logistics Capabilities and Performance.....	26
1.8 Research Gap	28
1.9 Conceptual Framework.....	30

1.10	General Methodology	33
1.10.1	Research Philosophy and Approach	33
1.10.2	Research Design.....	33
1.10.3	Description of the Study Area.....	34
1.10.4	Population and Sampling Procedure	35
1.10.5	Data Collection	35
1.10.6	Measurement of Variables	36
1.10.7	Data Validity, Reliability, and Analysis	40
1.11	Ethical Consideration.....	41
1.12	Organisation of the Study Thesis	41
	REFERENCES.....	43
	CHAPTER TWO	67
	PUBLISHED PAPER ONE.....	67
	WAREHOUSE MANAGEMENT PRACTICES AND PERFORMANCE OF SMALL- SCALE GRAPES PROCESSING FIRMS: EVIDENCE FROM TANZANIA	67
2.1	An Overview	67
	CHAPTER THREE	89
	PUBLISHED PAPER TWO	89
	SUPPLIER RELATIONSHIP MANAGEMENT AND PERFORMANCE OF SMALL- SCALE GRAPES PROCESSING FIRMS IN DODOMA, TANZANIA: THE MODERATING ROLE OF LOGISTICS CAPABILITIES.....	89
2.1	An Overview	89
	CHAPTER FOUR.....	114
	PUBLISHED PAPER THREE	114
	ORDER MANAGEMENT PRACTICES AND PERFORMANCE OF SMALL-SCALE GRAPES PROCESSING FIRMS: MODERATED BY LOGISTICS CAPABILITIES.....	114
4.1	An Overview	114
	CHAPTER FIVE.....	135
	MANUSCRIPT.....	135
	TRANSPORTATION MANAGEMENT PRACTICES AND PERFORMANCE OF SMALL-SCALE GRAPES PROCESSING FIRM: EVIDENCE FROM DODOMA, TANZANIA.....	135
	REFERENCES.....	157

CHAPTER SIX	165
SUMMARY, CONCLUSION, AND RECOMMENDATIONS.....	165
6.1 Summary of the Findings.....	165
6.1.1 Warehouse management practices and performance of SSGP firms.....	165
6.1.2 Supplier relationship management practices and performance of SSGP Firms.....	166
6.1.3 Order management practices and performance of SSGP firms	168
6.1.4 Transportation Management Practices and Performance	169
6.2 Conclusion	170
6.2.1 Warehouse Management Practices and Performance	170
6.2.2 Supplier Relationship Management and Performance.....	170
6.2.3 Order Management Practices and Performance.....	170
6.2.4 Transportation Management Practices and Performance	171
6.3 Recommendations.....	171
6.3.1 Warehouse Management Practices and Performance	171
6.3.2 Supplier Relationship Management and Performance.....	172
6.3.3 Order Management Practices and Performance.....	172
6.3.4 Transportation Management Practices and Performance	173
6.4 Policy Implications	173
6.5 Contribution of the Study.....	174
6.5.1 Theoretical Contribution.....	174
6.5.2 Empirical Contribution	175
6.5.3 Methodological Contribution.....	176
6.6 Limitations of the Study and Area for Further Research.....	177
APPENDICES	179

LIST OF TABLES

Table 1: Summary of variables and Operational definitions	39
Table 2: Fit statistics of the CFA for the influence of transportation management practice on the SSGP firm's performance.	148
Table 3: Indicators of reliability, convergent and discriminant validity	150
Table 4: Fit statistics of the structural model for the influence of transportation management practice on firm performance.....	151
Table 5: The parameter estimates of the structural model for the influence of transportation management practice on firms' performance.....	156

LIST OF FIGURES

Figure 1: Conceptual Framework	144
Figure 2: The standardised estimates of the proposed CFA model for the influence of transportation management practice on the SSGP firm's performance.	149
Figure 3: Standardised estimate for the effect of Transportation Management Practices on Firm Performance	152

LIST OF APPENDICES

Appendix I: Data Collection Tools	179
Appendix II: List of Ethical and Data Collection Approvals.....	190
Appendix III: Ethical and Data Collection Approvals.....	191

LIST OF ABBREVIATIONS AND ACRONYMS

BSR	Buyer-Supplier Relationship
CFA	Confirmatory Factor Analysis
CSP	Carrier Selection Practices
FLC	Firm's Logistics Capabilities
ICP	Inventory Control Practices
IFM	Information Flow Management
KTP	Knowledge Transfer Practices
LMP	Load Management Practices
MHP	Material Handling Practices
MOM	Multichannel Order Management
OFM	Order Fulfilment Management
OMP	Order Management Practices
PDP	Physical Distribution Practices
PMP	Packaging Management Practices
RBV	Resources-Based View Theory
RTD	Resource Dependency Theory
SDP	Supplier Development Practices
SIDO	Small Industry Development Organisation
SME	Small and Medium Enterprises
SMP	Storage Management Practices
SRM	Supplier Relationship Management
SSGP	Small-Scale Grape Processing
SSP	Supplier Selection Practices
TCT	Transaction Cost Theory
TMP	Transportation Management Practices
TPL	Third-Party Logistics
URT	United Republic of Tanzania
WMP	Warehouse Management Practices

ABSTRACT

Efficient logistics management practices are widely recognised as the backbone of successful agro-processing businesses, where swift handling and transportation are essential. However, there is a notable gap in the literature regarding the impact of logistics management practices on performance, which has gained scholarly attention. Therefore, this study addresses the gap in the literature by examining the impact of logistics management practices on the performance of small-scale grape processing firms in Tanzania. Specifically, the study first determined the effect of warehouse management practices on performance. Secondly, it examines the relationship between supplier relationship management practices and performance, with logistics capabilities serving as a moderating factor. Thirdly, it investigates the relationship between order management practices and performance, also moderated by logistics capabilities. Lastly, the study determined the influence of transportation management practices on performance. The study was guided by four theories: the Resource-Based View, Dynamic Capabilities, Resource Dependency, and Transaction Cost theories. The study was conducted in Dodoma, Tanzania, using a cross-sectional design. A census approach was used to select 202 small-scale grape processing firms, and purposive sampling was used to determine the study area. A structured questionnaire collected data on logistics management practices and performance. Data was analysed using descriptive statistics and structural equation modelling. The study findings revealed that warehouse management practices, including material handling, storage management, and inventory control, have a positive and significant impact on performance. Moreover, the findings revealed that supplier relationship management practices, specifically buyer-supplier relationship, knowledge transfer, supplier development, and supplier selection, have a positive and significant impact on performance, particularly when moderated by firm logistics capabilities. Furthermore, the findings emphasise that effective order management practices, including order fulfilment, information flow management, and multichannel order management, have a positive and significant impact on performance, with logistics capabilities playing a significant moderating role. Likewise, transportation management practices, including third-party logistics management, physical distribution, and load management, have a positive and significant impact on performance. The study recommends that small-scale grape processing firms prioritise

effective logistics management practices and invest in logistics capabilities, as these jointly enhance logistics operations and lead to sustainable and improved performance.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Globally, Small-Scale Grape Processing (SSGP) firms play a vital role in creating income opportunities and contributing significantly to Gross Domestic Product (GDP) and overall economic growth (John, 2022). These firms transform grapes into high-value products such as wine, juice, champagne, jam, and raisins, significantly boosting the agricultural sector's productivity (Nalyoto and Ngaruko, 2022). Also, the Food and Agriculture Organisation (FAOSTAT) reported that small-scale processing firms, including SSGP firms, account for nearly 40% of total employment and about one-third of the nation's GDP (FAOSTAT, 2023). Furthermore, studies show that SSGP firms play a significant role in the wine industry in Asia, particularly in China, as their expansion aligns with the growing demand for locally produced wines (Mutum, 2018; Sevara and Kazuo, 2018). Similarly, experience in Europe shows that the wine supply chain consists of approximately 99% micro, small, and medium-sized enterprises. Small-scale producers play a crucial role in the sector's economic impact and in public revenue, accounting for 0.8% of the GDP of the European Union (EU) (Pomarici et al., 2021). In Africa, South Africa leads in grape processing, where the majority of SMEs, including SSGP firms, constitute approximately 80% of South Africa's wine cellars, underscoring their significant presence in the industry (Basson, 2024; Vinpro, 2022).

Tanzania is the second-largest producer of grapes in Africa with a long history of productive viticulture (FAOSTAT, 2023; Nalyoto and Ngaruko, 2022). Within this context, SSGP firms play a crucial role in the grape value chain by linking and supporting producers, distributors, exporters, wholesalers, retailers, consumers, and researchers, thereby strengthening the value chain and supporting sustainable development (Lubawa and Raphael, 2023; Mahenge, 2022). Moreover, SSGP firms contributed to a 25% expansion of the grape market in 2023, which previously faced significant challenges (URT, 2024).

Given the potential contribution of SSGP firms, one might ask what enables them to perform better. Among various factors, effective logistics management plays a crucial role in enhancing firm performance by ensuring the efficient, seamless flow of goods from acquisition through processing to final consumption (Manogna and Mishra, 2022). In recent years, the management of logistical practices has become increasingly

essential in processing firms as businesses strive to expand their global market presence and capitalise on enhanced production and sourcing efficiencies (Njeru and Omwenga, 2021). The contribution of logistics management practices in manufacturing firms has been acknowledged worldwide. For instance, studies by Orbetron (2024), Sharma et al. (2023), and Jaqueta et al. (2020) reported that effective logistics management ensures cost effectiveness through proper materials handling and information sharing to ensure a smooth flow of material and finished goods within a supply chain, which is essential for maintaining production schedules and meeting customer demands at the right time, right quantity, right quality, and right place.

Further, previous scholars (e.g., Aborn, 2021; O’Byrne, 2019) have shown that every business industry involves various logistics management practices, which vary based on the type and size of the firm. However, practices such as warehouse management, supplier relationship management, order management, and transportation management are commonly used in large manufacturing and processing industries (Umar, 2019). Thus, understanding the logistics management practices and their impact on the firm’s performance is paramount for small-scale processing firms.

Warehouse management practices are a critical component of logistics management practices in SSGP firms, as they involve the systematic coordination of material handling, storage, and inventory control within a facility (Hanus, 2015). These practices include material handling, storage management, inventory control, and packaging. These practices enhance logistics efficiency and market competitiveness by helping processing firms streamline operations, minimise operational costs, and preserve perishable product quality (Njeru and Omwenga, 2021). Effective warehouse management supports timely order fulfilment, reduces waste, minimises stockouts, reduces lead times, prevents spoilage, and ensures a consistent supply within the agri-processing value chain (Oluyemisi et al., 2022; Campus, 2013).

Studies by Panigrahi et al. (2022) and Odhiambo et al. (2017) show that warehouse management practices vary across firms due to differences in product characteristics, firm size, operational scale, supply chain structure, and technological adoption. These factors shape how firms manage their inventory, optimise storage space, apply handling procedures, and coordinate logistics operations to achieve greater efficiency throughout the supply chain (Yong, 2014). In relation to this study, understanding these variations

is essential for examining how warehouse management practices influence the performance of small-scale grape processors operating in the semi-arid region of Dodoma. This is important because grape processing is a key economic activity in the region, and it depends on grapes as the main raw material, a seasonal product harvested only twice a year (Mlay, 2021; Kulwijila et al., 2018).

However, previous scholars have focused on warehouse management of non-perishable agricultural products, including maize (Bakhresa Group, 2025) and sorghum (Food Agro & Allied Industries Limited, 2023). Although studies by Kulwijila (2021) and Nzowa (2020) have revealed that grapes and grape-based products, particularly wine, are highly perishable, requiring proper handling and storage conditions to maintain quality. Still, there is scant literature on warehouse management practices and the performance of SSGP firms. In this regard, investigating warehousing management practices and their potential contribution to SSGP firms' performance constitutes another knowledge gap.

Likewise, supplier relationship management practice has been a crucial element in logistics management, as it enables small-scale processing firms to build and maintain effective relationships with their suppliers (Mutum, 2018). The practice is used as a marketing strategy to ensure suppliers meet the buying firms' short- and long-term requirements (Nkwabi and Fallon, 2020). Through supplier relationship management, small-scale firms can develop closer ties with key raw material suppliers who can supply quality grapes, thus producing required grape products, mainly wine, hence improving firm performance (Amoako-Gyampah et al., 2019).

Furthermore, studies have identified several activities involved in supplier relationship management, including buyer-supplier relationships, supplier development, supplier selection, and knowledge transfer (Yang et al., 2023; Mbeche and Gichanga, 2021; Saghiri and Wilding, 2021). As Yang and Jiang (2023) suggested, processing firms need to build sustainable buyer-supplier relationships, as these are considered strategic resources that they use to achieve performance. Furthermore, Saghiri and Wilding (2021) highlight that establishing a strong relationship with suppliers enables buying firms to enhance their supplier base by identifying areas for improvement and providing support to optimise supplier performance. Also, Mbeche and Gichanga (2021) suggest that evaluating supplier selection is vital as it enhances the availability of resources that

meet agreed quality standards. Also, due to competitive pressure in the business environment, knowledge transfer has become a strategic weapon in supplier management, as a buying firm can improve innovation and value creation (Corral de Zubielqui et al., 2019). However, many small-scale processing firms in developing economies are performing poorly; others have collapsed, and some are still struggling to survive (Nkwabi and Mboya, 2019). The increasing survival struggles have increased the demand for understanding the importance of investing in how supplier relationship management affects the performance of small-scale processing firms, particularly SSGP firms in Tanzania.

Moreover, order management practices are a unique aspect of logistics management practices, ensuring the effective management of customer orders from placement to delivery to the final consumer (Schwarz, 2023). These practices play a crucial role in logistics operations, encompassing key activities throughout the order lifecycle, including order fulfilment, order processing, multichannel order management, and information flow management (Samani, 2024; Gebisa, 2023; Omoush, 2022; Hanus, 2015; Gensler et al., 2007). Omoush (2022) reveals that efficient and effective order fulfilment requires a clear and transparent flow of information between a firm and its customers. An effective information flow is a critical link, ensuring the seamless movement of raw materials and finished products along the grape supply chain (Gebisa, 2023). Samani (2024) also stated that orders can be managed by adopting proper sales channels. In this context, a firm can reach customers through multiple channels, including direct sales, online platforms, and local distribution networks. Diversifying sales channels contributes to successful marketing and distribution strategies, allowing firms to expand their market reach and increase sales (Mang'ana et al., 2023).

Nonetheless, order management practices may vary across firms due to differences in operational scale, product type, market demand, technological adoption, and firm size (Zawawi, 2016). Although existing studies have examined customer order management primarily in large manufacturing firms (Samani, 2024; Omoush, 2022) and in technologically advanced environments (Gebisa, 2023; Schwarz, 2023), the literature reveals limited empirical evidence on how these practices apply within the context of SSGP firms. While related research exists in broader agribusiness and supply chain settings, on the one hand, studies specifically focusing on small-scale grape processing firms remain scarce. On the other hand, small-scale processing firms often face

operational inefficiencies, such as production delays and increased errors, which in turn contribute to customer dissatisfaction and, in some cases, financial losses (Razzak et al., 2021). The growing operational inefficiency has heightened the demand for understanding the impact of effective order management practices on the performance of SSGP firms.

Transportation management practices are a crucial link connecting businesses by efficiently moving materials, ensuring timely distribution and cost control (Steven et al., 2023). These practices include carrier selection, third-party logistics (3PL), physical distribution, and load management (Amonde and Anthony, 2023; Mbondo et al., 2015). Studies have shown that effective management of transportation practices optimises operational costs by enhancing seamless coordination among suppliers, customers, and warehouses, leading to efficiency and reliability (Chalotra and Kumar, 2016). Studies by Samita et al. (2020) indicated that efficient management of transportation activities within a supply chain can enable a small-scale processing firm to optimise its logistics operations and associated costs, ensuring security and safety and maintaining a competitive edge in processing (Adebayo and Aworemi, 2021). According to Gümüş et al. (2020), inefficient transportation practices disrupt manufacturing logistics by causing delays, higher handling and storage costs, product damage, and overall supply chain inefficiencies. These disruptions can lead to congestion, increased transportation costs, and higher inventory holding costs.

Haarman et al. (2022) also highlighted that small-scale processing firms' transportation management practices are generally family-run and conducted informally. These firms make transportation decisions based on tradition, immediate necessity, or personal experience rather than structured planning or data-driven strategies (Ayandibu and Houghton, 2017). As a result, most small-scale processing firms face inefficiencies, including inconsistent scheduling, suboptimal route planning, and unreliable delivery times, all of which affect supply chain reliability and cost-effectiveness. Despite these inefficiencies, previous studies have focused on large manufacturing firms with sufficient capital to own their vehicles (Steven et al., 2023; Amonde and Anthony, 2023). However, the findings from these studies cannot be directly applied to small-scale processing firms due to the fundamental differences in capital availability and operational scale.

Regarding mode of transportation, studies indicate that transportation models vary across firms depending on factors such as firm size, the nature of transported materials, financial constraints, and the distance to processing facilities (Rodrigue, 2024; Meixell and Norbis, 2008). In the context of small-scale processing firms in developing economies such as Tanzania, including SSGP firms, research has shown that traditional transportation methods are predominantly used for short distances (Gouda et al., 2024). For example, raw materials from nearby farms are often transported by donkeys, ox-drawn carts, bicycles, or carried on people's heads, as these approaches are affordable and well-suited to the needs of small-scale businesses. However, these traditional modes often expose perishable produce to prolonged transit times and potential damage due to inadequate handling and limited protection. In contrast, motor vehicles are more commonly utilised on farms located farther from processing facilities, enabling faster transportation, reduced spoilage, and improved quality control (Ellram and Golicic, 2015). This variability highlights the urgent need for tailored transportation strategies that align with the specific operational contexts of these firms, thereby enhancing logistical efficiency and performance.

Nevertheless, previous research highlights that the strength and direction of the relationship between logistics management practices and performance may vary based on the effectiveness of logistics capabilities (Agbandzo et al., 2024; Baía and Ferreira, 2024). Logistics capabilities are based on knowledge, skills, expertise, education, and resources that a firm utilises to efficiently manage the flow of customer orders from acquisition to final delivery (Saragih et al., 2020). These capabilities are crucial in maintaining buyer-supplier relationships, expediting order management, improving warehouse operations, and ensuring cost efficiency throughout the logistics process (Rehman et al., 2019). They enable processing firms to establish, enhance, and sustain effective and efficient logistics operations, including logistics management (Yi Liu et al., 2023; Saragih et al., 2020). Prior studies (Agbandzo et al., 2024; Rehman et al., 2019) have demonstrated a clear link between logistics capabilities and performance in manufacturing sectors, notably in Ghana's cement industry and Pakistan's textile sector.

Previous studies (Duah et al., 2024; George and Kerai, 2024; Irwin et al., 2022) have highlighted a connection between logistics capabilities and logistics management within the manufacturing sector. Even though logistics capabilities for large processing firms are widely acknowledged, little has been done for small-scale processing firms

(Meressa, 2020). Moreover, limited attention has been given to the moderating role of logistics capabilities in the relationship between logistics management practices and performance in SSGP firms. To address this gap, the current study examines how logistics capabilities moderate the relationship between logistics management practices and the performance of SSGP firms. Thus, there is a need to understand the moderating effect of logistics capabilities on the link between logistics management practices and the performance of small-scale processing firms in emerging economies such as Tanzania.

Evaluating performance in processing firms is crucial for identifying inefficiencies, guiding decision-making, improving competitiveness, ensuring financial sustainability, and supporting continuous improvement (Drago et al., 2022; Sazzadur and Khan, 2019). Empirical studies on logistics management in processing firms have found that logistics management practices and performance are significantly related (Njeru and Omwenga, 2021; Muhalia et al., 2021; Umar, 2019; Atnafu and Balda, 2018; Ristovska et al., 2017; Mwangangi, 2016). However, the relationship has been evident in food processing firms, such as sugar (Mena and Chuma, 2020), flour mills (Ajoke et al., 2019), and cashew nuts (Step, 2023). The relationship between logistics management practices and performance in the small-scale grapes processing context is less explored.

Moreover, previous literature has focused on logistics management practices and the general organisational performance of large processing firms. For instance, studies by Nzuma and Ndeto (2023) and Muthoni and Mose (2020) analysed logistics management practices and their impact on the performance of food and beverage manufacturing firms. Also, studies by Abiji et al. (2023) and Ajoke et al. (2019) assess logistics management practices on the organisational performance of flour Mills. Furthermore, studies by Rutto and Omwenga (2024), Mena and Chuma (2020), and Samita et al. (2020) evaluate the effects of logistics practices and organisational performance on the Sugar Manufacturing Industry. The results of the above studies cannot be generalised to grape processing due to the highly perishable nature of grapes and the small size of firms involved in this sector. Additionally, grape processing requires strict total quality management and specific geographical conditions, which further limit the applicability of findings from other industries (Mahenge, 2022; Nalyoto and Ngaruko, 2022).

Given the critical role of logistics management practices in enhancing the performance of small-scale processing firms, particularly in competitive environments, it is essential to comprehensively investigate their impact. This is particularly important because the study of small-scale processing firms in emerging countries, including Tanzania, remains under-researched (Kisinga et al., 2024; Hamisi, 2017). This study advances the understanding of SSGP firms by examining the influence of logistics management practices on their performance. It specifically explores how these practices shape small-scale processing firms' operational efficiency and competitiveness. Secondly, the study examines how a firm's logistics capabilities strengthen the relationship between logistics management practices and the performance of SSGP firms. The objectives were aligned with prior research and theories to examine whether and how logistics management practices can enhance the performance of SSGP firms.

1.2 Statement of the Problem

SSGP firms play a vital role in industrial sustainability and economic development by contributing to job creation, market expansion, and value addition in the agro-processing sector (Kalimang'as et al., 2021; Nkwabi et al., 2019; Mahenge, 2022). Studies by Kisinga et al. (2024) and Kulwijila (2021) have indicated that grapes produced in the country are of a unique kind, rich in organic and aromatic qualities, essential attributes that could yield high-quality grape products, such as wine and juice. To support the effectiveness and efficiency of SSGP firms, the Government and development agencies have introduced a range of initiatives. These include recognising grapes as a strategic cash crop, ensuring the availability of suitable grape varieties for wine production, providing technical assistance and capacity building to improve productivity and market access, facilitating access to affordable loans, strengthening the Tanzania Investment Centre, and supporting the provision of cost-effective grape processing machinery (URT, 2022).

Despite all the initiatives taken by the Government, the long-term survival of SSGP firms remains unsatisfactory (Mahenge, 2022; Seme and Maziku, 2021; Mlay, 2021; Kalimang'as et al., 2021). For instance, the FAOSTAT report showed that approximately 75% of SSGP firms fail to graduate and collapse in the early stages of their business (FAOSTAT, 2023). Such a scenario results in SSGP firms being unable to satisfy the existing domestic and foreign market demand, leading the country to lose

potential revenue sources (Seme and Maziku, 2021; Kalimang'as et al., 2021; Lwelamira, 2015).

Additionally, evidence reveals that approximately 40.3% of grapes produced in Dodoma, Tanzania, remain unprocessed (URT, 2022). However, there is a demand gap of about 5.2 million litres for processed grape products, including wine and juice, in both local and international markets (Lubawa et al., 2023; URT, 2019; Lutheran World Relief, 2016). The persistent underperformance of these firms negatively impacts the grape value chain, leading to unsatisfactory outcomes and an inability to purchase output from grape farmers. This underperformance highlights the critical need for improving operational practices to bridge the gap between production and performance.

Among other factors that could improve these firms' performance are logistics management practices (Orbetron, 2024; Sharma et al., 2023). Logistics management practices are likely to influence the overall performance of the grape industry, although empirical evidence on SSGP firms remains limited. Given the challenges SSGP firms face, investigating logistics management practices in the Dodoma region is crucial for making informed decisions that could enhance the efficiency and effectiveness of these firms.

Several studies have attempted to document grape production in Tanzania (Lubawa et al., 2023; Nalyoto and Ngaruko, 2022; Mlay, 2021; Mushi et al., 2021; Kalimang'as et al., 2021). However, most of these investigations have primarily focused on the general organisational performance of larger manufacturing firms' aspects, with limited emphasis on the relationship between logistics management practices and the performance of small-scale processing firms. Given the nature, structural, capital, technology, and operational differences between large-scale and small-scale firms, the findings derived from such studies cannot be directly applied to the context of SSGP firms. Consequently, there remains a notable gap in empirical evidence regarding the linkage between logistics management practices and the performance of SSGP firms.

Furthermore, the relationship between logistics management practices and performance can be strengthened by including logistics capabilities as a moderating variable. However, the role of logistics capabilities has not been adequately examined within the specific context of SSGP firms. Therefore, this study offers novel insights by investigating the relationship between logistics management practices and the performance of SSGP firms in Dodoma, Tanzania, and examining the moderating role

of logistics capabilities in this relationship. Addressing this gap is expected to improve performance along the grape value chain, thereby enhancing its potential as a significant source of income. Moreover, such improvements may support the realisation of Tanzania's Development Vision by fostering industrial growth and strengthening economic resilience.

1.3 Research Objectives

1.3.1 Main Objective

To assess the influence of logistics management practices on the performance of small-scale grape processing firms in Dodoma, Tanzania.

1.3.2 Specific Objectives

Specifically, the study intends to:

- i. Determine the effect of warehouse management practices on the performance of SSGP firms.
- ii. Examine the relationship between supplier relationship management practices and the performance of SSGP firms, as moderated by logistics capabilities.
- iii. Examine the relationship between order management practices and the performance of SSGP firms, as moderated by logistics capabilities.
- iv. Determine the influence of transportation management on the performance of SSGP firms.

1.4 Justification of the Study

The study presents one of the first attempts in the Dodoma region to examine the effects of logistics management practices on improving performance among SSGP firms. In this regard, the current study has gone beyond the available studies (Nyagango et al., 2023; Ndauka and Matotola, 2023; Nalyoto and Ngaruko, 2022; Mlay, 2021; Kalimang'as et al., 2021; Kulwijila et al., 2018) that focused on mobile phone usage, production technology, profit efficiency, marketing challenges, post-harvest losses, input demand responses, and factors affecting marketing performance. The study shifted its focus to logistics management practices, capabilities, and performance. In this view, the study findings provide empirical evidence supporting the relationship between logistics management practices and performance. Further, the study evaluates how logistics capabilities affect this relationship. The study's findings emphasise the potential of effective logistics management practices to enhance the performance of

SSGP firms. By optimising logistics operations, such practices can lead to reduced operational costs, improved collaboration, minimised post-harvest losses, and reduced spoilage. They also facilitate the timely delivery of products to the market in the right quantities and quality, thereby enhancing overall efficiency and profitability.

The study highlights the potential of warehouse management practices in enhancing the performance of SSGP firms. The findings indicate that factors such as material handling, inventory management, storage management, and physical distribution management significantly influence performance outcomes. Consequently, policymakers may utilise these empirical insights to design and implement targeted policies and programmes to support the growth and long-term sustainability of SSGP firms.

The study findings also highlight the importance of strengthening supplier relationship management as a key driver of improved performance among SSGP firms. The findings reveal that factors such as buyer-supplier relationships, supplier development, knowledge transfer, and load management play pivotal roles in shaping the performance of these firms. Moreover, logistics capabilities, including skills, knowledge, education, and experience, were identified as key enablers in strengthening the link between supplier relationship management and performance. Consequently, the Government, particularly through the Small Industry Development Organisation (SIDO), can utilise these empirical insights to formulate targeted strategies to foster a robust buyer-supplier network. Such an initiative would serve as a strategic approach to promoting collaboration, facilitating knowledge exchange, and supporting the development of suppliers (grape farmers), thereby driving improved performance.

Moreover, the study shed light on the effects of order management practices on SSGP firms that focused on improving performance. The findings reveal that order fulfilment, information flow management, and multichannel order management are potential factors that influence the performance of SSGP firms. Also, the moderating role of logistics capability is a key factor in strengthening this relationship. Recognising the significance of logistics capabilities can guide the development of appropriate support mechanisms, such as offering specialised training and facilitating exposure to advanced firms that employ best practices in managing customer orders throughout the order processing cycle. Such initiatives would enable SSGP firms to acquire practical skills

and experience. Additionally, robust logistics capabilities can enhance inventory management, improve efficiency and effectiveness through timely and accurate order delivery, and foster resilience in supply chain operations, ultimately contributing to the sustainable growth of these firms.

Furthermore, the study offers valuable insights into the impact of transportation management practices on performance. The findings indicate that factors such as carrier selection, 3PL management, physical distribution management, and load management are critical to the success of SSGP firms. Understanding these practices enables SSGP firm managers to collaborate effectively with local transporters familiar with the logistics of local grape production and marketplaces, thereby enhancing reliability, minimising supply chain risks, expanding the market base, and improving cost-effectiveness. Additionally, the study highlights best practices for handling, loading, and unloading perishable produce, particularly grapes.

The study also contributes to a deeper understanding of the Resource-Based View (RBV) theory, Dynamic Capabilities Theory, Resource Dependency Theory (RDT), and Transaction Cost Theory by highlighting the unique factors influencing the performance of the grapes processing industry through the management of logistics practices in a small-scale context. The study's findings offer valuable insights aligned with the 2002 SMEs Policy, recommending an emphasis on best practices for managing warehouse operations, particularly for perishable agricultural produce such as grapes.

1.5 Literature review

1.5.1 Definitions of Terms

1.5.1.1 Small-scale grape processing firms

Small-Scale Grape Processing (SSGP) firms are a subset of agro-processing firms (Anastanzia, 2019). Many researchers define agro-processing firms as manufacturing businesses that convert agricultural products into various forms, making them easier to handle, extending their shelf life, and increasing their value (Nkwabi et al., 2019; Kipene et al., 2015). While most of these firms operate in the informal sector, many are officially registered businesses. They typically employ up to 49 people, often family members, and operate with a capital investment ranging from TZS 5 million to 200 million as stipulated in the SMEs policy 2002 (URT, 2002). In this study, SSGP firms refer to family-owned grape processing businesses in Dodoma City. These firms

produce various grape-based products, including grape juice, wine, raisins, and spirits derived from grapes (URT, 2024).

1.5.1.2 Logistics Management Practices

Logistics management practices refer to the systematic coordination and execution of complex operations in moving, storing, and distributing goods, services, and related information to ensure efficiency, cost-effectiveness, and customer satisfaction (Matuga et al., 2020). In other words, logistics management practices can be defined as the best, most operational, and most theoretical ways to achieve logistical objectives (Aguno and Gameda, 2024). It is an operational part of the supply chain that deals with the planning, implementation, and control of the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption to meet customer requirements (Council of Supply Chain Management Professionals, 2013).

These practices serve as a collection of practical solutions for managing supply chain operations, including supplier relationships, warehousing, order processing, and transportation sectors, particularly for the logistics management responsibilities of logistical managers at all levels of processing firms (Abebe et al., 2020; Muema and Achuora, 2020; Mwinzi, 2018; Ristovska et al., 2017). In most successful modern enterprises, logistics practices are based on a system methodology, which involves the transfer of goods from suppliers to processing firms and ultimately to the final consumers (Njeru and Omwenga, 2021; Rapario, 2019). Therefore, this study is based on four dimensions of logistics management practices that may influence SSGP firms' performance. The practices include warehousing, supplier relationships, order management, and transportation management.

1.5.1.3 Warehouse Management Practices

Warehousing management practices refer to the systematic approaches and activities undertaken to manage the operations within a warehouse efficiently (Van Geest et al., 2022). These practices include the planning, organisation, and control of material handling, storage, inventory control, and packaging processes (Phupattarakit and Chutima, 2019). The primary objective of warehousing management practices is to ensure the accurate and timely availability of goods in the appropriate quantity and quality, supporting production schedules and meeting customer demands (Odhiambo

and Janet, 2016). In this study, warehousing management practices are defined as the principles and procedures adopted by SSGP firms to optimise the utilisation of warehouse resources, maintain product quality, and safeguard against fluctuations in production requirements and customer demand. Practices such as material handling, storage management, packaging management, and inventory control were included.

1.5.2.4 Supplier Relationship Management Practices

Supplier relationship management is increasingly recognised as a strategic, process-oriented approach to creating value for buyers and sellers and achieving superior performance (Liu et al., 2021). Gindner et al. (2015) defined supplier relationship management as a process by which businesses establish and sustain productive connections with their suppliers. Supplier relationship management has become a critical tool in the business environment, driven by the need to consider sustainability and risk, respond to competitive pressures, and achieve cost efficiency to remain cost-competitive (Shukla et al., 2023). Additionally, it supports the need to build closer ties with key suppliers capable of offering the expertise required to develop innovative new products and successfully bring them to market (Mushi et al., 2021). Supplier relationship management involves activities such as buyer-supplier relationship management (Yang and Jiang, 2023), supplier selection (Mbeche and Gichanga, 2021), supplier development (Changalima et al., 2022), and knowledge transfer (Shukla et al., 2023). This study defines supplier relationship management as a business strategy that SSGP firms employ to establish and maintain favourable relationships with grape suppliers. This approach emphasises collaboration, mutual trust, and shared objectives between the buyer (SSGP firm) and the supplier (grape farmers), aiming to ensure consistent supply, improve quality, and foster long-term partnerships that benefit both parties.

1.5.2.5 Order Management Practices

Order management practice refers to the systematic processes, strategies, and activities involved in efficiently managing customer orders from initiation to fulfilment (Samani, 2024). This includes tasks such as order processing, tracking, communication, and coordination across business functions. Effective order management practices ensure the accurate and timely delivery of goods or services while maintaining transparency and optimising information flow across the supply chain (Bag et al., 2020). In this study, order management practice is defined as all actions and related systems employed to

oversee and streamline the movement of materials and information throughout the grape value chain, from when the order is placed to delivery, encompassing order fulfilment, information flow, and multichannel order management.

1.5.2.6 Transportation Management Practices

Transportation management practices refer to the systematic planning, execution, and monitoring of transport-related activities to ensure the efficient, cost-effective, and sustainable movement of goods and services (Adebayo and Aworemi, 2021). As defined by Fianko et al. (2013), transportation management practices are crucial for maintaining supply chain continuity because they can add value to goods by moving them from suppliers' sites to manufacturing facilities, final customers, or sales locations. Additionally, Muhalia et al. (2021) found that transportation management practices constitute the operational aspect of logistics management, enhancing the movement and positioning of inventory. In this study, transportation management practices are defined as the essential activities to ensure that consumers receive the final product efficiently, balancing cost-effectiveness with timely delivery. These practices include carrier selection, physical distribution, third-party logistics, and load management.

1.5.2.7 Logistics Capabilities

Logistics capabilities refer to an organisation's strategic and operational proficiencies that enable effective resource management. As revealed by Poku (2022) and Pham and Hoang (2019), resources are inputs to capabilities, which use these resources to produce desired results. According to RDT, firm performance is determined by resources and capabilities. In this study, logistics capabilities refer to a firm's ability to efficiently and effectively utilise its resources to manage a wide range of logistics activities while ensuring optimal service quality and responsiveness. This includes coordinating the acquisition of raw materials, warehousing, transportation, and inventory management at minimal cost, as well as fostering strategic relationships with suppliers and external partners to enhance collaboration and knowledge exchange. Key components include firm-specific skills, experienced and educated logistics personnel, and adequate resources such as advanced technology and financial investment, all of which contribute to adaptability and improved firm performance, particularly in processing perishable goods.

Additionally, this study introduced logistics capabilities as a moderator, specifically in supplier relationship management and order management, as these two areas rely heavily on external interactions, information exchange, and customer satisfaction. Skills, education, knowledge, resources, and experience were found to be particularly critical in strengthening these external-facing practices, unlike warehouse management and transportation practices, which are more internally controlled and less dependent on relational or knowledge-based capabilities.

1.5.2.8 Performance

Performance refers to an organisation's operational capacity to achieve its intended objectives and can be assessed through various criteria such as production output, profitability, efficiency, effectiveness, quality, and innovation (Razzak *et al.*, 2021). Additionally, performance encompasses evaluating and measuring how effectively a company or organisation attains its goals and objectives (Lubawa and Raphael, 2023; Zarrouk *et al.*, 2020). In this study, the terms business performance, firm performance, and performance were used interchangeably. Also, performance was defined as the profit generated and the efficient use of resources. It was measured using subjective indicators of growth in sales, profits, market share, and assets (Mahmud *et al.*, 2022; Nyabwanga and Ojera, 2015).

1.6 Theoretical Literature Review

The study was guided by four theories: The Resource Dependency Theory (RDT), the Resource-Based View (RBV), the Dynamic Capabilities Theory (DCT), and the Transaction Cost Theory (TCT). The researcher could not find a single theory with sufficient construct to explain the investigated phenomena and develop a concrete ground for the study. Thus, the researcher used the four theories to complement one another due to the inherent weaknesses of each. RDT explains how organisations strategically manage external dependencies to secure resources, mitigate uncertainty, and ensure competitiveness and survival. However, it has a limitation: it focuses on managing external relationships and dependencies with stakeholders while inadequately addressing the development and utilisation of unique internal resources and capabilities as sources of performance. To address this gap, the RBV theory was used. Likewise, DCT was introduced to address the evolving business environment, emphasising that a firm's competitive survival depends on its ability to seize opportunities and address challenges in a timely manner. Furthermore, TCT is the theory of a firm that explains

how firms organise their operations and make decisions based on the costs associated with economic transactions. It posits that firms can achieve superior performance by efficiently managing these costs, including financial expenditures and the time and resources required for transactions. The four theories determine how logistics management practices and logistics capabilities influence performance. The following sections provide a concise explanation of these theories.

1.6.1 Resource Dependency Theory

The RDT was developed by Reitz *et al.* (1979). The theory claims that organisations that effectively manage their dependencies on external resources can achieve improved performance. RDT explains supplier relationship management by emphasising the firm's dependence on external suppliers for critical resources. According to RDT, firms need to manage these relationships strategically because suppliers control key resources (such as raw materials, in this case, grapes) that the firm needs to operate. Supplier relationship management, therefore, becomes a mechanism through which firms can secure a timely and reliable supply of necessary inputs. In this context, managing supplier relationships (e.g., negotiating contracts, fostering long-term partnerships, and building mutual trust and collaboration) helps reduce risks associated with supply disruptions and external uncertainty. In turn, better supplier relationships can lead to more stable resource flows, enhancing operational efficiency and performance.

In order management practices, firms rely on the timely and efficient flow of orders, effective coordination of those orders, and seamless alignment with suppliers, customers, and logistics providers. According to RDT, effective order management practices are critical in reducing reliance on external entities, such as suppliers and distributors, while minimising operational risks arising from poor coordination. Logistics capabilities, comprising knowledge, skills, resources, and experience, further moderate the relationship between order management and firm performance by mitigating uncertainties associated with supply chain disruptions. For instance, SSGP firms depend on suppliers for raw materials and must efficiently manage customer orders to maintain smooth production schedules. However, operational bottlenecks may arise if logistics infrastructure is inadequate and employees lack the knowledge, skills, and experience to handle challenges associated with supply chain disruptions. These inefficiencies can hinder the firm's ability to fulfil orders promptly, ultimately affecting overall performance. Therefore, order management practices inherently rely on logistics

capabilities to effectively manage interdependencies within the supply chain (Çeltekligil *et al.*, 2019).

RDT has been applied in the context of small businesses by Kisinga *et al.* (2024), Çeltekligil *et al.* (2019), and Phil Bretherton and Chaston (2018) to explain the reciprocal relationship between the processing firms and suppliers. The portrayed relationship shows that parties need to cooperate and acknowledge their mutual dependence to attain shared advantages in logistics management. The interdependency has also been observed by Kulwijila *et al.* (2018), who noted interdependence among partners in the grapes value chain. Accordingly, this study incorporated variables such as supplier relationship management practices, including buyer-supplier relationships, carrier selection, knowledge transfer, load management, and order management practices, such as order fulfilment, information flow, and multichannel order management, which are more informed by the theory's orientations and assumptions.

As such, RDT theorists provide the ground for examining the relationship between logistics management practices and performance. Thus, the theory has been used in Objective Two, which examines the influence of supplier relationship management practices on the performance of SSGP firms, particularly when moderated by the firm's logistics capabilities. The same theory was used in Objective Three to explain the moderating role of logistics capabilities on the relationship between order management practices and performance. It was used in the result interpretation and discussion, which helped the researcher draw sensible conclusions. Despite the relevance of RDT, the theory focuses heavily on external dependencies, often neglecting internal organisational capabilities and dynamics that also influence success. As Zawawi (2016) argues, the performance of small-scale processing firms is influenced by internal and external factors, which are interdependent. However, since RDT has limitations in analysing internal factors, the RBV theory was adopted to address this gap.

1.6.2 Resource-Based View

The study was also guided by Barney's (1991) RBV theory. This theory posits that organisations require resources to enhance efficiency and improve performance (Utami and Alamanos, 2023; Kara & İpekçi, 2022). From an RBV perspective, logistics management practices, particularly warehouse management, are valuable internal resources that contribute to operational efficiency and sustainable competitive

advantage. Effective warehouse management enables firms to optimise inventory, storage space, and time, thereby directly influencing costs and operational performance. In the context of SSGP firms, resources may include reliable grape suppliers, fermentation equipment, storage facilities, and skilled labour. Also, RBV helps justify the possession of logistics assets such as inventory and warehouse management systems, as foundational to firm performance. By implementing robust warehouse management practices, firms can maintain optimal inventory levels, reduce storage costs, and minimise spoilage or wastage, an essential factor when handling perishable products like grapes. According to RBV, firms that develop well-structured warehouse management systems possess a strategic resource that enhances their ability to outperform competitors. For instance, an SSGP firm equipped with standard warehouse management systems, such as temperature-controlled storage, can efficiently manage its perishable inventory. This capability reduces waste, lowers operational costs, and improves product quality, ultimately enhancing firm performance. Thus, warehouse management is a critical internal resource that strengthens a firm's competitive position and operational resilience (Mahmud *et al.*, 2022; Utami and Alamanos, 2023).

In the context of small-scale processing firms, RBV has been applied by Mang'ana *et al.* (2023), Mashenene and Kumburu (2023), and Salisu and Abu Bakar (2020) to explore the internal resources and capabilities required to improve performance. In this context, RBV offers valuable insights into how SSGP firms can develop and leverage their internal strengths to achieve performance. Therefore, RBV is particularly relevant to this study, as it provides a robust framework for understanding the internal dynamics and performance drivers of SSGP firms. Therefore, this theory was used to set the ground for objective one, which examines the relationship between warehouse management practices and the performance of SSGP firms.

While RBV has been foundational in strategic management and assumes stability, it offers limited guidance on how to adapt when the environment is volatile, a major limitation for SSGP firms operating in environments characterized by perishability, fluctuating demand, and informal systems. To address this shortcoming, DCT complements RBV by explaining how firms transform and adapt resources in dynamic environments.

1.6.3 Dynamic Capabilities Theory

The DCT was developed by Teece *et al.* (1997). The theory assumes that organisations can improve performance by continuously adapting, integrating, and reconfiguring internal and external competencies to address rapidly changing environments (Teece *et al.*, 1997). DCT focused on three core capabilities of a firm, which include sensing market shift (e.g., recognising changes in grape availability due to seasonality), seizing opportunities (e.g., investing in storage innovations or packaging), and reconfiguring assets (e.g., relocating warehouses closer to suppliers or consumers, or redesigning storage layouts base on product line shifts e.g., from wine to grape juice) (Bett and Anene, 2025). In this study, DCT was used to examine the warehouse management practices and their influence on the performance of SSGP firms. Specifically, DCT was applied to analyse how SSGP firms' warehouse management practices contribute to performance improvement by enabling operational flexibility, inventory optimisation, and resilience to perishability-related challenges (Gligor and Holcomb, 2012). The theory explains how SSGP firms respond to perishability, inventory control, temperature regulation, storage layout optimisation, and appropriate storage technologies to maintain product quality and reduce losses (Tukamuhabwa *et al.*, 2021; Barney *et al.*, 1987).

DCT has also been utilised within the context of small-scale businesses by Bett and Anene (2025) and Hermawati and Gunawan (2021), highlighting that effective sensing, seizing, and transforming capabilities, such as adapting knowledge networks, innovating processes, and changing how resources are used, significantly improve performance in dynamic environments. This theory supports Objective One, which examines the relationship between warehouse management practices and the performance of SSGP firms.

Despite its wide applicability, the DCT is not without limitations. DCT tends to emphasise firm-level capabilities while underestimating external constraints such as institutional barriers, resource scarcity, or infrastructural limitations, which are particularly relevant to small-scale firms in developing economies. Nevertheless, DCT remains useful in this study, as it provides a valuable lens for understanding how SSGP firms develop and apply warehouse management practices to address the dynamic, perishable nature of their operations. Its focus on sensing, seizing, and reconfiguring enables the study to frame warehouse management as both a static function and a

strategic, adaptive capability that contributes to improved performance in rapidly changing operating environments.

1.6.4 Transaction Cost Theory

Pioneered by Williamson (1979), TCT posits that a firm's superior performance is influenced by its ability to manage costs associated with economic transactions. The theory emphasises that transaction frequency and uncertainty are critical factors in determining transaction costs (Nagle *et al.*, 2024; Schwabe, 2013; Wever *et al.*, 2012). This study utilised TCT to provide insight into the strategic optimisation of transportation practices and related logistical costs, including vehicles, fuel, labour, and infrastructure (Cuypers *et al.*, 2021). In the context of SSGP firms, TCT was applied to enhance the management of transportation practices, encompassing the movement of goods from suppliers to processing units and ultimately to the market. The theory explains how firms can reduce transaction costs associated with transportation, thereby improving efficiency and overall performance.

TCT identifies several key cost components that influence transportation management, which include (i) Search and information costs, which represent the expenses incurred in identifying reliable and cost-effective transportation providers; Small-scale grape processors must assess transportation options based on timeliness and cost-effectiveness, and minimising these search costs through strong supplier relationships or long-term contracts can enhance operational efficiency; (ii) Negotiation and contracting costs which arise from determining transportation terms, including delivery schedules, pricing, and penalties for delays. Establishing clear agreements with transportation providers helps reduce these costs by minimising disputes and inefficiencies; (iii) Monitoring and enforcement costs relate to overseeing the transportation process to ensure goods are delivered on time and in good condition. Effective monitoring reduces administrative burdens and errors, allowing firms to uphold delivery standards; (iv) post-transaction costs include expenses resulting from transportation-related issues such as delays, damaged goods, or disputes. SSGP firms can optimise their transportation management practices by minimising transaction costs, reducing inefficiencies, and improving performance. TCT therefore provides valuable insights into how firms can manage logistical challenges in transportation and improve overall operational effectiveness.

TCT has also been utilised in the context of small-scale businesses by Ketokivi and Mahoney (2020) and Nkwabi *et al.* (2019), highlighting that managing logistics practices enables a firm to improve productivity in terms of quality and quantity, strengthen supply chain relationships, and maximise operational efficiency. This theory forms the basis for Objective Four, which examines the relationship between transportation management practices and the performance of SSGP firms.

1.7 Empirical Literature Review

Effective logistics management is crucial for processing firms, especially in agribusiness. It is key in strengthening supplier relationships within the supply chain, optimising order management processes, improving warehousing efficiency by maintaining appropriate inventory levels, and facilitating smooth product distribution. These practices serve as a fundamental link in the supply chain, supporting the continuous and effective movement of goods and services. Studies by Nalyoto and Ngaruko (2022), Mlay (2021), and Kulwijila (2021) reported that SSGP firms face unique challenges, including perishability, post-harvest losses, seasonality, low-quality grapes and grape-based products, and inadequate infrastructure, which affect their performance.

However, the empirical literature specifically addressing the impact of logistics management practices in the context of SSGP firms remains underexplored. Existing studies predominantly focus on other food processing sectors, such as dairy firms (Chirchir, 2018), cashew nut processing (Daniel *et al.*, 2020), flour mills (Ajoke *et al.*, 2019), sugar processing firms (Mena and Chuma, 2020), and beverage production (Rajab *et al.*, 2021). This review synthesises existing research on logistics management practices and their impact on the performance of small-scale processing firms, with a particular emphasis on warehousing, supplier relationship management, order management, and transportation. Furthermore, it examines prior studies that explore the role of logistics capabilities in influencing the relationship between these practices and firm performance.

1.7.1 Warehouse Management Practices and Performance

Warehousing is crucial for preserving the quality and extending the shelf life of perishable goods such as grapes (Van Geest *et al.*, 2022). According to the Cold Storage Market Report (2025), beverage firms investing in modern cold storage facilities

experienced reduced post-harvest losses and increased profit margins. Likewise, Phupattarakit & Chutima (2019) highlighted the importance of warehousing strategies in ensuring supply chain stability within textile manufacturers. Also, Garcia-Diaz and Smith (2024) reveal that effective material handling within a warehouse minimises product damage and enhances product quality, leading to increased sales and, in turn, improved performance.

Despite these insights, studies on warehousing solutions for SSGP firms are scarce. Further, most existing studies focus on the impact of warehouse management practices in various industries, including brewery companies (Joseph and Odeleye, 2021; Garba, 2020), dairy processing firms (Makena and Elizabeth, 2021), cement manufacturing firms (Kathurima *et al.*, 2016), construction projects (Jusoh and Kasim, 2016), and bottling companies (Unam, 2012). However, these studies have not examined warehouse management from the perspective of SSGP firms, considering the perishability of grapes. Therefore, this study seeks to bridge this gap by exploring the impact of warehouse management practices in SSGP firms. Understanding warehousing challenges and developing solutions tailored to small-scale processors, particularly those involved in perishable material processing and storage, remains a key research priority.

H1: Warehouse management has a significant relationship with performance

1.7.2 Supplier Relationship Management Practices and Performance

A strong supplier relationship enhances a firm's efficiency in raw material acquisition and ensures quality consistency. Studies on the broader food processing industry, including Ndiwa and Chege (2022) and Chirchir (2018) on dairy firms, revealed that collaborative supplier relationships lead to cost reduction and improved supply chain reliability. Similarly, Daniel *et al.* (2020) found that in cashew nut processing, strong supplier ties contributed to better inventory management and reduced production delays. Also, research by Kimario and Kira (2023), Changelima *et al.* (2022), and Mbeche and Gichanga (2021) highlights that the fundamental aspects of supplier relationships revolve around trust-building and collaboration. According to Shukla *et al.* (2023) and Mushi *et al.* (2021), building trust through knowledge sharing between buyers and suppliers strengthens commitment and ensures the quality of raw materials. For SSGP firms, trust and collaboration are essential for maintaining a steady supply of high-quality raw materials while mitigating production interruptions and supply chain risks

arising from external dependencies, including stakeholders in the grape value chain, suppliers, and transporters. To effectively manage these external dependencies, as guided by resource dependency theory, SSGP firms need the capacity to build resilient partnerships, implement robust risk management strategies, and coordinate resources efficiently across the supply chain.

Additionally, Westhuizen and Ntshingila (2020) emphasise that supplier development is crucial in strengthening coordination with buying firms. Providing suppliers with training, technical support, and financial assistance enhances their ability to produce quality raw materials more efficiently and in shorter timeframes. Although the literature widely supports the claim that supplier relationship management is a strategic approach to achieving and maintaining a competitive advantage by enhancing overall firm performance (Mutuku and Kaunda, 2022; Rajab *et al.*, 2021; Njogu and Moronge, 2018), these studies did not consider the role of supplier relationship management from the perspective of small-scale firms. This study aims to address this gap by investigating the effect of supplier relationship management practices on the performance of SSGP firms.

H2: Supplier relationship management has a significant effect on performance.

1.7.3 Order Management Practices and Performance

Order management practices, encompassing order fulfilment, information flow management, and multichannel order coordination, are essential for efficiently handling orders throughout the order lifecycle (Mori, 2024). This lifecycle spans from when an order is placed to its final delivery to the consumer (Hopstack, 2024; Hanus, 2015). A study by Ajoke *et al.* (2019) focused on flour mills and found that firms with automated order management systems experienced fewer stockouts and better financial performance. In the sugar processing sector, Mena and Chuma (2020) observed that integrating order processing with effective logistics management reduces lead times and improves operational efficiency. According to RDT, optimising order fulfilment practices enables firms to minimise external dependencies on supply chain partners. This reduced reliance helps firms mitigate uncertainties arising from inefficient transportation networks, distribution networks, or unreliable raw-material suppliers. Consequently, firms can gain greater control over the order management process,

ensuring smoother operations, improved reliability, and enhanced overall performance (Bretherton and Chaston, 2018).

Additionally, Bressolles and Lang (2020) comment that order management enhances the coordination of orders from various sales channels, such as physical shops and third-party marketplaces, into one system rather than depending on a single sales channel. Similarly, Schwarz (2023) argues that small-scale firms that optimise their order management practices are likely to minimise stockouts and delays, enhance delivery processes, and reduce logistical expenses, thereby increasing market share, sales, and profitability.

Although these findings emphasise the advantages of order management, there remains a research gap in examining its direct impact on SSGP firms, where fluctuating grape yields and market uncertainties introduce additional complexities (Nalyoto and Ngaruko, 2022; Mlay, 2021). Further, the empirical evidence on the impact of order management practices on firm performance remains inconclusive. For instance, while some studies (Gebisa, 2023; Nthiwa and Wanjiru, 2017) reported a positive effect, others, such as Badenhorst *et al.* (2013), found a negative relationship, particularly in small-scale processing firms. Moreover, much of the existing literature focuses on order management practices in Flour Mills (Ajoke *et al.*, 2019), bottle manufacturing firms (Nyaberi and Mwangangi, 2014), and the overall logistics management performance of larger manufacturing firms (Heydari *et al.*, 2020; Badenhorst *et al.*, 2013). However, these studies have not specifically examined order management practices within SSGP firms. Therefore, this study aims to bridge this gap by examining the role of order management practices in SSGP firms.

H3: Order management practices have a significant effect on performance

1.7.4 Transportation Management Practices and Performance

Transportation efficiency significantly influences the cost and speed of delivering processed grape products to markets (Kanyepe, 2023). Transportation practices, including carrier selection, 3PL management, physical distribution, and load management, have been recognised as key aspects in enhancing firm performance in processing firms (Silvera, 2024; Rifai, 2023; Festo, 2022). Goldsby *et al.* (2014) revealed that firms investing in dependable transportation networks achieved greater distribution efficiency and enhanced customer satisfaction. Similarly, dairy firms

examined by Magutu *et al.* (2024) benefited from integrating transport management systems, which optimised delivery routes. Moreover, studies by Ngesa and Namusonge (2023) and Mbondo *et al.* (2015) highlight that effective transportation management enables firms to engage in physical distribution and to overcome physical and non-physical barriers. This, in turn, facilitates the efficient delivery of goods to consumers at minimal costs, leading to improved firm performance.

Apart from that, Dopson (2024) found that the primary goal of using 3PL providers is to reduce costs, expand into new markets, and mitigate supply chain disruptions while focusing on the firm's core competencies. Likewise, Agbandzo *et al.* (2024) studied the fundamentals of 3PL markets and found that outsourcing transportation operations to 3PL providers may result in a loss of control and oversight over the operations, as well as reliance on the 3PL's performance and quality standards. According to Mageto *et al.* (2022), the use of 3PL can have a positive impact on firm performance by enabling risk sharing, cost reduction, access to transportation experts, and the opportunity to focus on a firm's core business activities. Likewise, scholars (Regua, 2023; Gaur, 2023; Orenstein, 2023) found that effective load management could optimise space in transport vehicles and enable a firm to transport larger quantities of goods in a single trip, thereby reducing fuel costs and increasing supply chain sustainability. Similarly, (2024) found that load planning optimisation improves performance by optimising resources to enhance the utilisation of proper packaging and palletising, ensuring goods are not damaged in transit. However, SSGP firms often encounter additional challenges, such as insufficient road infrastructure, elevated transportation costs, and the high perishability nature of grapes, necessitating further empirical research to identify the most effective logistics strategies.

H4: Transportation management has a significant relationship with performance

1.7.5 Logistics Capabilities and Performance

Logistics capabilities play a vital role in strengthening the link between logistics management practices and the performance of small-scale firms, particularly those involved in processing perishable products such as grapes (Dyduch *et al.*, 2021). According to RDT, logistics capabilities act as a key intermediary, helping mitigate the risks associated with external dependencies. Logistics capabilities ensure collaboration between buyer and supplier by enhancing on-time delivery, maintaining product quality,

and allowing the firm to rely on efficient transportation and storage systems (Zawawi *et al.*, 2017). By strengthening its logistics capabilities, a firm can reduce its dependence on external parties for timely delivery, thereby reducing potential supply chain disruptions (Gligor and Holcomb, 2014). This results in more efficient operations, higher performance, and better control over external dependencies. A firm's logistics capabilities, including skills, aptitudes, experience, and knowledge, enable it to leverage external resources and opportunities while mitigating uncertainties in the business environment.

Previous studies (Tukamuhabwa *et al.*, 2021; Agbandzo *et al.*, 2024) argued that firm-specific skills, such as unique technical knowledge, human capital, and the owner's business education and experience, improve performance. They contend that well-trained and experienced logistics personnel ensure efficient supply chain operations by coordinating effectively with suppliers' communities, ensuring timely delivery, proper handling, and storage, specifically on perishable goods, ultimately enhancing product quality, reducing waste, and improving overall firm performance. Also, Kiaya (2014) argues that educated and experienced logistics staff enhance problem-solving abilities and foster better communication and stronger collaboration with farmers, thereby minimising conflicts and reducing post-harvest losses. Additionally, studies by Bag *et al.* (2020) and Gligor and Holcomb (2012) argue that firms with inadequate logistics capabilities struggle to maximise the benefits of supplier relationship management, encountering issues such as spoilage, customer misunderstandings, and irregular supply.

Based on the literature review, it is evident that while logistics capabilities play a crucial role in supply chain efficiency and firm performance across industries, empirical studies focusing specifically on SSGP firms remain limited. Existing research highlights the importance of logistics capabilities, including skills, knowledge, education, and experience, in enhancing coordination, reducing supply chain disruptions, and improving overall firm performance (Tukamuhabwa *et al.*, 2021; Agbandzo *et al.*, 2024; Kiaya, 2014). However, most studies have explored logistics capabilities in broader industries, leaving the specific context of SSGP firms underexamined. Given the perishable nature of grapes and the SSGP firms' dependence on efficient logistics for procurement, transportation, maintenance of buyer-supplier relationships, and storage, it is essential to investigate how logistics capabilities moderate the relationship between logistics management practices and firm performance in this sector.

Additionally, most reviewed studies focus on large-scale wineries (Advani, 2020; Dolo *et al.*, 2018; Owuor, 2019; Francisco and Canare, 2018), with limited attention to small-scale grape processors. Further, the long-term impact of logistics management practices on the sustainability of these firms remains underexplored. There is also a lack of empirical research examining how specific logistics capabilities, such as skills, knowledge, experience, resources, or education, influence logistics management practices specifically in the Tanzanian context.

This study aims to address these gaps by examining the effect of logistics management practices on the performance of SSGP firms in Tanzania. By incorporating logistics capabilities as a moderating variable, the study seeks to provide insights into how logistical efficiency enhances the benefits of supplier relationship management and order management practices in resource-constrained environments. The findings are expected to offer practical recommendations for improving logistics management practices to boost the competitiveness of small-scale grape processors.

H5: Logistics capabilities moderate the relationship between supplier relationship management and performance.

H6: Logistics capabilities moderate the relationship between order management practices and performance.

1.8 Research Gap

Despite extensive research on logistics management practices and their benefits, there is a notable gap in understanding the specific impact of these practices on the performance of small-scale processing firms in the context of grape processing in Tanzania. Global studies have primarily focused on logistics management practices and the general organisational performance of large manufacturing firms. For instance, studies by Njeru and Omwenga (2021) analysed logistics management practices and their impact on the performance of food and beverage manufacturing firms in Kenya. Also, a study by Ajoke *et al.* (2019) assesses logistics management practices on the organisational performance of flour Mills, while studies by Mena and Chuma (2020) and Atnafu and Balda (2018) evaluate the effect of logistics management practices and organisational performance on the Sugar Manufacturing Industry in Ethiopia.

However, the results of the above studies cannot be generalised to grape processing due to its highly perishable nature (Mahenge, 2022). Other factors, such as total quality management requirements during processing and required geographical conditions, distinguish grape processing from other crops (Kulwijila, 2021). However, the unique dynamics of the grape processing industry in the Dodoma region, particularly its role in supporting local grape farmers by offering a stable market for their produce, adding value, and reducing post-harvest losses, key factors that could enhance its overall performance, remain underexplored. This study aims to bridge this gap by providing empirical evidence on the impact of logistics management practices on the performance of SSGP firms. By addressing the limitations of previous studies, this research highlights the often-overlooked localised logistical challenges, including inadequate handling equipment, insufficient storage space, financial constraints, the absence of cold chain facilities, weak strategic coordination between small-scale processors and farmers, and the critical need for efficient logistical operations to maintain product quality and enhance profitability (Kisinga *et al.*, 2024).

Further, it was noted that most of the local studies that focused on the relationship between logistics management practices and the performance of other agro-processing firms, such as dairy products (Amonde and Anthony, 2023), flour mills (John *et al.*, 2015), maize (Kadjo *et al.*, 2024), banana (Ezemba *et al.*, 2022), and oil (Mangala *et al.*, 2019). Their findings pertain to a different environmental context that is not conducive to grape cultivation or the handling of grape-based products. Consequently, these findings cannot be generalised to the research area, as the practices in the Dodoma region differ significantly. SSGP firms in this region operate under distinct conditions, necessitating specialised post-harvest handling, fermentation, temperature control, and storage. These factors differ markedly from those for processing other agricultural produce, which may not require such stringent conditions. Even studies focusing on grape processing firms have primarily examined larger-scale processing firms (Mushi *et al.*, 2021; Seme and Maziku, 2021; Mutum, 2018; Strohm *et al.*, 2014). Their findings cannot be generalised to the small-scale context due to differences in production capacity, access to modern processing technology, capital investment, supply chain logistics, quality control measures, and market access, which significantly influence the operational dynamics and sustainability of SSGP firms.

Moreover, previous studies on logistics management practices have each focused on different aspects (Emon *et al.*, 2024; Shukla *et al.*, 2023; Ajoke *et al.*, 2019; Orenstein, 2023; Adebayo and Aworemi, 2021). For example, some have examined supplier relationship management (Emon *et al.*, 2024; Shukla *et al.*, 2023), while others have looked into order processing management (Gallino and Rooderkerk, 2020; Bressolles and Lang, 2020), warehouse management (Joseph and Odeleye, 2021), and transportation management (Orenstein, 2023; Adebayo and Aworemi, 2021). This study brings together all these aspects to provide a clear and comprehensive understanding of logistics management in SSGP firms. Furthermore, this study goes beyond existing research on the relationship between logistics management practices and firm performance by examining how logistics capabilities moderate this relationship. In doing so, the study addresses current knowledge gaps and ensures that the findings are specifically applicable to the operational conditions of small-scale grape processors in the Dodoma region.

This study was necessary to examine the local context of grape processing and the performance of SSGP firms in Dodoma, Tanzania. This study also integrated four theories: resource dependency theory, resource-based view theory, dynamic capabilities theory, and transaction cost theory, unlike previous related studies, which mainly used a single theory per study. Additionally, this study employed quantitative data collection methods alongside appropriate analytical techniques derived from second-generation statistical approaches, including CB-SEM. As a result, the study ensures validity and robustness in its findings.

1.9 Conceptual Framework

The conceptual framework illustrated in Figure 1 visually represents the relationships among the variables examined, aligned with the study objectives and the four papers. The variables used in this study are independent, dependent, and moderating variables. Theoretical and empirical literature reviews informed these variables. The framework establishes the link between logistics management practices (independent variables) and the performance of SSGP firms (dependent variable). In this light, the conceptual framework was developed by combining concepts from logistics management practices with those related to SSGP firms' performance. In line with objective one (Paper one), a review of various literature sources on the performance of small-scale firms, i.e., Oluyemisi *et al.* (2022) and Phupattarakit and Chutima (2019), indicates that warehouse

management practices, including material handling, storage management, inventory control, and packaging management, have a significant impact on the performance. For SSGP firms to meet customer demand by supplying the right quantity of goods at the right time and with the right quality, it is crucial to maintain effective, efficient warehouse operations.

With regards to Objective Two (Paper Two), studies by Shukla *et al.* (2023), Chungalima *et al.* (2022), Saghiri and Wilding (2021), Butt (2019), Taherdoost and Brard (2019), and Kannan (2019) demonstrate that supplier relationship management practices, including buyer-supplier relationships, supplier selection, supplier development, and knowledge transfer, have a significant impact on performance. For SSGP firms to operate efficiently and effectively, producing high-quality grape-based products in the right quantities and at the right time, it is essential to establish a sustainable relationship with grape farmers, the primary suppliers of raw materials.

Furthermore, Objective three (Paper Three) explains that maintaining open and transparent customer communication channels is crucial for improving service delivery (Gallino and Rooderkerk, 2020; Bressolles and Lang, 2020; Ajoke *et al.*, 2019; Mwangangi, 2016). This can be achieved through effective and efficient order management practices that diversify sales channels, including online platforms, local markets, and direct phone orders, thereby increasing customer reach and improving firm performance (Hopstack, 2024).

In Objective Four (Paper Four), scholars (Orenstein, 2023; Mageto *et al.*, 2022; Adebayo and Aworemi, 2021; Wabuge and Osoro, 2020; Fanam and Ackerly, 2019; Hou *et al.*, 2017) reveal that transportation management practices, including carrier selection, third-party logistics (3PL) management, physical distribution, and load management, influence the performance of small-scale processing firms. The management of these practices is structured to establish effective linkages between small-scale processing firms and their supply chain partners. This approach aims to optimise logistics operations, minimise damage and spoilage of goods during transit, ensure the timely delivery of raw materials and finished products, reduce transportation costs, and enhance overall logistics management efficiency. Consequently, these improvements contribute to achieving superior organisational performance.

However, the strength and direction of the relationship between logistics management practices, specifically supplier relationship management, order management, and firm performance, can vary depending on a firm's logistics capabilities. Therefore, logistics capabilities, including knowledge, skills, experience, education, and available resources, are essential in strengthening the relationship between small-scale processing firms and their suppliers. Furthermore, these capabilities are crucial to ensuring a smooth, efficient workflow for customer orders from acquisition to final delivery.

The main issue in this study is how logistics management practices have contributed to the performance of SSGP firms. Additionally, the study explores the moderating role of logistics capabilities in the relationship between supplier relationship management and performance and between order management and performance. The relationships among independent, moderating, and dependent variables are presented in Figure 1.

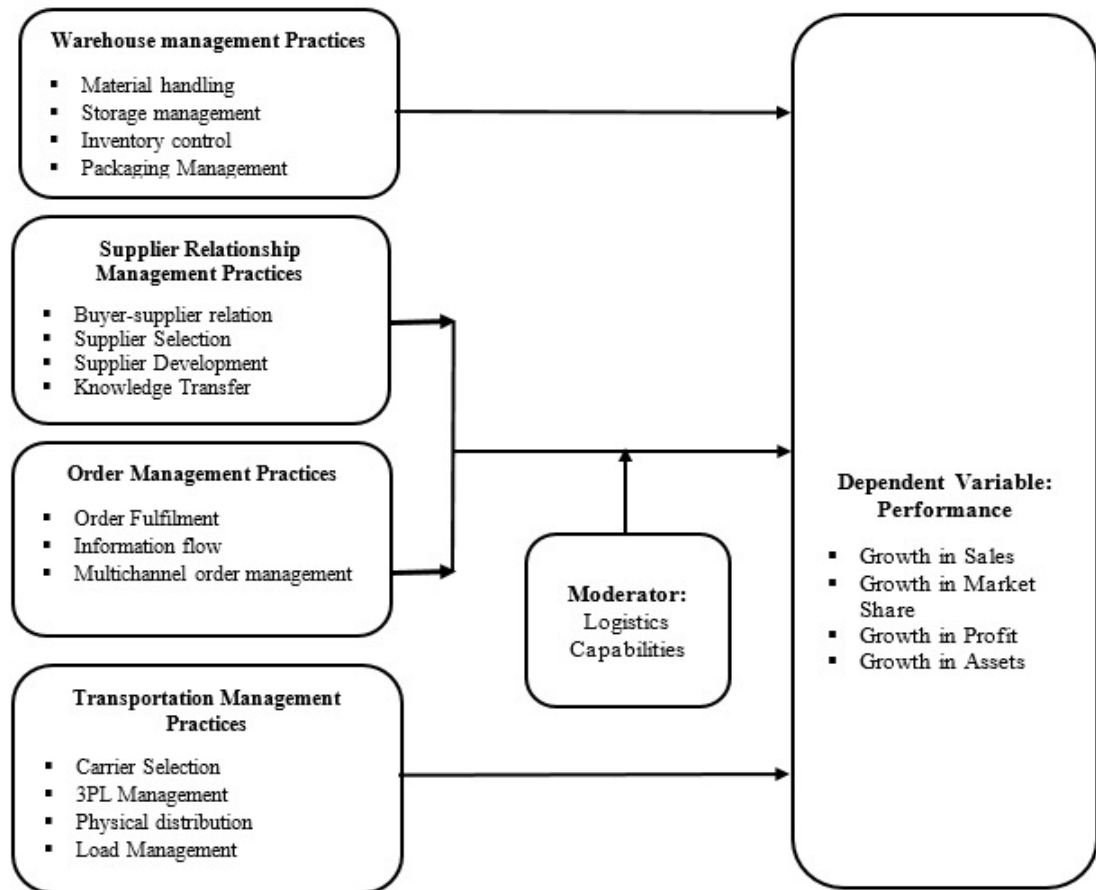


Figure 1: Conceptual Framework of the Study

Source: Author's Construction, based on Theoretical and Empirical Literature Review (2024)

1.10 General Methodology

1.10.1 Research Philosophy and Approach

This study adopted a positivist research paradigm, as it best suits quantitative research, emphasising objectivity, empirical measurement, and the systematic analysis of relationships between variables. The study adopted a positivist approach to establish empirical evidence through measurable data, enabling a structured investigation of causal relationships among key variables. By prioritising quantifiable outcomes, the research yields clear, testable insights, ensuring robust, reliable findings supported by a rigorous methodological framework.

The positivist approach operates on fundamental assumptions, including objectivity, determinism, and causality. It is assumed that the researcher remains objective throughout the study, relying solely on verifiable data and minimising personal biases. Additionally, guided by the deterministic assumption, the study presupposes that specific logistics management practices produce predictable performance outcomes, enabling the formulation of testable hypotheses to establish causal relationships. Ultimately, this research is grounded in the assumption that effective logistics management causally influences the performance of SSGP firms, aiming to empirically demonstrate this relationship and contribute valuable insights to both academic literature and practice.

Furthermore, the study follows a deductive approach, which is appropriate when existing theories guide research. This approach ensures that general theories are tested and refined through empirical investigation. The research follows a structured process, starting with theoretical propositions, defining hypotheses, testing them, and analysing the findings to confirm, refine, or modify existing theoretical frameworks. By adhering to this methodology, the study provides a logical and systematic evaluation of logistics management practices in SSGP firms, offering theoretical and practical contributions.

1.10.2 Research Design

This study employed a cross-sectional survey research design, which entails collecting data at a single point in time to capture respondents' facts and perceptions. This design is particularly useful for generating statistical explanations and making inferences about key study variables (Saunders, 2014). Additionally, it involves examining events, objects, subjects, and concepts by analysing and describing the attitudes, opinions, or

trends within a population without attempting to manipulate or control the conditions of these phenomena (Asenahabi, 2019; Jongbo, 2014). In line with the above, this study utilised the design to examine and establish statistical relationships between the effective management of logistics practices, such as supplier relationship management, order management, warehousing, and transportation management, and firms' logistics capabilities, as well as their impact on the performance of small-scale grape processing firms. However, this research design requires measures to control for sample bias, which could affect the reliability of the results and the clarity of their generalizability to the broader population. Despite these limitations, the design enabled the study to efficiently and cost-effectively assess a wide range of behaviours and other phenomena among a large group of SSGP firms efficiently and cost-effectively, as highlighted by Atlas (2024) and Scribbr (2024).

1.10.3 Description of the Study Area

The study was conducted in the semi-arid region of Dodoma, which is geographically bordered to the north by the Manyara Region, to the northeast by the Tanga Region, to the west by the Singida Region, to the south by the Iringa Region, and to the east and southeast by the Morogoro Region. Administratively, Dodoma is divided into seven districts: Bahi, Chamwino, Chemba, Dodoma, Kondoa, Kongwa, and Mpwapwa. Notably, Dodoma is the only region in Tanzania with an agroecological environment suitable for grape farming. The region is widely recognised for its favourable climatic and soil conditions, which support the cultivation of grapes (Nzowa, 2020). The region is strategically located, emerging as a hub for Tanzania's grape industry, thanks to better transportation networks and proximity to major markets. Due to these favourable conditions, Dodoma has witnessed a significant rise in the establishment of small-scale grape processing enterprises. These firms seek to capitalise on the region's potential by enhancing the value of harvested grapes, fostering local economic growth, and generating employment opportunities within the community. Despite their considerable potential, SSGP firms encounter numerous challenges that impede their performance. Primarily, these firms are family-operated, with logistics management practices executed informally, which adversely affects their efficiency and overall outcomes (Haarman *et al.*, 2022).

Furthermore, inefficiencies within the grape value chain have been documented (Mlay, 2021; Kulwijila *et al.*, 2018), negatively impacting SSGP firms. Such inefficiencies

have resulted in elevated operational costs, supply chain delays, increased post-harvest losses, restricted market access, and diminished profitability and competitiveness, leading to poor performance among these firms. In light of these challenges, it is crucial to investigate how logistics management practices influence the performance of SSGP firms in Dodoma, Tanzania. Addressing these issues could provide insights that enhance firm efficiency and strengthen the overall grape sector in the region.

1.10.4 Population and Sampling Procedure

The study population consisted of active SSGP firms registered with the SIDO. These firms were selected for their unique operational characteristics, influenced by factors such as the high perishability of grapes and opportunities for value chain development. Additionally, SSGP firms enhance the economic significance of grape farming by directly linking with small-scale grape farmers, thereby ensuring a stable, dependable market, consistent demand, and income security for agricultural producers.

A census sampling approach was employed to determine the sample size, targeting all 202 active SSGP firms. The decision to include the entire population was based on its manageable size, allowing for full enumeration while eliminating potential biases associated with sampling errors (Atlas, 2024). Additionally, purposive sampling was used to select 202 firm owners as the units of observation. Firm owners were chosen as respondents because they hold high-ranking positions within their businesses and are considered more reliable sources of information than lower-ranking employees (Mushi *et al.*, 2024).

1.10.5 Data Collection

This study employed a quantitative approach, necessitating the use of quantitative methods and data collection tools. A survey method was chosen, utilising a structured questionnaire to gather data. Upon obtaining all necessary ethical clearances and data collection approvals (refer to Appendix 2, pages 183-184), data were collected from SSGP firms in Dodoma City that voluntarily agreed to participate in the study. The questionnaire was self-administered by respondents; however, when participants faced difficulties completing it, the researcher provided unbiased assistance. The questionnaire was structured into two sections (see Appendix 1, pages 172-182). The first section contained demographic questions and screening questions related to grape processing, while the second section included items designed to gather information on

the study's key constructs. The key constructs examined in this study included supplier relationship management, order management, warehouse management, transportation management, logistics capabilities, and performance.

Although adapted from previous studies of a similar nature, the data collection tools underwent a pilot study to assess the relevance and clarity of the questions. Before the main data collection, the questionnaire was pretested on a separate group of 30 SSGP enterprises not included in the primary study. The pre-test was conducted in Bahi, Chemba, Kondoa, and Chamwino Districts, which are located outside the main study area. Following the pretesting, the questionnaire was revised to refine the wording and structure of the questions, ensuring they accurately reflected and accommodated respondents' understanding. The alterations to the questionnaires enabled the collection of sufficient and relevant information on the variables in this study. Based on the pilot study's findings, the questions were revised to better align with and accommodate respondents' understanding. As part of these revisions, terminology and phrases that were not relevant or easily understood by respondents were modified. These modifications enhanced the questionnaires, ensuring the collection of sufficient and relevant information on the study's variables.

1.10.6 Measurement of Variables

1.10.6.1 Dependent variable

This study measured performance as the dependent variable using a combination of financial and non-financial indicators, including sales growth, profit growth, asset growth, and market share growth (Kisinga *et al.*, 2024; Razzak *et al.*, 2021). These indicators are widely recognised in the literature as appropriate for evaluating performance in small enterprises (Kiyabo and Isaga, 2020; Forth and Bryson, 2019). A five-point Likert scale assessed these indicators, with 1 representing "not at all" and 5 indicating "to a very great extent." This scale was chosen for its suitability in measuring subjective constructs and its strong correlation with objective performance outcomes, as supported by empirical studies (Ramírez-Solis *et al.*, 2022; Rajala and Tidström, 2022; Wall *et al.*, 2004; Gregory and Richard, 1984).

The study employed four (4) validated subjective performance items adapted from prior empirical studies (Lubawa and Osabuohien, 2023; Lubawa and Raphael, 2023; Razzak *et al.*, 2021; Kellermanns *et al.*, 2012; Zulkiffli and Perera, 2011). The use of

subjective measures was particularly relevant for small-scale firms, where obtaining audited financial records is often challenging due to informal business operations and inconsistent record-keeping practices (Addo *et al.*, 2024; Lubawa and Raphael, 2023; Sorama and Joensuu-Salo, 2023; Mashavira *et al.*, 2022; Zulkiffli and Perera, 2011). In such contexts, subjective assessments are a reliable and valid alternative to objective financial indicators. Furthermore, they capture critical non-financial aspects of performance that are especially relevant for small-scale firms. For example, in family-owned businesses, performance is frequently evaluated against firm-specific goals and aspirations set by the owning family, which are better reflected in subjective performance measures (Razzak *et al.*, 2021).

1.10.6.2 Independent Variable

The study operationalised and measured logistics management practices among SSGP firms by adapting constructs from established empirical and theoretical literature, thereby enhancing the reliability and validity of the variables employed. The independent variables comprised four (4) key dimensions: (i) warehouse management, adapted from Kaestner *et al.* (2023), Ndiwa and Chege (2022), Joseph and Odeleye (2021), Orobia *et al.* (2020), Misron *et al.* (2018), and Musau (2016) which assessed a firm's ability to systematically manage material movement, storage, and control within a facility to enhance efficiency, reduce costs, and maintain product quality, measured through four (4) indicators; (ii) Supplier relationship management, drawn from Shukla *et al.* (2023), Butt (2019), Changelima *et al.* (2022), Saghiri and Wilding (2021), Wagner (2010), Taherdoost and Brard (2019), and Kannan (2019), which evaluated the firm's capacity to build and maintain effective relationships with their suppliers, also measured by four (4) indicators; and (iii) order management, based on the works of Hopstack (2024), Gallino and Rooderkerk (2020), Bressolles and Lang (2020), Ajoke *et al.* (2019), and Mwangangi (2016), which captured the firm's ability to efficiently handle customer orders from the point of placement through to final delivery, ensuring both timely service and consistent product quality, measured using three (3) indicators. (iv) Transportation management adopted from Orenstein (2023), Mageto *et al.* (2022), Festo (2022), Adebayo and Aworemi (2021), Wabuge and Osoro (2020), Fanam and Ackerly (2019), Hou *et al.* (2017), Mbondo *et al.* (2015), Williams *et al.* (2013), which evaluate the firm's ability to efficiently plan, coordinate, and control the movement of

raw materials and finished grape products, ensuring timely delivery, reduced spoilage, and cost-effectiveness, measured by four (4) indicators.

1.10.6.3 Moderating Variable

In this study, Firm Logistics Capabilities (FLCs) were examined as a moderating variable and measured using five (5) validated statements adapted from Agbandzo *et al.* (2024), George and Kerai (2024), Tukamuhabwa *et al.* (2021), and Pham and Hoang (2019). The items captured key dimensions of logistics capacity, including knowledge, skills, experience, education, and resource availability.

This study employed a five-point Likert scale to assess respondents' perceptions of SSGP firms regarding the impact of logistics management practices and logistics capabilities on performance. The scale ranged from 1 ("strongly disagree") to 5 ("strongly agree"), facilitating a structured evaluation of the observed constructs. The choice of a five-point scale was informed by prior research, which suggests it is particularly suitable for individuals with limited exposure to Likert-scale measurements. This scale allows for finer distinctions in responses while enhancing the potential for information gain (Krosnick and Presser, 2010). Since many respondents were unfamiliar with Likert scale measurement, adopting this approach was considered appropriate and relevant for the study.

The definition and measurement of variables are presented in Table 1. It explains the meaning of the variables used and provides their operational definitions.

Table 1: Summary of variables and Operational definitions

Construct		Operational definition
Dependent Variables		
Performance		The measurable outcomes of operations encompass internal efficiency and external growth indicators such as market share, sales, profit, and asset accumulation, reflecting the firm's strategic and financial sustainability.
• Growth in market share • Growth in sales • Growth in profit • Growth in Assets		
Independent Variables		
Warehouse Practices	Management	
• Material Handling		A firm's ability to systematically manage material movement, storage, and control within a facility to enhance efficiency, reduce costs, and maintain product quality.
• Storage management		Firm's ability to systematically organise, control, and optimise inventory storage to maximise space utilisation, preserve product quality, maintain the required temperature based on the nature of the product, ensure safety, and minimise losses.
• Packaging management		The firm's ability to utilise standardised packaging tailored to the product and to optimise packaging processes within a warehouse to ensure product protection, efficient storage, and smooth handling.
• Inventory Control		Firm's ability to systematically monitor, regulate, and optimise inventory levels within a warehouse to ensure the availability of required materials, prevent shortages and excesses, minimise holding costs, and enhance operational efficiency.
Supplier management	relationship	
• Buyer-supplier relationship management		The firm's ability to maintain an effective relationship with the supplier.
• Knowledge Transfer		Dissemination of industry-specific knowledge, practice, and creative approaches that bolster suppliers' ability and understanding in providing materials of superior quality.
• Supplier Selection		Selection of a supplier against the established product-based standards and criteria for selection.
• Supplier Development		Buyer's involvement in developing a particular supplier.
Order management practices		
• Order fulfilment		The firm's ability to receive, process, and deliver customer orders efficiently and effectively.
• Multichannel management	order	The firm's ability to manage multiple sales and distribution channels for marketing, selling, and delivering products to customers.
• Information management	flow	The firm's capability to share relevant information promptly ensures efficient and reliable flows of materials and customer orders.
Transportation practices	management	
• Carrier selection		The firm's ability to evaluate and choose transportation providers that align with its operational and financial goals to ensure cost-effective, reliable, and efficient movement of goods.
• Third-party management	logistics	The firm's ability to strategically outsource and oversee external logistics service providers to optimise transportation, reduce costs,

	share risks, and enhance operational efficiency while focusing on core competencies.
• Physical distribution	The firm's ability to efficiently plan, control, and optimise the movement of goods from production to consumers, minimising costs, reducing lead time, and ensuring timely deliveries.
• Load management	The firm's ability to efficiently plan, allocate, and optimise cargo capacity during transportation to minimise costs, reduce damage, reduce transit times, and ensure product safety.
Moderating Variable	
Firm's logistics capabilities (FLC)	The firm's key success factors include skilled, experienced, knowledgeable, and well-educated staff, ownership of essential resources such as machinery, and expertise in supplier relationship management within the processing industry.
Knowledge	
• Skills	
• Experience	
• Education	
• Resources	

1.10.7 Data Validity, Reliability, and Analysis

Covariance-Based Structural Equation Modelling (CB-SEM) was utilised to examine the relationship between logistics management practices and performance, with logistics capabilities as a moderating variable. The adoption of CB-SEM was essential due to its robustness as a statistical method, which facilitates the testing and estimation of causal relationships among variables. CB-SEM consists of two principal components: Confirmatory Factor Analysis (CFA) and the structural model. CFA is instrumental in identifying the relationships between observed variables and latent constructs, ensuring the validity and reliability of the measurement model. In this study, CFA was employed to validate and assess the reliability of the constructs related to logistics management practices, performance, and logistics capabilities.

Composite reliability (CR) was used alongside convergent and discriminant validity measures to evaluate construct validity and reliability. A CR value of 0.70 or above indicates satisfactory internal consistency of the constructs. Convergent validity is established when the Average Variance Extracted (AVE) is 0.50 or higher and is less than the CR, indicating that the construct explains more variance than is attributed to measurement error. Discriminant validity is confirmed when the AVE exceeds the Maximum Shared Squared Variance (MSV), ensuring the constructs remain distinct.

The structural model illustrates the interrelationships among latent variables, demonstrating how specific unobserved variables directly or indirectly influence others. In this study, a structural model was applied to assess the impact of logistics

management practices on the performance of SSGP firms, with logistics capabilities as a moderator. Several model fit indices were employed to evaluate the overall adequacy of both the proposed and alternative models. These included: Chi-square to degrees of freedom ratio (χ^2/df); values below 5 indicate an acceptable fit. The Goodness of Fit Index (GFI) is used to assess the model's overall goodness of fit. Comparative Fit Index (CFI) values of 0.90 or above indicate an acceptable fit. Root Mean Square Error of Approximation (RMSEA) values below 0.05 signify a good fit. All analyses were conducted using IBM AMOS software version 21, with a 5% significance level.

1.11 Ethical Consideration

The study obtained official research authorisation from Moshi Co-operative University (MoCU) and Dodoma City Council before pre-testing the data collection instruments and commencing the actual data collection process. The permit was presented to the Dodoma Regional Secretary (RAS) for permission to access SSGP firms. Before pre-testing the data collection instruments and conducting the actual data collection, the study objectives, purpose, procedures, and potential benefits were thoroughly explained to the respondents. Their informed consent was then sought to participate in completing the questionnaire. The study strictly adhered to the principles of voluntary participation, confidentiality, and respondent anonymity. Participants retained the right to withdraw from the study at any stage without any adverse consequences. They were fully informed about the data collection process, its intended use, and how the information would be shared with researchers, institutions, grape processors, and the general public. All collected data were securely stored to ensure confidentiality, and measures were taken to prevent participant identification. Furthermore, the study was conducted with honesty, integrity, and scientific rigour. The findings were contextualised within existing research, and all sources were accurately and appropriately cited.

1.12 Organisation of the Study Thesis

The study is structured into six chapters, not including the preliminary and appendix pages. The preliminary pages include sections such as the title page, declaration, copyright, certification, dedication, acknowledgements, table of contents, table of tables, figures, abbreviations, and an extended abstract. Chapter one serves as the introduction. This chapter provides essential background information, outlines the problem statement, defines the research objectives and questions, presents the rationale for the study, discusses the theoretical framework, and outlines the overall

methodology. The subsequent chapters are presented as a series of manuscripts, each corresponding to a specific objective of the study. Chapter 2 is a published manuscript detailing the findings of the first objective; Chapter 3 is a published manuscript addressing the second objective. Similarly, Chapter 4 is a published manuscript that discusses the results of the third objective; Chapter 5 is a manuscript intended for publication that presents the findings of the fourth objective. Each of these manuscripts adheres to the established guidelines and requirements of the target journals and publishers. The final chapter, Chapter 6, summarises the findings, draws conclusions, provides recommendations, outlines the study's contributions, and highlights areas for future research.

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CHAPTER TWO

PUBLISHED PAPER ONE

WAREHOUSE MANAGEMENT PRACTICES AND PERFORMANCE OF SMALL-SCALE GRAPES PROCESSING FIRMS: EVIDENCE FROM TANZANIA

3.1 An Overview

This chapter presents a published paper that aligns with Objective One. This paper was published in the Cogent Business & Management Journal, Volume 11, Issue 1, DOI: 10.1080/23311975.2024.2427215, published by Taylor and Francis. It examined warehouse management practices and their impact on the performance of small-scale grape processing firms, using evidence from Tanzania. Herewith, find the attached Paper that offers a comprehensive presentation of the study.



Warehouse management practices and business performance of small-scale grapes processing firms: evidence from Tanzania

Debora Chelestino Kisinga, Alban Dismas Mchopa & Leonada Raphael Mwangike

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Warehouse management practices and business performance of small-scale grapes processing firms: evidence from Tanzania

Debora Chelestino Kisinga^a , Alban Dismas Mchopa^b  and Leonada Raphael Mwangike^c

^aDepartment of Procurement and Supply Management, College of Business Education, Dodoma; ^bDepartment of Procurement and Supply Chain Management, Moshi Co-operative University; ^cDepartment of Procurement and Logistics Management, Mzumbe University, Morogoro

ABSTRACT

This paper examines the relationship between warehouse management practices including material handling, storage, inventory, and packaging and the business performance of small-scale grapes processing firms in Dodoma Region, Tanzania. A resource-based view theory guided the study based on the key variables. Data were collected using a survey questionnaire administered to 202 small-scale grapes processing firm owners. The study uses a cross-sectional survey design. Data were then subjected to descriptive and structural equation modelling. The findings indicated a significant positive relationship between the firm's business performance and the management of material handling ($\beta=0.112$, $p=0.009$), storage ($\beta=0.249$, $p<0.0001$), and inventory control ($\beta=0.043$, $p<0.0001$). However, there was no relationship between packaging management ($\beta=0.379$, $p=0.550$) and business performance. The study concluded that warehouse management practices are crucial for unlocking improved business performance in the small-scale grapes processing sector. By examining the link between warehouse management and positive business outcomes, this study offers valuable guidance for managers seeking to optimise their operations. This research contributes to the resource-based view theory by introducing new constructs not previously examined for small Tanzanian grape processors. The study, therefore, recommends the need for paying close attention to warehouse management practices if the grapes firms were to realise remarkable business while contributing significantly to the national economy.

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Business, Management and Accounting; Strategic Management; Marketing

1. Introduction

Warehouse Management Practices (WMPs) have become an important node in the logistics operations of many processing firms in both developed and developing countries (De Koster et al., 2017). Kidane (2021) views such practices as crucial conditions for contributing to the enhancement of efficiency and effectiveness in the control of the movement of goods and their storage within a warehouse and, therefore, leading to an improved firm's business performance. The rise in WMPs within firms is credited to the optimisation of space, labour, and equipment usage, along with the reduction of handling and storage costs (Campus, 2013; Kusriani et al., 2018). Oluyemisi et al. (2022) view WMPs as key for adding goods' value, maximising goods' quality, and controlling the firm's inventory levels, meanwhile ensuring the safety of the goods/products within a given warehouse. In spite of these acknowledgements, there is a yet dearth of literature on evidence demonstrating the effect of WMPs on the specific and overall business-related performances of small-scale processing firms (Alam et al., 2024; Gobeze, 2018).

Prior research contends that WMPs are among the important dimensions of logistics management practices influencing business performance in manufacturing firms. For instance, a study by Odhiambo et al. (2017) reveals that effective storage management systems influence organisational performance by

CONTACT Debora Chelestino Kisinga  deborakisinga@gmail.com  Department of Procurement and Supply Management, College of Business Education, Dodoma

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increasing output and efficiency in operations. Studies by Ndiwa and Chege (2022), Panigrahi et al. (2022), Omwenga (2021), and Makena and Elizabeth (2021) also found that material handling and inventory control management have a significant effect on the quality of such products, particularly with reference to the food and steel manufacturing companies in Kenya. Further, Cozzolino and De Giovanni (2023) report that packaging management leads to enhancement in the proper handling of products meanwhile ensuring the product's preservation.

Yet, there is scant evidence documented on WMPs in relation to grapes processing firms (Makena & Elizabeth, 2021; Ndiwa & Chege, 2022; Panigrahi et al., 2022), especially with reference to emerging economies. Nevertheless, literature has indicated that WMPs differ across firms (Odhiambo et al., 2017; Omwenga, 2021; Panigrahi et al., 2022). This study focused on WMPs in SSGP firms to provide a detailed understanding of the unique challenges they face in implementing warehouse operations. These challenges include the perishability of grapes, resource constraints, and the need for efficient operations to maintain quality and profitability. It is then worthwhile to examine WMPs among SSGP firms in the Dodoma Region for decision-making and to provide valuable insights into improving efficiency and quality in grape processing. Similarly, the study was also designed and then carried out in response to the call made by several observers (Alam et al., 2024; Jelle, 2020; Muchaendepi et al., 2019). Therefore, the study was, in particular, set to focus on the WMPs by taking several considered factors to be key, including material handling, storage, inventory control and packaging management in small-scale grapes processing (SSGP) firms in Dodoma region, Tanzania.

In Tanzania, literature reported that small scale processing firms, including those in the grapes processing industry, have contributed to economic growth which, account for about 40% of total employment and contributing roughly a third of the country's GDP (Kisinga et al., 2024; Mang'ana et al., 2023; Mashenene & Kumburu, 2023; Nalyoto & Ngaruko, 2022). Additionally, Lubawa and Osabuohien (2023), Lubawa and Raphael (2023) emphasise that SSGP firms not only create jobs but also promote economic diversification by converting grapes into products like wine, juice, champagne, jam, and raisins, thus adding value to agricultural produce. They also underscore the role of SSGP firms as a crucial link in the grape value chain, encompassing producers, processors, exporters, wholesalers, retailers, consumers, and researchers. Similarly, Kalimang'as et al. (2021) found that the efficiency and effectiveness of SSGP firms encourage smallholder farmers to adopt better farming practices, leading to higher yields and increased incomes. Therefore, understanding the effect of warehouse operation among SSGP firms is crucial as these firms play a significant role in enhancing agricultural productivity in Tanzania.

Despite the critical role of WMPs in boosting efficiency and effectiveness in managing the movement and storage of goods, many small-scale processing enterprises in developing countries continue to face stagnation and even collapse in their early stages of operation (FAOSTAT, 2023). For example, in Tanzania, 70% of small-scale processing firms have stagnated or collapsed within five years of their establishment (Kipene et al., 2015; Nkwabi & Fallon, 2020; Tisimia, 2014). This stagnation and collapse have negatively impacted the Tanzanian economy, with local firms struggling to meet domestic and international market demands, thus missing out on potential revenue (Luoga, 2019; Seme, 2021). As a result, researchers have studied various factors influencing the performance of small-scale processing enterprises, including Kisinga et al. (2024), Lubawa and Osabuohien (2023), Lubawa and Raphael (2023), Mashenene and Kumburu (2023), Mang'ana et al. (2023), Njiku (2019), and Kipene et al. (2015). However, these studies have not specifically examined the impact of warehouse management on a firm's business performance.

On the other hand, examining the business performance of small-scale processing firms is crucial as it enhances firms to strengthen their market position and understand their operations, management policies, and strategic decisions. Further, Zada et al. (2021) argued that the more small scale processing firms perform efficiently, the more they stir economic activities that lead to countries' welfare and growth. On the other hand, research studies revealed that WMPs are one of the important dimensions of processing firms' efficient performance (Etukudo & Babatola, 2023). However, several attempts have been made to document the effect of WMPs on the overall supply chain performance with limited attention towards the linkage of WMPs and business performance. This study intends to bridge this gap. The proposed solution could improve SSGP firms' business performance, create employment, generate revenue, improve warehouse operational strategies, and contribute to Tanzania's sustainable industrialisation goal.

However, there is no single approach to measuring business performance (Manogna & Mishra, 2022). Experts suggest that business firms can assess their performance using either subjective or objective information, or a combination of both, with a focus on achieving the firm's goals (Kara & İpekçi, 2022; Kellermanns et al., 2012). The challenge arises when small-scale firms are reluctant to publicly disclose their objective performance information (Lubawa & Raphael, 2023; Zulkiffli & Perera, 2011). Therefore, considering the real conditions faced by small-scale processing firms in general (including SSGP firms), this study measured business performance using subjective information-related statements that indicate whether the firm's goals have been met (Kellermanns et al., 2012; Mang'ana et al., 2023; Mwangangi, 2016).

The rest of this paper is organised as follows: Section Two presents the theoretical review and hypotheses development, Section Three describes the research methodology applied in this study, Section Four presents the findings, and Section Five presents the conclusion and recommendation.

2. Literature review

2.1. Theoretical underpinnings

2.1.1. Resource based theory (RBV)

Resource-Based View (RBV), developed by Barney (1991), guided this research under the assumption that every firm is heterogeneous from other firms in terms of resources and capabilities. RBV argues that firms that possess unique capabilities and resources characterised by certain attributes are more likely to enhance business performance (Hesty & Alamanos, 2023; Kara & İpekçi, 2022). Mahmud et al. (2022) comment that firms' resources are believed to be helpful in a situation where there is a capability of facilitating the implementation or conception of strategies that exploit market opportunities that believe in improving performance and neutralising potential threats. The assumption of the theory is built on resources, including tangible resources (physical capital, financial, and technological resources). Also, the theory considers intangible resources, namely human capital, intellectual property, brand reputation, and organisation culture, in building the firm competitive advantage. Similarly, the theory postulates that a firm's capabilities revolve around innovation, operational efficiency, and logistics management. Scholars believe that the synergy between tangible and intangible resource in the RBV assumptions brings heterogeneity for achieving competitive advantages (Utami & Alamanos, 2023). Therefore, by focusing on these resources, SSGP firms can build a competitive edge, even with limited overall resources, leading to improved business performance.

Similarly, RBV explains how SSGP firms can leverage their internal resources and capabilities for efficient warehouse operations and gain a competitive edge. The application of this theory in the context of small-scale processing firms in Tanzania is crucial for navigating the unique regional challenges the SSGP firms face. Studies noted that Tanzania's small-scale processing enterprises face challenges related to limited innovation and difficulty in adopting new technology, inadequate funds and the lack of quality raw material for processing (Nkwabi et al., 2019). Also, market access, high competition and poor infrastructure, as well as inadequate storage facilities for raw materials, are cited as bottlenecks to the performance of small-scale processing firms (Dube et al., 2018; Njiku, 2019). Similarly, studies note that agro-processing facilities, modern processing equipment, and processing skills are prerequisites for the business performance of small-scale processing firms in Tanzania (Nandonde et al., 2015).

Consequently, the ability to forge strong WMPs becomes a critical resource, enabling firms to leverage warehouse operations. Firms that can effectively manage material handling, storage, controlling their inventory, and managing packaging and resources are more likely to perform better. These specific resources and capabilities highlight the importance of RBV in understanding and addressing the unique challenges faced by small-scale processing firms in Tanzania. Likewise, the theory has well been used by previous scholars (Mang'ana et al., 2023; Mashenene & Kumburu, 2023; Salisu & Abu Bakar, 2019) to elucidate the internal resources and capabilities that small-scale processing organisations need to possess to improve their business performance. Therefore, RBV is of particular relevance in this study as it serves as a stepping stone for understanding SSGP firms in the context of Tanzania.

Despite the relevance of RBV to the study, the theory has overemphasised the internal resources, namely human resources, financial resources and physical resources. Such emphasis becomes too general

and ignores the external environment under which the firm is operating. Thus, there is a need for another theory, such as dynamic capability, that integrates and reorganises internal specific resources and capabilities like skills and competencies (both internal and external) to meet the challenges of a dynamic environment (Ludwig & Pemberton, 2011). Similarly, Gligor and Holcomb (2012) and Barney (1991) argue that a firm's resources are linked to capabilities and capabilities to performance. Therefore, to complement RBV, the dynamic capabilities theory was introduced to explain the essential aspect related to how small-scale firms use their internal capabilities to adapt their resources to changing market conditions to enhance their business performance.

2.1.2. Dynamic capability theory

Dynamic Capability Theory (DCT), developed by Teece et al. (1997), was adopted in this study as an extension of RBV to accommodate the changing environment. The theory assumes that business performance in an environment of rapid changes and technological advancement can be ensured by mastering the firm's own internal resources processes (Teece et al., 1997). According to DCT competitive survival of the firm in response to rapidly changing contemporary business conditions depends on the ability of the firm to sense (identify opportunities and threats), seize (take action), and transform (changing existing resources or creating new ones). A study by Barney et al. (1987) recognises the concept of dynamic capabilities as the extension of RBV as it emphasises the importance of flexibility, agility, and adaptability. While RBV focuses on static resources, dynamic capabilities highlight the dynamic processes that allow firms to evolve (Tukamuhabwa et al. (2023). Therefore, DCT, together with RBV, enhances a firm to better align their resource allocation, strategic planning, and innovation efforts, leading to achieving a competitive advantage, thus improving business performance (Barney et al., 1987; Sandberg and Abrahamsson (2011).

In the context of SSGP firms, DCT has been used to understand the dynamic nature of resource management to survive in a competitive environment. DCT recognises the ability to integrate logistics capabilities across firms' operations (including WMPs) can be considered a dynamic capability. The DCT is relevant to our study in that it explains the way firms develop firm-specific competencies to address rapidly changing environments. They refer to the capacity of the firms to cultivate adaptability, innovation, resource optimisation, and efficient operations in WMPs; these dynamic capabilities become a firm's secret weapon, enhancing SSGP firms to turn challenges into opportunities. Previous scholars (Dyduch et al., 2021; Kihara, 2018; Zhang et al., 2023) have used the dynamic capabilities theory to empower small-scale processing firms to navigate challenges, enhance resilience, create value, gain competitive advantage, and thus achieve better business performance. Therefore, DCT is essential for providing an understanding to SSGP firm managers on how to stay competitive and achieve long-term business performance.

2.2. Hypotheses development

2.2.1. Material handling practices and business performance

Material handling management practices are essential for processing firms (Hemant et al., 2019). This is because they facilitate shorter operating cycles, reduce handling costs, maintain the quality of materials, and promote efficiency within a warehouse (Staff, 2024). A study by Garcia-Diaz and Smith (2024) argues that ineffective material handling leads to a prolonged operating cycle, increased handling costs, and lower quality of raw materials and finished products, leading to loss of sales and revenue, thus affecting the firm's business performance. Oluyemisi et al. (2022) also reveal that effective material handling minimises product damage and enhances product quality, leading to increasing sales and thus improving business performance. Likewise, Orbetron (2024) and Vimal Arokyadass (2024) comment that the management of material handling increases efficiency processes within a warehouse by ensuring materials and work in progress flow smoothly, which reduces unnecessary costs and thus enhances firm performance. Most of the reviewed studies concentrate on the impact of material handling practices on brewery companies (Garba, 2020; Joseph & Odeleye, 2021), dairy processing firms (Makena & Elizabeth, 2021), cement manufacturing firms (Kathurima et al., 2016), construction projects (Jusoh & Kasim, 2017), and

bottling company (Unam, 2012). However, these studies did not consider the role of material handling from the perspective of SSGP firms. This study, therefore, intends to fill that gap by examining the role of material handling practices in SSGP firms. Hence, we propose the following hypothesis:

Hypothesis 1: Material Handling Practice has a positive significant influence on the Business Performance of SSGP firms in Dodoma, Tanzania.

2.2.2. Storage management practices and business performance

Storage management practices are crucial for processing firms as they help maximise available space, ensure inventory safety, minimise damage and spoilage, and ensure the timely availability of products within a warehouse (Sharma et al., 2023; Zhao et al., 2023). A study by Sunol (2024) argues that poor, disorganised storage can slow business processes and increase the risk of damage or loss of stored products, thus affecting business performance. Kulwijila et al. (2018) and Agriopoulou and Stamatelopoulou (2017) also add that improper storage practices lead to post-harvest losses, spoilage, and diminishing quality of stored goods, leading to affecting a firm's performance. Additionally, Kotane and Kuzmina-Merlino (2017) argue that effective storage management enhances a firm in cost reduction, maintenance of product quality, improved operational efficiency, and enables the firm to adapt to market changes, thus improving business performance. Similarly, Atlas (2024) comment that managing storage practices helps the firm develop valuable and differentiated resources that contribute to its business performance. Most of the reviewed studies concentrate on the effect of storage management practices on maize and beans warehouses (Chidege et al., 2024), carrots warehouses (Etukudo & Babatola, 2023), pharmaceuticals companies (Linda & Vorvick, 2020), construction projects (Mison et al., 2018) and supermarket (Odhiambo & Janet, 2016). Nevertheless, these studies did not consider the role of storage management from the perspective of SSGP firms. This study, therefore, intends to fill that gap by examining the role of storage management practices in SSGP firms. Hence, we propose the following hypothesis:

Hypothesis 2: Storage management practice has a positive significant influence on the business performance of SSGP firms.

2.2.3. Inventory control practice and business performance

Inventory control practices are a critical aspect of warehouse operations as they enhance inventory optimisation by ensuring enough amounts of raw materials to facilitate a seamless flow of production and sales while preventing both excesses and shortages (Gobeze, 2018). Nevertheless, Alam et al. (2024) showed that ineffective inventory control leads to accumulating excessive inventory for a time with cash tied up in it, leading to the inability to control inventory levels effectively, which affects business performance. On the other hand, Orobia et al. (2020), Muchaendepi et al. (2019), and Atnafu and Balda (2018) reveal that effective inventory control leads to improved efficiency of a business in utilising its capital resources to generate revenue, resulting in enhanced business performance. Most of the reviewed studies focus on the influence of inventory control practices on malt factories (Atlas, 2024), dairy processing firms (Ndiwa & Chege, 2022), pharmaceutical companies (Jelle, 2020), textile manufacturing firms (Musau et al., 2017), and flour milling firms (John et al., 2015). However, these research works did not consider the role of inventory control practices from the perspective of SSGP firms. This study, therefore, intends to fill that gap by examining the role of inventory control practices in SSGP firms. Hence, we propose the following hypothesis:

Hypothesis 3: Inventory control practice has a positive significant influence on the business performance of SSGP firms.

2.2.4. Packaging management practice and business performance

Packaging management practice is essential for processing firms as it enhances product protection, storage efficiency, and quality preservation to improve market value while optimising space utilisation and ensuring sustainable product condition (Cuzzolino & De Giovanni, 2023; Kim & McDonald, 2018). A study

by John Ducard (2015) reveals that ineffective packaging management can affect the quality of products, leading to the product reaching the final consumer in poor condition, that affecting firm performance. Nonetheless, Kaestner et al. (2023) and Anand and Popa (2022) comment that packaging management enhances the performance of manufacturing firms when transporting to distribution centres by protecting product and safety, enhancing easy handling, storing, picking and minimise mechanical shock and vibration while on transit. Most of the reviewed studies focus on the impact of packaging management practices on grains processing firms (Kim & Lee, 2022), the pharmaceutical industry (Origin Ltd., 2022), dairy processing firms (European Dairy Association, 2020), and meat and poultry processing firms (Lauren Wicks, 2022). These studies did not consider the role of material handling from the perspective of SSGP firms. This study, therefore, intends to fill that gap by examining the role of packaging management practices in SSGP firms. Hence, we propose the following hypothesis:

Hypothesis 4: There is a positive significant relationship between packaging management practices and the business performance of SSGP firms.

2.3. Literature on the impact of warehouse management practices on the performance of small-scale grape processing firms

Next is the matrix summary of the related literature review that validates the claim that there are limited or insufficient studies on the effect of WMPs on the performance of SSGP firms, as presented in Table 1.

2.4. Conceptual framework

In this research, the conceptual model integrates four practices derived from the RBV framework. These indicators represent the capabilities or resources of an enterprise and include material handling, storage, inventory, and packaging practices. The practices serve as a proxy for WMPs (Kidane, 2021; Ristovska et al., 2017). SSGP firms anticipate the management of these practices within a warehouse will ensure effective warehouse operations and, in turn, attain optimal business performance. Figure 1 depicts.

3. Methodology

3.1. Research design and study area

This study followed a cross-sectional survey design chosen for its ability to capture a momentary overview of the outcomes and features of SSGP firms at a particular moment. The research was carried out in Dodoma City, in Tanzania, deliberately chosen due to the fact that the wine industry in Tanzania is concentrated exclusively in the Dodoma Region, including Dodoma City, and ranks as the second largest producer of wine in Sub-Saharan Africa, following South Africa (Kalimang'as et al., 2021). Furthermore, the majority of grape processing facilities in Tanzania are concentrated in Dodoma City, further reinforcing its status as the notable hub for grape-based economic activities in Tanzania (Kulwijila et al., 2018). Additionally, the region's climate and soil conditions are well-suited for grape cultivation (Nyagango et al., 2023).

The decision to concentrate this study on SSGP firms was motivated by the recognition that these enterprises constitute a significant yet understudied component of Tanzania's agricultural economy (Lubawa & Osabuohien, 2023; Lubawa & Raphael 2023; Richter et al., 2021). By doing so, we will be highlighting the importance of SSGP firms in supporting local grape farmers by providing adequate markets for their agricultural produce. Additionally, these firms play a big role in supporting wine tourism in Tanzania. Hence, this study included SSGP firms characterised by a staff size ranging from 1 to 49 individuals or an investment capital of up to TZS 200 million, as recommended by the SMEs policy of 2002 and further acknowledged by Kisinga et al. (2024), Adamu (2018) and Njiku (2019). Additionally, a study by Francisco and Canare (2018), Kipene et al. (2015), and (Kellermanns et al., 2012) also suggested that when dealing with small-scale firms, it is essential to collect data within the range of 3 years to be consistent as it is a reasonable time for assessing the growth of the business. Hence, this study focuses on small-scale firms that have been in operation throughout the three years preceding the survey, specifically from 2020 to 2022.

Table 1. Literature review chat validating the claim that there are limited studies on the effect of WMPs on the performance of SSGP firms.

S/n	Author and Year	Place	Title	Variable studied	Sample size used	Relationship Identified	Identified Gaps
1	Ndiwa, & Chege, (2022);	Kenya	Inventory Management Practices and Supply Chain Performance of Dairy Processing Firms in Kiambu County, Kenya	Information integration, transportation system, material handling, and warehousing system	96 dairy firms	Inventory management practices have a positive influence on supply chain performance.	Descriptive statistics and multiple linear regression were used, focusing on the Dairy firm; a small sample for generalisation, geographical limitation, and the impact of WMPs on the BP of the SSGP firm was not studied, focused on larger firms.
2	Garba (2020)	Nigeria	The effect of material management on the performance of Benue Brewery Industry, Nigeria	Lead time and stock valuation	151 respondent	Material handling had a positive and significant relationship	Descriptive statistics used, Geographical limitation, Focus only on the brewery industry; the impact of WMPs on the BP of SSGP firm was not studied, focused on larger firm
3	Makena & Elizabeth, 2021	Kenya	The Effect of Material Handling Procedures on the Supply Chain Performance of Mount Kenya Dairies	Handling equipment, rate of movement, lead time, and cost-saving.	58 employees	material handling had a significant influence on the performance	-Descriptive survey research design, correlation, and regression statistical techniques -Limited sample size -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied,
4	Kathurima et al., 2016	Kenya	Effects of materials handling systems on the performance of cement manufacturing firms in Machakos county	automating material handling systems, information-directed systems, and semi-automated systems	60 employees	there was a positive and significant effect of automating material handling systems on performance	-Focused on Larger firm -Regression analysis model -Limited sample size -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm
5	Unam, 2012	Nigeria	Materials Management for Business Success: The Case of the Nigerian Bottling Company Plc	material wastage and profitability	92 employees	There is a positive significant relationship between efficient Materials Management and firm success	-Descriptive statistics and Chi-square test statistics used -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on a larger firm
6	Cozzolino and De Giovanni (2023)	Italy	Portfolios of sustainable practices for packaging in the circular economy: an analysis of Italian firms	facilitation of recycling activities, logistics optimisation, production processes, raw material saving, reuse of packaging, simplification of the packaging system, and use of recycled materials.	603 circular packaging projects	There is a positive relationship between sustainable practices adopted by firms to improve packaging circularity and reduction in environmental impact	-Geographical limitation -descriptive and prescriptive analyses used -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm

(Continued)

Table 1. Continued.

S/n	Author and Year	Place	Title	Variable studied	Sample size used	Relationship Identified	Identified Gaps
7	Odhiambo & Janet, 2016	Kenya	Effect of Storage Systems on the Organizational Performance: Study of Holdings Within Kisumu City	Storage system (Open storage system, closed system, random access system, centralised system); Organisational efficiency (safety, minimum obsolescence, high output, accuracy); Intervening variables (Location variables, nature of the organisation)	85 employees	There is a positive relationship between Storage Systems and Organizational Performance	-Geographical limitation -descriptive statistics used -Focus only on supermarkets -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm
8	Jelle, 2020	Kenya	Influence of Inventory Management Systems on the Performance of Pharmaceutical Companies in Kenya	Inventory management systems, technological, cultural, and performance metrics	75 workers	Inventory Management Systems have a positive and significant relationship with performance	-Regression and correlation methods used -Did not focus on SSGP firms -The impact of WMPs on the BP was not studied, -Focused on Larger firm
9	Joseph, & Odeleye, (2021);	Nigeria	Effect of Material Management on the Performance of Benue Brewery Industry, Nigeria.	Material handling, productivity, and performance	50 employees	Material management has a positive effect on performance	-Focus only on Nigerian Brewery -Geographical limitation -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm
10	Gobeze, K. D. (2018)	Kenya	The Assessment of Inventory Management Practice: The Case of Awash Wine Share Company (AWSC)	Optimal stock levels, purchase notification, Flexible production schedule, warehouse location identification, and health and safety management	76 employees	Inventory management practices are negatively affecting AWSC	-Descriptive statistics used -Geographical limitation -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm
11	Omwenga (2021)	Kenya	Influence of Logistics Practices on the Performance of Food Manufacturing Firms	Material management, inventory management, and transport management	234 firms	Logistics Practices have a positive relationship with a firm's performance	-limited to the food manufacturing firms -Geographical limitation -Did not focus on SSGP firm -The impact of WMPs on the BP was not studied, -Focused on Larger firm

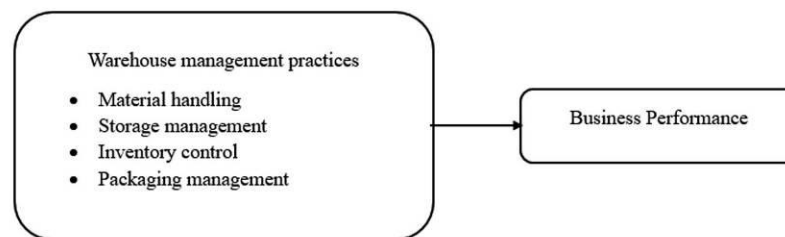


Figure 1. Conceptual framework.

Source: Author's construction, based on theoretical and empirical literature review (2023).

3.2. Data

Data for the study was obtained through a survey questionnaire that was administered to active SSGP firms in Dodoma that are listed by the Small Industry Development Organization (SIDO) (URT, 2022). The researchers employed purposive sampling to deliberately select firm owners as participants. This approach

was selected because firm owners, as senior informants, are regarded as more credible sources of data compared to those in junior positions (Lubawa, 2021). Before the main data collection, the study's questionnaire was tested on a distinct set of 30 SSGP enterprises that were not part of the core data collection.

The researchers conducted a pilot test of the questionnaire to gather observations and recommendations, which were then incorporated to strengthen the final data collection procedure. This process aimed to ensure the validity and reliability of the questionnaire. The questionnaire specifically sought to obtain information regarding the management of material handling, storage, inventory control and packaging practices. The study employed a census approach to gather data from the 202 small-scale grapes processing firms in Dodoma City (URT, 2022). This method was chosen because the population was sufficiently small to facilitate a thorough enumeration, thereby ensuring comprehensive, accurate, and reliable data. Thus providing a detailed understanding of the industry, leading to the elimination of the potential bias that can arise from sample errors, and ensuring that the data accurately reflects the characteristics of the entire population. Therefore, our analysis included all 202 currently operating small-scale processing firms located in Dodoma City.

3.3. Measurement of study variable

3.3.1. Dependent variable

This study employed business performance as the dependent variable, utilising a combination of financial and non-financial indicators. The indicators selected for this purpose included growth in market share, growth in sales, growth in profit, and asset *growth* (Kisinga et al., 2024). These indicators are commonly used in small business performance assessments (Forth & Bryson, 2019; Kiyabo & Isaga, 2020). To measure these indicators, a five-point Likert scale was employed, ranging from 1 ('Not at all') to 5 ('Very great extent').

The study employed four validated statements using subjective metrics to assess business performance derived from previous research conducted by Lubawa and Osabuohien (2023), Lubawa and Raphael (2023), Razzak et al. (2021), Kellermanns et al. (2012), and Zulkiffli and Perera (2011). Subjective measures were selected due to the common reluctance of small-scale business owners to disclose financial data and maintain comprehensive financial records. Research indicates that subjective metrics are strongly correlated with objective measures and are recognised as reliable and valid tools for evaluating performance in small businesses (Hatidja et al., 2021).

3.3.2. Independent variables

The study operationalised and assessed the WMPs of SSGP firms by adapting variables from previous research. This approach allowed the researchers to build upon established theoretical and empirical foundations, ensuring the validity and reliability of the key constructs measured in the study. Therefore, independent variables include material handling practices (MHP) borrowed from Joseph and Odeleye (2021), measuring the effectiveness and efficiency in transferring, storing, and managing goods from the manufacturing stage to storage and dissemination. Storage management practice (SMP) was adopted by Misron et al. (2018), measuring the effectiveness and efficient storage of goods in a conducive environment, while inventory management practices (IMP) were adopted by Ndiwa and Chege (2022), Alam et al. (2024), Orobia et al. (2020) and Musau et al. (2017) concerning the management of a firm's inventory levels within a warehouse. Further, packaging management practice (PMP) was adapted from Kaestner et al. (2023) focusing on monitoring and controlling the quality of the packaging materials to ensure that they safeguard the product quality. WMPs used a five-point Likert scale to assess the primary constructs, with a range of values from 1=strongly disagree to 5=strongly agree.

3.4. Reliability and validity

The suggested model's construct validity and reliability were evaluated using three key indicators: Composite Reliability (CR), convergent validity, and discriminant validity. Composite Reliability, convergent validity, and discriminant validity were employed to analyse these aspects. The results are presented in Table 2. The

proposed model exhibited strong reliability, supported by the indicated reliability indices: MHP (CR = 0.889), STP (CR = 0.901), ICP (CR = 0.815), and PMP (CR = 0.922). Therefore, both WMPs and company performance have dependability values exceeding 0.7, indicating a high level of reliability for each construct.

The results indicated that the Average Variance Extracted (AVE) of the constructs ranged from 0.524 to 0.666, demonstrating convergent validity. The statistics provide strong evidence for the convergent validity of the study since the AVE values meet the criterion of being greater than or equal to 0.50 and lower than the CR. In addition, we performed more rigorous assessments of discriminant validity using the Maximum Shared Squared Variance (MSV). The results showed that the MSV was consistently lower than the AVE for each concept, which further supports the presence of discriminant validity.

3.5. Data analysis

Covariance-based Structural Equation Modelling (CB-SEM) was utilised to investigate the relationship between WMPs and business performance. CB-SEM, a potent statistical approach widely applied in the social sciences, finds diverse applications ranging from examining fundamental connections between variables to intricate assessments of measurement equivalence for both basic and advanced constructs (Edeh et al., 2023; Nasution et al., 2020). Comprising Confirmatory Factor Analysis (CFA) and Structural model, as proposed by Anderson and Gerbing (1988), CFA illustrates the pattern of observed variables for the latent constructs hypothesised in the model. On the other hand, the structural model illustrates the relationships among unobserved variables.

3.5.1. Measurement model

The study employed CFA to evaluate the reliability and validity of WMPs and business performance. The fit statistics for the proposed model are shown in Table 3. The findings show that the proposed model fit values are close to the cut-off points used to evaluate fitness. The /df index of the model is 3.879. This value is less than 5, which is the recommended value indicating that the proposed model provides a better fit to the data than alternative models. Moreover, the obtained values for the Goodness of Fit Index (GFI) (0.908) and the Comparative Fit Index (CFI) (0.936) both exceed the recommended value of

Table 2. Indicators of reliability, convergent and discriminant validity.

Construct (s)	CR	AVE	MSV
Material Handling	0.889	0.572	0.188
Storage management	0.901	0.604	0.188
Inventory Control	0.815	0.524	0.007
Packaging management	0.922	0.666	0.159

Source: Survey data (2023).

Table 3. Fit statistics of the confirmatory factor analysis for the influence of warehouse management practices on business performance.

Category	Fit statistic	Recommended	Obtained	Interpretation
Absolute fit indices	χ^2	–	2791.975	Excellent
	Df	–	203	Excellent
	χ^2/df	<5	3.879	Acceptable
	RMSEA	<0.05	0.020	Acceptable
	PCLOSE	>0.05	0.058	Acceptable
	GFI	>0.90	0.908	Acceptable
	AGFI	>0.80	0.871	Acceptable
	RMR	<0.05	0.037	Excellent
	SRMR	<0.08	0.065	Excellent
Incremental Fit Indices	NFI	>0.90	0.911	Excellent
	CFI	>0.90	0.936	Excellent
	TLI	>0.95	0.967	Excellent
	IFI	>0.95	0.971	Excellent

Note: df: degrees of freedom; RMSEA: root mean square error of approximation; GFI: goodness of fit index; AGFI: adjusted goodness of fit index; RMR: root mean residual; SRMR: standardized root mean square residual; NFI : normed fit index, CFI: Comparative Fit Index, TLI: Tucker-Lewis Index, and IFI: incremental fit index.

0.9. The value of the Root Mean Square Error of Approximation (RMSEA) (0.020) is less than the recommended cut-off value of 0.05.

In Figure 2, the correlation among constructs varied from 0.06 to 0.43, suggesting an acceptable fit for our model. These results indicate that the fit statistics of the suggested CFA model were superior to those of alternative models. This suggests that the data better aligns with material handling practices, packaging management practices, inventory control practices, and store management practices.

4. Findings and discussion

4.1. Descriptive findings

4.1.1. Respondents characteristics

This study achieved a 95% response rate with 202 participants who were owners of the SSGP firm. The study primarily consisted of 85.15% of respondents who were males and 14.85% female. The survey showed that 43.56% of respondents fell between the age range of 36 to 50 years, 31.68% of respondents were below the age of 35, and 24.75% of respondents were aged 50 years and older. Also, of the respondents, 46% had completed primary school, 26% had a university degree, 15% had a certificate or diploma, and 13% had completed secondary education. Table 4 depicts.

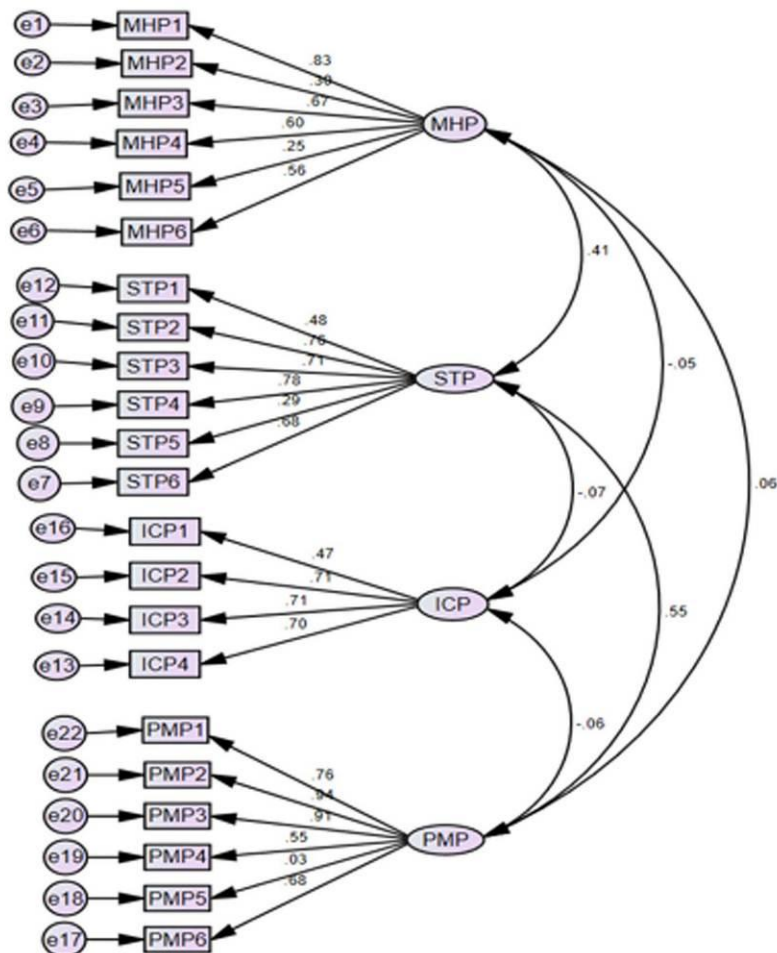


Figure 2. Displays the standardized estimates the proposed CFA model addressing the influence of WMPs on the firm's business performance.

Table 4. The respondents' characteristics

Variable	Frequency	Per cent
Education level		
Primary	92	46.00
Secondary	26	13.00
Certificate/Diploma	30	15.00
Bachelor	52	26.00
Gender		
Male	172	85.15
Female	30	14.85
Age		
<=35	64	31.68
36-50	88	43.56
51+	50	24.75

Source: Survey data (2023).

4.2. Structural model and hypothesis testing

4.2.1. The influence of warehouse management practice on business performance

A structural model, as presented in Figure 3, was employed to test the study's hypotheses using path coefficients and P-values. Table 5 shows that approximately 58% of the variance in business performance can be explained by the WMPs considered in this study, with an R^2 value of 0.581. The findings also reveal that the value of β represents the influence of WMPs, where a positive β indicates a positive impact on business performance, while a negative β suggests a negative effect. Additionally, the magnitude of β reflects the strength of the coefficient. None of the parameter estimates had a significantly larger SE. Furthermore, all CR values exceed the threshold of 1.96, confirming the robustness and reliability of the tested relationships between the study variables. Consequently, the results can be interpreted as follows:

The findings from Table 5 reveal that material handling practice has a positive impact on the business performance of SSGP firms by a 1% level of significance ($\beta=0.112$, $p=0.009$). Thus, H1 was supported. The findings imply that a unit increase in material handling practice results in an average increase of 0.112 in business performance. This finding could be due to the results of the optimisation of workflow within a warehouse, which reduced the chances of delays and disruption in production, reduced operational costs related to labour, product damage and transportation, improved inventory control, improved product quality and overall enhanced business performance. The finding is consistent with the results of Kathurima et al. (2016) and Joseph and Odeleye (2021), which indicate that material handling enhances a firm's performance by enabling short delivery time, reducing overall handling costs, reducing damage from poor handling, minimising labour idle time, preserving material quality, facilitating materials issuance, and ensuring on-time production of high-quality products.

It was also observed from the results in Table 5 that storage management practice had a positive impact on business performance by a 1% level of significance ($\beta=0.249$, $p<0.0001$). Thus, H₂ was supported. This means that a unit increase in in-store management practice results in an average increase of 0.249 in business performance. A plausible explanation could be due to required storage procedures, including management of storage temperature and hygiene management within a warehouse. A good storage condition is the most significant factor in producing excellent grapes products, mainly wine, to ensure consistent product quality. For instance, the capability of the SSGP firm to provide long-term storage stability of wine (e.g. six months and above) leads to improved quality of the wine. The findings are supported by Agriopoulou and Stamatelopoulou (2017) and Rocha-Parra et al. (2016), which confirm that grape products, specifically wine, are usually aged for an extended time to mature flavours after alcoholic fermentation. The studies suggest that if ideal conditions within a store, such as temperature, humidity, and light, are present during ageing, the grape product will undergo significant modifications, leading to improved quality and, hence, improving business performance.

The results presented in Table 5 illustrate inventory control practice had a positive impact on business performance by a 1% level of significance ($\beta=0.043$, $p<0.0001$). Thus, H₃ was supported. This means that a unit increase in inventory control practice results in an average increase of 0.379 in business performance. The findings imply that increased efforts in inventory control have a beneficial influence on the business performance of SSGP firms. For instance, SSGP firms primarily concentrate on overseeing two

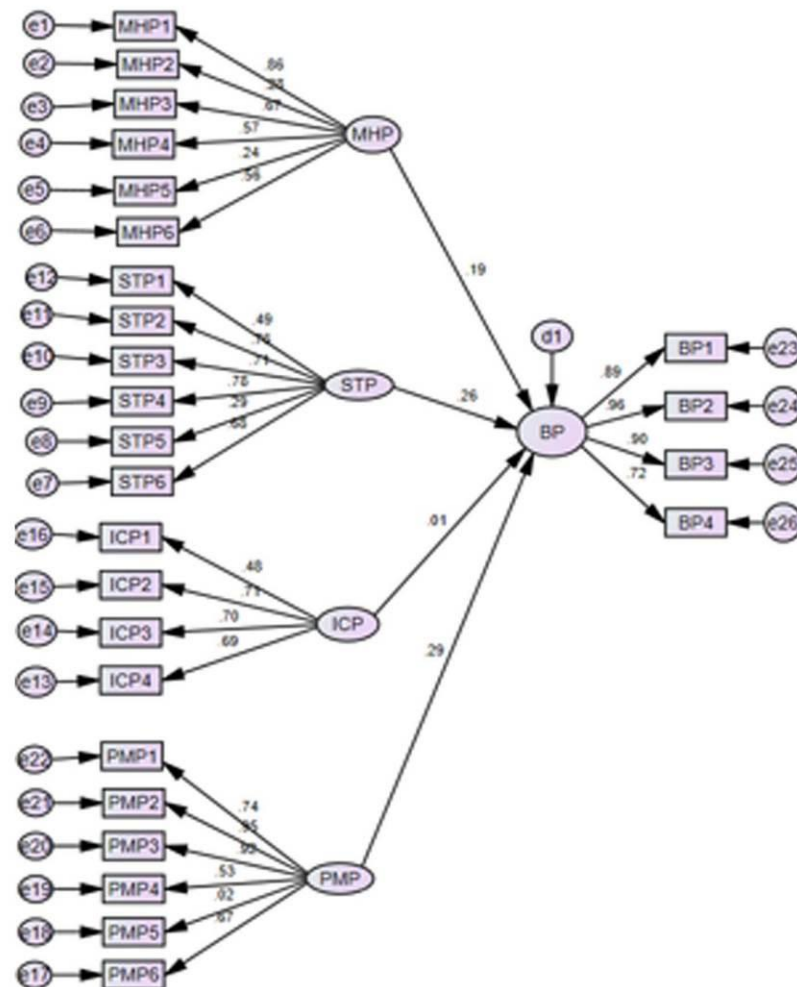


Figure 3. Illustrate utilisation of path analysis in examining the correlation between material handling, storage management, inventory control, and package management.

Note: MPH: material handling practices; STP: storage management practices; ICP: inventory control practices, PM: package management practices; BP: business performance

Table 5. Parameter estimates of the structural model for the influence of warehouse management practices on business performance.

Endogenous		Exogenous	Estimate(β)	SE	CR	p-Value	R-square
BP	<—	MHP	0.112	0.043	2.619	0.009	0.581
BP	<—	STP	0.249	0.072	3.465	<0.0001	
BP	<—	ICP	0.043	0.010	4.123	<0.0001	
BP	<—	PMP	0.379	0.635	0.597	0.550	

$p < 0.01 = 1\%$; $p < 0.05 = 5\%$; $p < 0.1 = 10\%$.

Note(s): BP: business performance; MHP: material handling practices; STP: storage management Practice; ICP: inventory control practices; PMP: packaging management practice.

categories of inventory in their warehouse: semi-finished inventory, which consists of unpacked wine in storage tanks that are still undergoing fermentation, and finished inventory, which comprises packed or bottled wine that is in transit to distribution centres or customers. Therefore, efficient inventory control enables these firms to maintain optimal inventory levels and prevent stock shortages. It also facilitates the control of buffer stock to keep the continuation of the business, and re-order levels based on the seasonal availability of grapes as a raw material, ultimately ensuring the company meets market demand.

Thus enhance the business performance. The findings of this study are supported by the results of Muchaendepi et al. (2019), Orobia et al. (2020) and Atnafu and Balda (2018), who state that inventory control practices are crucial in stimulating firm performance as they enable a firm to oversee the smooth and transparent flow of material. This leads to proper management of warehousing costs and storage space with optimal resource utilisation, thus leading to improved business performance.

The results presented in Table 5 illustrate that packaging management practices had a strong influence on business performance; however, the influence was not significant ($\beta=0.379$, $p=0.550$). Thus, Hypothesis 4 was not supported. These findings imply that a unit increase in packaging management practices within a warehouse does not influence business performance. Despite the high coefficient observed for packaging management practices, the lack of significance aligns with findings from Edelsbrunner and Thurn (2024), and Morashti et al. (2022), all of whom demonstrated that this relationship does not attain statistical significance. In the analysis conducted for this study, it was revealed that the relationship between packaging management practices and business performance was not significant, particularly for SSGP firms. This is primarily because these firms prioritise effective packaging management only at critical stages, specifically, when grape-based products are being prepared for dispatch or transport to sales centers or end consumers. During these times, the emphasis shifts to ensuring the products reach their destination in optimal condition.

Moreover, to maintain the quality of grape-based products while in the warehouse, SSGP firms utilise specialised storage equipment, specifically plastic tanks which are suitable for food storage. These tanks are designed to protect the products from moisture, gases, light, and temperature fluctuations, keeping the inventory at the required level based on the capacity of the firm, until they are required for distribution or marketing. As a result, SSGP firms pay less attention to packaging management in the early stages of their operations, which limits its effect on their overall business success. This means that these firms tend to focus more on storage, inventory control, and handling of grapes or grapes-based product, rather than packaging at key points in the supply chain.

On the other hand, these results are in contrast to those reported by Kaestner et al. (2023), whose studies indicate that safeguarding products from environmental influences involves enhancing packaging management. They emphasise that selecting appropriate packaging materials within a storehouse is crucial for aiding product storage and convenience. Packaging serves as a barrier against various environmental factors during transit and storage, including moisture, gases, light, and temperature, thus maintaining product quality and boosting firm performance.

5. Conclusions and recommendations

This study examines the relationship between WMPs and the business performance of SSGP firms in Tanzania. The results show that material handling, storage and inventory control jointly affect business performance. The influence is statistically significant at a 1% level. The results provide empirical evidence that WMPs not only minimise material handling, storage and inventory control overall costs but also have a crucial impact on maintaining required standards for grape-based products and meeting market requirements. Further, among WMPs, which were significant, storage management practices show a strong relationship and positive influence on business performance. Thus, the results support the view that optimal warehouse management practices are crucial for unlocking improved business performance in the small-scale grape processing sector.

This study has practical, theoretical, and policy implications. In practical terms, it provides the firm's manager with insight into the positive impact of WMPs on business performance. By highlighting the best practices in managing warehouse operations, the study provides managers with a framework to optimise their WMP strategies and enhance their firms' overall performance. Theoretically, the study contributes to the literature on WMPs of SSGP firms in developing countries. Consistent with the reasoning, the study contributes to the existing body of knowledge by conducting a more thorough investigation of the impact of WMPs on corporate success. The current study also makes a significant theoretical contribution by addressing specific added constructs (material handling, storage management, inventory control, and packaging practices) within the context of SSGP firms in Tanzania. This extension of the RBV

theory represents an important advancement in the literature. Overall, the study's theoretical contributions expand the RBV framework and create new knowledge by addressing previously untested constructs in the small-scale grape processing industry. This advancement strengthens the theoretical foundation and enhances the generalizability of the RBV.

The study recommends that the Government, particularly through the Tanzania Ministry of Industry and Trade, should maintain a focus on policies designed to enhance WMPs. This can be achieved by implementing targeted policies and programs that support the growth and long-term viability of SSGP firms. For example, policymakers can leverage the SME policy of 2002 to introduce best practices for managing warehouse operations, particularly for perishable agricultural produce like grapes. Therefore, the Government needs to invest in WMPs within small-scale firms, as these practices significantly impact business performance.

To conclude, the study was cross-sectional, conducted only in Tanzania, and focused entirely on small-scale firms processing grapes as raw materials. Thus, generalising the study findings to other countries with different conditions should be done cautiously. Also, the study primarily employed quantitative analysis approaches. By using a single method, it is possible that contextual information could have been overlooked. To achieve a more holistic understanding of the phenomenon under investigation, future studies should consider employing a mixed-methods approach that integrates both quantitative and qualitative research methodologies. Further, other scholars could explore additional variables of WMPs, as this study was limited to four key variables: material handling, storage, inventory, and packaging management. Furthermore, the efficiency and effectiveness of WMPs in small-scale processing firms are also greatly influenced by Information and Communication Technology (ICT) (Omwenga, 2021; Panigrahi et al., 2022). However, this study did not consider the role of ICT in WMPs of SSGP firms. Therefore, it is recommended that future studies should consider the role of ICT in SSGP firms.

Ethical approval

Ethical approval for this study was obtained from the Moshi Co-operative University (MoCU), as evidenced by the reference number MoCU/UGS/3/41, prior to commencing the data collection phase. During the data collection process, an introduction letter was presented to the respondents, clearly stating the researcher's intention to collect data for academic purposes only. As all respondents were able to read and write, written consent was obtained through the informed consent form, which they freely signed without any coercion. By signing the consent form, the respondents demonstrated their voluntary agreement to participate in the research. Therefore, respondents were free to provide their opinions on the questionnaire, as they were not subjected to any undue influence or pressure.

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About the authors

Debora Chelestino Kisinga, MBA, Assistant Lecturer, Department of procurement and Supply Management, College of Business Education, Research Interest- Logistics management, Procurement, Public Procurement, SMEs Development.

Dr. Alban Dismas Mchopa, Senior Lecturer at Moshi Co-operative University, PhD in procurement and supply chain management, Research interest include Procurement, Public Procurement, Supply Chain Management, and SMEs Development.

Dr. Leonada Raphael Mwagike, Senior Lecturer at Mzumbe University Tanzania, PhD in Supply chain management, research interests include public procurement, supply chain management, and value chain.

ORCID

Debora Chelestino Kisinga  <http://orcid.org/0000-0002-4969-5881>

Alban Dismas Mchopa  <http://orcid.org/0000-0001-8547-6267>

Data availability statement

The data that support the findings of this study are available from the corresponding Author, [Debora Chelestino Kisinga], upon reasonable request.

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CHAPTER THREE
PUBLISHED PAPER TWO
SUPPLIER RELATIONSHIP MANAGEMENT AND PERFORMANCE OF
SMALL-SCALE GRAPES PROCESSING FIRMS IN DODOMA, TANZANIA:
THE MODERATING ROLE OF LOGISTICS CAPABILITIES

2.1 An Overview

This chapter presents a published paper that corresponds to Objective Two. The paper was published in the IIMT Journal of Management, Volume 14, Issue 1, DOI: 10.1108/IIMTJM-11-2023-0051, published by Emerald. This study focused on supplier relationship management and the performance of small-scale grape processing firms in Dodoma, Tanzania, emphasising the moderating role of logistics capabilities. Herewith, find the attached Paper that offers a comprehensive presentation of the study.

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Supplier relationship management and business performance of small-scale grapes processing firms in Dodoma, Tanzania: the moderating role of logistics capabilities

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Debora Chelestino Kisinga

*Department of Procurement and Supply Management,
College of Business Education – Dodoma Campus, Dodoma, Tanzania*

Alban Dismas Mchopa

*Department of Procurement and Supply Chain Management,
Moshi Co-operative University, Moshi, Tanzania, and*

Leonada Raphael Mwagike

*Department of Procurement and Logistics Management, Mzumbe University,
Morogoro, Tanzania*

Abstract

Purpose – This paper aims to investigate the effect of supplier relationship management (SRM) on the business performance of small-scale grapes processing firms in Dodoma, Tanzania. The paper also examines the moderating role of logistics capabilities in the relationship between SRM and business performance.

Design/methodology/approach – This research uses a cross-sectional survey design. A structured questionnaire was used to collect data from 202 small-scale grape processing firms. The data were analysed through descriptive and structural equation modelling.

Findings – The findings revealed that buyer-supplier relationships, supplier development and supplier selection were positively and significantly related to business performance. Furthermore, knowledge transfer had no relationship with business performance. On the other hand, the findings showed that logistics capabilities significantly moderated the relationship between SRM and business performance.

Research limitations/implications – The study was cross-sectional, conducted only in Tanzania, and focussed entirely on small-scale firms processing grapes as raw materials. Thus, generalising the study findings to other countries with different conditions should be done cautiously. Also, this study used subjective measures, and other studies could use objective measures.

Practical implications – The study helps firm managers understand the importance of supplier relationship management on business performance. The findings also can be used by policymakers to create targeted policies and initiatives that support the firm's growth and sustainability.

Originality/value – To the best of the researchers' knowledge, this is the first attempt to find empirical support for the moderating role of logistics capability in supplier relationship management and the business performance of small-scale grapes processing firms in the Tanzanian context.

Keywords Supplier relationship management, Business performance, Small-scale grapes processing firms, Logistics capabilities

Paper type Research paper

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1. Introduction

Globally, Small-scale Grape Processing (SSGP) firms have contributed to economic development by providing employment opportunities and generating income for the processors (FAOSTAT, 2021). In Africa, South Africa is the leading country in grape processing, followed by Tanzania (Kalimangas *et al.*, 2021; OIV, 2021). In Tanzania, SSGP firms were established due to the country's long history of productive viticulture. SSGP firms are important in several aspects, including the sustainability of grape farming and its value chain, employment generation and value addition (Lubawa *et al.*, 2023). Currently, SSGP firms in Tanzania can produce 9,307,800 litres of wine annually, which shows an increase of 11% from 2020/2021, when the production was 8,252,400 litres (URT, 2022a, b).

Generally, small-scale processing firms produce up to 40% of all jobs and account for around one-third of the nation's Gross Domestic Product (Nalyoto and Ngaruko, 2022; URT, 2017). The success in the small-scale processing industry supports the United Nations' agenda of Sustainable Development Goals and a way of achieving Tanzania Development Vision 2025 on sustainable industrialisation. Enhancing the business performance of SSGP firms is crucial for the sustainable development of many countries, particularly in developing economies (Dube, 2018). Therefore, for a processing firm to enhance its business performance, several studies (Takwi and Atabongfua, 2020) have suggested that it is important to manage its logistics practices during production operations.

Logistics management practices have recently become essential in processing firms as every firm aims to gain a global market share and take advantage of higher production and sourcing efficiencies (Arvis, 2016). The practices involve supplier relationship management, warehousing, order processing, and transportation (Mena and Chuma, 2020). This study focussed on supplier relationship management practice since it is crucial in ensuring a consistent and dependable flow of inputs, hence reducing interruption in production. Additionally, it facilitates the establishment and maintenance of quality standards for raw materials.

Supplier relationship management (SRM) practice is a vital component of supply chain management that enables firms to build and maintain effective relationships with their suppliers (Nguyen, 2023; Mushi *et al.*, 2021). The practice is used as a marketing strategy as it involves buyer-supplier relationships, supplier development, supplier selection, and knowledge transfer to ensure that suppliers meet the short- and long-term requirements of the buying firms. Through SRM, SSGP firms can develop closer ties with key grapes suppliers who can supply quality grapes, thus leading to producing required grape products, mainly wine, hence improving firm performance.

Nevertheless, the importance of SRM practice in most small-scale processing firms in emerging countries remains stagnant and sometimes collapses in the early stages of their business, and SSGP firms are not exceptional (FAOSTAT, 2021). For instance, 75% of small-scale processing firms in Tanzania collapse soon after establishment or operate below capacity, resulting in low output, which fails to meet domestic demand and export (Nkwabi and Fallon, 2020; FAOSTAT, 2019). Failure of business performance is a critical indicator that leads to the collapse of small-scale processing firms (Bello *et al.*, 2022).

As a result, the Government and Development Agencies have initiated various efforts to support small-scale grapes processing firms. The efforts include ensuring the availability and reliability of grape varieties as raw material in wine production. Others include the provision of technical assistance and capacity building of grape processors to improve wine productivity and hence increase processors' income and profit by fostering better domestic, regional and international wine market access and provision of an opportunity for accessing affordable financing from the Agricultural Development Bank (ADB) (URT, 2019).

In spite of the efforts mentioned earlier, recent studies by Kipene *et al.* (2015) show that the performance of small-scale processing firms in Tanzania is still unsatisfactory. SSGP firms

still produce with limited capacity to meet the domestic and foreign markets. For example, in the fiscal year 2021–2022, only 59.7% of all produced grapes were processed by small-scale processing firms, while 38.3% were left unprocessed due to the limited capacity of the processing firms (URT, 2022a, b). While recent surveys indicate that the demand for processed grapes (wine and juice), both in and outside the country, is high, there continues to be a wide demand gap which approximates 5.2 million litres annually (Luoga, 2019; URT, 2018; Lutheran World Relief, 2016). It is indicative that enhancement of small-scale grape processors' capacity would promote utilisation of this market opportunity, thus improving business performance.

The performance of SSGP firms through SRM practices is a topic of interest. Previous studies have shown inconsistent outcomes, with some studies (Shukla *et al.*, 2023; Yang and Jiang, 2023) indicating that SRM practices generally influence the performance small scale processing firms, and other studies conducted by Amoako-Gyampah *et al.* (2019) and Tangus (2018), argue that inadequate application of SRM might result in a failure to improve the performance of manufacturing firms, and SSGP firms are among them. The current necessity is to understand how SRM practices affect the business performance of SSGP firms. However, previous studies (Mbailuka, 2020; Kipene *et al.*, 2015) on the small scale processing sector paid inadequate insight into the subject matter.

According to Tukamuhabwa *et al.* (2021) and Ho *et al.* (2020), the magnitude and direction of the association between SRM and performance can vary depending on the logistics capabilities' effectiveness. Logistics capabilities are the skills, knowledge and resources a firm has to manage the flow of goods and materials from suppliers to customers (Iranmanesh *et al.*, 2021; Gligor and Holcomb, 2014). Logistics capabilities have been assisting processing firms in initiating, enhancing, and maintaining effective and efficient SRM (Poku, 2022). Empirical studies (i.e. Shraah *et al.*, 2022; Migdadi, 2021) showed the relationship between logistics capabilities and performance in the pharmaceutical and food industries.

Despite the importance of logistics capabilities for processing firms, the literature reveals that scant contribution is obtained from small-scale industries (Meressa, 2020). Furthermore, other scholars (Nyamasege and Evans, 2015) found an association between logistics capabilities and SRM in Kenya's Public sector. However, the moderating effect of logistics capabilities on the association of SRM and performance in SSGP firms has received little attention. In order to bridge the identified research gap, the current study sought to investigate the direct relationship between SRM and performance and the moderating effect of logistics capabilities on the relationship between SRM and business performance.

This study adds knowledge to the body of literature regarding the interaction effect of logistics capabilities on the link between SRM and business performance in the context of Tanzania's small-scale processing firms. By studying the moderating effect of logistics capabilities in the context of small-scale processing firms, the study broadens the existing discussion on the effect of SRM on the performance of SSGP firms in Dodoma, Tanzania.

2. Literature review

2.1 Theoretical underpinnings

Resource Dependency Theory (RDT), developed by Reitz *et al.* (1979), guided this study based on the assumptions that for firms to survive in their uncertain environment, they have to respond to and become dependent on those firms that control resources, which are both critical to their operations and have limited control over them. Hence, RDT is grounded on the hypothesis that interdependence, when coupled with uncertainty about what actions will be

of those whom the firm interdepends, leads to a situation where survival and continued success are uncertain; thus, a firm takes actions to manage external interdependencies (Nienhüser, 2017). Further, RDT argues that firms establish strategic collaborations in order to minimise their environmental dependence as well as uncertainty and focus on negotiating relationships of dependence. According to RDT, when these relationships are managed properly, they can positively affect the performance of the firm.

In the context of small-scale processing firms, RDT has been used by Mbeche and Gichanga (2021) and Kulwijila *et al.* (2018) to explain the existence of a reciprocal relationship between the buying firm (SSGP) firm and suppliers (grapes farmers), wherein both parties collaborate and recognise their interdependence in order to achieve shared benefits. SSGP firm–supplier relationships are an example of such relationships established within this study. SSGP firms provide value to suppliers by offering financial support, technical assistance, feedback, and training. In return, these firms anticipate receiving essential raw materials, punctual delivery, reduced non-supply risks, enhanced quality, cost-effectiveness, and a sustainable and reliable supply. The interdependency was also acknowledged by Kulwijila *et al.* (2018), who noted that there is interdependence between the buying firm and supplier in the grapes value chain.

Also, the RDT was appropriate in SSGP firms as it provides insight into the firm's logistics capabilities, such as resources, experience, knowledge and skills in moderating the relationship between SRM and business performance along the grapes value chain. RDT recognise the firm's logistical capabilities as the ability of the grape processing firm to manage the acquisition of high-quality grapes as raw materials from reliable suppliers, with the required quantity and at a competitive price, while enhancing on-time delivery of inputs and outputs, leading to firm performance. Zawawi *et al.* (2017) and Gligor and Holcomb (2014) also supported the argument by highlighting in their study that logistics capabilities as a complex bundle of skills, accumulated knowledge, and competencies determine a firm's efficiency and ability to manage resources and respond to external environment challenges, leading to achieving superior performance. Therefore, this study adapted variables such as buyer–supplier relationship, supplier development, and supplier selection, which relates to this theory.

2.2 Hypotheses development

2.2.1 Buyer–supplier relationship and business performance. A good supplier relationship is considered a strategic resource which processing firms use to gain performance (Yang and Jiang, 2023). Theoretically, it is argued from the RDT that external factors can influence a firm in utilising its resources and capability to exploit external opportunities and neutralise threats, thus enhancing its performance (Famiyeh and Kwarteng, 2018). Likewise, small-scale firms that collaborate with their suppliers could be able to utilise their internal resources and exploit external opportunities effectively and efficiently, thus enhancing firm performance. Nevertheless, different studies have provided mixed findings on the buyer–supplier relationship's impact on firm business performance. For instance, Shukla *et al.* (2023) found that buyer–supplier relationships positively impact the firm's performance. Conversely, Liu *et al.* (2021) and Oosterhuis *et al.* (2011) found negative relationships between buyer–supplier relationships and performance. Based on resources dependency theory arguments, buyer–supplier relationship management will bring resources (quality materials and right quantity, on-time delivery) from the supplier, thus enhancing firm performance. Based on that, the following hypothesis is proposed.

- H1. Buyer–supplier relationship management positively influences the business performance of SSGP firms

2.2.2 Supplier development and business performance of SSGP firms. Supplier development aims to find areas where suppliers can perform better and then help them do so to enable the buying firm to achieve its long-term and short-term needs (Boloukian, 2018). Supplier development significantly predicts future business ties (Glavee, 2019). RDT recognises that SSGP firms are more efficient when embedded within network exchange relationships as they explore various opportunities to deal with their uncertain environment (Oduro *et al.*, 2020). Similarly, firms that develop their supplier, such as providing training and support and offering financial assistance, are in a position to avoid environmental uncertainty by having a continuous and reliable supply of raw materials. Previous studies (i.e. Changalima *et al.*, 2022; Van der Westhuizen and Ntshingila, 2020) support the argument that supplier development has a positive impact on firms' business performance. In contrast, other studies found a negative relationship between supplier development and performance (Tran *et al.*, 2022). Therefore, based on the RDT perspective, supplier development can bring a continuous supply of raw materials from suppliers, ultimately contributing to the firm performance. Thus, this study hypothesised.

H2. There is a positive and significant relationship between supplier development and the business performance of SSGP firms.

2.2.3 Knowledge transfer and business performance of SSGP firms. Due to competitive pressure in the business environment, knowledge transfer has become a strategic weapon in the management of suppliers. Knowledge transfer from a buying firm to suppliers helps to improve innovation capabilities and is considered a useful strategy for value creation and sustainable firm performance (Corral de Zubielqui *et al.*, 2019). From RDT, knowledge transfer enables learning, innovation, growth, and competitive advantage, hence improving firm performance. There is mixed empirical evidence on the impact of knowledge transfer on business performance. For example, scholars (i.e. Shukla *et al.*, 2023; Anand *et al.*, 2020) found a positive and significant impact between internal and external knowledge transfer and business performance. Conversely, other scholars (i.e. Reus *et al.*, 2016; Ritala *et al.*, 2015) found a negative relationship, particularly in small scale processing firms. Focussing on RDT arguments, knowledge transfer will bring resources such as quality raw materials at the right quantity from the supplier, thus enhancing firm performance. Based on this observation, the following was hypothesised.

H3. Knowledge transfer positively and significantly influences the business performance of small-scale grape processing firms

2.2.4 Supplier selection and business performance of SSGP firms. Effective supplier selection enhances the sustainable availability of resources with the agreed quality standards. A study by Mbeche and Gichanga (2021) argues that a firm should prioritise specific criteria that would lead to efficient supplier selection based on the desired outcomes a firm aims to accomplish. RDT argues that effective supplier selection is directly linked to the firm performance based on criteria such as the supplier's ability to deliver raw material at the right quantities, time, and competitive price, enabling the firm to produce standard quality and profitable products. Some SRM studies (i.e. Nyaberi *et al.*, 2018) found that supplier selection could have a positive influence on the firm's performance. In contrast, Taherdoost and Brard (2019) found a negative relationship between supplier selection and firm performance. Therefore, based on the dependency theory perspective, supplier selection could lead to bringing quality raw materials to the firm. Thus, the study hypothesised.

H4. Supplier selection management positively and significantly influences the business performance of SSGP firms

2.3 Logistics capabilities and business performance of SSGP firms

The concept of capability is one of the fundamental components of the RDT. It refers to the skills, aptitudes, and knowledge of a firm to possess and exploit external resources and opportunities to neutralise business environment uncertainties. According to RDT, firm performance is determined by resources and capabilities (Poku, 2022). Resources are the input to capabilities, in which capability uses these resources to produce desired results.

In the context of SRM, logistics capabilities can be viewed as the capacity of the firm to manage its suppliers and conduct its internal tasks and responsibilities related to supplier relations to achieve its desired outcome (Pham and Hoang, 2019). Firms must ensure that logistics capabilities are strategically used as they can contribute majorly towards achieving superior performance. Notwithstanding, knowledge-based resources are critical capabilities (Migdadi, 2021). Similarly, Tukamuhabwa *et al.* (2021) contend that firm-specific skills such as unique technical knowledge, human capital, and owner's education and experience allow business performance to improve. This study hypothesises that logistics capability regarding knowledge, skills, experience, and education may influence the link between SRM and business performance. The study also found that logistics capabilities positively affect the relationship between SRM and business performance. Therefore, logistics capabilities can interact with the influence of SRM on business performance in SSGP firms. This interaction can take place in such a way that the higher the level of logistics capability, the more likely it is that SRM will strongly affect business performance. In light of this, it is worthwhile hypothesising the following.

- H5. Logistics capability significantly moderates the relationship between SRM and the business performance of SSGP firms.

3. Methodology

3.1 Research design and study area

A cross-sectional survey design guided this study. The design was selected as it provides a snapshot of the outcome and the characteristics of SSGP firms at one specific time. The study was conducted in Dodoma City, Tanzania. The area was purposely selected because it is Tanzania's main centre for grape cultivation and wine production (Kalimang'asi, 2021). In addition, Tanzania's small-scale grape processing businesses are largely allocated in Dodoma City, which also serves as a prominent central grape farming corridor (Lwelamira, 2015). Moreover, it is among the fastest-growing cities, a leading commercial centre, an economic hub, and the capital city of Tanzania.

The selection of SSGP firms in Tanzania as the primary focus of this study is based on the fact that the grape processing firms in Tanzania, especially at the small-scale level, are an important but under-researched sector within the agricultural economy. Furthermore, it is worth noting that SSGP firms frequently assume a crucial role in the sustenance of local grape farmers, as they offer a reliable market for their agricultural yield. The examination of the interactions between these processors and grape producers carries substantial implications for rural livelihoods and agricultural value chains. Therefore, this study involved the SSGP firm with a workforce ranging from 5 to 30 individuals or with an investment capital ranging from TZS 5 million to TZS 100 million, as cited by AnastanziaNjiku (2019), being active within the past three (3) years before the day of the survey (i.e. from 2020 to 2022).

3.2 Sampling and data collection

In the selected City, the targeted population comprised 202 active SSGP firms registered by the Small Industry Development Organization, 2020 (SIDO) (URT, 2022a, b). The study included all 202 small-scale grapes processing firms in Dodoma City (URT, 2021).

The population was chosen because it is small enough to allow complete enumeration. In addition, the complete enumeration assisted in clearing out the bias that sampling errors would otherwise cause. Purposive sampling was used to select firm owners as respondents. Firm owners were involved because they are high-ranking informants and are thought to be more reliable sources of information than lower-ranking informants (Li *et al.*, 2022). Data on the main study variables were gathered using a survey questionnaire. This method simplified the researchers' data collection process. The questionnaire underwent pre-testing on a sample of 30 SSGP firms that were distinct from those included in the primary data collection. This pre-testing aimed to assess the questionnaire's validity and reliability. The suggestions, recommendations, and observations pertaining to the questions in the questionnaire were enhanced and integrated to enhance the final data collection process.

3.3 Measures

3.3.1 Dependent variable. The dependent variable was business performance measured using four (4) statements regarding growth in market share, growth in sales, growth in profit, and growth in assets as adapted from other scholars (i.e. Razzak *et al.*, 2021; Mahmud *et al.*, 2022; Kellermann *et al.*, 2012; Zulkiffli and Perera, 2011). A five-point Likert scale was used to measure all of the main constructs of the BP in the current study, ranging from 1 = Not at all to 5 = very great extent.

3.3.2 Independent variables. This study borrowed and modified questions from previous studies to measure management practices of supplier relationships of small-scale grapes processing firms. Buyer-supplier relationship management (BSR) measures the ability of the firm to maintain an effective relationship with the supplier. The relationship was measured using six (6) statements related to BSR modified from other studies (i.e. Shukla *et al.*, 2023; Butt, 2019). Supplier development practice (SDP) measures the buyer's involvement in developing a particular supplier (i.e. Chagalima *et al.*, 2021; Saghiri and Wilding, 2021; Wagner, 2010). Supplier selection practice (SSP) was measured by six (6) statements adapted from (Taherdoost and Brard, 2019; Kannan, 2019). Knowledge transfer practice (KTP) was measured by six (6) statements adapted from (Shukla *et al.*, 2023). A five-point Likert scale was used to measure all of the main constructs in SRM, ranging from 1 = Strongly disagree to 5 = Strongly Agree.

3.3.3 Moderating variable. The Firm's Logistics Capabilities (FLCs) were used as a moderating variable and were measured using five (5) statements adapted from Tukamuhabwa *et al.* (2021), Pham and Hoang (2019), and Migdad (2021). A five-point Likert scale was used to measure all of the main indicators of the FLC in the current study, ranging from 1 = no extent to 5 Very large extent. In ensuring the validity of the study, research assistants were trained to have a common understanding of the tool, and then the tool was translated into Swahili to ensure that respondents understood the questions.

The definition and measurement of variables are presented in Table 1. This explains the meaning of the variable used, their acronym as well as operational definitions.

3.4 Reliability and validity

To evaluate construct validity and reliability, Composite Reliability (CR), convergent, and discriminant validity were used. Construct validity and reliability were assessed using three indicators: Composite Reliability (CR), convergent validity, and discriminant validity from the proposed model. The results are presented in Table 2. For reliability, the proposed model exhibited the following reliability indices: SDP (CR = 0.831), BP (CR = 0.817), FLC (CR = 0.793), BSR (CR = 0.814), KTP (CR = 0.866) and SSP (CR = 0.791). All constructs, namely SRM practice, Business Performance, and Firm's Logistic Capabilities,

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	Acronym	Operational definition/measurement
<i>Independent variables</i>		
Buyer-supplier relationship	BSR	The ability of the firm to maintain an effective relationship with the supplier
Supplier development	SDP	Buyer's involvement in developing a particular supplier
Supplier selection	SSP	Selection of a supplier against the established product-based standards and criteria for selection
Knowledge transfer	KTP	Dissemination of industry-specific knowledge, practice, and creative approaches that bolster suppliers' ability and understanding in providing materials of superior quality
<i>Dependent variable</i>		
Business performance	BP	The outcome of the operations includes internal and external achievements of the goal of small-scale processing firms. Measured in questions on a five-point Likert scale
<i>Moderating variable</i>		
Firm's logistics capabilities	FLC	These are the key success factors of the firm, and they include skilled, experienced, and knowledgeable staff, along with the ownership of essential resources such as machines and expertise in supplier relationship management within the processing industry
Source(s): Author's own creation		

Table 1.
Definition and measurement of variables

Constructs	CR	AVE	MSV
Supplier development practice	0.831	0.693	0.158
Business performance	0.817	0.736	0.051
Firm logistics capabilities	0.793	0.625	0.058
Buyer-supplier relationship	0.814	0.641	0.106
Knowledge transfer practice	0.866	0.777	0.197
Supplier selection practice	0.791	0.633	0.182
Source(s): Data			

Table 2.
Indicators of reliability, convergent and discriminant validity

demonstrated Composite Reliability values greater than 0.7, indicating good reliability for each construct.

Regarding convergent validity, the results indicated that the Average Variance Extracted (AVE) of the constructs ranged from 0.625 to 0.777. As convergent validity requires AVE values to be equal to or greater than 0.50 and lower than CR, these findings provide strong evidence of convergent validity. Additionally, we conducted more stringent discriminant validity tests using the Maximum Shared Squared Variance (MSV). The results showed that, for each construct, the MSV was less than the AVE, further supporting the presence of discriminant validity.

3.5 Data analysis

Structural Equation Modelling (SEM) was used to study the relationship between SRM, business performance, and logistical capabilities. SEM is a robust multivariate analysis technique extensively employed in the social sciences (Edeh *et al.*, 2023). Its applications range from analysing simple relationships between variables to complex assessments of measurement equivalence for first- and higher-order constructs (Nasution *et al.*, 2020). SEM comprises two essential components: Confirmatory Factor Analysis (CFA) and the structural model (Anderson and Gerbing, 1988).

3.5.1 Measurement model. Confirmatory Factor Analysis (CFA) was conducted to assess the reliability and validity of SRM practice, Business Performance, and the firm's logistics capabilities. The fit statistics of the proposed model are presented in Table 3. The results indicate that the proposed model fit values are close to the cut-off points used for evaluation. For instance, the χ^2/df index of the proposed model is 2.817, which is less than 5, indicating that the proposed model provides a better fit to the data than alternative models. Additionally, the obtained values for the Goodness of Fit Index (GFI) (0.854) and Comparative Fit Index (CFI) (0.973) exceeded the recommended threshold of 0.9. Similarly, the value of the Root Mean Square Error of Approximation (RMSEA) (0.048) is less than the recommended cut-off of 0.05.

Category	Measure	Estimate	Threshold	Interpretation	Sources
Absolute fit indices	χ^2/df	2.817	1 to 3	Excellent	Benton <i>et al.</i> (2020)
	RMSEA	0.048	<0.06	Excellent	Tran <i>et al.</i> (2022)
	PCLOSE	0.055	>0.05	Acceptable	Nienhüser (2017)
	GFI	0.854	>0.80	Acceptable	Tran <i>et al.</i> (2022)
	AGFI	0.838	>0.80	Acceptable	Liu <i>et al.</i> (2021)
	RMR	0.044	<0.05	Acceptable	Nasution (2020)
Incremental fit indices	SRMR	0.062	<0.08	Excellent	Edeh <i>et al.</i> (2023)
	NFI	0.930	>0.90	Excellent	Benton <i>et al.</i> (2020)
	CFI	0.973	>0.95	Excellent	Nienhüser (2017)
	TLI	0.960	>0.95	Excellent	Benton <i>et al.</i> (2020)
	IFI	0.977	>0.95	Excellent	Liu <i>et al.</i> (2021)

Note(s): *df* = degrees of freedom, *RMSEA* = Root Mean Square Error of Approximation, *GFI* = Goodness of Fit Index, *AGFI* = Adjusted Goodness of Fit Index, *RMR* = Root Mean Residual, *SRMR* = Standardised Root Mean Square Residual, *NFI* = Normed Fit Index, *CFI* = Comparative Fit Index, *TLI* = Tucker-Lewis Index *IFI* = Incremental Fit Index

Source(s): Data

Table 3.
Fit statistics of the
structural model

For discriminant validity, low correlations were observed among the constructs, ranging from 0.14 to 0.54 (Figure 1). These findings demonstrate that the fit statistics of the proposed CFA model outperformed the alternative models, indicating that the proposed CFA model, as illustrated in Figure 1 for SRM practice, business performance, and firm's logistics capabilities, better fit the data.

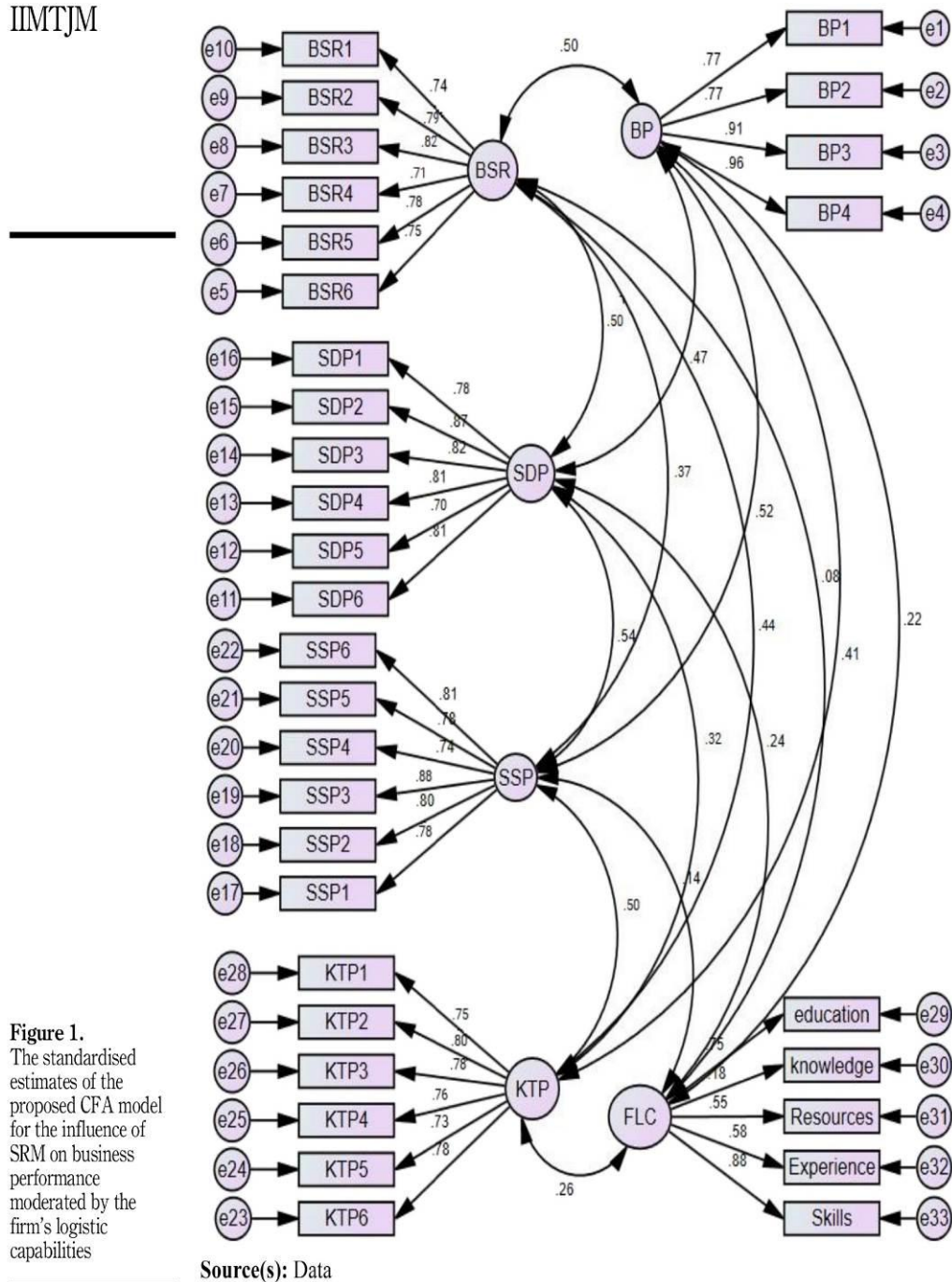
4. Findings and discussion

4.1 Descriptive findings

4.1.1 Respondents' characteristics. The majority of those who participated in the study were males, 172 (85.15%), compared to females, 30 (14.85%). Also, the majority, 88 (43.56%) of the respondents, were between 36 and 50 years of age, followed by 64 (31.68%) who were below 35 years of age. The remaining 50 (24.75%) respondents were 50 years and above. These findings imply that the SSGP industry is dominated by males aged between 36 and 50 years. According to the Bureau of Statistics (NBS, 2022), people between 36 and 50 are categorised as the working age as they are energetic and can contribute to economic development. Therefore, they need financial, technical, and mental support from the Government to improve their business performance.

As for education level, 30 (15%) held certificates or diplomas, 26 (13%) completed secondary education. The majority (92 or 46%) of the respondents completed primary

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education, followed by 52 (26%) who had bachelor's degrees. Most (106 or 52.48%) of the respondents had working experience of between 3 and 4 years, followed by 57 (28.22%) with 5 and 6 years of experience. The remaining (39 or 19.31%) respondents had working experience of more than 7 years. Further, most small-scale processing firms were found to have three to thirty employees, which justifies the firm's size as a small-scale group. Table 4 depicts.

			IIMT Journal of Management
Variable	Frequency	Percent	
<i>Gender</i>			
Male	172	85.15	
Female	30	14.85	
Total	202	100.00	
<i>Years of the business</i>			
3–4	106	52.48	
5–6	57	28.22	
7+	39	19.31	
Total	202	100.00	
<i>Number of employees</i>			
1–5	128	63.37	
6–7	57	28.22	
8–30	17	8.42	
Total	202	100.00	
<i>Number of technical employees</i>			
One	158	78.22	
Two	32	15.84	
Three	10	4.95	
Ten	2	0.99	
Total	202	100.00	
<i>Education level of the owner</i>			
Primary	92	46.00	
Secondary	26	13.00	
Certificate or diploma	30	15.00	
Bachelor	52	26.00	
Total	202	100.00	
<i>Age of the respondents</i>			
≤35	64	31.68	
36–50	88	43.56	
51+	50	24.75	
Total	202	100.00	
Source(s): Author's own creation			Table 4. Respondents' characteristics

4.2 Structural model and hypothesis testing

The fit indices for the structural model, as presented in Table 3, aligned with the recommended range. Path analysis was used to test the relationship between buyer–supplier relationship, supplier development, supplier selection, and knowledge transfer.

4.2.1 The direct influence of supplier relationship management on business performance. The supplier relationship management constraints are positively influencing business performance, as indicated by the Standardised estimate in Figure 2.

The findings from Table 5 revealed that buyer–supplier relationship management has a positive significant effect on the business performance of SSGP firms by ($\beta = 0.494$, $p < 0.0001$). Thus, H1 was supported. The findings imply that when buyer–supplier relationship management increases, there is a probability of increasing business performance. This finding could be due to the result of the establishment of two-way, mutually beneficial relationships between the firm and its suppliers. For instance, when there are mutual goals, commitment, communication, and trust between a processing firm and its grapes supplier, it will be easy to manage the grapes supply chain effectively as it has become a potentially valuable way of securing firm performance.

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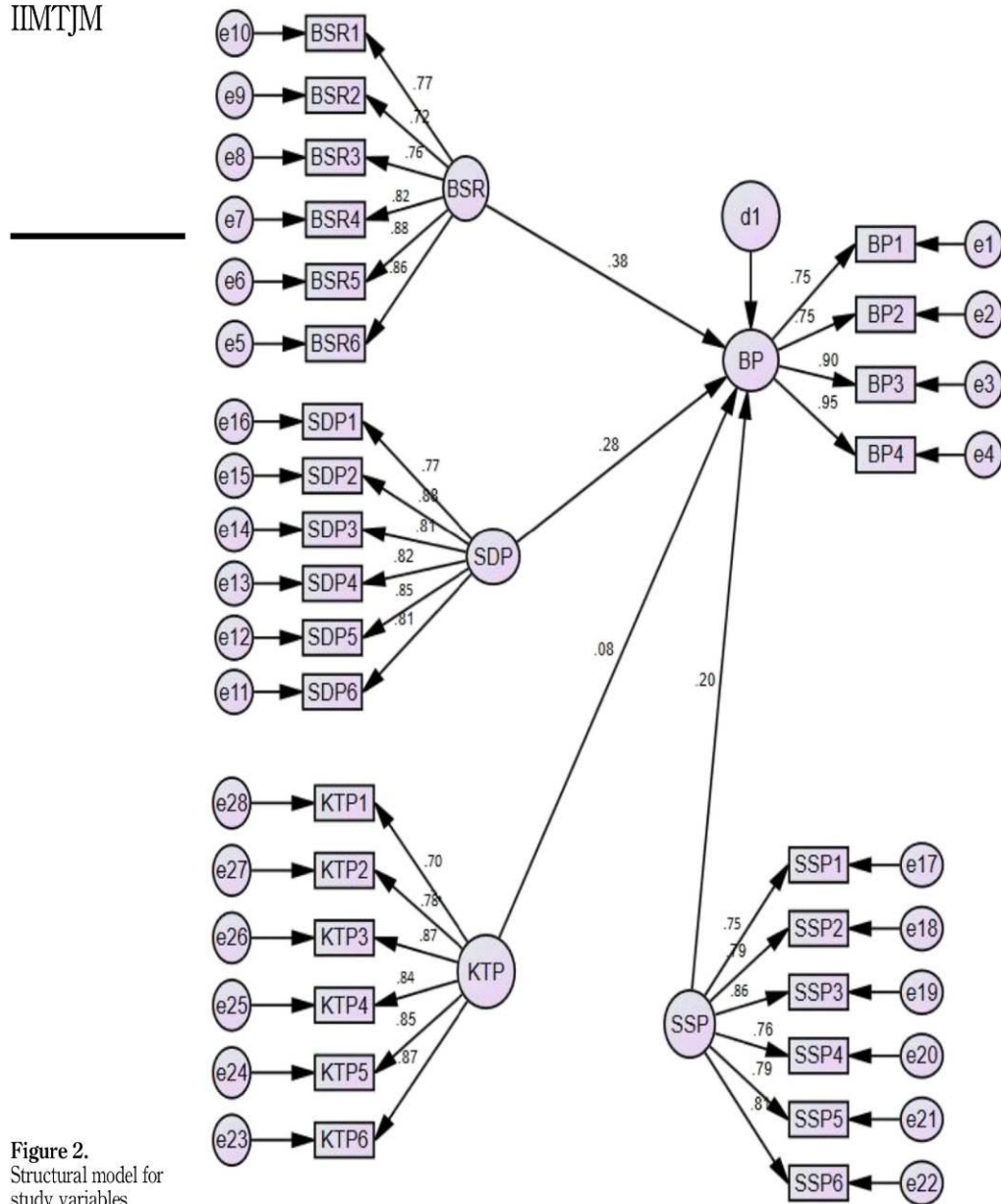


Figure 2.
Structural model for
study variables

Source(s): Data

Table 5.

Parameter estimates of
the structural model for
the influence of SRM on
business performance

Endogenous		Exogenous	Estimate	S.E.	CR	p-value	R-square
BP	←	BSR	0.494	0.112	4.417	<0.0001	0.687
BP	←	SDP	0.194	0.049	3.97	<0.0001	
BP	←	KTP	0.066	0.059	1.128	0.26	
BP	←	SSP	0.291	0.104	2.787	0.005	

Note(s): BP = Business performance, BSR = buyer-supplier relationship, SDP = Supplier Development Practice, KTP = Knowledge Transfer Practice, and SSP = Supplier Selection Practice

Source(s): Data

This finding is consistent with the findings of [Shukla et al. \(2023\)](#), which indicate that buyer–supplier relationship management has a positive significant relationship with firm performance. This is because trust influences commitment to the supplier to bring quality raw material to the supplier at the right quality and quantity, thus enhancing the firm performance. However, the findings are in contrast with the findings in a study by [Liu et al. \(2021\)](#), which indicate that the relationship between buying and supplying firms attracts suppliers' opportunistic behaviour, and this can reduce the buyer's ability to be objective and make effective decisions, such as buying quality material, thus reducing firms' performance. Additionally, the findings support the supposition in the RDT that buyer–supplier relationship management can enhance the availability of quality resources in terms of raw materials at the right time, the right quality, the right quantity and at the right price, thus leading to firm performance.

As [Table 5](#) illustrates, supplier development practices have a positive and significant effect on the business performance of SSGP firms by ($\beta = 0.194, p < 0.0001$). Thus, [H2](#) was supported. The findings imply that when supplier development increases, there is a probability of increasing business performance. The reasonable explanation could be that the establishment of programs has improved strategic supplier's performance. For instance, the improvement of supplier performance through training, mentoring, and providing technical and financial assistance to their supplier enables the firm to manage the uncertainty of the grape supply chain by reducing the risk of supply of meeting production schedules, thus securing a sustainable and reliable supply of quality raw materials, and thus enhancing the firm's performance.

Similar findings are reported in other studies (i.e. [Changalima et al., 2022](#); [Van der Westhuizen and Ntshingila, 2020](#)), which showed that supplier development practices have a positive and significant relationship with business performance because collaborating with the supplier by providing training, technical and financial assistance enables a grape supplier to produce quality grapes at shorter times. However, these findings are inconsistent with the findings in a study by [Tran et al. \(2022\)](#), which indicate that there is no impact of supplier development on the firm performance. Theoretically, RDT assumes that supplier development practices are a valuable asset as they provide room for SSGP firms to develop their key suppliers so as to ensure timely delivery of quality supply of raw materials at the required quantity, thus enhancing firm performance.

The findings from [Table 5](#) reveal that knowledge transfer is insignificantly related to the business performance of SSGP firms by ($\beta = 0.066, p = 0.260$). Thus, [H3](#) is not supported. This finding implies that when knowledge transfer increases, there is no impact on business performance. This could be because of the nature of SSGP firms' capabilities, specifically in the owner's education level and the required experienced staff capable of transferring required knowledge in the grapes processing field. Firm owners with low resource capacity and experience could have been limited with various skills and knowledge that can affect their ability to transfer high-quality knowledge to their suppliers (grapes farmers). For instance, most small-scale processors (46%) have primary education with limited or no professional industrial knowledge, specifically activities in the production of foods such as grapes. This limits their ability to train suppliers to improve their performance and productivity. Thus, knowledge transferred by these firms to their supplier may not have the strength to influence business performance.

The findings from SEM are in line with the findings from previous studies on knowledge transfer (i.e. [Anand et al., 2020](#)), which showed that knowledge transfer does not have any effect on business performance because small-scale processing firms were less likely to engage in knowledge transfer practice than larger firms. The study identified several factors that contributed to this, including the lack of resources, experience, motivation, and a culture of knowledge sharing. For example, small-scale processing firms may be more focussed on

day-to-day operations and may not have the resources and capacity to invest in knowledge transfer initiatives. However, the findings are in contrast with the findings in a study by Reus *et al.* (2016) that knowledge transfer from training, social networking, and the quality of knowledge had varying levels of impact on small-scale processing sector business performance.

The findings summarised in Table 5 indicate that supplier selection positively correlated with the business performance of SSGP firms by ($\beta = 0.291, p = 0.005$). Hence, H4 was supported. The findings imply that as the effort to select a reliable supplier increases, the increase of these efforts would lead to increasing in business performance. The reason behind this could be because the SSGP firm will be sure of the availability of high-quality raw materials and cost-effective inputs from selected suppliers based on agreed selection criteria. As a result, a firm will be able to produce quality grape products, leading to improved firm performance.

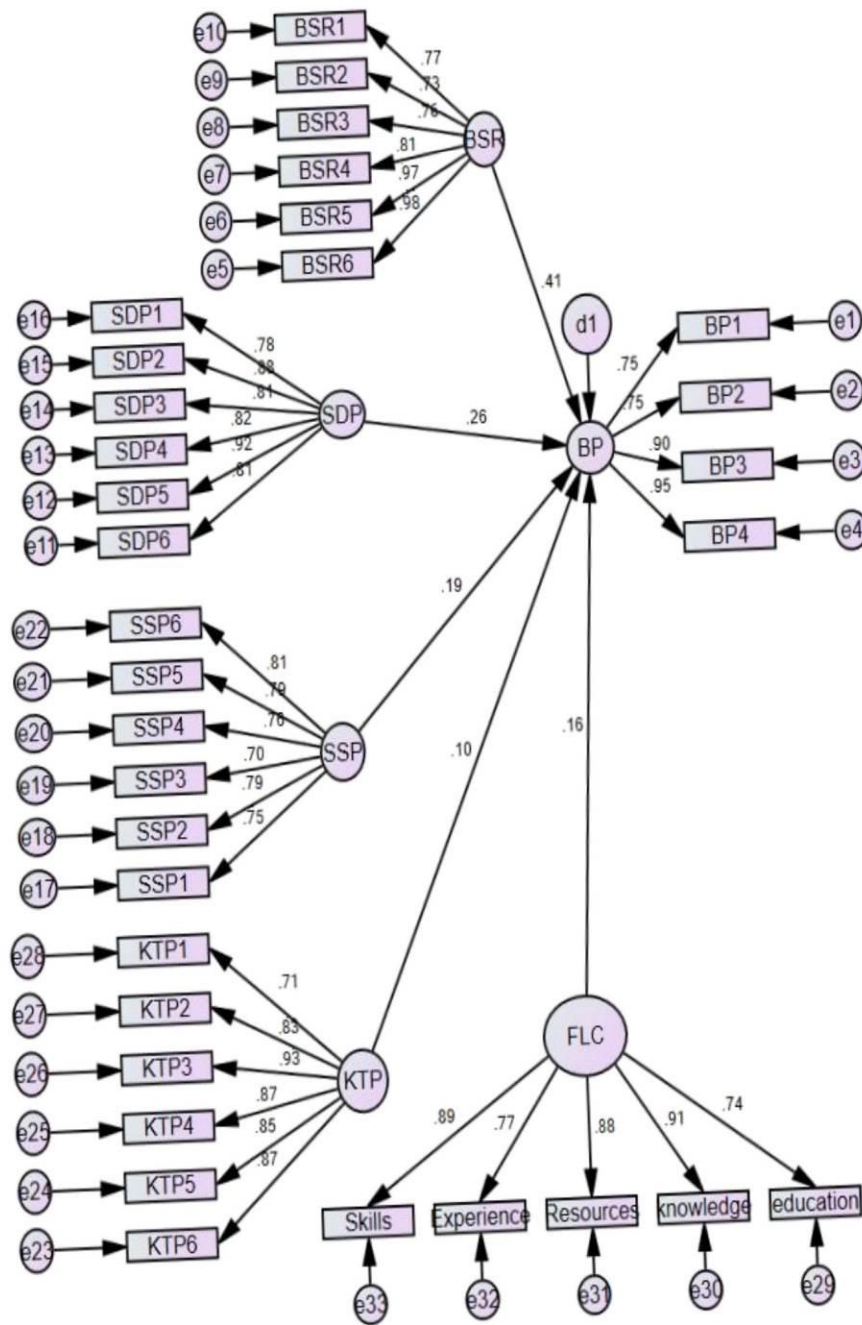
The results are supported by the findings in a study by Nyaberi *et al.* (2018), which indicate that supplier selection is grounded on the supplier's ability to meet the organisation's needs. This is because when a buyer is ready to accommodate the potential growth of their supplier, they can influence the ability of the supplier to be reliable and consistent in supplying raw materials of the required quality at the right time and with favourable pricing terms, thus enhancing firm performance. However, the findings contradict the findings in a study by Taherdoost and Brard (2019), who argue that choosing the right supplier is insufficient to ensure the firm's success. Even if a firm decides which supplier to work with, the relationship between the two parties can still be a source of problems. Thus, effective supplier selection would lead to sustainable relationships between buyer and supplier, positively affecting the firm performance.

4.2.2 The moderating effect of logistics capabilities on the link between supplier relationship management practices and business performance. The firm's logistic capabilities were adjusted to moderate the influence of supplier relationship management on business performance (Figure 3 indicates).

4.2.2.1 The moderating effect of logistics capabilities on the relationship between buyer-supplier relationship and business performance. After being moderated by the firm's logistics capabilities, findings in Table 6 demonstrate a positive relationship between the buyer-supplier relationship and business performance ($\beta = 0.530, p < 0.0001$). Thus, H1 was supported. The findings imply that as the effort to increase buyer-supplier relationship management increases, the increase in buyer-supplier relationship management would lead to an increase in business performance. These findings could be attributed to the ability of the firm to collaborate, communicate, and be able to build trust with supplier communities. For instance, small-scale grape processing firm owners with higher education and experience are likely to have the knowledge and skills to manage a complex supply value chain operation. In addition, SSGP firms with more resources, such as finances, transport, enough storage space, material handling equipment, advanced warehouse, and qualified store and production personnel, are in a good place to achieve efficiency, accuracy, and speed improvements, which can sustain its relationship with supplier leading to improved business performance.

The findings are supported by the findings in a study by Tukamuhabwa *et al.* (2021), who contend that a firm with employees who know the latest logistics and supply chain management trends can make informed decisions about improvement. They are also more likely to be able to identify and solve problems that arise in the value chain.

4.2.2.2 The moderating effect of logistics capabilities on the relationship between supplier development and business performance. After being moderated by the firm's logistics capabilities, findings in Table 6 demonstrate a statistically significant relationship between supplier development and business performance ($\beta = 0.272, p < 0.0001$). The findings reveal that as the effort to increase supplier development to grape suppliers increases, the increase in



Source(s): Data

Figure 3.
Structural model for
study variables

Endogenous		Exogenous	Estimate	S.E.	CR	p-value	R-Square
BP	←	BSR	0.53	0.114	4.661	<0.0001	0.731
BP	←	SDP	0.272	0.073	3.726	<0.0001	
BP	←	KTP	0.188	0.075	2.514	0.013	
BP	←	SSP	0.374	0.141	2.652	0.008	
BP	←	FLC	0.134	0.058	2.306	0.021	

Source(s): Data

Table 6.
Parameter estimates of
the structural model for
the influence of SRM
practices on business
performance
moderated by the
firm's logistic
capabilities

supplier development would lead to increasing in business performance. This could be attributed to the establishment of a stronger and more collaborative relationship between a buyer and supplier. A firm with enough resources and educated, skilled, knowledgeable, and experienced staff with capabilities in handling issues concerning supplier development, such as the provision of training, financial support, and supplier performance evaluation, is likely to enhance product quality, reliability, innovation, and cost-effectiveness. This is because the firm capabilities have become a potentially valuable way of enhancing performance. As a result, this could lead to an overall improvement in the quality of grape-based products, mainly wine.

The study findings were supported by the findings in a study by [Wagner \(2010\)](#), who revealed that firms with employees who know the latest logistics and supplier development trends are more likely to improve firm performance. This is because employees know the best practices for supplier development and can identify and implement new and innovative approaches. In addition, [Wagner \(2010\)](#) argues firms with employees with the necessary skills, such as negotiation, communication, and problem-solving, are more likely to develop suppliers effectively because they would be able to build strong relationships with suppliers, communicate effectively, and resolve problems that arise during the development process. Thus, strong logistics capabilities can be a valuable asset for a firm that wants to improve its supplier development program, hence improving business performance.

4.2.2.3 The moderating effect of logistics capabilities on the relationship between knowledge transfer and business performance. After being moderated by the firm's logistics capabilities, the findings from the SEM in [Table 6](#) demonstrated a significant positive relationship between knowledge transfer and business performance ($\beta = 0.188, p = 0.013$). The findings suggest that when the firm enhances the transfer of knowledge to grape suppliers, the increase of knowledge to grape suppliers leads to an increase in business performance. One possible reason for this is that small scale processing firms with strong logistics capabilities such as experience, skills and knowledge in grapes processing industry, with ability to manage resources, are able to effectively share their knowledge with their raw material suppliers. This can result in improved quality, efficiency, and consistency in the materials supplied, ultimately contributing to the sustainability of the grape supply chain, hence improving business performance.

The findings are supported by the findings in other studies (i.e. [Shukla et al., 2023](#)), which revealed when a firm has strong logistics capabilities will be able to transfer knowledge across its organisations and suppliers. This is attributed to the possession of efficient systems and processes that facilitate the collection, storage, and dissemination of knowledge. Similar findings are reported in a study by [Lombardi \(2019\)](#), who observes that the correlation between logistics capabilities and firm performance enhances the relationship between knowledge transfer and firm performance. The findings are in line with the resource dependency theory, which shows that a firm could have power over its supplier by selecting and establishing a strategic collaboration in order to minimise supply chain uncertainty by negotiating criteria on which their relationship should depend, thus ensuring firm performance.

4.2.2.4 The moderating effect of logistics capabilities on the relationship between supplier selection and business performance. The findings in [Table 6](#) indicate that, upon moderating with logistics capabilities, there is a statistically significant association between supplier selection and business performance ($\beta = 0.374, p = 0.008$). The findings imply that as effort increases in managing supplier selection practices, the increase in managing supplier selection would lead to an increase in business performance. The strengthened firm performance could be caused by the enhanced firm's logistics capabilities in identifying and setting criteria for selecting a supplier who can ensure a steady supply of high-quality raw

materials, thus improving business performance. For instance, when there are skills, knowledge, and experience in identifying competent indicators of supplier selection, it is easy to select a supplier who can meet the long-term and short-term goals of the firm. Therefore, strong logistics capabilities have become a potential way of strengthening the link between supplier selection and firm performance.

These findings align with the findings reported by Nyaberi *et al.* (2018), which indicate that having knowledge capability in selecting the right supplier would lead to selecting a supplier capable of supplying quality raw materials at the right quantity at a reasonable price, thus strengthening the firm performance. Additionally, the findings support the statement from RDT that the benefits of supplier selection are greater for firms with strong logistics capabilities as it would lead to effective management of supply chain uncertainty. Establishing a collaborative agreement between a buyer and supplier who is reliable and consistent in supplying the required raw material at the agreed price, place, and quantity would lead to enhanced firm performance.

5. Conclusion and recommendations

5.1 Conclusion

In conclusion, this study understands the complex relationship between supplier relationship management, logistics capabilities, and the business performance of SSGP firms in Tanzania. The findings highlight the significant impact that effective SRM practices can have on enhancing business performance. As SSGP firms continue to have a healthy relationship with their suppliers, they will be able to offer quality grapes products to the market, receiving quality raw materials at the right time with a competitive price; these factors will be paramount for improved business performance. Moreover, the moderating role of logistics capabilities emerged as a critical factor, underscoring the importance of a well-integrated supply chain in maximising the benefits of strong supplier relationships. Therefore, FLC is the main instrument in strengthening SRM and business performance.

5.2 Recommendations

The study proposes that SSGP firms should collaborate with extension officers to find areas for enhancement in grape growers' practices during grape production. This collaboration will facilitate the process of selecting suppliers and ultimately result in the acquisition of high-quality grapes. Furthermore, it is imperative for the Government, specifically through SIDO, to actively support the establishment of a buyer-supplier network. This initiative would serve as a strategic measure to foster collaboration, encourage knowledge exchange, and enhance the development of suppliers. These factors are essential for the prosperity of small-scale processors and suppliers.

6. Study implications, limitations and direction for future studies

6.1 Theoretical implication

Previous studies on SSGP firms in Tanzania did not address the notion of SRM and business performance, as well as the moderation effect of a firm's logistics capabilities on the relationship between SRM and firm performance. In line with this argument, first, the study adds to the literature by diving deeper to investigate the effect of SRM practices and business performance moderated by a firm's logistics capabilities. Secondly, the findings of this study contribute to advancing RDT as a theoretical framework. The study validates RDT by demonstrating how effective SRM practices positively influence business performance. Further, the study extends RDT by introducing the moderating role of logistics capabilities in

IIMTJM

this relationship. Through this study, we confirm the importance of key constructs within RDT, such as the reliance on external resources and strategic management of dependencies. Furthermore, we refine these constructs by highlighting specific aspects of SRM and logistics capabilities which are critical for SSGP firms. Similarly, specific constructs such as buyer–supplier relationship, supplier development, and supplier selection, which were not previously tested in the SSGP context in Tanzania, were added. This led to the creation of new knowledge and made the theory more general when it is carefully broken down and tried in different settings.

6.2 Practical implications

This study is valuable, in particular to SSGP firms, as it demonstrates the effect of SRM practices in enhancing firm performance. Further, it highlights the effect of strong logistics capabilities in moderating the relationship between SRM and firm performance. For managers, the study provides insights into how effective SRM can positively impact business performance. Managers can learn about best practices in improving their relationship with suppliers. Further, by understanding the moderating role of logistics capabilities, managers can assess their current logistics capacity and identify areas for improvement such as resource efficiency, employees' knowledge and skills. On the other hand, policymakers can use the study findings to create targeted policies and initiatives that support the growth and sustainability of SSGP firms. Also, based on the necessity of supplier relationships in enhancing the success of small-scale firms, policy makers can focus on creating frameworks or programs that facilitate better SRM, such as training programs or networking events.

6.3 Limitations and direction for future studies

The current study has considerable limitations that are set for future research. The study was cross-sectional, conducted only in Tanzania, and focussed entirely on small-scale firms processing grapes as raw materials. Thus, generalising the study findings to other countries with different conditions should be done cautiously. Future studies may also think of incorporating other theories rather than RDT to explain the effect of SRM on business performance by moderating with other variables such as political, technological, legal or economic factors. This study used subjective measures, and other studies could use objective measures. Also, this study mostly utilised quantitative analysis methods. Using only one method instead of multiple approaches, such as qualitative research, may have led to the oversight of important contextual information. Future research could combine quantitative and qualitative approaches to gain a more comprehensive understanding of the phenomenon.

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Appendix

The supplementary material for this article can be found online.

Corresponding author

Debora Chelestino Kisinga can be contacted at: deborakisinga@gmail.com

CHAPTER FOUR
PUBLISHED PAPER THREE
**ORDER MANAGEMENT PRACTICES AND PERFORMANCE OF SMALL-
SCALE GRAPES PROCESSING FIRMS: MODERATED BY LOGISTICS
CAPABILITIES**

4.1 An Overview

This chapter presents a published paper that aligns with Objective Three, which examines order management practices and the performance of small-scale grape processing firms in Tanzania, focusing on the moderating influence of logistics capabilities. This paper was published by the University of Dodoma in the African Business Management Journal, Volume 3, Issue, DOI: <http://doi.org/10.58548/2025abjm31.1736>. The paper comprehensively analyses how order management practices, moderated by a firm's logistics capabilities, enhance firm performance. Herewith, find the attached Paper that offers a comprehensive presentation of the study.

Order management practices and small-scale grape processing firms' performance: the moderating effect of logistics capabilities

Debora Chelestino Kisinga^{1*}, Alban Dismas Mchopa² and Leonada Raphael Mwangike³

¹Department of Procurement and Supply Management, College of Business Education, Dodoma, Tanzania

²Department of Procurement and Supply Chain Management, Moshi Co-operative University, Moshi, Tanzania

³Department of Procurement and Logistics Management, Mzumbe University, Morogoro, Tanzania

*Correspondence: deborakisinga@gmail.com

Abstract

This study examines the moderating effect of logistics capabilities on the relationship between order management practices and the performance of small-scale grapes processing firms. A resource dependency theory guided the study based on the key variables including order fulfilment management, information flow management, and multichannel order management. Data were collected through a survey questionnaire distributed to 202 owners of small-scale grape processing firms in Dodoma, Tanzania. The study used a cross-sectional survey design. Data were then analysed through descriptive and covariance-based structural equation modelling. The findings indicated that information flow and order fulfilment management had a positive and significant influence on firm performance. No statistically significant evidence, however, was found on the direct effect of multichannel order management on firm performance. Furthermore, the findings indicated that logistics capabilities play a significant moderating role in the relationship between order management practices and firm performance. These findings imply that logistics capabilities strengthen the effects of order fulfilment management, information flow management, and multichannel order management on firm performance. Thus, the study suggests that optimising logistics capabilities improves timely and accurate delivery, enhances coordination and communication, and broadens customer reach, thereby improving overall firm performance.

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1. Introduction

Globally, small-scale grapes processing (SSGP) firms play a significant role in socio-economic development by enhancing value addition and contributing significantly to the nation's gross domestic product (GDP) (Mang'ana et al., 2023; URT, 2017). According to the Food and Agriculture Organization's Statistics (FAOSTAT), small-scale processing firms generate about 40% of total employment and contribute roughly one-third of the national GDP (FAO, 2023). Moreover, in Asia, particularly in China, SSGP firms play a vital role in the wine sector, as their growth aligns with the rising consumer preference for locally made wines (Sevara & Kazuo, 2018). Similarly, in Europe, around 99% of businesses involved in the wine supply chain are micro, small, and medium-sized enterprises, contributing to around 0.8% of the European Union's GDP (Pomarici et al., 2021). In the African context, South Africa stands out as a leader in grape processing, where SSGP firms make up about 80% of the country's wine cellars, highlighting their substantial role in the industry (Basson, 2024; Vinpro, 2022).

Tanzania ranks as the second-largest grape producer in Africa and has a long-standing history of productive viticulture (Kalimang'asi et al., 2021). However, smallholder farmers faced challenges in accessing reliable markets. For example, between 2021 and 2022, statistics showed that only 59.7% of harvested grapes were processed, while the remainder either perished in the fields or were sold at a loss (URT, 2022). To address this challenge, the government, in collaboration with development agencies, implemented a number of supportive interventions. These include offering technical support and capacity-building initiatives to boost productivity and market reach, improving access to affordable financing, reinforcing the role of the Tanzania Investment Centre, and facilitating the supply of affordable grape processing equipment (URT, 2022). Following the government's initiatives, SSGP firms were encouraged to enter the industry, which consequently provided a more reliable market for grapes produced by smallholder farmers.

SSGP firms play a critical role in the grape value chain by converting grapes into raisins, jam, vinegar, and wine, which can also be concentrated and extracted for industrial uses (Nalyoto & Ngaruko, 2022; Alston & Sambucci, 2019). These firms serve as essential connectors among key stakeholders, including grape producers, final consumers and

service providers (Lubawa & Osabuohien, 2023; Mahenge, 2022; Kulwijila et al., 2018). Furthermore, small-scale processors are more embedded in local economies and operate closer to farming communities and local markets, thus making them crucial for economic development. Therefore, SSGP firms played a pivotal role in enhancing the grape sector, contributing to a 25% market growth by effectively addressing the challenges that had previously hindered its development (URT, 2024).

Considering the potential contribution of SSGP firms to the community, one might ask what factors are responsible for enabling these firms to perform well and continue delivering services effectively. Among other factors, order management practices are crucial because they represent a critical component of logistics operations and act as a backbone of customer satisfaction and business success (Sunol, 2024). These practices involve activities such as order fulfilment management, information flow management, and multichannel order management (Samani, 2024; Gebisa, 2023). Studies by Mpuon et al. (2024) and Omoush (2022) revealed that order management practices enhance firms to efficiently handle customer orders from the point of placement through to final delivery, ensuring both timely service and consistent product quality. Thus, understanding these practices and their impact on SSGP firms' performance is essential.

Despite the earlier-mentioned government interventions, the long-term sustainability of SSGP firms remains inadequate (Lubawa & Osabuohien, 2023; Mahenge, 2022; Seme & Maziku, 2021; Mushi et al., 2021). Studies by Mang'ana et al. (2023), Rajah (2022), Njiku (2019), Dube et al. (2018), and Tisimia (2014) revealed that 75% of small-scale firms have a life span shorter than a decade. The poor performance resulted in the failure and inability of the majority of SSGP firms to deliver the expected services to their customers. As a consequence, researchers have investigated logistics management practices such as supplier relationship management (Kisinga et al., 2024a), warehouse management (Mohring et al., 2024; Kisinga et al., 2024b), and physical distribution management (Jaqueta et al., 2020). Yet, the effect of order management practices on SSGP firm's performance has received inadequate attention in previous studies. Furthermore, the link between order management practices and performance has been well-documented in larger processing firms, including those in the food sector such as sugar (Mena & Chuma, 2020), flour milling (Ajoke et al., 2019), and cashew nut processing (Daniel et al., 2020). However, this relationship remains underexplored within the context of SSGP firms. In light of these inconsistencies and the scarcity of supporting evidence, there is an increasing need to investigate the impact of order management practices on the performance of SSGP firms.

On the other hand, studies by Agbandzo et al. (2024) and Baia and Ferreira (2024) indicate that the impact of order management practices on firm performance can vary depending on how efficient and effective a firm's logistics capabilities are. Logistics capabilities encompass the knowledge, skills, experience, education, and resources possessed by a firm to effectively manage the workflow of customer orders from acquisition to delivery to the final consumer (Saragih et al., 2020). These capabilities ensure the maintenance of product quality, expedited order fulfilment, enhanced communication, and cost efficiency throughout the process (Rehman et al., 2019). Earlier research (i.e., Agbandzo et al., 2024; Rehman et al., 2019) has demonstrated the connection between logistics capabilities and performance within manufacturing sectors, specifically in Ghana's cement industry and Pakistan's textile industry. Although the significance of logistics capabilities for processing firms is well acknowledged, nonetheless the moderating influence of logistics capabilities on the relationship between order management practices and firm performance in a small-scale processing firm's context has received minimal attention (Duah et al., 2024; George & Kerai 2024; Irwin et al., 2022; Meressa, 2020). To bridge this gap, the present study seeks to investigate how logistics capabilities influence this relationship within the context of SSGP firms. Therefore, it is essential to examine the moderating effect of logistics capabilities on the connection between order management practices and the performance of small-scale processing firms in emerging economies like Tanzania.

The remainder of this paper is structured as follows: Section 2 outlines the theoretical framework and hypothesis development, Section 3 details the research methodology employed, Section 4 presents the study's findings and discussion, and Section 5 offers the study's implications, limitations and direction for future studies.

2. Theoretical underpinnings and hypotheses

2.1 The resource dependency theory

This study is grounded in the resource dependency theory (RDT), originally proposed by Pfeffer and Salancik (1978) and later expanded by Reitz et al. (1979), which posits that organisations are not self-sufficient but must rely on external actors to access critical resources. The core proposition of RDT is that organisational survival and success depend on how well firms manage dependencies and uncertainty arising from their external environment (Pfeffer & Salancik, 2003). Firms facing high interdependence are, therefore, driven to adopt strategies that reduce vulnerability and increase

control over essential external resources. This makes the theory particularly relevant in the context of SSGP firms, which rely on external parties, such as farmers, distributors, and transportation networks, for raw materials, order fulfilment, and market access. In line with the assumptions of RDT, this study conceptualises order management practices as activities influenced by external resource conditions and logistics capabilities as a moderating internal resource that helps firms navigate these dependencies and improve performance outcomes (Çeltekliligil et al., 2019).

While RDT provides a strong basis for analysing external dependencies, it tends to underemphasise the role of internal capabilities in managing those dependencies (Casciaro & Piskorski, 2005). This limitation is addressed in the current study by integrating logistics capabilities as a firm's internal resources comprising knowledge, skills, education and other related resources to moderate the effect of order management practices on firm performance. In doing so, the theory not only guided the identification of relevant variables but also helped shape the central research problem: understanding when logistics capabilities moderate the relationship between order management practices (which are heavily shaped by external dependencies) and firm performance. By applying RDT in this way, the study conceptualises a problem rooted in the need for SSGP firms to manage external resource pressures effectively while leveraging internal strengths, an issue particularly relevant in developing economies where both constraints and interdependencies are significant (Kisinga et al., 2024a; Kimario & Kira, 2023; Kulwijila et al., 2018).

2.2 Hypotheses

2.2.1 Order fulfilment management and firm performance

Order fulfilment management is a fundamental component of supply chain operations that involves the systematic handling of customer orders from receipt through to final delivery. It ensures that goods are delivered accurately and on time, which is essential for maintaining customer satisfaction and repeat business (Schwarz, 2023). In a dynamic and competitive business environment, effective order fulfilment enhances a firm's ability to protect its brand reputation, reduce logistical inefficiencies, and increase profitability, thereby contributing significantly to business growth (Robertson, 2021). From the perspective of RDT, firms seek to reduce uncertainty and gain operational control by minimising reliance on external partners. The optimisation of order fulfilment processes enables firms to internalise key supply chain activities, thus decreasing their dependency on external actors and enhancing their responsiveness to market demands (Bretherton & Chaston, 2018). This internal control is particularly vital for firms operating with limited resources, such as small-scale processors.

Despite the theoretical importance of order fulfilment, empirical evidence remains inconclusive. Some studies, such as those by Mori (2024) and Anon (2023), report a positive association between order fulfilment practices and firm performance. Conversely, Hopstack (2024) presents findings indicating an insignificant relationship. Moreover, existing studies have predominantly focused on large-scale processing firms (Kimario & Mwangike, 2024), disposable product industries (Heydari et al., 2020), or the optimisation of warehouse performance (Mohring et al., 2024), with limited attention paid to the unique context of SSGP firms. This gap necessitates further investigation tailored to the realities of SSGP operations. In response to these theoretical and empirical gaps, the present study investigates the relationship between order fulfilment management practices and performance among SSGP firms in Tanzania. Accordingly, the following hypothesis was proposed:

H1: Order fulfilment management has a positive and significant effect on firm performance

2.2.2 Information flow management and firm performance

Information flow has become an essential component for successful firm performance in today's competitive environment (Ajoke et al., 2019). It serves as the foundation for coordination and collaboration across order management and logistics operations (Baihaqi & Sohal, 2013). Efficient information flow supports operational visibility and enables informed decision-making throughout the order lifecycle, which is vital for maintaining customer satisfaction and achieving performance gains (Sunol, 2024). Drawing on RDT, effective information flow reduces uncertainty by improving access to timely and accurate data across the supply chain. For SSGP firms, the ability to coordinate procurement, production, and delivery through real-time information sharing enhances their responsiveness to market demands and strengthens their overall order management capabilities (Bretherton & Chaston, 2018; Bretherton & Chaston, 2005).

Despite its theoretical significance, empirical findings on the effect of information flow on firm performance remain mixed. Some studies (Mori, 2024; Gebisa, 2023; Nthiwa & Wanjiru, 2017) report a positive and significant impact, while others, such as Badenhorst et al. (2013), suggest a negative relationship, particularly for firms with limited technological capacity. Moreover, much of the existing research has focused on large firms such as flour mills (Ajoke et al., 2019) and bottle manufacturing industries (Nyaberi et al., 2014) with little consideration of small-scale processing environments.

Given this gap, the present study aims to examine the effect of information flow management practices on the performance of SSGP firms in Tanzania. Understanding how information flow influences performance within this specific context was expected to guide targeted interventions aimed at enhancing operational efficiency and improving the competitiveness of these firms. Accordingly, the following hypothesis was proposed:

H2: Information flow management has a positive and significant effect on firm performance

2.2.3 Multichannel order management and firm performance

Multichannel order management has become essential for modern business operations, as it enables firms to optimise sales, improve customer experience, and enhance market reach across diverse platforms (Gallino & Roederkerk, 2020). It refers to a coordinated approach to handling customer orders across multiple sales channels, including direct sales, e-commerce platforms, and local distributors (Samani, 2024). Through the integration of order processing, inventory control, and fulfilment systems, multichannel order management practices ensure consistent and efficient delivery of products, regardless of the channel through which an order is placed. Informed by RDT, multichannel order management can reduce uncertainty by enabling firms to manage their dependencies on various external channels through improved coordination and visibility (Çeltekligil et al., 2019). By consolidating order data from physical shops, online platforms, and third-party retailers into a unified system, firms can track, process, and fulfil orders more effectively, thereby increasing operational control and strategic responsiveness (Bressolles & Lang, 2020).

Previous studies on the impact of multichannel order management on firm performance are inconclusive, with studies reporting varying results. For instance, studies by Bressolles and Lang (2020) highlight its positive contribution to customer satisfaction and firm performance. In contrast, Le (2023) reports a negative relationship, particularly among small firms that lack the technological infrastructure and resources to manage multiple channels effectively. Furthermore, existing literature largely focuses on retail and service-based industries, leaving a knowledge gap regarding how multichannel order practices function within small-scale processing firms. To address this gap, the present study investigates the effect of multichannel order management practices on the performance of SSGP firms in Tanzania. Accordingly, the following hypothesis was proposed:

H3: Multichannel order management has a positive and significant effect on firm performance

2.2.4 The moderating effect of logistics capabilities

The concept of capability is a core element of RDT, representing internal strengths, such as skills, knowledge, experience, and education, that enable firms to effectively leverage external resources and navigate environmental uncertainties (Sazzadur & Khan, 2019). Logistics capabilities, in particular, refer to a firm's ability to manage the flow of goods, services, and information in a way that reduces dependency on external actors, improves control, and enhances performance (Agbandzo et al., 2024). For SSGP firms, these capabilities are essential for maintaining operational efficiency and competitive positioning. Logistics capabilities in small scale processing firms encompass a wide range of competencies, including proficiency in order management systems, product knowledge, market awareness, and technical expertise in process optimisation, communication, and distribution management (Poku, 2022; Bretherton & Chaston, 2018). These capabilities support timely decision-making, enhance supply chain coordination, and ensure effective responses to market demands, which is particularly vital in firms handling perishable products like grapes.

Within this study's conceptual model, logistics capabilities are posited to moderate the relationship between order management practices and firm performance. According to Agbandzo et al. (2024), logistics capabilities determine how effectively a firm can execute order fulfilment, manage information flows, and coordinate across multiple sales channels. A firm with strong logistics capabilities is better positioned to maximise the benefits of order management practices. For example, the ability to respond quickly to order changes, streamline communication, or track deliveries in real time amplifies the positive effect of order management practices on performance. Empirical studies present mixed findings regarding the role of logistics capabilities in enhancing performance. In contrast, some scholars report a positive influence (Kisinga et al., 2024a; Bag et al., 2020), while others, such as Sazzadur and Khan (2019) and Joong-Kun Cho et al. (2008), have found either insignificant effects, especially in contexts where firms lack the infrastructure to fully utilise such capabilities. These inconsistencies highlight the need for further investigation, particularly within small-scale processing firms where resource constraints may limit the effective application of logistics capabilities. Given the limited evidence on how logistics capabilities influence the effectiveness of order management practices in small-scale processing environments, this study introduces logistics capabilities as a moderating variable. It examines how these capabilities condition the relationship between each dimension of order management practices and firm performance. Accordingly, the following hypotheses were proposed (See Figure 1):

H4: Logistics capabilities positively and significantly moderate the relationship between order fulfilment management and firm performance

H5: Logistics capabilities positively and significantly moderate the relationship between information flow management and firm performance

H6: Logistics capabilities positively and significantly moderate the relationship between multichannel order management and firm performance

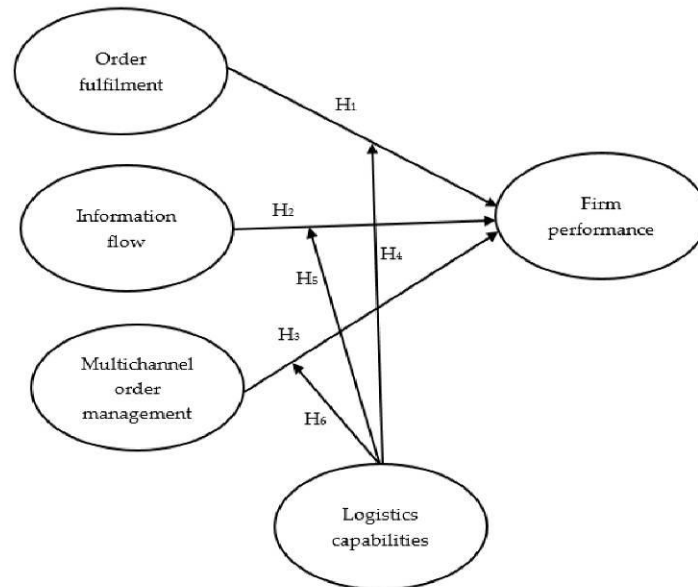


Figure 1. The Conceptual framework

Source: Figure by authors

3. Methodology

3.1 Research design and study area

This study adopted a cross-sectional survey design, as data were collected at a single point in time without the need to monitor temporal changes (Jongbo, 2014). This design provides a scientifically robust framework for examining relationships among multiple variables within a defined population, making it appropriate for the study's objectives. Given the objective of the study, to examine the moderating effect of logistics capabilities on the relationship between order management practices and performance of SSGP firms, this design was particularly suitable for establishing a snapshot without the need for longitudinal tracking (Bryman, 2016).

In the context of small-scale, resource-constrained firms such as SSGPs in Tanzania, longitudinal or experimental designs are often infeasible due to financial, operational, and accessibility limitations. Therefore, cross-sectional surveys offer a methodologically credible alternative that still allows for valid explanatory inferences (Creswell & Creswell, 2018). This approach is widely accepted in organisational and supply chain research for studying behavioural, operational, and relational dynamics across firms at a given moment (Saunders et al., 2019). Moreover, similar studies in agro-processing and small-scale manufacturing contexts have successfully used cross-sectional designs to explore inter-variable linkages in developing economies (Bag et al., 2020). Thus, the selection of this design enhances both the relevance and methodological credibility of the findings within the SSGP settings.

The study was conducted in Dodoma City, one of the seven administrative districts within the Dodoma Region, which also includes Chamwino, Kongwa, Mwapwa, Bahi, Chemba, and Kondoa. The decision to select Dodoma City was driven by its strategic role as the epicentre of grape cultivation and wine production in Tanzania (Kalimang'as et al., 2021). Empirical data show that Dodoma Urban contributes nearly 70% of the region's total grape output, highlighting its significance as both a production and processing hub (Nalyoto & Ngaruko, 2022). Furthermore, the majority of SSGP firms in Tanzania are concentrated in Dodoma City, primarily due to its central location within the country's grape farming corridor and its proximity to grape producers (Kisinga et al., 2024b; URT, 2022). These firms

serve as a vital market for local grape farmers and represent a critical yet under-explored component of Tanzania's agricultural value chain. Therefore, selecting Dodoma City as the study area ensures practical relevance, given the high density of operational SSGP firms and their direct linkage to regional grape production.

3.2 Sampling and data collection

A census approach was employed in this study to ensure comprehensive coverage of the target population, which consisted of 202 active SSGP firms registered by the Small Industries Development Organization (SIDO) (URT, 2022). Given the relatively small and accessible population size, full enumeration was deemed feasible and methodologically sound. Census is particularly appropriate when studying a manageable population, as it eliminates sampling error, enhances data reliability, and ensures that findings reflect the entire population rather than a subset (Saunders et al., 2019; Taherdoost, 2016). Furthermore, in empirical research involving specialised industries such as agro-processing or small-scale manufacturing, census approaches are commonly adopted to improve validity and avoid the potential distortions introduced by sampling variability (Mwakyeja & Kimario, 2024). The decision to use census approach was therefore aligned with both the study context and established methodological recommendations for small population. Moreover, purposive sampling was employed to select 202 firm owners as units of observation. Firm owners were chosen as respondents because they are high-ranking informants and are believed to offer more reliable information than lower-ranking employees (Li et al., 2006).

During the data collection phase, respondent engagement was facilitated through an introductory letter accompanying the survey. This letter outlined the purpose of the study and clearly stated that the data was being collected solely for academic purposes. All participants were literate and thus provided written informed consent by voluntarily signing the consent form presented by the researcher. Participation was entirely voluntary, and respondents were free to express their views through the questionnaire without any form of coercion (Creswell & Creswell, 2018). A survey questionnaire was employed as the primary data collection instrument due to its ability to facilitate the efficient collection of standardised data from a large number of respondents within a relatively short period. This method is well-suited for explanatory research, particularly when the objective is to examine relationships among variables across a defined population (Creswell & Creswell, 2018). The drop-and-pick method was used to distribute and collect the questionnaires, enabling respondents to complete them at their convenience while allowing researchers to follow up in person to improve the response rate.

Prior to the main data collection, the questionnaire was pre-tested on a sample of 30 SSGP firms located in Bahi, Chemba, Kondoa, and Chamwino districts, which are not located in the area of this study. This sample represented approximately 15% of the total study population of 202 firms. Such a proportion falls within the range recommended by methodological literature, which suggests that 10% to 20% of the population is appropriate for pilot testing in survey-based research (Presser et al., 2004). The pre-test aimed to evaluate the clarity, relevance, and internal consistency of the instrument, enabling refinement of the wording, structure, and translation prior to full-scale deployment. Conducting the pre-test outside the main study area minimised the risk of response bias while still obtaining feedback from firms with similar characteristics. In addition, research assistants were trained to ensure uniform interpretation of the questionnaire.

3.3 Measurements

3.3.1 Dependent variable

This study used firm performance as the dependent variable, measured through a combination of financial indicators and non-financial indicators, including sales growth, profit growth, asset, and market share growth (Kisinga et al., 2024a; Razzak et al., 2021). These measures are widely acknowledged in existing literature as appropriate indicators for evaluating performance in small enterprises (Kiyabo & Isaga, 2020; Forth & Bryson, 2019). The indicators were assessed on a five-point Likert scale, with 1 representing "not at all" and 5 indicating "to a very great extent." To assess firm performance, this study employed a five-point Likert scale, a measurement approach that has been empirically validated as both reliable and strongly correlated with objective performance outcomes (Ramírez-Solis et al., 2022; Rajala & Tidström, 2022; Wall et al., 2004; Gregory & Richard, 1984). The Likert scale was particularly appropriate for this context because they are well-suited for measuring subjective constructs (Ramírez-Solis et al., 2022; Rajala & Tidström, 2022).

The study utilised four (4) validated subjective items derived from previous empirical research (Lubawa & Osabuohien, 2023; Lubawa & Raphael, 2023; Razzak et al., 2021; Kellermanns et al., 2012; Zulkiffli & Perera, 2011). The use of subjective performance measures was especially relevant in small scale firms, where access to audited financial records is often difficult due to informal business practices and inconsistent record-keeping (Addo et al., 2024; Lubawa & Raphael, 2023; Sorama & Joensuu-Salo, 2023; Mashavira et al., 2022; Zulkiffli & Perera, 2011). In such settings, subjective assessments offer a reliable and valid alternative to objective financial metrics. Moreover, subjective

indicators capture critical non-financial aspects of performance that are particularly relevant for small-scale firms. For instance, small-scale firms, which are typically family-owned, often assess performance in relation to firm-specific objectives and aspirations established by the owning family, for which subjective performance measures are more appropriately suited (Razzak et al., 2021).

3.3.2 Independent variable

The study operationalised and measured order management practices among SSGP firms by adapting constructs from established empirical and theoretical literature, thereby enhancing the reliability and validity of the variables employed. The independent variables comprised three (3) key dimensions: (i) order fulfilment management, adapted from Heydari et al. (2020) and Davis & Roberge (2023), which assessed the firm's ability to receive, process, and deliver customer orders, measured through six (6) indicators; (ii) information flow management, drawn from Ajoke et al. (2019) and Mwangangi (2016), which evaluated the firm's capacity to share timely and relevant information to support the smooth flow of materials and customer orders, also measured by six (6) indicators; and (iii) multichannel order management, based on the works of Le (2023) and Bressolles & Lang (2020), which captured the firm's ability to manage multiple sales and distribution channels for marketing, selling, and product delivery, measured using five (5) indicators. All constructs were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.3.3 Moderating variable

In this study, Firm Logistics Capabilities (FLCs) were examined as a moderating variable and measured using five (5) validated statements adapted from Agbandzo et al. (2024), George & Kerai (2024), Tukamuhabwa et al. (2021), Pham & Hoang (2019). The items captured key dimensions of logistics capacity, including knowledge, skills, experience, education, and resource availability. A five-point Likert scale was employed, ranging from 1 ("to no extent") to 5 ("to a very large extent"), to assess respondents' perceptions of their firm's logistics competencies.

The definition and measurement of variables are presented in Table 1. This explains the meaning of the variable used, as well as operational definitions.

Table 1. Definition and measurements of variables

Variables	Acronym	Operational definition
Dependent variable		
Firm performance	FP	A firm's capacity to successfully and efficiently meet its objectives and targets.
Independent variables		
Order fulfilment management	OFM	Firm's ability to receive, process, and deliver customer orders at the right time, right quantity, right quality, and right place.
Information flow management	IFM	Firm's capability to share relevant information promptly, ensuring efficient and reliable flows of materials and customer orders.
Multichannel order management	MOM	Firm's ability to manage multiple sales and distribution channels for marketing, selling and delivering products to customers.
Moderating variable		
Firm's Logistics capabilities	FLCs	The capacity of SSGP firm to manage customer orders and execute its internal tasks and responsibilities related to order management.

Source: Table by the authors

3.4 Reliability and validity

To assess construct validity and reliability, Composite Reliability (CR) was employed alongside measures of convergent and discriminant validity, in alignment with prior studies (Said et al., 2011). A CR value of 0.70 or above indicates satisfactory internal consistency of the constructs. Convergent validity is considered established when the average variance extracted (AVE) reaches 0.50 or higher and is less than the CR, reflecting that the construct explains more variance than is attributed to measurement error and cross-loadings. Discriminant validity is confirmed if the AVE exceeds the maximum shared variance (MSV), ensuring distinctiveness among constructs. The establishment of construct validity and reliability thus provides a sound foundation for assessing the overall model fit using multiple goodness-of-fit indices. Various indices were used to evaluate the overall fit of both the proposed and alternative models: (1) the chi-square to degrees of freedom ratio (χ^2/df), where values below 5 indicate an acceptable fit; (2) the

Goodness of Fit Index (GFI); (3) the Comparative Fit Index (CFI), with values of 0.90 or above signifying an acceptable fit; and (4) the Root Mean Square Error of Approximation (RMSEA), with values under 0.05 indicating a good fit.

3.5 Data analysis

Covariance-based structural equation modelling (CB-SEM) was employed to examine the relationship between order management practices and firm performance moderated by the firm's logistics capabilities. CB-SEM is a second-generation multivariate analysis technique employed due to its robustness in theory testing and its ability to assess complex causal relationships involving multiple latent constructs simultaneously. Unlike other models, CB-SEM allows for the estimation of measurement error and the evaluation of model fit indices, thereby enhancing the reliability and validity of the results (Hair et al., 2010). Furthermore, CB-SEM is particularly suited for confirmatory research where the theoretical model is well-established, as it tests how well the proposed model fits the observed data based on covariance structures. Given that this study aimed to validate a theory-driven model involving latent constructs such as order management practices, firm performance, and logistics capabilities, CB-SEM was the most appropriate analytical technique (Edeh et al., 2023; Nasution et al., 2020).

As described by Nu'man et al. (2020), CB-SEM comprises two main components: confirmatory factor analysis (CFA) and the structural model. CFA helps identify the relationships between observed variables and the latent constructs in the proposed model and plays a crucial role in validating and ensuring the reliability of the measurement tools (Hernandez, 2010). Numerous studies, such as those by Jung et al. (2010), have utilised CFA to assess measurement validity and reliability. In this study, CFA was utilised to confirm the reliability and validity of the constructs associated with order management practices, firm performance, and logistics capabilities.

The structural model demonstrates the interconnections among latent variables, detailing how specific unobserved variables directly or indirectly influence other latent variables within the model. In this study, a structural model was applied to assess the influence of order management practices on firm performance, moderated by the firm's logistics capabilities. Analysis was performed using IBM AMOS software version 21, with a significance level of 5%.

4. Findings and discussion

4.1 Characteristics of respondents and firms

The study's findings reveal that the majority of participants were male, with 172 (85.1%) men and 30 (14.9%) women. A significant number of respondents, 88 (43.6%), were aged between 36 and 50, followed by 64 (31.7%) who were under 35. The remaining 50 (24.7%) respondents were 50 years or older. Regarding education, 30 (15.0%) held certificates or diplomas, 26 (13.0%) had completed secondary education, while the majority, 92 (46.0%), had only primary education, and 52 (26.0%) held bachelor's degrees. Additionally, a considerable proportion of SSGP firms, 106 (52.5%), had been operating for three to four years, with 57 (28.2%) in business for five to six years. The remaining 39 (19.3%) firms had been established for over seven years. Table 2 depicts the results on characteristics of respondents and firms.

Table 2. Characteristics of respondents and firms

Variable	Frequency	Percent
<i>Gender</i>		
Male	172	85.1
Female	30	14.9
Total	202	100.0
<i>Years of the business</i>		
3-4	106	52.5
5-6	57	28.2
7+	39	19.3
Total	202	100.0
<i>Number of employees</i>		
1-5	128	63.4
6-7	57	28.2
8-30	17	8.4
Total	202	100.0
<i>Number of technical employees</i>		
One	158	78.2
Two	32	15.8
Three	10	5.0
Ten	2	1.0
Total	202	100.0
<i>The education level of the owner</i>		
Primary	92	46.0
Secondary	26	13.0
Certificate or Diploma	30	15.0
Bachelor	52	26.0
Total	202	100.0
<i>Age of the respondents</i>		
35 and below	64	31.7
36-50	88	43.6
51 and above	50	24.7
Total	202	100.0

Source: Table by the authors

4.2 Common method bias

This study employed a self-administered structured questionnaire for data collection, which is often associated with the risk of response bias. To assess the presence of common method bias, Harman's single-factor test was conducted. The results showed that a single factor accounted for approximately 31.2% of the total variance. Since this value falls below the recommended threshold of 50% (Findley et al., 2021; Podsakoff et al., 2003), it was concluded that common method bias did not pose a significant concern in this study.

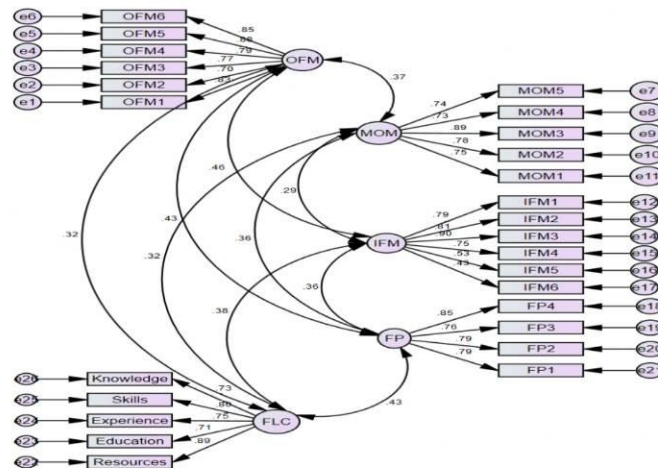
4.3 CFA results

It was explained in the methodological section that CFA was used to test the reliability and validity. The fit statistics of the proposed model are presented in Table 3. As seen in the table, the proposed model had fit values near those used as cut-off points. For instance, the χ^2/df index of the proposed model is 3.730, which is less than 5, indicating that the proposed model better fits the data than the alternative models. On the other hand, the obtained value of the GFI (0.954) and CFI (0.916) indexes were greater than the recommended value of 0.9. Similarly, the value of RMSEA (0.041) is less than 0.05, which is the recommended threshold (Said et al., 2011). Therefore, the fit statistics of the proposed CFA model were better compared to other alternative models; the proposed CFA model presented in Figure 2 for order management practices and firm performance better fit the data.

Table 3. CFA model fit indices

Fit statistic	Recommended	Obtained
χ^2	-	1450.789
Df	-	389
χ^2/df	< 5	3.730
GFI	> 0.90	0.910
CFI	> 0.90	0.955
RMSEA	< 0.05	0.041

Source: Table by the authors

**Figure 2.** The CFA model (standardised estimates)

Source: Figure by authors

As indicated before, three indicators, composite reliability (CR), convergent, and discriminant validity, were used to assess construct validity and reliability from the proposed mode. Table 4 presents the reliability, convergent, and discriminant validity. For reliability, the proposed model had the following reliability indices: OFM (CR = 0.91), IFM (CR = 0.904), MOM (CR = 0.886), firm performance (CR = 0.923), and FLC (CR=0.850). The values of the Composite Reliability index for all constructs of order management practices, firm performance, and logistics capabilities (FLC) were greater than 0.7, which indicates good reliability for all constructs (Findley et al., 2021). Concerning convergent validity, the results showed that the AVE of the constructs ranged from 0.532 to 0.752. For convergent validity, AVE should be greater or equal to 0.50 and lower than CR (Said et al., 2011). This finding provides good evidence of the presence of convergent validity. This means that much variance of the construct indicators is explained by the construct rather than the measurement error.

Regarding the discriminant validity, the low correlations among the four constructs, ranging from 0.29 to 0.46 (Figure 2), is an indication of discriminant validity (Ab Hamid et al., 2017). Given the evidence for multiple factors that are at least somewhat separable, we conducted more stringent discriminant validity tests via maximum shared squared variance (MSV). The results showed that, for each construct, the MSV was less than the AVE, which is an indication of discriminant validity (Findley et al., 2021). Table 4 depicts these results.

Table 4. Reliability, convergent and discriminant validity

Domain	CR	AVE	MSV
OFM	0.931	0.693	0.210
IFM	0.904	0.612	0.213
MOM	0.886	0.609	0.152
FP	0.923	0.752	0.213
FLC	0.850	0.532	0.147

Note(s): OFM = Order fulfilment Management, IFM = Information flow management, MOM= Multichannel order management, FP = Firm performance, FLC = Firm's logistics capabilities

Source: Table by the authors

4.4 Structural model and hypothesis testing

The fit indices for the structural model fell within the recommended thresholds, indicating an acceptable model fit. Path analysis was conducted to examine the relationships among order fulfilment management, information flow management, and multichannel order management.

4.4.1 The direct influence of order management practices on firm performance

Also, as presented in the methodological section, the structural equation model used to assess the influence of order management practices on firm performance. Generally, the findings reveal that order management practices positively influence firm performance, as indicated in the standardised estimates in Figure 3.

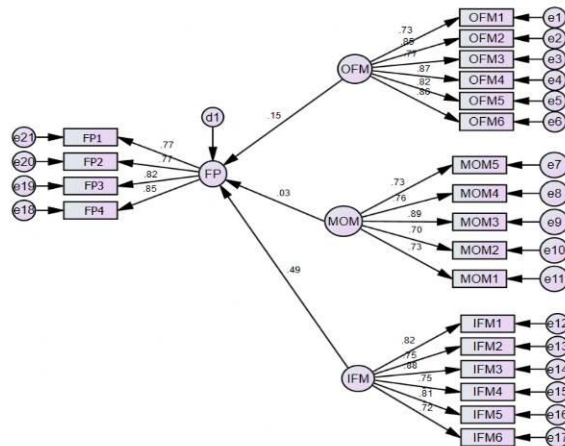


Figure 3. The structural model (standardised estimates) for the direct effects

Source: Figure by authors

These results are more detailed in Table 5. They show the parameter estimates, standard error, and the associated p-value of the fitted SEM for the influence of order management practices on firm performance without the effect of logistics capabilities as a moderation factor. Thus, the results can be interpreted as follows:

4.4.1.1 Order fulfilment management and firm performance

The SEM results in Table 5 revealed that order fulfilment management, as one of the components of order management practices, was significantly positively related to firm performance ($\beta = 0.579$, $p = 0.041$). Therefore, H1 was confirmed. This finding implies that a unit increase in order fulfilment practice score was associated with an increase in firm performance score by 0.579 units. The reason for this significant relationship is due to the fact that, since grapes are a seasonal product, through order fulfilment practices, SSGP firm has been able to forecast their demand by placing their orders early to grapes farmers, leading to optimisation of inventory levels based on their storage capacity, thus, reducing the risks of stockouts or excess inventory leading to meeting market demand (Kulwijila et al., 2018).

Furthermore, effective order fulfilment provides SSGP firms with real-time tracking and visibility of orders, which is essential when dealing with perishable produce like grapes. This practice allows SSGP firms to monitor the status of raw material deliveries and respond swiftly to any delays or issues, thus satisfying their customers. Additionally, the management of order fulfilment facilitates the efficient handling of picking and packing activities, which is crucial for maintaining the integrity of the grapes throughout the process. On the other hand, order fulfilment ensures grapes products are delivered to customers on time and in the right quantity while maintaining product quality, enhancing to minimise loss or damage of products. Further, by ensuring all orders are fulfilled on time and in the right quantity, the SSGP firm can be able to maintain proper inventory levels, thus improving firm performance.

The findings of this study aligned with Mori (2024) and Sugiarto (2016), who found that effective order fulfilment is important in contributing to business growth as it ensures firms exceed customer expectations by delivering on time while maintaining product quality, enhancing a firm's ability to differentiate itself from competitors. Further, Gebisa (2023) insists that by managing the order fulfilment process, a firm can establish clear and open communication channels with suppliers of raw materials to ensure timely delivery. The findings are theoretically consistent with RDT, which highlights that effectively managing external resource dependencies enhances a firm's performance.

4.4.1.2 Information flow management and firm performance

Also, Table 5 shows that information flow practice was also significantly associated with firm performance ($\beta = 0.848$, $p < 0.001$). Therefore, H2 was confirmed. The results suggest that an increase in information flow management by one unit increased the firm performance score by 0.848 units. The explanation for this relationship lies in the fact that effective information flow management enhances the responsiveness and efficiency of SSGP firms by improving inventory tracking, reducing waste through more accurate demand forecasting, and enabling quicker adjustments to production and distribution. These improvements collectively contribute to enhanced operational performance and increased customer satisfaction, as firms are better equipped to meet market demands while minimising inefficiencies. A clear and concise information flow acts as a link to ensure a smooth flow of raw materials and finished goods along the grapes supply, thus minimising supply chain disruption, leading to improved firm performance. These findings match with the study done by Mushi et al. (2021) who revealed that information flow is considered an asset since efficient and reliable material flows are not possible without it. Likewise, Nthiwa and Wanjiru (2017) found that the flow of accurate, real-time information in logistics was considered vital to the flow of materials and finished goods. Furthermore, the findings are linked with RDT which highlights the critical role of optimising information exchange to manage relationships with suppliers and customers and reduce external resource pressures.

4.4.1.3 Multichannel order management and firm performance

Concerning H3, the finding in Table 5 reveals that the influence of multichannel order management on firm performance was not significant ($\beta = 0.049$, $p = 0.628$). Consequently, H3 was not confirmed. This result indicates that as a firm invests in managing multichannel orders, its performance does not necessarily improve. This may be attributed to a lack of knowledge and skills in effectively utilising different channels to meet customer needs, which is particularly critical for small-scale processing firms, including SSGP firms. These firms often face challenges in integrating and optimising multiple channels due to limited resources, insufficient expertise, and the complexities involved in managing diverse customer touchpoints in a coordinated manner. The findings are linked to studies conducted by Le (2023), who argues that fulfilling orders from multiple sales channels can be complex and costly as it requires a firm to manage multiple distribution carriers, packaging requirements, and delivery times. However, the findings contradict the recommendations of RDT, which emphasise the firm's ability to reduce uncertainties associated with multiple external relationships by managing its dependencies through coordinating with various external channels.

Table 5. The parameter estimates of the structural model for the direct effects

Endogenous <--- Exogenous	Estimate	S.E.	CR.	p	R square	Decision
FP <--- OFM	0.579	0.283	2.045	0.041	0.504	Accepted
FP <--- IFM	0.848	0.127	6.657	< 0.001		Accepted
FP <--- MOM	0.049	0.101	0.484	0.628		Not Accepted

Note(s): OFM = Order fulfilment management, IFM = Information flow management, MOM = Multichannel order management, FP = Firm performance

Source: Table by the authors

4.4.2 The moderating effect of logistics capabilities on the link between order management practices and the performance of SSGP firms

The structural equation model was again used to assess the influence of order management practices on firm performance moderated by the firm's logistics capabilities (Figure 4). This figure illustrates the way the firm's logistics capabilities (FLC) were adjusted to moderate the impact of order management practices on firm performance (FP). The results in Table 6 show the parameter estimates, standard error, and the associated p-value of the fitted SEM for the influence of order management practices on firm performance with the effect of logistics capabilities as a moderation factor. It was observed that in the presence of logistics capabilities, firm performance was significantly associated with order fulfilment ($p=0.038$), information flow ($p < 0.001$), and multichannel order management ($p < 0.001$) among SSGP firms in the study area.

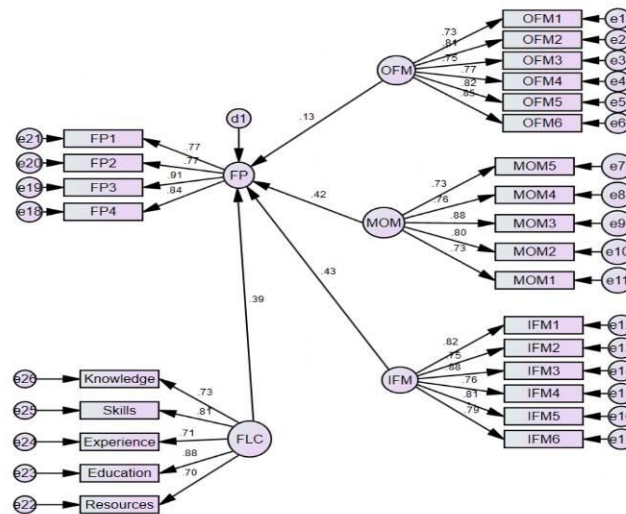


Figure 4. The structural model (standardised estimates) for the moderating effects

Source: Figure by authors

4.4.2.1 The moderating effect of logistics capabilities on the relationship between order fulfilment management and firm performance

The results presented in Table 6 indicate that logistics capabilities significantly moderated the relationship between order fulfilment management practices and firm performance. Specifically, after incorporating logistics capabilities as a moderator, a unit increase in the order fulfilment practice score led to an increase of 0.497 units in firm performance ($\beta = 0.497$, $p = 0.038$). Accordingly, Hypothesis 4 was supported. This finding suggests that when SSGP firms possess strong logistics capabilities, such as knowledge of distribution systems, inventory control, and customer communication, they are better positioned to maximise the benefits of their order fulfilment efforts. These capabilities enable firms to make prompt, informed decisions regarding inventory management, optimise distribution routes to reduce costs, and quickly respond to supply chain disruptions (Mori 2024).

Furthermore, skilled employees enhance customer communication with customers and suppliers, which minimises order errors, reduces the incidence of stockouts or overstocking, and ultimately lowers the costs associated with product returns and excess inventory. When integrated effectively, logistics capabilities allow SSGP firms to deliver orders on time, meet customer expectations, and preserve product quality, factors that contribute directly to improved performance (Baía & Ferreira, 2024; Joong-Kun Cho et al., 2008). These results are consistent with the work of Gebisa (2023) and Sugiarto (2016), who found that effective order fulfilment, when supported by internal capabilities, leads to reduced carrying costs and enhanced operational efficiency. The findings also align with the assumptions of RDT, which emphasises the importance of internal capabilities in managing external dependencies. In this context, logistics capabilities serve as a strategic resource that enables firms to enhance supply chain responsiveness, differentiate from competitors, and support sustainable business growth.

4.4.2.2 The moderating effect of logistics capabilities on the relationship between information flow management and firm performance

The findings in Table 6 reveal that logistics capabilities significantly moderate the relationship between information flow management and firm performance. Specifically, after accounting for the moderating effect, a unit increase in information flow management practices leads to an increase of 0.719 units in firm performance ($\beta = 0.719$, $p < 0.001$). As such, Hypothesis 5 was supported. This result highlights the critical role of logistics capabilities, such as experienced, skilled, and educated personnel, in facilitating efficient and effective information flow. Firms with strong logistics capabilities are more likely to gather, process, and communicate accurate information across departments, suppliers, and customers. This, in turn, enables the firm to better understand and respond to customer needs, ensuring that the right products are delivered in the correct quantity, to the right place, at the right time, and with the required quality.

Moreover, effective information flow minimises misunderstandings and misinterpretations in customer orders, reducing the likelihood of delays, incorrect deliveries, or lost sales. Logistics capabilities act as a connecting element across the order processing cycle, ensuring seamless coordination among departments. This internal coordination

allows SSGP firms to manage their order processing systems more effectively and make timely decisions, particularly in adjusting production plans based on raw material availability. This is particularly important in the context of grape processing, where seasonality in grape production poses supply challenges. Firms with strong logistics capabilities and access to reliable information can better forecast demand, schedule procurement, and avoid stockouts, thereby improving performance outcomes.

These findings are consistent with those of Mori (2024) and Kulwijila (2021), who found that logistics capabilities enhance the positive relationship between information flow and performance. Similarly, Demski et al. (2022) reported that firms with advanced logistics capabilities are better positioned to communicate with customers and adjust orders based on feedback, leading to improvements in innovation, product quality, and customer satisfaction. The findings also align with RDT, which underscores the importance of internal capabilities in managing external dependencies and mitigating information asymmetries. By strengthening internal logistics capabilities, firms are able to control and effectively leverage external information flows, thereby achieving superior organisational outcomes.

4.4.2.3 The moderating effect of logistics capabilities on the relationship between multichannel order management and firm performance

The moderated results presented in Table 6 show a statistically significant relationship between multichannel order management and firm performance after accounting for the effect of logistics capabilities ($\beta = 0.421$, $p < 0.001$). Accordingly, Hypothesis 6 was supported. This finding suggests that logistics capabilities strengthen the positive effect of multichannel order management on firm performance among SSGP firms in Tanzania. Most of these firms have traditionally relied on face-to-face sales through nearby outlets such as local bars. However, the results indicate that when firms develop internal logistical competencies, such as skilled human capital, knowledge of sales platforms, and basic supply chain infrastructure, they are better equipped to manage sales across multiple channels, thereby expanding market reach and improving operational performance (Samani, 2024; Le, 2023).

Logistics-related capabilities play a crucial moderating role by enabling firms to diversify distribution strategies. These include partnerships with regional distributors, collaboration with distant vendors, or adoption of digital platforms. In a sector where customer bases are often geographically constrained and distribution informal, such capabilities are essential for overcoming bottlenecks, preventing service delays, and ensuring consistent delivery outcomes (Kimaro et al., 2024; Saah, 2022).

Also, the results underscore the importance of investing in business education, supply chain skills, and logistics technology. These resources enhance the firm's ability to process orders across multiple channels effectively and adjust to varying customer needs. Consequently, firms gain access to broader markets, improve delivery efficiency, and minimise losses, factors that are critical to performance in Tanzania's evolving but fragmented agri-processing sector. The findings are in line with those of Irwin et al. (2022), who found that firms with well-developed logistics capabilities can better manage multichannel operations, thus enhancing customer accessibility and overall market responsiveness. Similarly, Issah et al. (2025) demonstrate that logistics and technological capabilities are key enablers of agility in SMEs, allowing for adaptive distribution and improved market responsiveness.

From a theoretical perspective, these results reinforce the assumptions of RDT, which posits that internal capabilities enable firms to effectively manage their dependencies and uncertainties in the external environment (Pfeffer & Salancik, 2003). In this context, logistics capabilities serve as essential enablers, allowing SSGP firms to coordinate complex order and distribution flows across multiple channels, ultimately driving improved performance in resource-constrained and localised operating environments. It was noted that order management practices accounted for about 62.1% of the variability in firm performance ($R^2 = 0.621$), with logistics capabilities acting as a moderating factor (see Table 6).

Table 6. The parameter estimates of the structural model for the moderating effects

Endogenous <--- Exogenous	Estimate	S. E	CR	p	R square	Decision
FP <--- OFM	0.497	0.212	2.344	0.038	0.621	Accepted
FP <--- MOM	0.421	0.095	4.432	< 0.001		Accepted
FP <--- IFM	0.719	0.118	6.111	< 0.001		Accepted
FP <--- FLC	0.452	0.096	4.709	< 0.001		Accepted

Note(s): OFM = Order fulfilment management, IFM = Information flow management, MOM = Multichannel order management, FP = Firm performance, FLC = Firm's logistics capabilities

Source: Table by the authors

5. Study implications, limitations and direction for future studies

5.1 Theoretical Implications

This study contributes to the development of RDT by validating its applicability in the context of SSGP firms in developing economies. The findings confirm that firms with stronger logistics capabilities are more effective in implementing order management practices, which, in turn, positively influence firm performance. This study extends RDT by demonstrating the moderating role of logistics capabilities, showing that internal competencies can strengthen a firm's ability to manage external dependencies and reduce environmental uncertainties. It highlights specific order management practices dimensions, order fulfilment, information flow, and multichannel management as strategic interdependencies requiring internal capability development. These insights advance the theoretical understanding of how firms operating in resource-constrained environments strategically respond to external pressures.

5.2 Practical and Managerial Implications

The findings offer practical insights for managers of SSGP firms. First, firms should prioritise the adoption of cost-effective and user-friendly order management systems to streamline order processing, inventory tracking, and demand forecasting. Such systems enhance operational efficiency and responsiveness to market demands. Second, investing in employee training is critical, especially in areas such as logistics coordination, customer communication, and supply chain monitoring. Skilled personnel enable better execution of order management practices and reduce errors that could impact product quality or delivery timelines. Third, managers should consider developing multichannel strategies by exploring regional distribution networks or digital platforms to expand their market reach and reduce overreliance on informal and localised sales models.

5.3 Policy Implications

The study provides important implications for policy-makers and development agencies. There is a need to support SSGP firms through targeted capacity-building initiatives, including subsidised training in logistics management and digital literacy. In addition, policies should facilitate access to affordable technological infrastructure, such as digital order processing tools and supply chain analytics platforms. Development actors, including local governments and NGOs, can play a significant role in creating enabling environments through logistics hubs, access to finance for infrastructure upgrades, and supportive transport systems that enhance the competitiveness and growth of small-scale agro-processing enterprises.

5.4 Limitations of the study

This study is subject to certain limitations. Firstly, it adopted a cross-sectional design, was conducted within the specific context of Tanzania, and focused exclusively on small-scale firms engaged in grape processing. While this approach enabled a detailed and contextually grounded analysis, the findings may not be directly generalisable to firms operating in different countries or under varying environmental, economic, or industrial conditions. As such, caution should be taken when extending these results beyond the study context. Secondly, the analysis was based primarily on quantitative data, which may have limited the exploration of detailed, context-specific insights that qualitative methods could provide. Thirdly, the scope of the study focused exclusively on three dimensions of order management practices: order fulfilment, information flow, and multichannel management. Lastly, although the study was confined to Dodoma City in Tanzania, enabling a focused examination within a defined context, this geographic limitation may affect the extent to which the findings can be generalised to broader geographical or industrial settings.

5.5 Areas for further research

Future research could build on this study in several ways. Firstly, future research could consider applying alternative theoretical frameworks beyond RDT to examine the impact of order management practices on firm performance, potentially incorporating moderating variables such as technological capability, managerial competence, or firm size or age. Secondly, this study relied on subjective measures; therefore, future research could consider incorporating objective performance indicators to enhance measurement validity. Additionally, the study primarily employed a quantitative research approach. Relying on a single method may have limited the capture of deeper contextual insights. To address this, future studies are encouraged to adopt mixed-methods designs that combine both quantitative and qualitative techniques, thereby providing a more comprehensive and holistic understanding of the phenomenon. Lastly, future studies could explore additional variables, such as order tracking systems, lead time management, returns and reverse logistics and order batching and scheduling practices, as these may play a significant role in shaping the effectiveness of order management practices and firm performance in small-scale processing contexts.

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CHAPTER FIVE
MANUSCRIPT
TRANSPORTATION MANAGEMENT PRACTICES AND PERFORMANCE
OF SMALL-SCALE GRAPES PROCESSING FIRM: EVIDENCE FROM
DODOMA, TANZANIA

By

Debora Chelestino Kisinga
Department of Procurement and Supply Management,
College of Business Education-Dodoma Campus, Dodoma, Tanzania
Email; deborakisinga@gmail.com
Corresponding Author

Alban Dismas Mchopa
Department of Procurement and Supply Chain Management,
Moshi Co-operative University, Moshi, Tanzania, and
Email; albanmchopa@gmail.com

Leonada Raphael Mwagike
Department of Procurement and Logistics Management,
Mzumbe University, Morogoro, Tanzania
Email; lrnwagike@mzumbe.ac.tz

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Abstract

This paper examines the relationship between transportation management practices, including carrier selection, third-party logistics management, physical distribution and load management, and the performance of small-scale grape processing firms in Dodoma, Tanzania. Transaction cost theory guided the study, with the key variables identified. Data were collected using a questionnaire administered to 202 small-scale grape processing firm owners. The study uses a cross-sectional survey design. Data were then subjected to descriptive and structural equation modelling. The findings indicated that third-party logistics management practice ($\beta=0.087$, $p<0.0001$), physical distribution management practice ($\beta=0.957$, $p<0.0001$) and load management practice ($\beta=0.060$, $p=0.0004$) have a positive and significant relationship with firm performance. No evidence, however, was found on the effect of carrier selection practices ($\beta=0.187$, $p=0.736$) on firm performance. Implicitly, the effective implementation of third-party logistics, physical distribution, and load management practices significantly enhances the performance of small-scale grape processing firms. Thus, the study suggests that optimising transportation management practices can enhance operational efficiency, reduce transportation-related costs, improve delivery reliability, and enable greater focus and resource allocation to core business activities. Also, the findings extend transportation management practices by exploring previous unexamined practices and underscore the importance of prioritising transportation management for firm performance.

Keywords: Transportation Management practices, Firm performance, Small-scale grapes processing firms.

1.0 Introduction

Globally, Transportation Management Practices have been identified as a major contributor to the economy by connecting businesses to their supply chain partners and, thus, representing a competitive force in business (Kanyepe, 2023; Muhalia *et al.*, 2021; Oyesiku *et al.*, 2020). Adebayo and Aworemi (2021) asserted that managing transportation practices is crucial to achieving an effective supply chain, as it adds value by moving goods from suppliers' sites to manufacturing facilities, final customers, or sales locations. Also, Goldsby *et al.* (2014) observed that transportation practices enhance a firm's ability to optimise logistics operations and associated costs, ensuring security and safety, and maintaining a competitive edge in processing firms.

A study by Samita *et al.* (2020) highlighted that transportation practices have long been a significant area of managerial attention due to their critical importance and visible costs. These practices encompass a wide range of activities, including carrier selection, route planning, fleet management, load planning and optimisation, third-party logistics services, and physical distribution (Kanyepe, 2023; Amonde and Anthony, 2023; Adebayo and Aworemi, 2021). According to Odoo *et al.* (2020), transportation practices have received substantial managerial attention across a wide range of organisations, as they play a pivotal role in the overall success and competitiveness of businesses. However, despite its importance, limited studies have explored and demonstrated the role of transportation Management Practices as an effective logistical management strategy for improving the performance of small-scale processing firms, particularly in developing economies.

Several studies have highlighted that transportation management has become critical to improving business performance for large manufacturers and firms operating at regional and global scales. For instance, Mageto *et al.* (2022) and Wabuge and Osoro (2020) noted that using a third-party logistics service to transport raw materials and finished goods lowers costs and relieves a firm of the burden of handling non-core functions. Liotta *et al.* (2016) and Meixell and Norbis (2008) also comment that carrier selection enhances a firm's flexibility in managing indirect costs, such as carrier frequency, based on actual order and firm capacity. Further, Regua (2023) argues that physical distribution directly influences customer needs and a firm's commitment level in a particular market. Likewise, Gaur (2023) argues that load management practices enable a firm to reduce distribution costs while maintaining the quality of on-transit goods. On

the other hand, transportation management practices have been studied in sugar manufacturers (Samita *et al.*, 2020), cement manufacturing firms (Connor, 2020), and food and beverage companies (Adebayo and Aworemi, 2021).

Despite the existence of a large body of literature on transportation management practices, Mageto *et al.* (2022), Regua (2023), Gaur (2023), Samita *et al.* (2020), Connor (2020), Francisco and Canare (2018), and Musau *et al.* (2017), however, little has been done in the small-scale processing firms' context. This study, therefore, intends to examine the effects of Transportation management practices in small-scale processing firms, as the findings from larger manufacturing firms cannot be generalised to small-scale contexts. This study focused on transportation management practices in SSGP firms to provide a detailed understanding of the unique challenges they face throughout the transportation process, including the perishability of grapes, resource constraints, and the need for efficient operations to maintain quality and profitability. Other factors include temperature control to maintain freshness during transportation, recommended packaging design, handling practices, and transportation time, which distinguish the transportation of grapes and grape-based products from other products, prompting this study.

A study by Mashenene and Kumburu (2023) and Aguinis and Burgi-Tian (2023) highlights the crucial role of agro-processing firms, including SSGP firms, in driving economic growth and reducing poverty across many African countries. They estimate that Tanzania hosts approximately three million small-scale firms, which are integral to the trade and service sectors and provide employment for over five million people. These enterprises are vital to economic sustainability and development, particularly in least developed countries like Tanzania. Despite their significance, many small-scale processing firms face inefficient transportation management, which hampers their operational performance and their ability to meet market demands. SSGP firms, in particular, rely heavily on road transport due to its accessibility and adaptability, facilitating the movement of raw materials and processed products from farms to processing facilities and markets. However, poor road infrastructure and high transportation costs significantly affect logistical efficiency (Soprano, 2024).

In more remote areas, these firms often resort to traditional transport methods, such as ox-carts and hand-carts, to navigate rough terrain and reach local markets where larger

vehicles are impractical. While these methods are cost-effective, they are slow and restrict the volume of goods transported, highlighting the need for infrastructure improvements to enhance efficiency (Odoom *et al.*, 2020). Given these challenges, examining Transportation management practices among SSGP firms in Dodoma is essential to support informed decision-making and offer insights into improving efficiency and quality in the grape processing sector.

Notwithstanding the critical role of transportation management practices in connecting businesses to their supply chain partners, small-scale firms in developing countries face several challenges in improving performance (Soprano, 2024). One of the primary challenges is managing logistics effectively, including transportation practices (Aborn, 2021; Odoom *et al.*, 2020). Similarly, O'Byrne (2019) found that processing firms often struggle with significant increases in transportation costs, which can account for 5% to 10% of their total sales, thereby affecting profitability. However, researchers have studied various factors influencing the performance of small-scale processing enterprises, including Lubawa *et al.* (2023), Mashenene and Kumburu (2023), Mang'ana *et al.* (2023), Anastazia (2019), and Kipene *et al.* (2015). These studies have not specifically examined the impact of transportation management practices on performance.

The performance of small-scale grape processing firms in relation to their transportation management practices is a subject of interest. Previous studies have shown inconsistent outcomes, with some studies (Adebayo and Aworemi, 2021; Oyesiku *et al.*, 2020; Nyabwanga and Ojera, 2015) indicating that transportation management practices generally affect the performance of small-scale firms, while studies conducted by Kanyepe (2023), Mahalia *et al.* (2021) and Wabuge and Osoro (2014) argue that inefficient transportation management might fail to achieve superior performance in manufacturing firms, and SSGP firms are among them. It is necessary to understand how transportation management practices affect the performance of SSGP firms. However, previous studies (Adebayo and Aworemi, 2021; Matuga *et al.*, 2020; Chalotra and Kumar, 2016) on the small-scale processing sector provided insufficient insight into the subject matter.

A study by Manogna and Mishra (2022) has highlighted that the performance of small-scale processing firms is a crucial aspect of overall success and sustainability, as it

enhances a firm's ability to identify its competitive position within the business environment in which it operates. Further, studies by Papulová *et al.* (2021), Adebayo and Aworemi (2021), and Stojkić and Bošnjak (2019) suggested that it is essential for a firm to measure its performance to identify its market position and sustainability. Also, Zada *et al.* (2021) argued that the more small-scale processing firms perform efficiently, the more they stimulate economic activities that lead to countries' welfare and growth.

On the other hand, research studies revealed that Transportation management practices are one of the important dimensions of processing firms' efficient performance (Kanyepe, 2023). Nevertheless, several attempts have been made to document the effect of Transportation management practices on minimising overall supply chain risk, with limited attention paid to their linkage with firm performance. This study intends to bridge this gap. The proposed solution could improve SSGP firms' performance, minimise supply chain risks arising from the perishable nature of grapes, create employment, generate revenue, and improve transportation strategies. Therefore, this study examined the effect of transportation management practice on the performance of SSGP firms in Dodoma, Tanzania, by considering practices such as carrier selection, third-party logistics management, physical distribution and load management. These practices were considered important because they are commonly used to assess transportation management in the manufacturing sector (Oyesiku *et al.*, 2020; Chalotra and Kumar, 2016).

However, no single method exists for measuring firm performance (Changalima *et al.*, 2023; Manogna and Mishra, 2022). Research indicates that businesses can evaluate their performance using subjective or objective information, or a combination of both, to achieve their strategic goals (Mang'ana *et al.*, 2023). Most of the reviewed studies rely on objective measures; however, they often overlook small-scale firms' reluctance to publicly disclose their objective performance data (Lubawa and Raphael, 2023; Zulkiffli and Perera, 2011). This study aims to address this gap by measuring the performance of SSGP firms using subjective statements that reflect whether the firm's goals have been achieved. Specifically, the study focuses on performance statements related to market share growth, profitability growth, sales growth, and return on assets (Mwangangi, 2016; Kellermanns *et al.*, 2012).

2.0 Literature Review

2.1 Theoretical Underpinnings

This study was guided by Transaction Cost Theory (TCT), established by Oliver E. Williamson in 1979. This theory assumes that a firm's superior performance stems from its ability to manage the costs of economic transactions (Nagle *et al.*, 2024; Wever *et al.*, 2012). The theory is also grounded in the assumption that transaction frequency and uncertainty are critical factors influencing the determination of transaction costs. TCT posits that expenses associated with the movement of goods, such as vehicles, fuel, labour, and infrastructures supporting transportation, are not merely operational concerns but pivotal factors that affect the firm's overall cost structure and profitability (Cuypers *et al.*, 2021). Similarly, in the context of SSGP firms, where resources are limited and profit margins are small, the efficient management of transportation costs can determine competitive advantage and financial sustainability.

TCT has been applied in this study to elucidate how various transportation practices, such as carrier selection, third-party logistics management, physical distribution and load management, can be strategically utilised to minimise costs and enhance operational efficiency. The theory suggests that firms can allocate more resources to other critical business areas by minimising transportation expenses, thereby improving overall performance (Schwabe, 2013). TCT has also been utilised in the context of small-scale businesses by Ketokivi and Mahoney (2020), highlighting that managing transportation practices enables a firm to improve productivity in terms of quality and quantity, strengthen supply chain relationships, and maximise operational efficiency. Thus, this study adapted variables including carrier selection, third-party logistics management, physical distribution and load management, which are relevant to this theory.

2.2 Hypotheses Development

2.2.1 Carrier selection management and performance of SSGP firms

Carrier selection aims to optimise the logistics process by partnering with carriers that align with the firm's operational and financial goals while maintaining good quality, ensuring efficient, cost-effective, and reliable movement (Matuga *et al.*, 2020). TCT comments on the effectiveness of carrier selection in directly linking to firm performance by enabling firms to choose carriers that offer competitive rates and

dependable services, thereby reducing costs associated with uncertainties and delays, thereby achieving a cost-effective transaction (Chalotra and Kumar, 2016). Likewise, small-scale firms that manage their carrier selection practices can reduce delivery time and minimise spoilage, damage, and loss of goods, thereby increasing profitability (Meixell and Norbis, 2008). Nevertheless, different studies have provided mixed findings on the impact of carrier selection on firm performance. For instance, a study by Fanam and Ackerly (2019), Liotta *et al.* (2016), and Williams *et al.* (2013) found that carrier selection positively influences firms' performance. Conversely, Rajah (2022) and Adebayo and Aworemi (2021) found a negative relationship between carrier selection and performance.

On the other hand, most of the reviewed studies concentrate on the impact of carrier selection practices on food and beverage companies (Adebayo and Aworemi, 2021) and shipping companies (Fanam and Ackerly, 2019). However, these studies did not consider the role of carrier selection from the perspective of SSGP firms. This study therefore aims to fill that gap by examining the effect of carrier selection on SSGP firms. Hence, the following hypothesis was proposed:

H₁: Carrier selection has a significant effect on the performance

2.2.2 Third-party logistics management and performance of SSGP firms

Using third-party logistics services is a necessary strategic practice in managing logistical operations (Rifai, 2023; Adesunkanmi and Nurain, 2022). This is because it allows a firm to focus on core competencies while minimising transportation and logistics costs (Anthony and Amonde, 2023; Musau, 2016). Also, Rifai (2023) asserted that managing third-party logistics services allows a firm to share risks associated with transportation and supply chain disruptions while optimising resources, which is crucial for maintaining profitability. Theoretically, TCT holds that processing firms can achieve cost-effective logistics operations by avoiding the high costs of developing and maintaining in-house logistics capabilities (Mageto *et al.*, . Similarly, small-scale processing firms that use third-party logistics services can reduce logistics costs and promote growth and sustainability by focusing on their core competencies while efficiently managing their logistics operations (Martin, 2021). Previous studies (Adesunkanmi and Nurain, 2022; Dopson, 2024; Rifai, 2023) support the argument that third-party logistics management positively impacts a firm's performance. In contrast,

other studies have identified a negative correlation between third-party logistics management and performance (Wabuge and Osoro, 2014).

Additionally, most of the reviewed literature focused on the effect of third-party logistics management on seed companies (Wabuge and Osoro, 2014), package manufacturers for food and beverages (Griffin, 2023), and pharmaceutical manufacturers (Advani, 2020). However, these studies did not consider the effect of third-party logistics management from the perspective of SSGP firms. This study therefore aims to fill that gap by examining the role of third-party logistics management in SSGP firms. It is, therefore, hypothesised that:

H₂: Third-party logistics management practice has a significant effect on performance.

2.2.3 Physical distribution management and performance of SSGP firms

Physical distribution has a favourable and considerable impact on a firm's performance (Lopienski, 2021; Jaqueta *et al.*, 2020). This is because it facilitates processing enterprises in overcoming physical and non-physical barriers to delivering goods to consumers at minimal cost (Mbondo *et al.*, 2015). Likewise, Rao *et al.* (2014) revealed that managing physical distribution can help a firm reduce transportation costs and lead times. From TCT, physical distribution enables a firm to reduce holding and carrying costs, thereby reducing the risk of stockouts or overstocking, achieving optimal inventory levels and timely deliveries (Jaqueta *et al.*, 2020).

There is mixed empirical evidence on the impact of physical distribution on firm performance. For instance, previous researchers (i.e., Felichism, 2022; Maletič *et al.*, 2020; Hou *et al.*, 2017) stated that physical distribution positively and significantly impacts firm performance.

In contrast, other studies, such as those by Jaqueta *et al.* (2020) and Keside Ejike (2019), identified a negative correlation, especially in small-scale processing firms. Additionally, a larger part of the reviewed literature concentrates on the impact of physical distribution practices on tea processing firms in Kenya (Muma, 2014) and the electronic industry in Thailand (Kankanit and Busba, 2015). Nonetheless, these studies did not consider the role of physical distribution practices from the perspective of SSGP firms. This study therefore aims to fill that gap by examining the role of physical distribution management practices in SSGP firms. Therefore, this study hypothesised that:

H₃: Physical distribution management practice has a significant effect on performance

2.2.4 Load management practices and performance of SSGP firms

Efficient load management is paramount to success in logistics and transportation (Silvera, 2024; Mufandaedza, 2023). This is because load management helps a firm minimise track capacity, reduce transit times, and lower fuel costs, thereby enhancing its ability to achieve cost-effective delivery processes (Adebayo and Aworemi, 2021). TCT argues that there is a direct link between load management and a firm's performance, based on the ability to manage the frequency of transactions, as these transactions affect the firm's logistics operations (Silvera, 2024). Similarly, firms that manage their loads during transportation achieve better performance by reducing total distribution costs, ensuring product safety, increasing flexibility, and enhancing customer satisfaction (Silvera, 2024; Gaur, 2023; Orenstein, 2023). Previous research, such as that by Patel (2024) and Mufandaedza (2023), supports the view that load management practices positively influence a firm's performance.

In contrast, other studies found a negative relationship between load management and performance (Regua, 2023). On the other hand, most of the reviewed studies focused on the effects of load management practices on food and beverage companies (Gaur, 2023; Adebayo and Aworemi, . These studies did not consider the effect of load management from the perspective of SSGP firms. This study therefore aims to fill that gap by examining the effects of load management practices in SSGP firms. Therefore, the following hypotheses were considered;

H₄: Load management practice has a positive and significant effect on the firm's performance

2.3 Conceptual framework

Based on the theoretical and empirical literature review, Figure 1 displays the interaction between variables. The independent variable is transportation management practice, including carrier selection, third-party logistics management, physical distribution, and load management. The dependent variable is firm performance. It was anticipated that when SSGP firms manage these practices, they could achieve optimal performance.

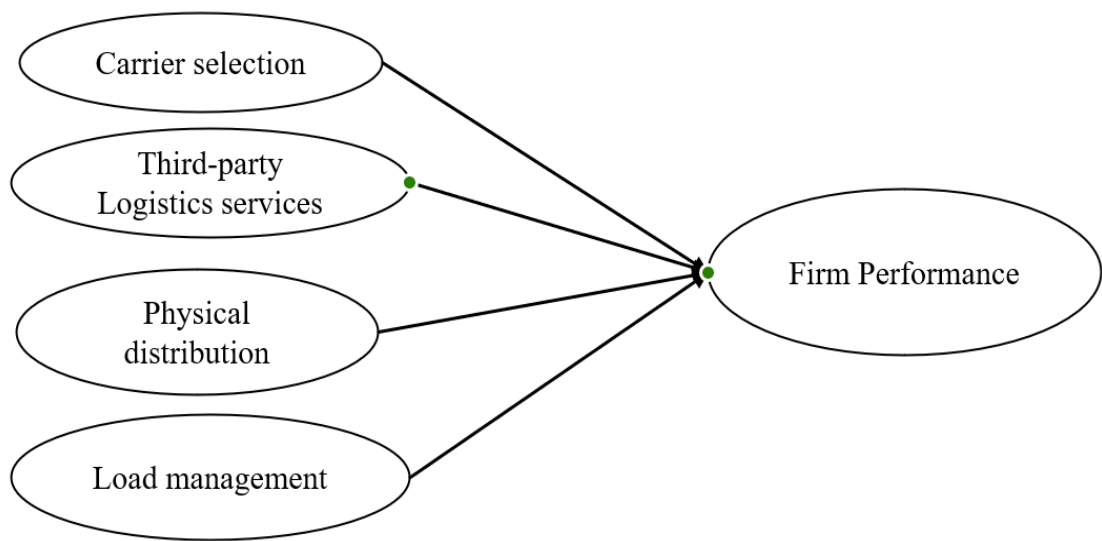


Figure 2: Conceptual Framework

Source: Author's Construction, based on Theoretical and Empirical Literature Review (2023)

3.0 Methodology

3.1 Research design and Study area

The study used a cross-sectional research design. This design was chosen as it allowed for data to be collected at a single point in time, facilitating the identification of patterns of association between variables. This design ensures a comprehensive snapshot is captured, enabling researchers to infer the population's interests. The research was conducted in Dodoma City, Tanzania, which was deliberately selected due to its prominence as the country's main centre for viticulture and wine production (Kalimang'as *et al.*, 2021). Moreover, Tanzania's small-scale grape processing businesses are predominantly in Dodoma City, a significant central corridor for grape farming (Kulwijila *et al.*, 2018). Furthermore, it is one of the fastest-growing cities, a major commercial centre, an economic hub, and the capital of Tanzania.

The decision to focus on SSGP firms in Tanzania is justified by their substantial yet underexplored role in the agricultural economy, particularly at the small-scale level. Further, grape processing has emerged as one of the fastest-growing sectors in the region, highlighting the need for scholarly attention. Despite their importance, SSGP firms have not received adequate research focus, which limits understanding of their operational dynamics and contributions to the economy. Moreover, the highly

perishable nature of grapes necessitates effective transportation management to minimise losses, prevent spoilage, and ensure sustainability.

Additionally, these firms are essential in supporting local grape farmers by providing a reliable market for their produce, improving rural livelihoods, and strengthening agricultural value chains. This study aims to fill a research gap by examining the interactions between SSGP firms and grape producers, with substantial implications for the sustainability and growth of the small-scale processing sector in Tanzania. Consequently, this study focused on household SSGP firms employing between 1 and 49 individuals or with investment capital of TZS 5 million to TZS 200 million, in line with the SMEs policy of 2002 and as referenced by Njiku (2019). Specifically, the study considered firms that had been in operation for at least three years since 2020.

3.2 Sampling and data collection

The targeted population for this study comprised 202 active SSGP firms registered with the Small Industry Development Organisation (SIDO) (URT, 2022). The study encompassed all 202 SSGP firms in Dodoma City (URT, 2021). The population was selected because it is sufficiently small to permit full enumeration. Additionally, this complete enumeration helped eliminate the bias that might arise from sampling errors. Purposive sampling was employed to select 202 firm owners as the units of observation. Firm owners were chosen as respondents because they are high-ranking informants and are believed to offer more reliable information than lower-ranking informants (Li *et al.*, 2006). The choice of the firm's owners as key informants is supported by Mushi *et al.* (2024), who used the head of the user department in procurement entities as a key informant, and Lubawa and Raphael (2023), who used the head of the family as a key informant.

Data on the key study variables were gathered using a survey questionnaire, which was pre-tested on a sample of 30 small-scale grape processing firms. These pre-test firms were distinct from those included in the main data collection. Pre-testing was conducted outside the study area in Bahi, Chemba, Kondoa, and Chamwino Districts. This pre-test aimed to assess the questionnaire's validity and reliability. Feedback from this process led to enhancements in the questionnaire based on suggestions, issues, recommendations, and observations. To ensure the study's validity, research assistants

were trained to ensure a uniform understanding of the tool, which was then translated into Swahili to ensure that respondents accurately understood the questions.

3.3 Measurements, validity, and reliability of study variables

3.3.1 Dependent Variable

This study employed firm performance as the dependent variable, utilising a combination of financial and non-financial indicators. The indicators chosen for this purpose comprised market share growth, profit growth, sales growth and return on assets. These indicators were adopted from Lubawa *et al.* (2023), Razzak *et al.* (2021), Kellermanns *et al.* (2012) and are widely applied in assessing the performance of small businesses (Kiyabo and Isaga, 2020; Forth and Bryson, 2019). To measure these indicators, a five-point Likert scale was employed, ranging from 1 ("Not at all") to 5 ("Very great extent").

The study employed four (4) validated statements using subjective metrics to assess firm performance derived from previous research conducted by Lubawa *et al.* (2023), Razzak *et al.* (2021), Kellermanns *et al.* (2012), and Zulkiffli and Perera (2011). Subjective measures were selected because small-scale business owners commonly resist disclosing financial data and maintaining comprehensive financial records (Lubawa and Raphael, 2023; Zulkiffli and Perera, 2011). Research indicates that subjective metrics are strongly correlated with objective measures and are recognised as reliable and valid tools for evaluating performance in small businesses (Mang'ana *et al.*, 2023; Hatidja *et al.*, 2021; Mwangangi, 2016).

3.3.2 Independent Variables

The study utilised validated measurement scales that had been employed in prior research. (i) Carrier selection was measured using items adapted from Fanam and Ackerly (2019), Williams *et al.* (2013) and Meixell and Norbis (2008); (ii) Items adapted from Mageto *et al.* (2022) and Wabuge and Osoro (2020) were used to measure third-party logistics management; meanwhile, (iv) physical distribution was measured using indicators adopted from Festo (2022), Hou *et al.* (2017), Mbondo *et al.* (2015), and Stephens and Wright (2002). (iv) Load management practice was measured using items adapted from Orenstein (2023) and Adebayo and Aworemi (2021). A five-point Likert scale was employed to measure all primary constructs in transportation management practices, with responses ranging from 1 = strongly disagree to 5 = strongly agree.

3.3.3 Validity and Reliability

To assess construct validity and reliability, we used Composite Reliability (CR) and convergent and discriminant validity measures, as utilised in previous studies (Said *et al.*, 2011). A CR value of 0.70 or higher indicates good internal consistency for the factors. Convergent validity is established when the Average Variance Extracted (AVE) is equal to or greater than 0.50 and lower than CR, indicating that the construct's variance explains more than the measurement error and cross-loadings. Discriminant validity is achieved if AVE exceeds the Maximum Shared Squared Variance (MSV).

Confirming construct validity and reliability thus provides a strong foundation for examining the overall model fit using a range of goodness-of-fit indicators. In this study, several indices were employed to evaluate the fit of both the proposed and alternative models: (1) the chi-square to degrees of freedom ratio (χ^2/df), where values under 5 signify an acceptable fit; (2) the Goodness of Fit Index (GFI); (3) the Comparative Fit Index (CFI), with acceptable values being 0.90 or higher; and (4) the Root Mean Square Error of Approximation (RMSEA), where values below 0.05 reflect a good model fit.

3.4 Data Analysis

Covariance-Based Structural Equation Modelling (CB-SEM) examined the relationship between transportation management practices and firm performance. CB-SEM was used because it is a powerful statistical technique for testing and estimating causal relationships among variables (Edeh *et al.*, 2023; Nasution *et al.*, 2020). A study by Anderson and Gerbing (1988) revealed that CB-SEM comprises two essential components: Confirmatory Factor Analysis (CFA) and Structural Model. CFA illustrates the pattern of observed variables for the latent constructs hypothesised in the model. It plays a crucial role in validating and ensuring the reliability of the measurements (Hernandez, 2010). Numerous studies have utilised CFA to assess the validity and reliability of measurements (Jung *et al.*, 2010). This study employed CFA to test the reliability and validity of the constructs related to transportation management practices and firm performance.

On the other hand, the structural model illustrates the relationships among unobserved variables. It specifies how specific latent variables directly or indirectly influence changes in the values of other latent variables in the model. This study used a structural

model to evaluate the influence of Transportation management practices on firm performance. The analysis was conducted using IBM AMOS version 21, with a significance level of 5%.

4.0 Findings and Discussion

4.1 CFA for the influence of transportation management practice on SSGP firm performance

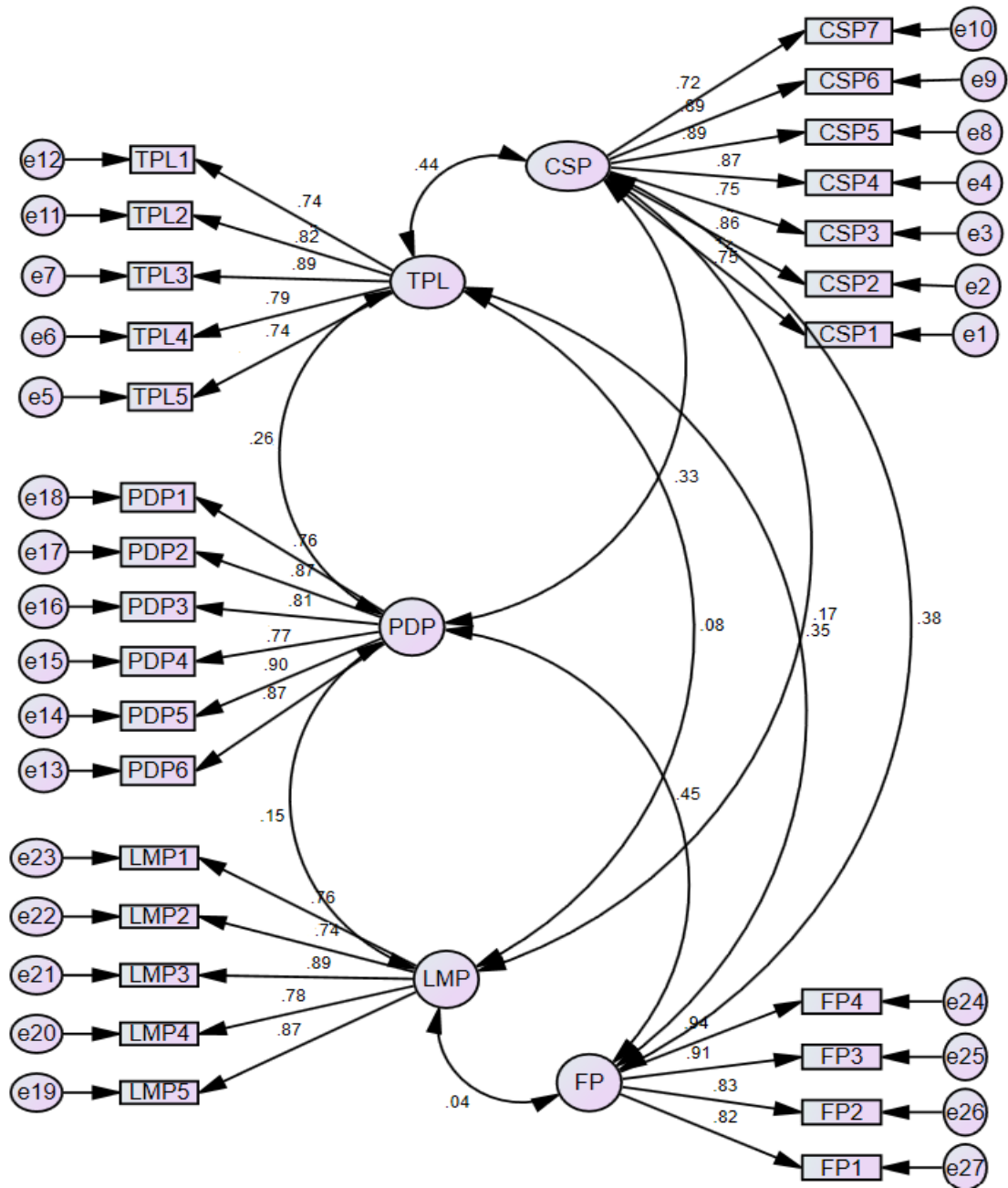
Table 1 presents the Confirmatory Factor Analysis, which assesses the reliability and validity of transportation management practice. The findings show that the proposed model fit values are close to the cut-off points used to evaluate fitness. The χ^2/df index of the model is 3.989. This value is less than 5, the recommended value, indicating that the proposed model provides a better fit for the data than alternative models.

Table 2: Fit statistics of the CFA for the influence of transportation management practice on the SSGP firm's performance.

Fit statistic	Recommended	Obtained
χ^2	-	1252.404
df	-	314
χ^2/df	<5	3.989
GFI	>0.90	0.908
CFI	>0.90	0.927
RMSEA	<0.05	0.021

Source: Survey Data (2023)

Moreover, the obtained values for the Goodness-of-Fit Index (GFI) (0.908) and the Comparative Fit Index (CFI) (0.927) exceed the recommended value of 0.9. The value of the Root Mean Square Error of Approximation (RMSEA) (0.021) is less than the recommended cut-off value of 0.05 (Table 1). The correlation between latent variables ranges from 0.08 to 0.45, and factor loading ranges from 0.72 to 0.94 (Figure 2).



Source: Survey Data (2023)

Figure 3: The standardised estimates of the proposed CFA model for the influence of transportation management practice on the SSGP firm's performance.

Indicators of reliability, convergent and discriminant validity

Composite reliability and convergent and discriminant validity were utilised to assess construct validity and reliability, as presented in Table 2. Composite reliability was used to assess a construct's internal consistency. Convergent validity concerns the degree to which different indicators of the same construct correlate. Discriminant validity examines the extent to which one construct is distinct from other constructs. Regarding reliability, the proposed model demonstrated the following reliability indices: FP

(CR=0.929), CSP (CR=0.946), TPL(CR=0.888), PDP(CR=0.923), and LMP(CR=0.872). All the constructs, namely firm performance, carrier selection management practice, third-party logistics management practice, physical distribution management practice, and load management practices, were observed to have a favourable internal consistency with Composite Reliability values greater than 0.7, indicating good reliability for each construct.

Table 3: Indicators of reliability, convergent and discriminant validity

Domain	CR	AVE	MSV
FP	0.929	0.766	0.146
CSP	0.946	0.714	0.146
TPL	0.888	0.614	0.213
PDP	0.923	0.668	0.213
LMP	0.872	0.592	0.028

Source: Survey Data (2023)

The findings revealed that the constructs' Average Variance Extracted (AVE) ranged from 0.592 to 0.766. This value provides strong evidence of convergent validity, as the required AVE is greater than 0.50 and lower than the CR. We also conducted more rigorous tests of discriminant validity using the Maximum Shared Squared Variance (MSV). The MSV should be lower than the AVE to provide evidence of discriminant validity.

4.2 Structural model for the influence of transportation management practice on the SSGP firm's performance

As presented in the methodological section, the structural relationship between transportation management and performance was assessed using the Covariance-Based-Structural Equation Model (CB-SEM). CB-SEM was first fitted to assess the influence of Transportation management practices on performance among SSGP Firms. The transportation management practices had four constructs: carrier selection practice (CSP), third-party logistics management practices (TPL), physical distribution practices (PDP), and load management practices (LMP). On the other hand, firm performance had only one construct with four elements. Table 3 displays the fit statistics of the fitted model. The ratio of the chi-square to the degree of freedom (χ^2/df) is 4.49. This value is less than the recommended cut-off point of 5, indicating that the fitted model fits the data well. In addition, the obtained value of GFI (0.912) and CFI (0.934) indices were greater than the recommended value of 0.9. Likewise, the value of RMSEA (0.032) is less than

the recommended cut-off point of 0.05. Therefore, we can conclude that the fitted model (Figure 1) fits the data well.

Table 4: Fit statistics of the structural model for the influence of transportation management practice on firm performance

Fit statistic	Recommended	Obtained
χ^2	-	1437.635
df	-	320
χ^2 / df	<5	4.493
GFI	>0.90	0.912
CFI	>0.90	0.934
RMSEA	<0.05	0.032

Source: Survey Data (2023)

The fit indices for the structural model, as detailed in Table 3, were consistent with the recommended range. Path analysis examined the relationships between carrier selection, third-party logistics management, physical distribution, and load management. Figure 3 depicts.

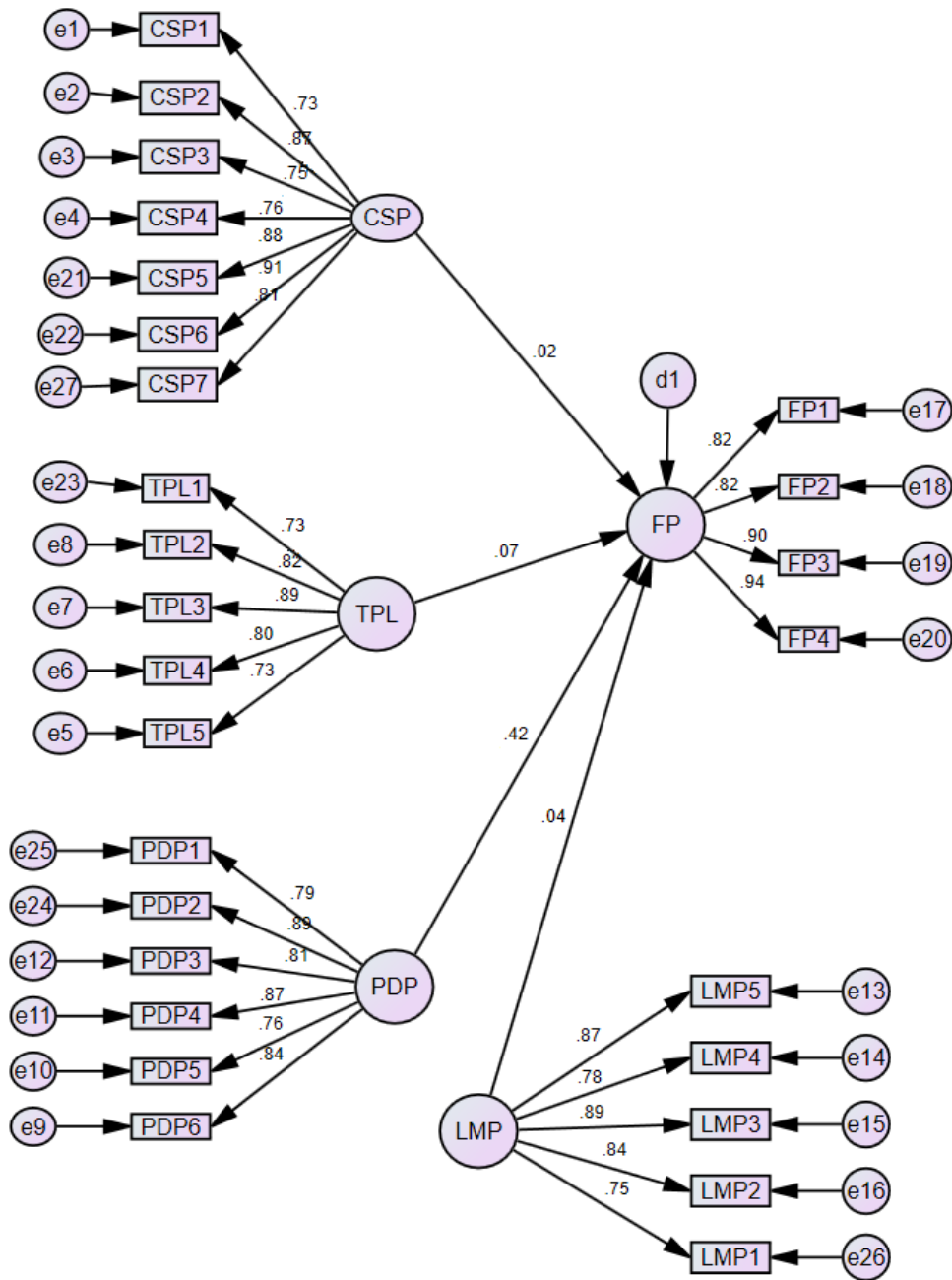


Figure 4: Standardised estimate for the effect of Transportation Management Practices on Firm Performance

Source: Survey Data (2023)

Note: CSP=Carrier selection practices, TPL= Third party Logistics management practices, PDP=Physical Distribution Practices, LMP=Load Management Practices, and FP= Firm Performance

The influence of transportation management practice on the SSGP firm's performance.

The effect of Transportation management practices on a firm's performance was assessed using the CB-SEM. The findings show that third-party logistics management practice ($p < 0.0001$), physical distribution practice ($p < 0.0001$), and load management practice ($p = 0.0004$) were statistically significant, affecting performance among small-scale grape processors in the study area. Table 4 depicts.

The findings demonstrate that third-party logistics management practices positively affect firm performance ($\beta = 0.087$, $p < 0.0001$), thereby supporting H2. This means that a unit increase in third-party logistics management practice results in a 0.087 increase in performance among SSGP firms in Dodoma City. The explanation for this significant relationship can be based on the fact that third-party logistics management practices allow small-scale processing firms to enhance their competitive edge by concentrating on core business functions such as product development, quality improvement, and marketing while leaving the complexities of transportation logistics to a specialised third-party logistics provider with the necessary expertise and resources. Further, by transferring transportation activities to a third-party logistics provider, small-scale processing firms can reduce the potential for stock loss or damage during transit (Mageo et al., 2022).

The findings are supported by Rifai (2023) and Dopson (2024), who argue that third-party logistics providers help firms expand into new markets and share cost and supply chain risks. Also, a study by Adesunkanmi and Nurain (2022) supported the relationship, noting that third-party logistics services enhance manufacturing firms' short- and long-term performance by reducing costs and risks and boosting operational efficiency. Further, TCT supported the relationship by emphasising that firms that outsource transportation logistics to third-party logistics providers can reduce transaction costs associated with managing transportation activities internally, allowing them to focus on their core competencies.

Regarding H3, the findings indicate that physical distribution practice positively influenced firm performance ($\beta = 0.957$, $p < 0.0001$). The findings imply that a unit increase in physical distribution management practice results in a 0.957 increase in performance among SSGP firms. The explanation for this significant relationship is that

when small-scale processing firms invest heavily in physical distribution, their performance increases. This is because a firm can build a personal connection with its customers and receive direct, immediate feedback. Furthermore, small-scale processing firms can manage physical distribution effectively by engaging in direct distribution channels. In this case, a firm's ability to understand the local market will improve; thus, it will be able to maintain market share and stabilise prices by minimising costs associated with intermediaries.

The findings are linked to studies by Mbondo et al. (2015) and Rao et al. (2014), who highlight the role of physical distribution practices and performance in small-scale processing firms. Further, the studies elaborate that superior performance of small-scale processing firms is achieved if physical distribution practice is employed as a direct link between a firm and the final consumer, thus enabling a firm to be sure that the product reaches its targeted market in good condition, thus maintaining a competitive edge in the marketplace. The findings align theoretically with TCT, suggesting that effective management of physical distribution practices can improve a firm's performance by minimising transaction costs associated with supply chain uncertainties.

The findings similarly observed that load management practices positively and significantly impact performance ($\beta=0.060$, $p=0.0004$), supporting H4. This suggests that a unit increase in load management practices results in an average increase of 0.060 in performance. A possible explanation for this relationship lies in the critical role of load management within SSGP firms, particularly considering the modes of transportation they utilise. These include hand carts, ox-drawn carts for transporting grapes from farms, and motor vehicles for longer distances. Effective load management has been essential for ensuring the safety and quality of raw materials and processed products as it optimises loading and unloading procedures, uses appropriate packaging, and implements palletising techniques that prevent damage and crushing of grapes during transit. Moreover, when utilising motor vehicles, efficient load distribution reduces costs by minimising the number of trips, maximising space utilisation, and optimising fuel consumption, ultimately improving overall distribution efficiency. Therefore, by implementing effective load management practices, SSGP firms have enhanced product preservation, reduced wastage, and lowered distribution expenses, thereby strengthening operational efficiency and overall profitability.

Similar findings were reported in studies by Patel (2024) and Regua (2023), which noted that load management enhances firms' performance by minimising losses associated with over-stacking and layering, and by saving costs by optimising space during transportation. Also, Mufandaedza (2023) found that load management enhances a firm's understanding of load characteristics, as some products may be more sensitive to temperature while others may be more fragile and require special handling. Thus, load management minimises crushing or damage to perishable goods, specifically fruits, by ensuring proper loading, unloading, and specialised packaging during transportation. The findings also support the TCT recommendations that load management practices reduce transportation inefficiencies, minimise transaction costs, and improve performance.

Lastly, the results presented in Table 4 indicate that the carrier selection practice does not significantly affect the performance of SSGP firms ($\beta=0.187$, $p=0.736$). Consequently, H1 was not supported. The findings suggest that enhancing carrier selection management does not improve firm performance. The possible explanation for this insignificant relationship could be the size and scale of these firms, as the nature of their production and logistics operations does not generate sufficient volume to negotiate better terms or significantly benefit from different carriers.

The findings align with previous studies by Rajah (2022) and Adebayo and Aworemi (2021), who argued that small-scale processing firms in developing economies are more focused on costs and the availability of carriers than on performance optimisation. Also, a report from the World Economic Forum (2022) stated that small-scale processing firms are facing unique challenges, including limited resources, capabilities, and a lack of expertise, which limit their ability to thoroughly assess and manage carrier performance effectively. Further, the findings on insignificant relationship are not consistent with those of Fanam and Ackerly (2019), Liotta *et al.* (2016), and Williams *et al.* (2013), which comments that managing carrier selection enhances the firm's ability to optimise transportation by choosing a carrier based on actual orders and the firm's capacity. Thus, reducing costs and expanding delivery options improve firm performance. Furthermore, the results do not support the TCT argument that managing carrier selection minimises potential costs associated with uncertainty and disruptions along the supply chain.

Furthermore, the results indicate that 63.1% of the total variation in the firm's performance is explained by the independent variables Carrier selection practices (CSP),

Third-party Logistics management practices (TPL), Physical Distribution Practices (PDP), and =Load Management Practices (LMP). Table 4 depicts.

Table 5: The parameter estimates of the structural model for the influence of transportation management practice on firms' performance

Hypothesised relationship			Estimate	SE.	CR.	P-Value	R-square
FP	<---	CSP	0.187	0.555	0.337	0.736	0.631
FP	<---	TPL	0.087	0.021	4.095	<0.0001	
FP	<---	PDP	0.957	0.138	6.945	<0.0001	
FP	<---	LMP	0.060	0.017	3.571	0.0004	

Source: Survey Data (2023)

5.0 Conclusion and Recommendations

5.1 Conclusion

In conclusion, this study explores the relationship between Transportation management practices and the performance of small-scale grape processing firms in Tanzania. The findings underscore the substantial impact that Transportation management practices can have on improving firm performance. As small-scale grape processing firms continue to invest in Transportation management practices, they can optimise resources, reduce transportation costs, and focus on their core business activities. Further, firms will be able to achieve on-time delivery while maintaining product quality and at competitive pricing; these factors are crucial for enhancing firm performance.

5.2 Recommendations

The study advocates that the Government, particularly through SIDO, continue to promote awareness of policies designed to enhance the effectiveness of Transportation management practices. This can be achieved by combining targeted policies, programmes, and initiatives supporting SSGP firms' growth and long-term sustainability. For instance, policymakers could utilise the 2002 SME Policy to introduce best practices for managing transportation, particularly for perishable agricultural products such as grapes. Therefore, the government should enhance Transportation management practices within these small-scale firms, as such practices significantly impact their performance.

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CHAPTER SIX

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

6.1 Summary of the Findings

Logistics management practices in small-scale processing firms, particularly SSGP firms, were not widely debated in the emerging economy. This study examined the logistics management practices and performance of SSGP firms in Tanzania. Few empirical studies have investigated the relationship between logistics management practices and the performance of small-scale processing firms, but their findings have been contradictory and inconclusive. Additionally, this study builds upon previous research by exploring how logistics capabilities moderate the relationship between logistics management practices and the performance of SSGP firms. Unlike earlier studies that primarily focused on large manufacturing firms and used objective performance measures, this research takes a different approach by incorporating subjective performance indicators.

6.1.1 Warehouse management practices and performance of SSGP firms

The first paper determined the effect of warehouse management practices on the performance of SSGP firms. This study formulated hypotheses based on the empirical and theoretical review of the RBV theory and DCT. A quantitative approach, employing a cross-sectional research design, was adopted, focusing on 202 SSGP firms. Data for the independent variables, including material handling, third-party logistics management, storage management, and physical distribution, were collected from primary sources through a survey questionnaire. The quantitative data were analysed using Structural Equation Modelling.

The findings for objective three indicated that material handling practices ($\beta = 0.112$, $p = 0.009$), storage management practices ($\beta = 0.249$, $p < 0.001$), and inventory control practices ($\beta = 0.379$, $p < 0.001$) had a statistically significant positive relationship with performance, hence supporting H1, H2, and H3. These findings suggest that when small-scale processing firms improve their warehouse management practices, they are more likely to perform better. According to the findings, SSGP firms believe that, due to the perishable nature of grapes, maintaining optimal storage conditions is the most critical factor in producing high-quality grape products, particularly wine, to ensure consistent product quality. Thus, effective material handling minimises the risk of delays and disruptions in production. This is further reinforced by efficient, effective

inventory control, which manages inventory levels to ensure business continuity and appropriate reorder levels based on seasonal grape availability. However, there was no evidence of the impact of packaging management practices on the performance of SSGP firms ($\beta=0.072$, $p=0.0550$). Implying that, in SSGP firms, packaging management practices have a limited impact on enhancing performance. Therefore, H4 was not supported.

The findings align with the RBV and DCT, which assert that the positive relationship between material handling practices, storage management practices, and inventory control practices arises from the efficient utilisation of resources and the ability to dynamically adapt and reconfigure internal capabilities to respond effectively to changing market conditions. This, in turn, enhances operational efficiency, optimises resource use, and strengthens the competitive advantage of SSGP firms, ultimately improving performance.

6.1.2 Supplier relationship management practices and performance of SSGP Firms

The second paper investigated the relationship between supplier relationship management and performance and examined the impact of logistics capabilities on this relationship. In this manuscript, the independent variables include buyer-supplier relationships, supplier development, knowledge transfer, and supplier selection. Logistics capabilities, measured by indicators of knowledge, skills, experience, resources, and education, serve as the moderating variable. The dependent variable was performance, measured by growth in sales, market share, profit, and assets. Focusing on this objective was crucial, as SSGP firms need to establish a sustainable relationship with grape farmers. These firms rely heavily on the continuous supply of quality grapes from local farmers to maintain production standards and meet consumer demand. Hypotheses were developed based on Resource Dependence Theory to guide this study. A quantitative approach was applied to analyse data from 202 SSGP firms. The hypotheses were tested using Covariance-Based Structural Equation Modelling.

The study revealed that buyer-supplier relationship management has a statistically significant positive effect on the performance of SSGP firms at the 1% level ($\beta=0.494$, $p < 0.0001$). The findings imply that when buyer-supplier relationship management increases, performance tends to rise, supporting H1. Furthermore, supplier development practice was positively and significantly related to performance, with a 1 per cent effect

($\beta=0.194$, $p<0.0001$). These findings imply that supplier development tends to improve performance, supporting H2. Additionally, supplier selection was positively and significantly correlated with performance at the 1 per cent level ($\beta=0.291$, $p=0.005$). The findings imply that as the effort to select a reliable supplier increases, performance tends to improve, supporting H4. However, the relationship between knowledge transfer and performance was found to be insignificant ($\beta = 0.066$, $p = 0.260$). This result suggests that increased knowledge transfer does not significantly affect performance, which does not support H3.

Furthermore, the moderating effect of logistics capabilities appears to be crucial in this relationship. Specifically, after being moderated by the firm's logistics capabilities, the buyer-supplier relationship management exhibited a positive and significant impact on performance. ($\beta=0.530$, $p < 0.0001$). The findings imply that when firms increase their management of their supplier relationships, performance tends to increase, supporting hypothesis 1. These findings could be attributed to the firm's ability to collaborate, communicate, and build trust with supplier communities. Furthermore, after being moderated by the firm's logistics capabilities, the findings demonstrated a statistically significant relationship between supplier development and performance ($\beta = 0.272$, $p < 0.0001$). The findings indicate that when firms prioritise supplier development, their performance improves, supporting H2. This is because firms with sufficient resources and well-trained, skilled, knowledgeable, and experienced staff are better equipped to manage supplier development initiatives. These initiatives may include training, financial support, and supplier performance evaluations, thereby enhancing product quality, reliability, innovation, and cost-effectiveness. This suggests that a firm's capabilities in supplier development serve as a valuable mechanism for improving overall performance.

Moreover, after being moderated by the firm's logistics capabilities, the findings revealed a significant positive relationship between knowledge transfer and performance ($\beta = 0.188$, $p = 0.013$). The findings suggest that when the firm enhances knowledge transfer to grape suppliers, this increase in knowledge leads to higher performance. One possible reason is that small-scale processing firms with strong logistics capabilities, such as experience, skills, and knowledge in the grapes processing industry and the ability to manage resources, can effectively share their knowledge with their raw material suppliers. Also, upon moderating with logistics capabilities, it was

revealed that there is a statistically significant association between supplier selection and performance ($\beta = 0.374$, $p = 0.008$). The findings imply that performance tends to increase when firms manage supplier selection. Based on these findings, strong logistics capabilities offer a potential way to strengthen the link between supplier selection and firm performance by enabling small-scale firms to identify and set criteria for selecting a supplier who can ensure a steady supply of high-quality raw materials, thereby improving performance.

The findings strongly validate RDT in explaining the link between supplier relationship management and performance in SSGP firms. RDT emphasises that firms rely on external resources to ensure the timely delivery of high-quality raw materials in the required quantities, making effective relationship management essential. Additionally, the study highlights that logistics capabilities act as a moderating factor, enabling firms with stronger logistics competencies to manage supplier relationships more effectively. The results confirm that strategically managing external dependencies and internal capabilities is key to enhancing SSGP firm performance.

6.1.3 Order management practices and performance of SSGP firms

The third paper examined the relationship between order management practices and the performance of SSGP firms and the moderating role of logistics capabilities in this relationship. The study formulated hypotheses based on a literature review and Resource Dependence Theory. A quantitative approach was employed, focusing on 202 SSGP firms. The independent variables included order fulfilment, information flow, and multichannel order management, while firm performance was the dependent variable. Logistics capabilities acted as the moderating variable. Data for the independent, dependent, and moderating variables were collected from primary sources using a survey questionnaire.

The results summary provides empirical evidence that order fulfilment ($\beta=0.579$, $p=0.041$) and information flow management practice ($\beta=0.848$, $p<0.0001$) were significantly positively related to firm performance. Thus, H1 and H2 were supported. In contrast, the study found no evidence of a multichannel order management effect on firm performance ($\beta=0.049$, $p=0.628$). The results suggest that multichannel order management does not enhance performance in SSGP firms. Therefore, H3 was not supported. On the other hand, after being moderated by the firm's logistics capabilities,

the results summary provides empirical evidence that firm performance was significantly associated with order fulfilment ($p=0.038$), information flow ($p<0.0001$), and multichannel order management ($p<0.0001$) among SSGP firms in the study area. Hence, H1, H2, and H3 were supported. The results support the importance of investing in logistics capabilities, which are key to enhancing order management practices and significantly improving performance among SSGP firms.

Implicitly, the findings reinforce the RDT that internal resources and capabilities within SSGP firms are expected to minimise dependency; SSGP firms in the study control uncertainties and lower transaction costs by leveraging internal skills, knowledge, and experience in grape logistics, thereby leading to desired performance outcomes.

6.1.4 Transportation Management Practices and Performance

The fourth manuscript determined the influence of transportation management on the performance of SSGP firms in Dodoma, Tanzania. This study developed hypotheses based on transaction cost theory and the empirical literature. The independent variable encompassed carrier selection management, third-party logistics management, physical distribution management, and load management practice. The dependent variable was performance. Data for this study were collected primarily using a questionnaire. The data were analysed descriptively and using structural equation modelling.

The findings revealed that third-party logistics management practice ($p<0.0001$), physical distribution practice ($p<0.0001$), and load management practice ($p=0.0004$) were statistically significant, affecting performance among small-scale grape processors in the study area. Thus, H2, H3, and H4 were supported. These findings suggest that as a firm's efforts to manage carrier selection, physical distribution, and loads while in transit increase, performance will likely improve. However, in SSGP firms, the carrier selection practice does not significantly impact performance ($\beta = 0.187$, $p = 0.736$). Consequently, H1 was not supported.

The findings of this study are consistent with TCT, which emphasises minimising transaction costs between buyers and sellers. Within the context of an SSGP firm, the study highlights the firm's efforts to control costs associated with transaction frequency and uncertainty. This entails optimising logistical expenses for the movement of goods, including costs for vehicles, fuel, labour, and infrastructure. The findings underscore

these factors as crucial in determining transaction costs, ultimately enabling the firm to achieve its desired performance outcomes.

6.2 Conclusion

6.2.1 Warehouse Management Practices and Performance

The study confirms that effective warehouse management practices, particularly material handling, storage, and inventory control, have a significant positive impact on the performance of SSGP firms. Among these, storage management shows the strongest influence. These findings highlight the strategic importance of optimising warehouse operations to reduce costs and ensure product quality. Therefore, prioritising efficient warehouse practices is essential for improving performance in the small-scale grape processing sector.

6.2.2 Supplier Relationship Management and Performance

The results of this study emphasise that establishing and maintaining strong relationships with suppliers is a key driver of improved performance in SSGP firms. By fostering effective supplier partnerships, firms are more likely to secure high-quality inputs promptly and in cost-effective conditions critical for delivering competitive grape products to the market. The findings also underscore the importance of logistics capabilities, which significantly strengthen the impact of supplier relationship management. A well-developed logistics system enables smoother coordination, faster delivery, and greater responsiveness across the supply chain. Therefore, for SSGP firms aiming to enhance operational efficiency and market performance, simultaneous investment in supplier relationship management and logistics capabilities is essential.

6.2.3 Order Management Practices and Performance

The results demonstrate that effective order management practices, specifically order fulfilment, multichannel coordination, and information flow, significantly enhance the performance of SSGP firms. Strong logistics capabilities further strengthen this relationship, serving as a moderating factor that amplifies the impact of order management on performance. These findings highlight the strategic importance of developing efficient order processing systems to improve responsiveness, streamline operations, and drive business growth. For SSGP firms, investing in logistics capabilities is both supportive and essential, enabling better coordination, resource efficiency, and customer responsiveness. The evidence points to the need for integrated

order and logistics management approaches as a foundation for sustained performance improvement in the sector.

6.2.4 Transportation Management Practices and Performance

The findings confirm that transportation management practices have a significant and positive impact on the performance of SSGP firms. By implementing effective transportation strategies, firms can achieve greater operational efficiency through optimal resource utilisation and cost reduction. Timely and reliable delivery also supports maintaining product quality and competitive pricing, both critical for meeting market expectations. These results emphasise the importance of prioritising transportation management as a strategic function. For SSGP firms aiming to enhance performance, investing in reliable and efficient transportation systems is essential to support business growth and market competitiveness.

6.3 Recommendations

6.3.1 Warehouse Management Practices and Performance

The key issue identified in this study is the inadequate storage and handling of perishable agricultural produce, particularly grapes, which negatively impacts the quality and shelf life of grape-based products produced by SSGP firms in Dodoma City. To address this, firm managers must proactively improve post-harvest practices to reduce spoilage and maintain product quality.

Specifically, SSGP firms should invest in affordable temperature-controlled storage systems to preserve grape freshness. In addition, implementing effective inventory control systems and training staff in best practices for handling and storage are essential to prevent deterioration. Specialised packaging designed to shield grapes from environmental damage should also be adopted to protect product integrity.

Firms should regularly monitor storage conditions, apply clearly defined quality control standards, and conduct routine assessments to ensure consistent quality. These actions, led by firm managers and supported by skilled staff, can significantly reduce spoilage losses and enhance the market competitiveness of grape-based products. Ultimately, this will improve operational performance and sustainability in the small-scale grape processing sector.

6.3.2 Supplier Relationship Management and Performance

The key finding of this study is that effective supplier relationship management significantly enhances the performance of SSGP firms in Tanzania. This underscores the need for firms to establish and maintain collaborative, trust-based relationships with their key suppliers. To achieve this, SSGP firms should dedicate resources toward building long-term partnerships by promoting open communication, aligning objectives, and setting clear supplier selection criteria based on cost, quality, and reliability.

To translate this into actionable steps, SSGP firms must implement structured supplier engagement strategies focusing on continuous collaboration and mutual development. Strengthening logistics capabilities is also critical, as efficient logistics systems support better coordination and information flow, reinforcing supplier relationships and overall performance.

6.3.3 Order Management Practices and Performance

The key issue revealed by the findings is that weaknesses in order fulfilment and information flow management limit the operational efficiency and performance of SSGP firms. Addressing these areas is critical for firms aiming to improve performance.

To resolve this, SSGP firm managers should adopt simple, affordable order management software that can track inventory, process orders, and forecast demand. This will streamline the fulfilment process and enhance responsiveness to market needs. Additionally, firms should invest in digital communication platforms that facilitate real-time information sharing between departments and with customers, enabling greater accuracy and speed in order processing.

It is also essential for managers to provide regular staff training focused on developing skills in order management and information flow management. By equipping employees with the necessary tools and knowledge, firms can reduce errors, increase efficiency, and improve customer engagement. Integrating multichannel order management strategies alongside robust logistics capabilities will further support these improvements by ensuring coordinated operations and effective resource allocation.

In summary, firm managers should lead the implementation of digital tools, staff capacity-building, and logistics integration to enhance both order fulfilment and information flow processes. These actions will collectively strengthen firm performance.

6.3.4 Transportation Management Practices and Performance

The key issue identified in the findings is inefficiency in transportation management, which hampers the timely, quality-preserving delivery of perishable produce by SSGP firms. To address this challenge, firms must prioritise transportation system improvements to safeguard product quality and reduce operational inefficiencies.

Firm managers should adopt advanced logistics solutions such as real-time tracking systems and cold-chain technologies to monitor the movement and condition of products throughout the delivery process. Partnering with third-party logistics providers can enhance efficiency by offering route optimisation and cost-saving opportunities through their specialised expertise. Training staff in proper handling and transport procedures for perishable goods is also necessary to minimise spoilage and align with food safety standards.

Moreover, SSGP firms and industry associations should actively engage with government stakeholders to advocate for supportive logistics policies and infrastructure improvements. These efforts can help streamline regulations, enhance transportation networks, and ultimately improve the firm's ability to compete in the market.

6.4 Policy Implications

For policy implications, the study suggests that the government, through the Small Industries Development Organisation, continue prioritising its policies to enhance warehouse management practices. For instance, Tanzania's SME policy 2002 does not include warehouse management practices of perishable agricultural produce, particularly grapes. Therefore, the Government must invest in warehouse management practices in small-scale firms, as they impact performance.

Also, policymakers have a supportive role to play by creating enabling environments through targeted initiatives. These may include capacity-building programmes, supplier-buyer networking forums, and technical training workshops to foster collaboration and information sharing. Such interventions can help bridge communication gaps, enhance supply chain integration, and support the development of sustainable supplier networks in the small-scale grape processing sector.

Further, the study advocates that the Government, particularly through SIDO, continue to promote awareness of policies designed to enhance the effectiveness of transportation management practices. This can be achieved by combining targeted policies,

programmes, and initiatives supporting SSGP firms' growth and long-term sustainability. For instance, policymakers could utilise the 2002 SMEs Policy to introduce best practices for managing transportation, particularly for perishable agricultural products such as grapes. Therefore, the government should enhance transportation management practices within these small-scale firms, as such practices significantly impact their performance.

6.5 Contribution of the Study

6.5.1 Theoretical Contribution

On the theoretical aspect, the study used four theories, namely Resource Dependency Theory (RDT), Resource-Based View (RBV) Theory, Dynamic Capabilities Theory (DCT), and Transaction Costs Theory (TCT). The study employed the theories to find their applicability in the context of small-scale processing firms. The RDT supports that SSGP firms should strategically manage their external dependencies by cultivating strong buyer-supplier relationships, an essential approach for reducing environmental uncertainty and enhancing resource access. The theory also supports strategic investment in supplier development, which can enhance their capabilities and improve the quality and reliability of their supply inputs. Additionally, careful supplier selection based on mutual goals and strategic alignment can further strengthen these interdependent relationships.

The RBV theory supports the strategic management of key internal resources, particularly in material handling, storage, and inventory control, to enhance operational efficiency, improve the quality of grape-based products, and strengthen the competitiveness of SSGP firms. While RBV explains what resources a firm has, DCT explains how firms deploy, integrate, and reconfigure these resources under conditions of uncertainty. DCT also contributes to warehouse management practices, particularly inventory control and storage management. DCT views inventory control as a static warehouse function and a core dynamic capability in firms dealing with perishable goods like grapes. DCT supports the view that inventory control is a strategic capability that must be adopted to address environmental changes and firm-specific challenges, particularly in the context of seasonal fluctuations, the fermentation process, and product perishability. DCT emphasises that SSGP firms that develop the capability to reconfigure their inventory practices, specifically in adopting cold storage technologies,

demand forecasting tools, or LIFO (Last-In-First-Out) systems, are better positioned to minimise spoilage, reduce holding costs, and meet customer needs efficiently.

Additionally, under the DCT framework, storage management is understood not as a fixed operational process but as a strategic and adaptive capability that enables firms to respond to environmental changes, particularly those associated with perishability, seasonality, and market demand variability. Thus, DCT contributes to storage management by offering a lens through which SSGP firms can proactively align storage infrastructure, processes, and technologies with external market changes and internal growth needs. It underscores the role of storage flexibility and innovation in achieving long-term operational effectiveness and competitive advantage.

Finally, the TCT reinforces the idea that SSGP firms can significantly improve their operational efficiency and overall performance by strategically managing transportation practices, including optimal carrier selection, third-party logistics coordination, and efficient load management. The theory highlights that reducing logistics uncertainties helps minimise costly disruptions and enhance supply chain reliability. This can be achieved through stronger collaboration with logistics providers, enabling firms to leverage specialised expertise and industry knowledge to manage transportation costs more effectively.

6.5.2 Empirical Contribution

First, regarding the general literature on agro-processing firms, this study contributes to narrowing the knowledge gap on logistics management practices and the performance of SSGP firms. The study provides evidence that logistics management practices are essential for the enhanced performance of SSGP firms in Tanzania.

Second, this study extends beyond previous research examining the impact of logistics management on performance by incorporating an analysis of the moderating effect of logistics capabilities on this relationship, specifically in the context of small-scale enterprises. This approach provides deeper insights into how logistics capabilities influence the effectiveness of logistics management practices in enhancing firm performance. The results of this study offer important insights into the role of logistics capabilities in enhancing logistics management practices and improving firm performance in Tanzania. As such, these findings add to the existing empirical literature

by providing further evidence on how logistics capabilities strengthen the effectiveness of logistics management in small-scale enterprises.

Third, while numerous studies have examined logistics management practices in isolation, such as buyer-supplier relationship, supplier selection, supplier development, knowledge transfer, 3PL management, physical distribution, storage management, material handling, carrier selection, information flow, and multichannel order management, this research integrates all these practices to develop a more comprehensive understanding of their collective impact on the performance of SSGP firms. By analysing these logistics functions comprehensively, this study seeks to determine whether their combined implementation yields greater performance improvements for small-scale firms than individual applications.

Fourth, the study's findings are valuable to government authorities, policymakers, regulatory bodies, and agencies responsible for fostering an environment that enhances firm performance. By shedding light on the logistics management practices of SSGP firms, the study identifies key areas requiring greater support. This includes initiatives such as strategic buyer-supplier networking events, workshops, and forums that promote knowledge exchange and collaboration, ultimately improving logistical efficiency and overall performance.

Lastly, previous studies have examined the relationship between logistics management practices and performance primarily using objective measures. In contrast, this study explores the impact of logistics management practices on the performance of SSGP firms by incorporating subjective indicators, including sales growth, profit growth, market share growth, and asset growth. This approach provides a more comprehensive understanding of firm performance by capturing managerial perceptions and contextual factors that may not be reflected in objective metrics.

6.5.3 Methodological Contribution

This study makes significant methodological contributions by adopting a multi-theoretical framework, employing advanced analytical techniques, and providing a comprehensive perspective on logistics management in SSGP firms. The study comprehensively explains how logistics strategies, firm capabilities, and performance outcomes interact by integrating Resource Dependence Theory, the Resource-Based

View, Dynamic Capabilities, and Transaction Cost Theories. This multi-theoretical approach enhances the depth of analysis, allowing for a more integrated interpretation of the factors influencing firm performance.

This study employs a second-generation statistical method, CB-SEM, achieving a significant analytical advancement. This approach enables the examination of multiple complex relationships, enhancing analytical precision by capturing both direct and moderating effects. Among second-generation statistical techniques, CB-SEM is particularly valued for its confirmatory analytical capabilities, which facilitate the thorough evaluation of model fit, minimise estimation errors, and strengthen methodological robustness. Its reliability in model estimation ensures that the findings are statistically sound and theoretically grounded. Consequently, integrating CB-SEM into this study adds methodological value by providing a comprehensive and precise assessment of the relationships under investigation, thereby enhancing the credibility and methodological rigour of the research.

6.6 Limitations of the Study and Area for Further Research

The current study has considerable limitations that are set for future research. First, as a cross-sectional study conducted exclusively in Tanzania, its findings may not be easily generalised to other countries with differing economic, environmental, and regulatory conditions. Future research could address this gap by undertaking comparative studies across countries, enabling a broader understanding of the challenges and success factors influencing SSGP firms in diverse settings.

The second limitation of this study is its focus on logistics management practices and moderating variables. The study analysed four key logistics practices: supplier relationship management, order management, warehousing, and transportation, offering detailed insights into their impact on performance. While additional logistics practices, such as reverse logistics, supply chain integration, and demand forecasting, were beyond this study's scope, future research could explore these dimensions to provide a more comprehensive perspective. Additionally, this study considered logistics capabilities as a moderating factor but did not include external influences such as political, technological, legal, and economic conditions. Future studies could integrate these external factors to provide a more comprehensive understanding of their role in the performance of small-scale processing firms.

Lastly, this study relies on primary quantitative analysis methods. While these methods provide measurable, generalizable findings, they may not fully capture the contextual and experiential insights that qualitative research can offer. Future research could enhance these findings by adopting a mixed-methods approach, integrating qualitative techniques such as in-depth interviews, case studies, and focus group discussions. This approach would provide a deeper understanding of small-scale processors' challenges and decision-making processes, complementing the statistical insights from quantitative analysis.

APPENDICES

Appendix I: Data Collection Tools

I am **Debora Chelestino Kisinga**, a PhD candidate at Moshi Co-operative University in Moshi, Kilimanjaro, Tanzania. As a requirement for the PhD award, I am currently undertaking research on logistics management practices and the performance of small-scale grape processing firms in Dodoma, Tanzania. I kindly request that you provide vital information on the crucial problems under investigation, based on the firm's performance in terms of profitability growth, Market share growth, sales growth, and asset growth.

I am humbly requesting your responses to the given questions. I assure you that confidentiality will be maintained throughout the study and that your honest answers to questions will be essential to the study's results.

Yours sincerely,

Debora C. Kisinga

PhD Candidate, Moshi Co-Operative University

PO Box 474 Moshi

Phone Number: 0715115556/0767115556

Email: deborakisinga@gmail.com

PART I: PRELIMINARY INFORMATION

S/No.	Item	Details / Responses
1	Questionnaire Number	
2	Gender	1=Male 2=Female
3	Name of the Owner	
4	Age of the owner	
5	Business Name	
6	Years in business	
7	Firm's location	
8	Respondent's Contact (optional)	
9	Number of employees	
10	Number of technical employees	
11	The education level of the owner	
12	What position do you hold in your organisation?	
13	Which among the following activities is your processing firm engaged in?	1=Grape juice making () 2=Winemaking () 3=Both () 4=Other(specify).....

PART TWO: LOGISTICS MANAGEMENT PRACTICES IN THE FIRM

A: SUPPLIER RELATIONSHIP MANAGEMENT PRACTICES

A1: Buyer-grape Supplier relationship management

The following statements concern buyer-supplier relationship management practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Buyer-grape farmers relationship management	1	2	3	4	5
BSR1	We have face-to-face communication with key grape farmers.					
BSR2	We consider reliability as a cornerstone of our relationship.					
BSR3	Our firm has common goals with our suppliers, such as reducing costs, improving product quality, and expanding market reach.					
BSR4	We collaborate with a supplier who is committed to producing quality grapes.					
BSR5	Our firm clearly understands the financial aspects of the relationship with our supplier, including pricing structures, discounts, and any additional charges.					
BSR6	Our firm has clearly defined quality standards and performance metrics to enable suppliers to meet our firm's requirements.					

A2: Knowledge transfer practices

The following statements concern knowledge transfer practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Knowledge transfer practices	1	2	3	4	5
KTP1	Our firm has a culture of sharing knowledge with suppliers.					
KTP2	We have a culture of encouraging our employees to learn whenever opportunities arise.					
KTP3	We build capacity for our suppliers through training courses, workshops, mentoring, and coaching.					
KTP4	Our employees can share and apply skills and knowledge to improve productivity, quality, or innovation.					
KTP5	Our firm has a culture of knowledge management that involves storing, organising, and sharing knowledge.					
KTP6	Our firm is willing to share knowledge with our suppliers.					

A3: Supplier Selection Practices

The following statements concern supplier selection practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Supplier selection (Grape farmers' selection) Practices	1	2	3	4	5
SSP1	We select a supplier who strategically fits our predetermined product-based criteria.					
SSP2	We select a grape farmer who is honest, ready to communicate, and willing to share confidential information.					
SSP3	The quality of grapes is the major criterion for selecting our grape farmer.					
SSP4	We select our grape farmers based on the flexibility of contract terms and conditions.					
SSP5	We select our grape farmers based on financial stability and staying power in this business.					
SSP6	We select grape farmers based on technical expertise in this field.					

A5: Supplier Development Practices

The following statements concern Supplier development practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Supplier Development Practices	1	2	3	4	5
SDP1	We support our grape farmers in improving their capabilities.					
SDP2	We develop our grape farmers to improve the reliability and quality of our products.					
SDP3	We enhance our grape farmers through direct involvement (Collaboration)					
SDP4	We provide feedback about performance evaluation to our grape farmers.					
SDP5	The allocated personnel in managing grape farmers enhance the grape farmers' know-how.					
SDP6	We identify, measure, and improve our grape farmers' performance by tracking customer satisfaction, production outcomes, and business results.					

B: ORDER MANAGEMENT PRACTICES

B1: Order Fulfilment Management

The following statements concern order processing management. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Order fulfilment management	1	2	3	4	5
OFM1	Our firms ensure there are efficient order processing measures					
OFM2	We are able to fulfil on-time orders that meet customer expectations.					
OFM3	Delays in order delivery are rare within our operations.					
OFM4	We can process orders quickly, minimising customer wait times.					
OFM5	We rarely face situations where orders are only partially filled due to stock shortages.					
OFM6	Our customers rarely return orders due to fulfilment errors.					

B2: Multi-channel Order Management

The following statements concern multi-channel order processing. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Multi-channel Order Management	1	2	3	4	5
MOM1	Our customers receive a consistent experience across all our sales channels.					
MOM2	Our sales channels (e.g., online, offline, third-party platforms) are well-integrated and synchronised.					
MOM3	Our communication across channels is effective for managing orders and customer inquiries.					
MOM4	We can respond quickly to orders placed through any sales channel.					
MOM5	We maintain consistent fulfilment quality across all order channels.					

B3: Information Flow Management

The following statements concern information-sharing management. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Information Flow Management	1	2	3	4	5
IFM1	The information shared between our firm, grape farmers, and customers is consistently accurate.					
IFM2	Our firm is effective in providing timely information to facilitate real-time order management.					
IFM3	Our firm provides accessible information systems to support order-processing activities.					
IFM4	Our systems are well connected, enabling smooth data sharing and order management.					
IFM5	Communication with our suppliers and customers is consistent and reliable.					
IFM6	We provide customers with real-time access to their order status.					

C: WAREHOUSE MANAGEMENT PRACTICES

C1: Material Handling Practices

The following are the statements concerning Material Handling Practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Material Handling Practice	1	2	3	4	5
MHP1	The firm considers minimising the cost of operation during material handling.					
MHP2	Through material handling, our firm can optimise space utilisation.					
MHP3	Material handling enhances our firm's ability to optimise workflow.					
MHP4	Material handling enhances a firm's ability to reduce product damage.					
MHP5	Material handling has improved efficiency and productivity at our firm.					
MHP6	Material handling enhances the improvement of product quality and minimises contamination.					

C2: Storage Management Practices

The following statements concern storage practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Storage Management Practices	1	2	3	4	5
STP1	We have the required storage capacity to store our product.					
STP2	Our conducive environment allows grape products to be stored until they are suitable for sale.					
STP3	We make available a balanced flow of raw materials necessary to meet operational requirements.					
STP4	We conduct storage and reservations of grape products.					
STP5	Our store is under the control of a technically qualified Store Officer.					
STP6	Our storage location minimises the double handling of materials and finished goods.					

C3: Packaging Management Practices

The following statements concern packaging practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Packaging Management Practices	1	2	3	4	5
PMP1	We pack our grape products to protect them against any possible hazards.					
PMP2	Packaging facilitates the efficient handling of our outputs.					
PMP3	Packaging enhances identification, labelling, and the preservation of goods in usable condition.					
PMP4	We carefully select packaging materials to ensure the quality of our product, the cost of packing materials and the cost of measuring, weighing, and parcelling.					
PMP5	Packaging serves as a background for advertising and as the necessary space for the processor and customers to identify these products by trade name or brand name.					
PMP6	Before selecting packaging, we consider safety precautions such as fire hazards and climate conditions, as some materials are flammable.					

C4: Inventory Control Practices (ICP)

The following statements concern Inventory Control Practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

CODE	Inventory Management Practices	1	2	3	4	5
ICP1	Our firm has optimal stock levels based on its capacity.					
ICP2	We manage work-in-progress inventories to avoid contamination and spoilage.					
ICP3	We manage packed inventory (wine) to ensure the proper quantity is packed in prepared containers/bottles.					
ICP4	We have a proper material control system in our firm.					

D: TRANSPORTATION MANAGEMENT PRACTICES

D1: Carrier Selection Management Practice

The following statements concern carrier management practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

Code	Carrier selection management practice	1	2	3	4	5
CSP1	Our firm considers the transportation cost when selecting a particular mode of transport.					
CSP2	Our firm considers transit time to be a factor in selecting our carrier.					
CSP3	The performance of a transport carrier is considered when choosing a carrier mode.					
CSP4	We consider frequency and flexibility to be necessary criteria for selecting our carrier.					
CSP5	Our firm considers a carrier's ability to provide transparent and efficient communication crucial.					
CSP6	Our firm considers contractual partnerships with our carrier to mitigate seasonality and ensure consistency of consignment, as prices can be affected by many factors.					
CSP7	We transport grapes from the farm to the processing area at the specified time (e.g., morning and evening)					

D2: Third Party Logistics (3PL) Management Practices

The following statements concern the use of 3PL management practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

Code	Third-Party Logistics Management Practices	1	2	3	4	5
TPL1	Third-party logistics services have improved our firm's operational efficiency and reduced overall costs.					
TPL2	Third-party logistics partnerships have enabled our firm to expand into new markets and share supply chain risks.					
TPL3	The use of third-party logistics providers has improved our firm's performance.					
TPL4	Outsourcing logistics to third-party providers enables our firm to focus more effectively on core product development and marketing functions.					
TPL5	Using third-party logistics providers has helped our firm reduce transportation-related losses and product damage.					

D3: Physical Distribution Management Practice

The following statements concern physical distribution management practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

Code	Physical Distribution Management Practice	1	2	3	4	5
PDP1	We work with each customer to develop an acceptable delivery schedule.					
PDP2	Orders submitted to us are delivered on time, as defined by the customers.					
PDP3	We respond to our customers' order inquiries with accurate information.					
PDP4	We manage our transport arrangements while delivering grape products to our customers.					
PDP5	The firm incurs the minimum cost to transport products to customers at the desired location and at the right time.					
PDP6	Transport management arrangements ensure products are available at the customers' desired location.					

D4: Load Management Practices

The following statements concern load planning and optimisation management practices. Please indicate your level of agreement with the statement. Whereas 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree.

Code	Load Management Practices	1	2	3	4	5
LMP1	Our organisation ensures that deliveries are consolidated.					
LMP2	Our organisation ensures that cargo is placed on the appropriate dunnage, such as pallets and crates, for easy loading.					
LMP3	Goods transported by my organisation are properly packaged before being transported.					
LMP4	We arrange grape products in vehicles to optimise distribution.					
LMP5	We select a carrier based on the actual consignment and capacity.					

PART THREE: FIRM'S LOGISTICS CAPABILITIES

The following statement shows how the effectiveness of your firm's logistics capabilities affects performance. Use a **Likert scale of 1 = no extent; 2 = small extent; 3 = medium extent; 4 = large extent; 5 = very large extent.**

CODE	Firms Logistics capabilities	1	2	3	4	5
FLC1	Knowledge Comprehensive understanding and expertise required to manage logistics processes effectively, optimising supply chain efficiency and supporting operational resilience					
FLC2	Skilled labour The ability to have highly skilled professionals in the field of grape and grape processing activities					
FLC3	Experience The ability of the firm owner to have the required logistics management experience in the processing industry					
FLC4	Education level Formal educational background and training of employees or management in areas relevant to business education, logistics, supply chain management, and business operations.					
FLC 5	Resources The ability to own assets such as machines, processing and storage facilities, handling and storage equipment, tools, and vehicles					

PART FOUR: PERFORMANCE OF SMALL-SCALE GRAPES PROCESSING FIRMS

Please indicate the extent to which your firm has realised improved performance over the last 3 years, from 2020 to 2022. Write your response in the appropriate answer box.

1 = Not at all, 2 =Small Extent, 3 = Moderate Extent 4 = Great Extent, 5 = Very great extent

CODE	Firm's Performance	1	2	3	4	5
FBP1	Your firm's growth in market share					
FBP2	Your firm's growth in sales					
FBP3	Your firm's growth in profit					
FBP4	Your firm's growth in assets					

Source: Modified from Mwangangi (2016)

Appendix II: List of Ethical and Data Collection Approvals



UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MOSHI CO-OPERATIVE UNIVERSITY (MoCU)
CHUO KIKUU CHA USHIRIKA MOSHI



OFFICE OF THE VICE CHANCELLOR
 06 Sokoine Road, 25121 Mfumuni,
 P. O. Box 474, Moshi, Tanzania, Tel: +255 272751833,
 Email: vc@mocu.ac.tz, Website: www.mocu.ac.tz

Unapojibu tafadhali taja:
Kumb. Na. MoCU/UGS/3/41

Tarehe: 24 Februari, 2023

Katibu Tawala,
 Ofisi ya Mkuu wa Mkoa,
 S. L. P. 914,
DODOMA – TANZANIA.

YAH: KIBALI CHA KUFANYA UTAFITI KWA WANAFUNZI WA CHUO KIKUU CHA USHIRIKA MOSHI (MoCU)

Tafadhali husika na kichwa cha habari hapo juu.

Madhumuni ya barua hii ni kumtambulisha kwako **Ndugu Debora Chelestino Kisinga** mwanafunzi wa Chuo Kikuu cha Ushirika Moshi ambaye kwa sasa anatarajia kufanya utafiti katika eneo lako.

Maombi haya yamezingatia Waraka wa Serikali wenye Kumb. Na. MPEC/R/10/1 wa tarehe 7 Julai, 1980 pamoja na Hati Idhini ya Chuo Kikuu Cha Ushirika Moshi (MoCU). Moja ya majukumu ya Chuo ni kufanya tafiti na kutumia matokeo ya tafiti hizo katika kufundishia. Aidha, wanafunzi hufanya tafiti kama sehemu ya masomo yao wakiwa Chuoni.

Ili kufanikisha utekelezaji wa tafiti hizo, Makamu Mkuu wa Chuo hutoa vibali vya kufanya tafiti nchini kwa wanataaluma na wanafunzi kwa niaba ya Serikali na Tume ya Sayansi na Teknolojia.

Hivyo basi, tunakuomba umpatie mwanafunzi aliyetajwa hapo juu msaada atakaouhitaji ili kufanikisha utafiti wake. Gharama za utafiti atalipia mwenyewe. Msaada anaouhitaji ni kuruhusiwa kuonana na viongozi na wananchi ili aweze kuzungumza nao kuhusiana na utafiti wake. Aidha, endapo kuna maeneo yanayozuliwa kufanyika kwa shughuli hii, tafadhali mjulishe hivyo.

Mada ya utafiti wa mwanafunzi aliyetajwa hapo juu ni: **“Logistics Management Practices and Business Performance of Small-Scale Graps Processing Firms in Dodoma Region, Tanzania”**

General: Moshi Co-operative University, 06 Sokoine Road, 25121 Mfumuni, P. O. Box 474, Moshi, Tanzania,
 Tel: +255 272751833 Email: info@mocu.ac.tz, Website: www.mocu.ac.tz



JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA
HALMASHAURI YA JIJI LA DODOMA



Unapojibu tafadhali taja:

Kumb. Na. HJD/F.10/5/225

21 Machi, 2023

Kwa yeyote anayehusika.,
 Halmashauri ya Jiji,
 S.L.P 1249,
DODOMA.

YAH: KIBALI CHA UTAFITI/KUKUSANYA TAARIFA

Husika na somo tajwa hapo juu.

2. Namtambulisha kwako **Ndg. DEBORA C. KISINGA** kuja kufanya utafiti katika Halmashauri ya Jiji la Dodoma. Utafiti huo unahusu **“LOGISTICS MANAGEMENT PRACTICES AND BUSINESS PERFORMANCE OF SMALL - SCALE GRAPES PROCESSING FIRMS IN DODOMA REGION, TANZANIA”** Utafiti huo utafanyika kwa muda wa mwaka mmoja kuanzia **24 Februari, 2023** hadi **23 Februari, 2024**.

3. Kwa barua hii, naomba apokelewe na kupatiwa ushirikiano ili aweze kufanikisha utafiti wake kama ilivyoelezwa hapo juu.

Ahsante.

Kny: MKURUGENZI WA JIJI
 HALMASHAURI YA JIJI LA DODOMA
 S.L.P. 1249,
 DODOMA

Yusuph Pille

Kny: MKURUGENZI WA JIJI
DODOMA