

# 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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## 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



## 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. Changanima *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 (Lwelmira, 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; Zulkiffia 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. Changalima *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,

	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  $\chi^2/df$  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	$\chi^2/df$	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)
	SRMR	0.062	<0.08	Excellent	Edeh <i>et al.</i> (2023)
Incremental fit indices	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

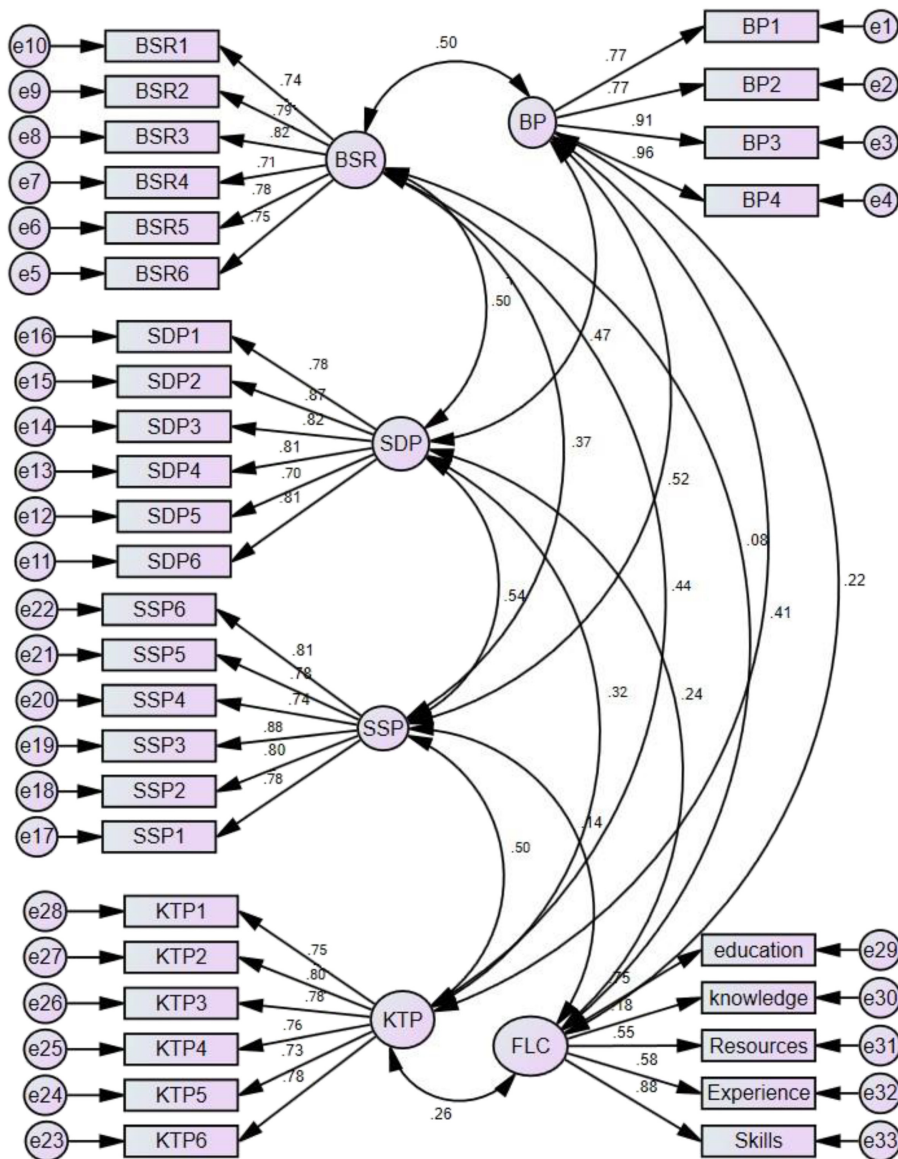
For discriminant validity, low correlations were observed among the constructs, ranging from 0.14 to 0.54 (Figure 1). These findings demonstrate that the fit statistics of the proposed CFA model outperformed the alternative models, indicating that the proposed CFA model, as illustrated in Figure 1 for 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



Source(s): Data

**Figure 1.** The standardised estimates of the proposed CFA model for the influence of SRM on business performance moderated by the firm's logistic capabilities

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.

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

**Table 4.**  
Respondents'  
characteristics

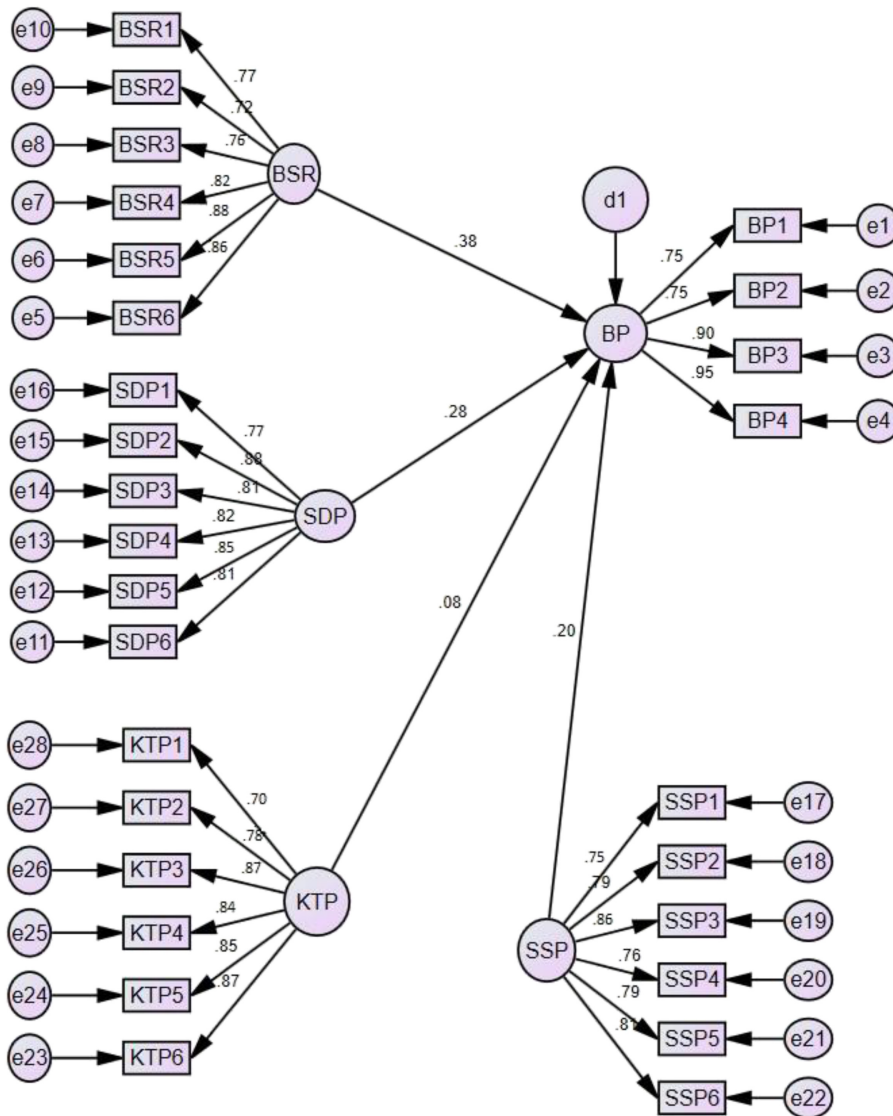
**Source(s):** Author's own creation

#### 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.



**Figure 2.** Structural model for study variables

Source(s): Data

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

**Table 5.** Parameter estimates of the structural model for the influence of SRM on business performance

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.

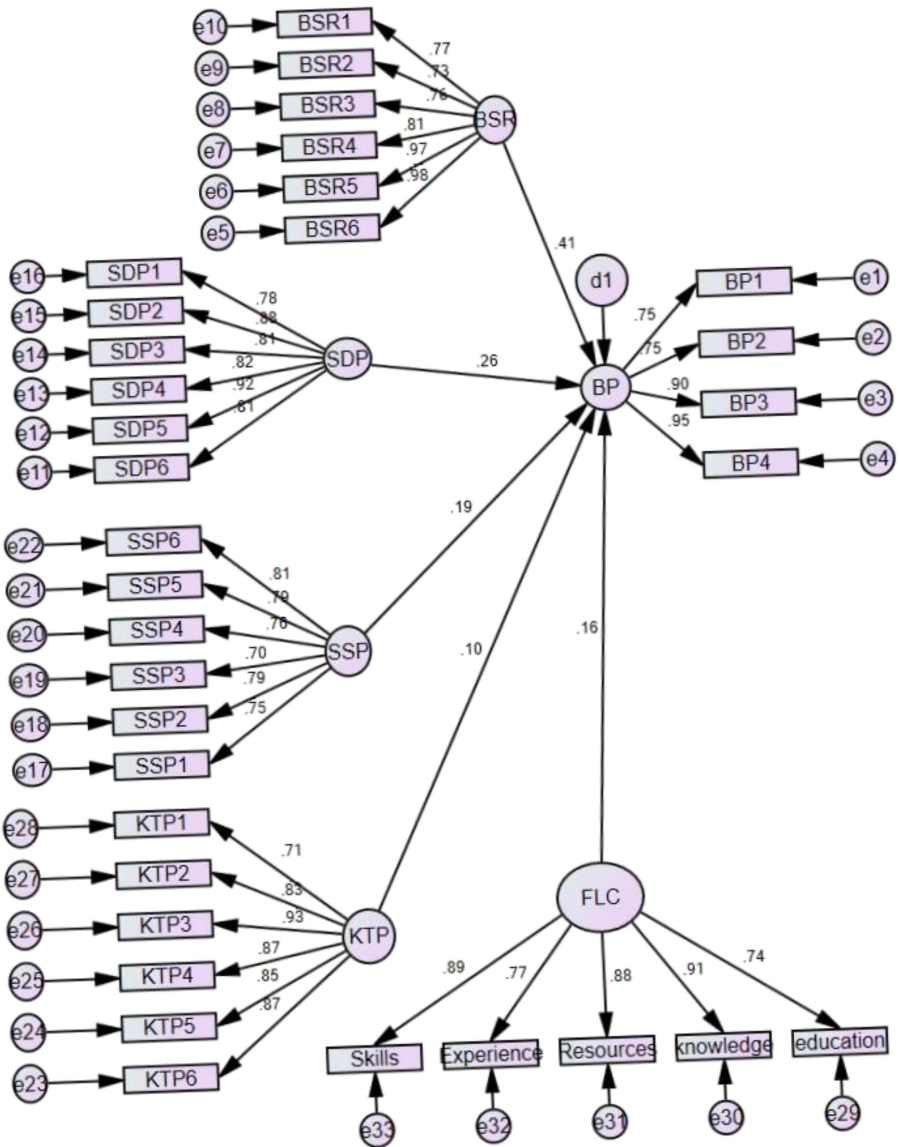
*4.2.2 The moderating effect of logistics capabilities on the link between supplier relationship management practices and business performance.* The firm's logistic capabilities were adjusted to moderate the influence of supplier relationship management on business performance (Figure 3 indicates).

*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





**Figure 3.**  
Structural model for  
study variables

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

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

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

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.

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