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The Role of Supply Chain Management Practices Towards Knowledge Acquisition and Business Performance Among SMEs

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Abstract: As competition intensified within the 4 IR era, along with the recent aftermath of the COVID-19 pandemic, managing supply chains became increasingly complex, thereby escalating the challenges faced by SMEs in acquiring the relevant knowledge necessary for enhancing their competitive advantage. This situation has prompted researchers and practitioners alike to shift their attention from short-term transactional supply chain management practices to adopting knowledge acquisition strategies that improve organisational competitive advantage. A review of the existing literature revealed that limited research on this subject has been conducted within SMEs, thereby warranting a study of this nature. The objective of this study is to examine the role of supply chain management practices in knowledge acquisition, as well as the impact of knowledge acquisition on the business performance of South African SMEs. A non-probability convenience sampling technique was adopted, and data were gathered using a cross-sectional survey with self-administered structured questionnaires among SME owners and managers (n=250) in Gauteng province. The results revealed that four out of the five predictors (with the exception of information sharing) showed significant predictive relationships towards knowledge acquisition in SMEs. Moreover, knowledge acquisition also demonstrated a significant relationship with business performance. These findings have implications for policymakers and researchers in the field of supply chain management, as they highlight the need for SMEs to adopt effective supply chain management practices to strengthen their knowledge acquisition capacity and subsequently improve their business performance.

Keywords: Knowledge acquisition, business performance, supply chain management, small enterprise, medium enterprise, knowledge-based view.

1. Introduction

Globally, small and medium-sized enterprises (SMEs) account for over 90% of all registered businesses, a figure that would be even higher if informal businesses were included (OECD, 2022). SMEs are widely acknowledged for their potential to stimulate economic activity, alleviate poverty, and promote innovation, contributing significantly to industrial output and job creation. They are regarded as critical to long-term economic sustainability (World Bank, 2023) and have emerged as key drivers of economic development in numerous developing countries, including South Africa (Fatoki, 2020).

Since the advent of democracy in 1994, South Africa has pursued goals of economic growth through enhanced competitiveness, job creation, and wealth redistribution to foster inclusive development. However, the country has faced the dual challenge of reintegrating into the global economy while fulfilling the high socioeconomic expectations of its citizens (Mthabela & Van der Poll, 2021). Within

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this complex environment, SMEs are pivotal yet encounter significant operational and structural challenges that hinder their growth and scalability (Herrington et al., 2022; Buthelezi et al., 2021). A critical factor exacerbating these challenges is the inefficiency in managing supply chain operations, often stemming from limited knowledge acquisition and poor supply chain performance (Hosseini et al., 2024; Moktadir et al., 2023; Raj et al., 2022). This deficiency in knowledge acquisition impedes SMEs' ability to leverage their supply chains effectively, resulting in suboptimal business performance and diminished competitive advantage.

This situation has prompted researchers and practitioners to pivot their focus from short-term transactional supply chain management practices (SCMPs) to exploring how these practices can facilitate knowledge acquisition, thereby enhancing an organisation's competitive edge (Gunasekaran et al., 2021). As SCMPs evolve, SMEs are becoming more integrated, necessitating the acquisition of additional knowledge for the successful implementation of strategic goals and objectives (Zhou & Benton, 2007).

However, an existing literature review reveals a significant gap concerning this dynamic within the specific context of South African SMEs, particularly in Gauteng province (Madzimure 2018; Omoruyi 2018; Omoruyi & Akuoma 2020; Mudara 2021; Willie & Zuva 2021; Magodi, Daniyan and Mpofu 2022). This gap is critical for three reasons. Firstly, Gauteng serves as South Africa's economic centre, accounting for more than a third of the country's GDP and featuring the continent's most intricate supply chains, which creates a challenging environment for its SMEs. Secondly, the province boasts a highly varied SME sector, encompassing formal manufacturing, tech startups, and an extensive informal trade sector. However, research often simplifies "SMEs," overlooking these complex realities (InvestSA 2025). Lastly, previous studies have regarded supply chain management practices (SCMP) and knowledge management as distinct areas, ignoring the mediating function of knowledge acquisition (Mhlongo & Daya, 2023; Makanda & Ngalawa, 2025). This vital process, through which SCMPs enhance performance, remains empirically untested within this population.

The present study is therefore designed to fill this gap by providing empirical evidence on the role of specific SCMPs in knowledge acquisition and business performance within Gauteng's unique and critical SME sector. Against this background, this study examines the influence of selected supply chain management practices, including supplier relationship management, customer relationship management, information sharing, information quality, and supply chain collaboration, on knowledge acquisition and, subsequently, the influence of knowledge acquisition on the supply chain performance of SMEs in Gauteng province.

The remainder of this paper is structured as follows: Section 2 presents the literature review and hypothesis development. Section 3 outlines the research methodology. Section 4 details the results, and Section 5 provides a discussion of the findings. Finally, Section 6 concludes the study with a summary and recommendations.

1.1 Problem statement

SMEs in South Africa operate in an environment characterised by intense competition and rapid technological change. Given their constant battle for competitive advantage, multiple research initiatives have emerged to understand the factors hindering their competitiveness and the strategies for overcoming these challenges (Raj et al., 2022). The proliferation of advanced technologies and the globalisation of markets since the 1990s have fundamentally reshaped traditional supply chain models, making the effective integration of knowledge more demanding yet more critical for success than ever before (Moktadir et al., 2023; Gunasekaran et al., 2021; Hosseini et al., 2024).

For SMEs, this evolving landscape presents a significant challenge. As competition has intensified and markets have become global, managing supply chains has also become more complex. This complexity intensifies the challenges SMEs face in acquiring the relevant knowledge necessary to aid

business performance and secure improvement (Li & Lin, 2006). While some SMEs have recognised the importance of implementing supply chain management, they often lack the knowledge of what constitutes a comprehensive set of Supply Chain Management Practices (SCMPs), hindering effective implementation (Sundram, Chandran & Bhatti, 2016). This knowledge gap is critical, as SCMPs are essential for building sustained differential advantages and, consequently, superior organisational performance (Wang, Po Lo, Chi & Yang, 2004). Consequently, a pressing research gap exists in understanding the mechanisms through which SCMPs facilitate knowledge acquisition in this vulnerable sector. The core problem, therefore, revolves around the extent to which SMEs can acquire knowledge within their supply chains and how specific supply chain practices influence this knowledge acquisition and, in turn, business performance.

Internationally, the concept of supply chain practices has been extensively researched (Shukla et al., Garg & Agarwal, 2011; Qrunfleh & Tarafdar, 2013; Sundram et al., 2016). However, within the South African context, and specifically for SMEs in the Gauteng province, there is a scarcity of empirical studies that have tested the integrated conceptual framework proposed in this study. None have simultaneously investigated the roles of supplier relationship management, customer relationship management, information sharing, information quality, and supply chain collaboration on knowledge acquisition and its subsequent impact on SME performance. Therefore, this study is motivated by the need to address this gap. It specifically examines the unique challenges and opportunities faced by SMEs in the Gauteng province and aims to contribute to a deeper understanding of how their specific knowledge acquisition strategies, driven by SCMPs, impact business performance.

2. Literature Review and Hypothesis Development

This section provides an overview of the underlying theory as well as hypothesis development arising from the literature review on the study constructs

2.1 Underlying theory

The theoretical background informing this study draws from the knowledge-based view (KBV) of the organisation, which is an extension of the resource-based view (RBV). The main assumption of the theory centres on the notion that an organisation is an association for generating and applying diverse types of knowledge (Saarenketo et al., 2009). The KBV regards knowledge as the most strategically significant resource of the organisation, as it is typically the most complicated to imitate and requires integration across a broad base of capabilities (Liao et al., 2009). The proliferation of this theory was further based on the idea that the firm is considered an administrative structure and a collection of productive resources. This theory is also used to explain variations in performance within an industry (Hoopes et al., 2003). According to the KBV, earlier literature confirms that variations in performance occur when successful firms possess valuable resources that others do not.

The study is theoretically grounded in the knowledge-based view (KBV) of the firm, which evolved from the resource-based view (RBV). The primary assumption of this theory is that the organisation primarily functions as an association for creating and leveraging diverse types of knowledge (Grant, 2021; Al-Kurdi et al., 2022). Building on the RBV, the KBV (Pereira & Bamel, 2021) asserts that a firm's capacity for sustainable competitive advantage is contingent upon its ability to access, integrate, and leverage the specialised knowledge dispersed among its organisational members. The RBV emphasises that an organisation's sustained competitive advantage is rooted in its possession of valuable and unique resources and capabilities, which encompass both tangible and intangible assets (Rianawati et al., 2024). For SMEs, the KBV indicates that distinctive knowledge and the effectiveness with which it is disseminated and utilised are the most essential resources for competing against larger, resource-abundant rivals. The choice of KBV is crucial as it provides a theoretical framework for understanding how the SCMPs examined in this study, such as collaboration and information

sharing, serve as essential pathways for KWNA. This connection is vital, as it transforms SCMPs from simple operational efficiencies into strategic activities that foster knowledge creation, ultimately enhancing competitive performance.

2.2 Supply chain management practices

Supply chain management practices (SCMPs), as defined by Shukla et al. (2011), are a set of activities undertaken in an organisation to promote effective management of its supply chain. These practices are regarded as operational functions or activities of an organisation, which determine the effectiveness and efficiency of its supply chain (Sundram et al., 2016). It is important to note that the concept of SCMPs among organisations has been extensively researched internationally (Shukla et al., 2011; Qrunfleh & Tarafdar, 2013; Sundram et al., 2016). In this study, factors that determine SCMPs among SMEs have been identified as supplier relationships, customer relationships, information sharing, information quality, and supply chain collaboration, all of which contribute to a strong SME sector (Ayyagari et al., 2014). This necessitates a critical analysis to gain comprehensive insight into the identified SCMPs' impact on knowledge acquisition and supply chain performance within the SME context.

Supply chain management practices (SCMP) are critical, multi-dimensional activities essential for successful SCM implementation. These practices cover all aspects of the supply chain process and generally encompass integration, information sharing, strategic supplier partnerships, customer relationships, outsourcing, postponement, and lean practices (Aslam et al., 2021). In this study, based on established linkages to knowledge exchange in the existing literature, the SCMP framework comprises five critical factors: supplier relationship management, customer relationship management, information sharing, information quality, and supply chain collaboration. These five dimensions, discussed below, are vital contributors to a strong SME sector. Due to their limited resources, SMEs need accurate and timely information, such as demand forecasts and inventory levels from their partners. This helps them mitigate the "bullwhip effect" and manage operational risks (Ayyagari et al., 2014; Nurzhanova & Kosherbayeva, 2025). This necessitates a critical analysis to gain comprehensive insight into the impact of the identified SCMPs on knowledge acquisition and supply chain performance within the SME context (Mofokeng, 2025; Mthiyane et al., 2025).

2.2.1 Supplier relationship management

One of the foundational pillars of SCMP is Supplier Relationship Management (SRM), which focuses on fostering long-term collaborations with upstream partners (Chen & Tsai, 2023; Chileshe & Phiri, 2022). SRM is essential for effectively managing the flow of materials, information, and risks from suppliers to the organisation. Therefore, successfully implementing SRM is crucial for achieving the overall objectives of SCMP, such as operational efficiency and gaining a competitive advantage (Tagiyev, 2021; Emon et al., 2024). The assertion that SRM immensely contributes to SMEs is supported by many researchers, scholars, and academics alike (Singh & Kumar, 2020; Nasrallah & Khoury, 2022). SRM is a strategic approach to maximising value and minimising risks by managing interactions with suppliers of products and services (Echtelt et al., 2008). Furthermore, SRM aims to establish collaborative and robust partnerships with suppliers, which have the potential to yield advantageous results for all parties involved (Lambert & Schwieterman, 2012; Glory, 2023). Consequently, SRM helps suppliers gain a better understanding of the strengths, challenges, and opportunities for improvement in shared operations, leading to enhanced operational performance and the successful completion of projects (Ha & Lo, 2018; Emon et al., 2024). The key to SRM lies in sharing continuous, reliable, and accurate information with strategic suppliers(Tseng, 2014; Mthiyane & Chinomona, 2025).

In view of the preceding discussion, the following hypothesis is proposed:

- H1 Supplier relationship management has a significantly positive influence on knowledge acquisition

2.2.2 Customer relationship management

Despite its varying definitions, previous literature confirms that customer relationship management (CSRM) focuses on creating, managing, and expanding the relationships between a firm and its customers (Hyun & Perdue, 2017; Das & Hassan, 2022). CSRM can make a positive contribution to SMEs by using technology to ensure that customers have up-to-date information on SME operations (Newby et al., 2014). According to Krolikowski and Yuan (2017) and Cavaliere et al. (2021), relationships with customers have always been crucial for organisations in the competitive business world. This is because strong relationships with customers enable suppliers to achieve improved inventory management and greater operational efficiency, due to the knowledge shared and acquired in such relationships. It is therefore hypothesised that:

- H2 Customer relationship management has a significantly positive influence on knowledge acquisition

2.2.3 Information sharing

Information sharing (INS) is defined as the degree to which each party reveals information that may assist the other party's activities, helping partners to understand each other's businesses and maintain a long-term partnership. It is also a multi-dimensional capability in supply chains, traditionally recognised as comprising both information content and information technology (Fu et al., 2017; Huo, Haq, & Gu, 2021). INS entails the ability to synchronously share real-time information with suppliers and customers (Meacham et al., 2013) and is critical for improving supply chain performance (Yu et al., 2010; Kembro & Selviaridis, 2015; Kwamega et al., 2022). It is regarded as a vital competency for significantly enhancing overall supply chain performance (Mukhsin & Suryanto, 2022). Sharing reliable and continuous information is a crucial element that can foster integration with suppliers (Emon et al., 2024), allowing SMEs to leverage key performance metrics (KPMs) to significantly drive operational performance (Ha & Lo, 2018; Chen & Tsai, 2023). This integrated approach helps SMEs mitigate risks and gain a sustainable competitive edge. It is against this background that the following hypothesis is posited for the study:

- H3 Information sharing has a significantly positive influence on knowledge acquisition.

2.2.4 Information quality

Information quality (INQ) has become a critical concern for organisations and an active area of management information systems research (Lee et al., 2022). It encompasses various dimensions related to the accuracy, completeness, and credibility of data, as well as its contextual relevance, timeliness, and user accessibility. These dimensions ensure the data's suitability for use, particularly concerning its accuracy, timeliness, completeness, and credibility. Together, these factors facilitate effective and efficient decision-making (Wang & Strong, 2021). Notable literature on INQ directed at SMEs in South Africa is rare, as noted by Govuzela and Mafini (2019). The existence of this gap in the literature acts as a catalyst for investigating how INQ can be harnessed to improve supply chain performance in Gauteng. In this regard, the following hypothesis is formulated for the study:

- H4 Information quality has a significantly positive influence on knowledge acquisition

2.2.5 Supply chain collaboration

Supply chain collaboration (SPCC) is characterised as the cooperative engagement of two or more organisations aimed at synchronising supply chain operations and establishing unique value-added processes to better address customer needs. This collaboration is perceived as a coordinated effort

that encompasses the open exchange of real-time information, collaborative planning, resource allocation, and shared accountability to optimise operations, enhance resilience, and generate mutual value (Hofer et al., 2014; Coupa, 2024; Ivalua, 2025). The collaboration between buyers and suppliers is essential as it facilitates technology transfer and directly contributes to improved operational performance throughout the supply chain (Chileshe & Phiri, 2022; Glory, 2023). While supply chain collaboration encompasses various dimensions, such as resource pooling and joint decision-making, the sharing of accurate information and knowledge remains the fundamental cornerstone of effective cooperation among channel members (Duan, Hu, & Zhang, 2025; Emon et al., 2024). Furthermore, SPCC has been identified as a mechanism that facilitates the elimination of delays within channels, resulting in enhanced delivery times and the prompt dissemination of knowledge and information (Ofori et al., 2025). Consequently, a deficiency in information sharing may impede the acquisition of knowledge in supply chain management, leading to errors in equipment design and poorly executed start-up activities, which can result in significant problems and costs for both parties. Enhanced collaboration with suppliers is likely to improve responsiveness, as an increase in information and knowledge sharing enables a swift response to fluctuations in customer demand.

From the preceding discussion, it is hypothesised that:

- H5 Supply chain collaboration has a significantly positive influence on knowledge acquisition.

2.3 Knowledge acquisition

The key strategic importance of knowledge in today's highly competitive, knowledge-driven economy has been increasingly emphasised in recent academic research (Al-Dhaafri & Al-Shehhi, 2024; Haldar & Jana, 2023). Knowledge itself is widely regarded as a valuable and non-substitutable resource for any company competing in an uncertain and dynamic environment (Pacharapha & Ractham, 2012). For SMEs, Knowledge acquisition (KNA) has been identified as a vital variable, as its absence may often hinder the achievement of firm objectives (Gligah et al., 2020). KNA is a sophisticated and multi-stage process that extends beyond simple information collection. It fundamentally involves the acquisition, assimilation, adaptation, and corroboration of both external and internal knowledge (Wu et al., 2024). Furthermore, KNA encompasses higher-order cognitive activities such as conceptualisation, explanation, question formulation or interpretation, and ultimately, problem-solving or reaching justified conclusions (Góra & Góra, 2017; Haldar & Jana, 2023). An extensive literature search reveals that knowledge may be acquired from both within and outside an organisation (Henry et al., 2014). In the context of this study, facts, rules, ideas, methods, heuristics, formulae, correlations, statistics, or any other relevant information may be obtained. Experts in the field of interest, textbooks, technical articles, database reports, periodicals, and the environment may all serve as sources of this information. Consequently, it has become essential for SMEs to increasingly pursue growth and improved performance by leveraging supply chain networks to access new knowledge and capabilities (Gunasekaran et al., 2021). It is therefore hypothesised that:

- H6 Knowledge acquisition has a significantly positive influence on supply chain performance

2.4 Supply chain performance

Supply chain performance (SCP) as a concept has emerged as a significant topic within scholarly literature and academic discourse (Jin et al., 2020). For example, earlier literature has defined SCP as the performance of a selection of functions included within the supply chain (Sutrisno, 2019). Conversely, Wang et al. (2020) characterised SCP as the effectiveness of each stage of the e-commerce supply chain in optimising costs, reducing inefficiencies, improving speed, and meeting customer expectations. In addressing the enhancement of SCP, Utami et al. (2017) presented a distinctive aspect

of this concept as the identification of trends that can render supply chains more competitive. Accordingly, this study aims to investigate the relationship between selected SCMPs and knowledge acquisition, which in turn could lead to improved performance in the supply chains of SMEs. Within the context of SCM, KNA transitions from being a passive recipient of data to an active, strategic process. In this capacity, managers actively seek information concerning demand, technology, supplier capabilities, and market dynamics. This proactive approach is essential for attaining a competitive advantage and effectively navigating the complex and uncertain landscape of supply chains (White, Afolayan & Mason-Jones, 2016; Duan et al., 2025).

3. Materials and Methods

An empirical investigation grounded in a post-positivist quantitative research paradigm was conducted, utilising a cross-sectional survey questionnaire to collect data from SME owners and managers. The rationale for selecting a quantitative research design lies in its efficacy as a valuable tool for comparing and elucidating the knowledge, attitudes, and behaviours of large groups of individuals (Chong & Shafaghi, 2009). The sampling frame consisted of various lists, including a register from the Gauteng Enterprise Propeller (GEP) and databases from the relevant municipalities within Gauteng province. SEM was chosen as the primary method of analysis; therefore, considerable attention was directed towards determining the sample size. The study adhered to a guideline proposed by Pallant (2016), who recommends a sample size of 250-400 respondents as adequate for achieving a high degree of accuracy. A non-probability convenience sampling technique was adopted, based on geographical proximity, availability at a given time, and the willingness of participants to engage in the research.

A close-ended, structured self-administered questionnaire was developed, as it was considered easy to manage, cost-effective, and yielded a higher response rate compared to other data collection instruments (Wiid & Diggines, 2015). The questionnaire incorporated adapted scales from prior studies for all constructs measured. The supplier relationship management scale was adapted from the study conducted by Forkmann et al. (2016), while the information quality scale was derived from the work of Li and Lin (2006). The information sharing scale was based on the scale developed by Sundram et al. (2016). The supply chain collaboration scale was adapted from the research undertaken by Hofer et al. (2014). The knowledge acquisition measure was sourced from the scale developed by Martinez-Canas et al. (2014), and the supply chain performance measure was adapted from a scale proposed by Prajogo et al. (2012). The sections pertaining to the study constructs employed a five-point Likert format (ranging from 1=strongly disagree to 5=strongly agree) to mitigate the issues of common method bias in scale construction. Prior to the primary survey, the research questionnaire underwent a panel review and pilot testing procedures. Feedback from academics was utilised to revise the questionnaire, thereby enhancing its face validity. A pilot study was subsequently conducted with a sample of 40 randomly selected respondents from the population to evaluate the appropriateness of the measures developed in a different context. The pilot test indicated adequate item-to-total correlations exceeding 0.5 and Cronbach alpha reliability values greater than 0.7, thus confirming the content validity of the measuring instruments (Maree, 2016). The principal data collection was performed by the lead author in the southern region of South Africa. The data were analysed using the Statistical Package for Social Sciences (SPSS) version 28 and AMOS version 28 software. Descriptive analysis was employed to outline the profiles of the respondents, while correlations and structural equation modelling were utilised to examine associations and predictive relationships among the study constructs for hypothesis testing.

3.1 Ethical consideration

The study received ethical approval from the Faculty of Management Sciences Research Ethics Committee (FREC) under approval No FRECMS-23022022-107-BN. The managers and owners were approached personally to participate and provided informed consent prior to data collection. Data

were ultimately collected using the drop-and-collect-survey (DCS) method, conducted by the researchers and five trained field workers, as this method retains many of the advantages of the mail questionnaire while avoiding its inherent impersonality (Brown, 1984).

4. Presentation of Results

Table 1 presents the demographic characteristics of the study respondents.

Table 1: *Demographic characteristics*

Characteristic	Group	Number	Percentage
Management	Manager	92	47.9%
	Owner	100	52.1%
Total		**192**	**100%**
Number of employees	Fewer than 50	162	84.4%
	50-99	23	12%
	100-199	6	3.1%
	200 or more	1	0.5%
Total		**192**	**100%**
Number of years operating in business	5–7 years	28	14.6%
	8-10 years	162	84.4%
	10 years and above	2	1%
Total		**192**	**100%**
Physical assets owned	Less than R4m	172	89.6%
	R4m– less than R8m	12	6.3%
	R8m~less than R10m	7	3.6%
	R10m and above	1	0.5%
Total		**192**	**100%**
Annual sales	Less than R1m	170	88.5%
	R1m– less than R5m	14	7.3%
	R5m – less than R10m	7	3.6%
	R10m and above	1	0.5%
Total		**192**	**100%**

From the two hundred and fifty questionnaires administered, 192 were deemed suitable for analysis, constituting a response rate of 76.8% due to the presence of outliers and normality issues. A majority of the respondents were owners (n=100; 52.1%) compared to their managerial counterparts (n=92;

47.9%). The largest group of SMEs (n=185; 96.4%) employed fewer than 100 employees, reported sales figures of less than R5 million (n=184; 95.8%), and owned physical assets worth less than R8 million (n=184; 95.9%). Additionally, (n=162; 84.4%) had been operating in business for 8 to 10 years.

4.1 Assessing the measurement model

A confirmatory factor analysis (CFA) was conducted to assess the fit, reliability, and validity of the measurement model, as reported in Table 2. The following goodness-of-fit measures, endorsed by Hu and Bentler (1999), were considered as a guide to acceptable model fit: Chi-square or CMIN/DF < 3.0, incremental fit index (IFI) > 0.90, Tucker-Lewis index (TLI) > 0.90, comparative fit index (CFI) > 0.90, and standard root mean square error of approximation (RMSEA) < 0.08. Fit indices are known to be sensitive to factors such as model complexity, sample size, and the number of indicators per construct. In applied research with complex models, CFI and TLI values in the high 0.80s are often deemed acceptable, especially when RMSEA and χ^2/df values are strong (Hair et al., 2010). The initial model, as displayed in Table 2, yielded fit indices of χ^2/df = 2.487, CFI = 0.876, IFI = 0.861, TLI = 0.877, and RMSEA = 0.078. The χ^2/df ratio of 2.487 is well below the conservative cutoff of 3.0, indicating a good fit relative to model complexity (Kline, 2016). Additionally, the RMSEA value of 0.078 falls within the acceptable range of 0.05 to 0.08 (Browne & Cudeck, 1992), and the TLI of 0.877 is close to the 0.90 benchmark, further supporting the model's adequacy. Although the CFI and IFI values fall slightly below the conventional 0.90 threshold for excellent fit, the overall model fit is considered marginally acceptable as endorsed by Hair et al. (2010). While the current model was retained to test the pre-specified theoretical framework, future research could enhance model fit through re-specification, such as freeing theoretically justified parameters based on modification indices (e.g., correlated errors between similarly worded items or common sources).

Table 2: *Accuracy test results*

Research Constructs		**Descriptive Statistics**		**Cronbach's Test**		**C.R.**	**AVE**	**Outer loadings**
		Mean	**SD**	**Item-total**	**α Value**			
Supply chain relationship management (SPRM)	$SPRM_{-1}$	3.867	0.975	.419	0.713	0.85	0.53	0.58
	$SPRM_{-1}$			.521				0.77
	$SPRM_{-2}$			.495				0.58
	$SPRM_{-3}$			.513				0.63
	$SPRM_{-4}$			.614				0.64
Customer Relationship Management (CRM)	$CSRM_{-1}$	3.305	1.103	.869	0.900	0.81	0.48	0.71
	$CSRM_{-2}$			.887				0.61
	$CSRM_{-3}$			.443				0.85
	$CSRM_{-4}$			.736				0.71
	$CSRM_{-5}$			.869				0.66
Information Sharing (INS)	INS_{-1}	3.691	0.979	.610	0.785	0.80	0.47	0.74
	INS_{-2}			.700				0.61
	INS_{-3}			.738				0.69
	INS_{-4}			.527				0.69
	INS_{-5}			.592				0.66
Information Quality (INQ)	INQ_{-1}	3.645	1.199	.548	0.777	0.83	0.49	0.66
	INQ_{-2}			.558				0.72
	INQ_{-3}			.568				0.65
	INQ_{-4}			.546				0.69
	INQ_{-5}			.546				0.72
	$SPCC_{-1}$	3.753	1.029	.717				0.68

Research Constructs		Descriptive Statistics		Cronbach's Test		C.R.	AVE	Outer loadings
		Mean	SD	Item-total	α Value			
Supply chain collaboration (SPCC)	$SPCC_{-2}$			.646	0.709	0.81	0.50	0.75
	$SPCC_{-3}$			.516				0.70
	$SPCC_{-4}$			.574				0.68
	$SPCC_{-5}$			.501				0.72
Knowledge Acquisition (KNA)	KNA_{-1}			.599				0.70
	KNA_{-2}			.471				0.87
	KNA_{-3}	3.817	.971	.580	0. 770	0.83	0.49	0.77
	KNA_{-4}			.602				0.68
	KNA_{-5}			.553				0.78
Supply chain performance (SCP)	SCP_{-1}			.595				0.62
	SCP_{-2}			.834				0.68
	SCP_{-3}	3.692	.981	.827	0.910	0.89	0.47	0.69
	SCP_{-4}			.833				0.74
	SCP_{-5}			.807				0.79

CR=Composite Reliability; AVE= Average Variance Extracted
The results of the fit indices [$\chi 2/df = 2.487$, $p < 0.001$, RMR = 0.120, CFI = 0.876, IFI = 0.861, TLI = 0.877 and RMSEA = 0.078

As presented in Table 2, all study constructs attained adequate internal consistency reliability, with Cronbach's alpha coefficients ranging from 0.713 to 0.910 and CR values ranging from 0.80 to 0.89, thus exceeding the recommended threshold of 0.7. The item-total correlation values ranged from 0.419 to 0.869, which is higher than the cut-off value of 0.3 (Maree, 2016). Table 2 further exhibits adequate convergent validity, as the outer loadings of all items range from 0.58 to 0.85, exceeding 0.7, and the AVE values range from 0.47 to 0.53, which is approximately equal to 0.5 (Pallant, 2016).

The Hetero-Trait-Monotrait (HTMT) ratio of inter-construct correlations, shown in Table 3, demonstrates sufficient discriminant validity, as the inter-construct correlations are all less than 0.90 (Kline, 1998). Furthermore, consideration of the results in Table 3 reveals that all the square roots of AVE (bolded italicised diagonal scores) are greater than the correlation coefficients of other latent variables (off-diagonal scores), thereby confirming adequate discriminant validity as well (Fornell & Larcker, 1981).

Table 3 : *Hetero-Trait-Monotrait (HTMT) ratio*

Construct	SPRM	CSRM	INS	INQ	SPCC	KNA	SCP
Supply Chain Relationship (SPRM)	*0.728*						
Customer Relationship Management (CRM)	0.142	*0.692*					
Information Sharing (INS)	0.043	0.468***	*0.686*				
Information Quality (INQ)	0.538**	0.043	0.025	*0.686*			
Supply Chain Collaboration (SPCC)	0.468**	0.015	0.109	0.568**	*0.707*		
Knowledge acquisition (KNA)	0.507**	0.068	0.040	0.530**	0.457**	*0.700*	
Supply Chain Performance (SCP)	0.088	0.089	0.263*	0.028	0.074	0.547**	*0.700*

** Significant at the 0.01 level (2-tailed) *Significant at the 0.05 level (2-tailed). Note: The values of the square root of the AVE are italicised and bolded red in the diagonal line.

4.2 Structural model assessment

The structural equation modelling results shown in Figure 1 illustrate the causal relationships among the study constructs.

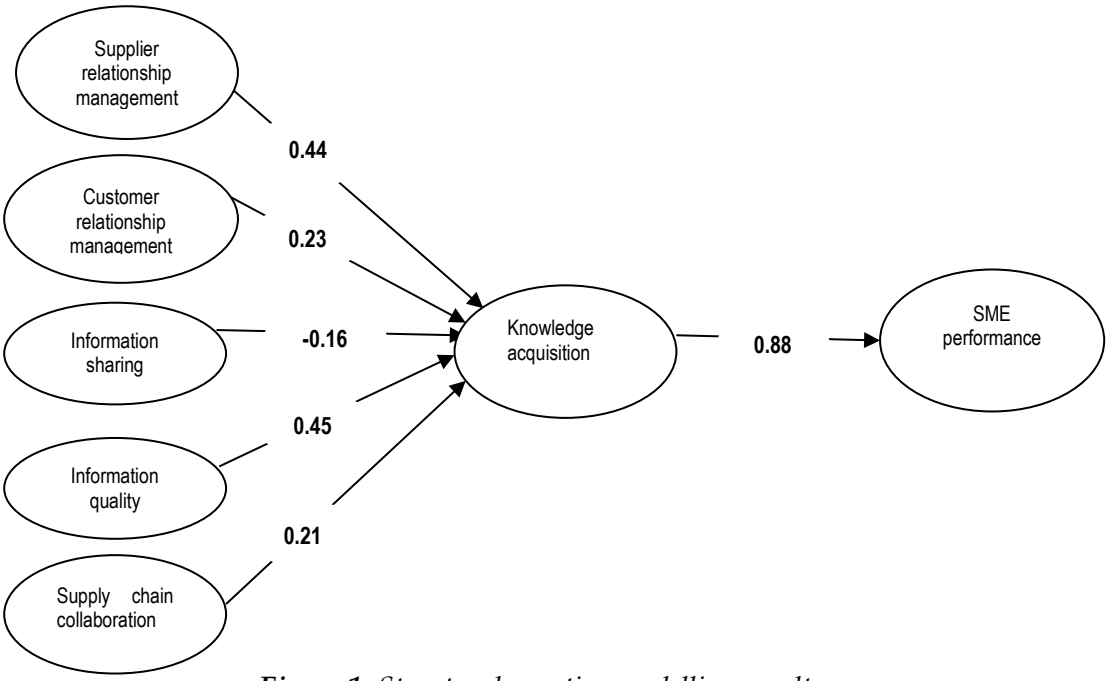

***Figure 1**: Structural equation modelling results*

Table 4 presents the path analysis results in AMOS, which were conducted for hypothesis testing. Five of the hypotheses (H1, H2, H4, H5, and H6) reported significant beta coefficients for the hypothesised paths at a level of $p < 0.01$ and were accepted, while the remaining hypothesis (H3) was rejected due to its statistical insignificance.

***Table 4**: Summary of the hypotheses testing results*

Structural Paths	Hypothesis	Path Coefficient	Outcome
Supplier relationship management → Knowledge acquisition	H_1	0.44***	Accepted
Customer relationship management→ Knowledge acquisition	H_2	0.23***	Accepted
Information sharing → Knowledge acquisition	H_3	-0.16	Not Accepted
Information quality → Knowledge acquisition	H_4	0.45***	Accepted
Supply chain collaboration → Knowledge acquisition	H_5	0.21***	Accepted
Knowledge acquisition → SMEs performance	H_6	0.88***	Accepted
significance level <0.001* **			

5. Discussion of Findings

The results provided through SEM supported and accepted the stated hypothesis (H1) that there is a significant relationship between SPRM and KNA, with a path coefficient of ($\beta = 0.44$; $p < 0.001$).

This result supports previous studies undertaken by several scholars, including Ritchie and Brindley (2007), who posit that the establishment of an SPRM culture is critical for enabling inter-firm and intra-firm communication regarding business performance and management. KBV asserts that SPRM knowledge is a firm's most strategically important resource and that inter-organisational relationships are critical channels for knowledge creation and transfer (Grant, 1996).

SEM results further revealed that H2, which posits that CSRM has a significant influence on KNA, was found to be supported and acceptable ($\beta = 0.23$; $p < 0.01$). Chen et al. (2013) support this finding by conceding that a common understanding of CSRM among supply chain partners can help firms reach a coherent standard of risk evaluation and facilitate the process of KNA. Based on KBV, effective CSRM practices enable SMEs to systematically gather, analyse, and interpret information derived from customer interactions, preferences, feedback, and market behaviour (Nguyen & Waring, 2013).

The hypothesis (H3), which posits that INS has a significantly positive influence on KNA, was found not to be supported and statistically insignificant by the SEM results shown in Table 3 ($\beta = -0.16$; $p < 0.001$). A plausible reason for this finding is that KNA thrives on interactive elements that deepen understanding, such as feedback, discussion, and reflection, which simple INS lacks (Durst et al., 2023). Poor communication, coupled with a culture of hoarding knowledge, can also inhibit meaningful exchange, thus leading to these findings. The results are also contrary to the KBV assumption that information sharing underpins knowledge acquisition, as it enhances mutual understanding regarding market trends, customer preferences, and operational practices (Li & Lin, 2006).

The results of the study support hypothesis (H4), which posits that INQ has a significantly positive influence on KNA, with a path coefficient ($\beta = 0.45$; $p < 0.001$). Previously, empirical literature highlighted the importance of information quality in facilitating knowledge acquisition in SMEs (Fan et al., 2017). Consistent with KBV theory, high information quality provides the foundation upon which meaningful knowledge can be developed (Alavi & Leidner, 2001).

The hypothesis (H5) that posits that SPCC has a significantly positive influence on KNA was found to be supported by the SEM results shown in Table 3 ($\beta = 0.23$; $p < 0.001$). The results suggest that working together with other organisations in the supply chain could help SMEs access new and relevant knowledge, which would lead to improved performance and competitiveness (Squire et al., 2009; Hofer et al., 2014). KBV suggests that the essence of cooperation between customers/suppliers and firms is knowledge collaboration, with absorptive capacity being critical for effective knowledge sharing (Qu & Mardani, 2023).

Furthermore, the results of the study support hypothesis (H6), which posits that KNA has a significantly positive influence on SCP, with a path coefficient ($\beta = 0.088$; $p < 0.001$). The finding highlights the importance of KNA as a major driving force in achieving SCP for SMEs. The results are congruent with previous studies conducted by Samir (2020), which highlighted that SMEs that invest in acquiring new knowledge and skills could improve their performance and competitiveness in the market. Based on KBV, SME managers relying on proper knowledge management practices may have the propensity to generate a competitive advantage for the firm and hence increase supply chain performance (Kipngeno Kirui et al., 2021).

5.1 Limitations and future research opportunities

The study was subject to certain limitations that need to be acknowledged when interpreting the findings. The sampling limitation, due to the small sample size of SMEs in the study, may underrepresent the entire population of SMEs in Gauteng province. It is recommended to expand the scope of the research beyond Gauteng province by conducting similar studies in other regions or countries and different geographical contexts. Although the non-probability convenience sampling

technique used in the study offers several advantages, including cost-effectiveness, ease of participant recruitment, and flexibility in research design, it does not guarantee equal representation. This limitation implies that the results of the study cannot be generalised to all South African SMEs. To this end, probabilistic techniques are recommended to ensure that the sample is representative of the whole population. The study only focused on the role of supply chain management practices on knowledge acquisition and business performance in SMEs, ignoring the mediating effect of knowledge acquisition (KNA) on supply chain management practices (SCMP) and supply chain performance (SCP). Further research is needed to consider other factors that may impact SMEs' resilience and competitiveness, such as access to financing, economic conditions, and government policies. The intervening effect of other variables should also be considered toprovide a more comprehensive understanding of the challenges and opportunities facing SMEs in Gauteng province.

5.2 Common method bias

While being one of the most commonly used methods in the social sciences, survey questionnaires are susceptible to random error, which can affect the reliability and validity of the empirical results (Baumgartner & Steenkamp, 2001). The study duly mitigated this effect by incorporating multiple items to capture the study constructs, as endorsed by Min et al. (2016). The scale items were selected from different measurement scales to ensure that multiple items represented the study constructs. Furthermore, Harman's single-factor technique was conducted as a post hoc measure to detect common method variance. The test comprised 35 factors, with the maximum variance explained by any single factor being 15.145%, and the cumulative percentage for all the factors was 79.088%. According to the rule of thumb associated with Harman's single-factor test, this suggests that no factor accounted for more than 50% of the variance (Podsakoff et al., 2012).

6. Conclusions and Recommendations

The study enabled the exposition and analysis of the relationships between supply chain management practices and variables such as knowledge acquisition and business performance. These supply chain management practices demonstrated their importance in fostering knowledge acquisition and, consequently, supply chain performance within SMEs. The assertion that knowledge is a critical strategic resource for firms was supported by the study, which incorporated the Knowledge-Based View (KBV) as an underlying theory. For small and medium-sized enterprises (SMEs), this perspective can significantly influence supply chain practices, knowledge acquisition, and overall business performance. As a result, SMEs may become even more viable in their quest for growth and performance. Moreover, the findings of the study can serve as a sound basis for the existing body of literature on overcoming the challenges faced by the SME sector. Further research is recommended to confirm the findings of the study and to determine the generalisability of the results to other regions or countries.

It is recommended that SMEs invest in building and maintaining strong relationships with their customers in order to understand their customers' needs and preferences, thereby providing high-quality products and services that meet their expectations. Collaboration and engagement in knowledge sharing with other organisations, including suppliers, customers, and industry partners, is key to helping SMEs learn from one another, improve their processes, and increase their competitiveness. It is further recommended that SMEs partner with local educational institutions and invest in technology to enhance their knowledge acquisition and the management of their business processes. Finally, SMEs should invest in improving the quality of their information systems and ensure that the information they use is accurate, up-to-date, and relevant to their operations.

7. Declarations

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investigation (B.N.D.); data curation (B.N.D., B.A.M. & O.O.); drafting and preparation (L.N. & B.A.M); review and editing (L.N. & B.A.M.); supervision (N/A); project administration(O.O. L.N. & B.A.M.); funding acquisition (N/A). All authors have read and approved the published version of the article.

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