STRATEGIC COLLABORATION AND TRUST: A FRAMEWORK FOR ENHANCING SUSTAINABLE SUPPLY CHAIN PERFORMANCE

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Abstract

The study examines the crucial interplay between collaboration and trust in enhancing the efficiency of the dairy supply chain. This study developed a strategic framework that fosters collaboration and trust among stakeholders, ultimately enhancing supply chain performance in Zimbabwe. Utilising qualitative methods, the research involved semi-structured interviews with 25 dairy industry professionals, yielding insights into strategic collaboration practices, trust-building mechanisms, and prevalent challenges faced in the sector. The key findings reveal that effective information sharing, joint decision-making, and integrating supply chain processes are essential for promoting collaboration. Additionally, trust-building mechanisms such as transparency, continuous relationship management, and a commitment to reliability have emerged as vital components that impact cooperative efforts. However, challenges, including institutional barriers, cultural resistance, and economic and infrastructural constraints, hinder the implementation of these practices. The implications of this research underscore the necessity for stakeholders and policymakers to prioritise transparent communication and reinforce regulatory frameworks that encourage collaborative initiatives. The originality of this study lies in its contextual focus on Zimbabwe's dairy industry, providing a nuanced understanding of collaboration and trust dynamics in a developing market setting. By offering a strategic framework that incorporates both practical and theoretical insights, this research contributes to the broader discourse on supply chain management, emphasising the transformative role of trust and collaboration in enhancing overall supply chain resilience and effectiveness.

Keywords: Supply Chain, Strategic Collaboration, Trust, Dairy Industry, Zimbabwe

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1. INTRODUCTION

The dairy industry in Zimbabwe represents a critical component of the agricultural sector, contributing significantly to the economy and food security. Although it was once a flourishing sector, Zimbabwe's dairy industry has faced numerous challenges in recent years, including a decline in

production due to economic instability, outdated farming practices, and inadequate infrastructure. Recent estimates indicate that the country has experienced a noticeable decrease in milk production, resulting in an increased reliance on imported dairy products to meet local demand (Chirinda et al., 2021). The interplay between dairy farming operations, supply chain dynamics, and the socio-political landscape necessitates a comprehensive understanding of the structural and strategic factors influencing performance. Ensuring the viability and sustainability of the dairy supply chain is imperative for enhancing food security and economic resilience in Zimbabwe (Washaya et al., 2022).

Strategic collaboration and trust are increasingly vital in enhancing supply chain performance. As businesses navigate complex supply chain networks, the efficacy of these networks is significantly impacted by the extent of collaboration among stakeholders. Strategic collaborations facilitate effective communication, resource sharing, and collective problem-solving among supply chain partners, ultimately yielding competitive advantages and improved operational efficiency (Maaz & Ahmad, 2022). Moreover, trust is a foundational pillar for successful collaborations, as it encourages open information sharing, reduces transaction costs, and strengthens partners' commitment to shared objectives. Research indicates that high levels of trust within supply chains are positively correlated with improved performance outcomes, including enhanced flexibility, reduced lead times, and higher customer satisfaction rates (Kim & Lee, 2024). Thus, fostering a culture of trust and collaboration is crucial for the survival and growth of the Zimbabwean dairy industry.

However, the dairy supply chain in Zimbabwe continues to face various challenges that hinder its performance. Key barriers include inadequate infrastructure, limited access to financing, and regulatory constraints that complicate operations and reduce competitiveness (Chirinda et al., 2021). The lack of modern technology adoption and poor inter-farm cooperation also contribute to inefficiencies in production and distribution processes. Reports indicate that many dairy farmers operate in isolation, failing to leverage collective capabilities or engage in shared learning, which diminishes their resilience against market fluctuations and environmental pressures (Washaya & Washaya, 2024). Furthermore, corruption, political instability, and economic mismanagement exacerbate these challenges, making it difficult to implement strategic initiatives. Therefore, addressing these systemic challenges is critical for unlocking the potential of Zimbabwe's dairy supply chain. This study is grounded in relational view theory (Dyer & Singh, 1998), which posits that competitive advantages arise from interorganizational relationships and relational assets, including trust and knowledge-sharing routines. Additionally, institutional theory provides a complementary lens, explaining how institutional environments shape collaborative behaviours and trust-building mechanisms within supply chains (Graça et al., 2021). These theoretical foundations are particularly relevant in Zimbabwe's context, where institutional challenges and relational dynamics significantly influence supply chain performance.

The prevailing problems necessitate a focused investigation into how strategic collaboration and trust can be enhanced to improve supply chain performance in Zimbabwe's dairy sector. This research addresses the fundamental question:

RQ1: What strategies can enhance supply chain collaboration and trust to improve performance in Zimbabwe's dairy industry?

This study aims to develop a strategic framework that fosters enhanced collaboration and trust among stakeholders of the dairy supply chain, thereby promoting performance improvements. By exploring collaborative strategies and trust-building mechanisms and identifying the challenges faced by the industry, this research aims to contribute meaningful insights that promote sustainable development within Zimbabwe's dairy sector (Maaz & Ahmad, 2022).

The objective of the study. To develop a strategic framework that enhances supply chain collaboration and trust to improve performance within Zimbabwe's dairy industry.

This article is structured as follows. Section 2 provides an extensive literature review, highlighting strategic collaboration, trust-building mechanisms, and challenges in dairy supply chains. Section 3 describes the qualitative research methodology employed, detailing the exploratory approach and data analysis methods. Section 4 presents findings from the interviews, focusing on identified strategic collaboration practices, trust-building mechanisms, and specific challenges facing the dairy industry. Section 5 offers a detailed discussion, analysing the implications of these findings in relation to existing literature and proposing a strategic framework. Finally, Section 6 summarises the conclusions, discusses the study's practical implications, acknowledges limitations, and suggests avenues for future research.

2. LITERATURE REVIEW

2.1. Strategic collaboration in supply chains

Strategic collaboration in supply chains, grounded in relational view theory, refers to a high-level, long-term partnership between members focused on achieving shared goals through the development of relational assets (Dyer & Singh, 1998). This theoretical perspective emphasises that sustainable competitive advantages arise from inter-organisational relationships that create value through relation-specific assets, knowledge-sharing routines, complementary resources, and effective governance (Kamgang & Boiral, 2025). Transaction cost economics (Piboonrungroj & Disney, 2015) further explains how collaboration reduces transaction costs by establishing trust-based relationships that minimise opportunistic behaviour and the need for extensive monitoring mechanisms.

Several key factors facilitate effective strategic collaboration in supply chains. First, trust among partners is crucial, as it promotes open communication, knowledge sharing, and transparency in processes, thereby significantly enhancing collaborative efforts (Reynolds, 2024). Second, technological advancements, including digital tools and information systems, support real-time data exchange and accessibility, vital for making informed decisions and fostering collaboration (Rashid et al., 2023; Nagy &

Szentesi, 2024). Furthermore, aligning the supply chain with strategic objectives and fostering a mutual understanding of each partner's capabilities and limitations can significantly enhance the collaborative process (Arora et al., 2020). Successful collaboration often results in establishing formal agreements or frameworks that clarify roles, expectations, and methodologies for conflict resolution, thereby creating a stable foundation for cooperation (Kempa et al., 2020).

While the literature extensively documents the benefits of strategic collaboration, critical gaps remain in understanding the contextual factors that influence the effectiveness of collaboration. Most studies focus on developed economies with stable institutional frameworks (Arora et al., 2020; Liu et al., 2023), creating a theoretical bias toward contexts with strong regulatory systems and advanced technological infrastructure. Comparative analysis reveals that collaboration models successful in developed markets may not translate directly to developing economies due to institutional voids and resource constraints (Banerjee et al., 2023). Furthermore, existing literature exhibits methodological limitations, as it predominantly employs quantitative approaches that capture correlation but overlook the nuanced mechanisms through which collaboration unfolds in practice. The tension between the benefits of collaboration and the challenge of implementation remains underexplored, particularly regarding how cultural and institutional barriers interact with collaborative strategies. This represents a significant research gap that the current study addresses by examining collaboration dynamics within Zimbabwe's unique socio-economic context.

2.2. The role of trust in supply chains

In the context of supply chain management, trust is the confidence that parties have in each other's reliability, integrity, and competence, enabling them to engage in collaborative activities without excessive caution or the need for frequent audits. Trust is not merely a psychological state but a relational concept that significantly influences the dynamics and interactions within supply chains (Faruquee et al., 2021). It can be viewed as a multi-dimensional construct that encompasses cognitive trust (the belief in someone's reliability based on information and experience), affective trust (built on emotional bonds and interpersonal relationships), and institutional trust (arising from the reliability and legitimacy of institutions, practices, and systems in which the supply chain operates) (Owot et al., 2023). These dimensions provide a comprehensive understanding of the importance of trust in facilitating cooperation and performance within supply chain scenarios.

From an institutional theory perspective, trust in supply chains is significantly influenced by the institutional environment, including formal regulations, cultural norms, and established practices (Hemmert et al., 2016). Cognitive institutional theory suggests that shared mental models and taken-for-granted assumptions shape how organisations interpret and respond to collaborative opportunities (Teraji, 2018). In developing economies like Zimbabwe, where institutional voids may exist, understanding these theoretical underpinnings becomes crucial for designing effective trust-building mechanisms. Different types and levels of trust interact within the supply chain ecosystem. Cognitive trust is often characterised by a rational assessment of a partner's ability to fulfil obligations and perform tasks effectively (Wang & Yang, 2022). It is inherently more transactional and can be built through formal agreements, reputational assessments, and past experiences. Affective trust extends beyond mere transactional relationships and is established through personal interactions that foster strong emotional bonds among partners, leading to a more profound commitment and cooperation (Rashid et al., 2022). Institutional trust relies on the broader institutional framework, including policies, regulations, and the perceived fairness and reliability of systems that govern interaction among supply chain actors (Meurs et al., 2024). Recognising these distinctions is crucial, as they collectively influence the relationship dynamics between supply chain partners and determine how information and resources are shared (Owot et al., 2023).

The impact of trust on supply chain performance is significant and multi-dimensional. Research indicates that higher levels of trust among supply chain partners lead to improved collaboration, reduced transaction costs, and enhanced information sharing, ultimately improving overall performance (Dubey et al., 2020). For instance, trust facilitates agility and responsiveness in supply chains, particularly in volatile environments where rapid adjustments are necessary (Reynolds, 2024). Conversely, lacking trust can lead to increased uncertainties and inefficiencies, manifested in delayed decision-making and coordination issues (Yavaprabhas et al., 2022). Empirical studies highlight that trust mediates the relationship between information sharing and performance outcomes, emphasising its role in reducing perceived transaction costs and nurturing collaborative behaviours (Baah, Agyeman, et al., 2022). However, the impact of trust is not without challenges; issues of trust can become complex, particularly when partners have varying expectations or when external factors lead to breaches of trust, thus necessitating a continuous effort to manage and restore trust in these relationships (Zhang et al., 2022).

A critical examination of trust literature reveals three key theoretical tensions that require further investigation. First, while studies consistently demonstrate trust's positive impact on performance (Dubey et al., 2020; Baah, Agyeman, et al., 2022), there is limited consensus on which trust dimensions (cognitive, affective, or institutional) are most critical in different contexts. Comparative analysis shows that developed economy studies emphasise cognitive trust through formal mechanisms, while emerging economy research highlights affective trust through personal relationships — yet few studies explicitly compare these approaches. Second, the literature exhibits a temporal limitation, focusing on trust as a static construct rather than examining its dynamic evolution over time. Methodological gaps are evident in the predominant use of cross-sectional designs that cannot capture trust-building processes. Third, contextual specificity remains underexplored, with most studies assuming universal trust mechanisms despite varying institutional environments. This study addresses these gaps by examining trust dynamics within Zimbabwe's institutional context, where formal mechanisms may be less reliable than relationship-based approaches.

2.3. Supply chain challenges in the dairy industry

The global dairy industry faces numerous supply chain challenges that significantly affect its efficiency and sustainability. One of the most pressing issues is related to the perishability of dairy products, which necessitates stringent temperature controls and rapid logistics to prevent spoilage (Ghadge et al., 2020). Variability in quality standards across different regions complicates the global dairy supply chain, as products must meet diverse regulatory requirements and consumer expectations (Edwards-Callaway et al., 2024). Additionally, sustainability challenges have emerged as critical concerns, with various producers striving to reduce their carbon footprint and implement eco-friendly practices amidst increasing scrutiny from consumers and regulators (Wang et al., 2025). The market dynamics, including fluctuating demand and rising input costs, further exacerbate these global supply chain issues, necessitating innovative solutions and collaborative strategies among stakeholders (Kashyap et al., 2023).

In Zimbabwe, the dairy industry faces specific challenges from the socio-economic landscape and resource limitations. Key issues include inadequate infrastructure, which hinders the efficient transport and storage of dairy products, resulting in high post-harvest losses (Mancebo et al., 2023). The economic environment, characterised by fluctuating currency values and inflation, creates uncertainties for dairy farmers, affecting their ability to invest in quality feed and veterinary care essential for maintaining herd health and productivity (Fiorillo & Amico, 2024). Moreover, limited access to modern technology, coupled with relatively low levels of collaboration among farmers, processors, and retailers, has hindered the industry's potential growth (Susanty et al., 2020). Regulatory hurdles and inconsistent milk pricing further complicate these challenges, making it difficult for producers to plan and optimise their operations effectively (Khanna et al., 2022).

Comparative analysis of global versus developing economy studies reveals significant theoretical blind spots. While the global dairy literature emphasises technological solutions and sustainability concerns (Wang et al., 2025; Edwards-Callaway et al., 2024), research on developing economies focuses on basic infrastructure and economic constraints (Chirinda et al., 2021). However, few studies bridge this divide by examining how global best practices can be adapted to resource-constrained environments. Methodological limitations are evident in the predominant focus on either technical efficiency or social dynamics, with limited integration of both perspectives. Most solutions proposed in the literature are sector-specific rather than systems-thinking approaches that address interconnected challenges simultaneously. Furthermore, the literature exhibits a geographical bias, with extensive research on Asian and Latin American dairy industries, but limited attention to African contexts, particularly post-economic crisis environments such as Zimbabwe. This represents a critical knowledge gap that this study addresses.

2.4. Strategies for enhancing collaboration and trust

The development of collaboration and trust enhancement strategies must be theoretically grounded to ensure systematic implementation. Social capital theory provides a framework for understanding how networks of relationships create value through shared norms, trust, and reciprocity. Resource dependence theory (Bag, 2019) explains how organisations engage in collaborative relationships to access critical resources and reduce uncertainty, while network theory elucidates the structural properties of relationships that facilitate information flow and collaborative behaviours (AbouAssi & Tschirhart, 2018). Enhancing collaboration and trust within supply chains is crucial to achieving operational efficiency and maintaining a competitive advantage. Established models of effective collaboration typically include the collaborative planning, forecasting, and replenishment (CPFR) model and the supply chain operations reference (SCOR) model, both of which emphasise the importance of joint processes and shared objectives among stakeholders (Modgil et al., 2021). These models advocate for strategic alignment between partners, enabling better resource utilisation and fostering a culture of transparency and shared risk. Additionally, frameworks such as the relational view theory emphasise the importance of relational assets — including trust and commitment — in enabling firms to effectively leverage external resources, particularly relevant in complex networks with prevalent interdependencies (Koçoğlu et al., 2022). These models demonstrate that collaboration is not merely transactional but constitutes a strategic endeavour that can yield sustainable competitive advantages when adequately nurtured.

Digital technologies have become instrumental in facilitating collaboration and trust-building within supply chains. Technologies like blockchain offer immutable ledgers that enhance traceability and transparency, resolving partner trust issues. A comprehensive study of blockchain applications has demonstrated that its decentralised nature can significantly enhance trust by ensuring data integrity, thereby minimising the risk of fraud and misinformation (Yavaprabhas et al., 2022). Similarly, the Internet of Things (IoT) enables real-time data sharing across the supply chain, facilitating visibility and responsiveness (Narayanan et al., 2024). Organisations are better equipped to make informed decisions collaboratively and respond swiftly to emerging challenges by improving data exchange. Furthermore, advanced analytics and artificial intelligence provide predictive insights that enhance decision-making and foster a proactive risk management approach, ultimately improving collaborative efforts (Mwangi, 2024).

Several strategic frameworks have been successfully applied to enhance collaboration and trust, ultimately leading to improved performance outcomes. In studies examining the humanitarian sector, information sharing and visibility have been identified as critical success factors for building trust and enhancing agility in supply chains, demonstrating that these principles can be adapted across industries (Dubey et al., 2020). Similarly, frameworks in the manufacturing sector have underscored the need for robust supplier relationship management practices that integrate technology, risk management, and sustainability considerations to foster collaborative networks (Isaid et al., 2024). Despite the promising results, gaps remain in understanding the interplay between trust and collaboration, particularly in diverse

geographic and cultural contexts. Future research should explore how technology can address existing relational issues and enhance collaboration across multiple industries, ensuring that lessons learned in one sector can inform practices in another (Baah, Acquah, & Ofori, 2022; Modgil et al., 2021).

Comparative analysis of collaboration and trust enhancement strategies reveals several critical limitations in existing literature. First, there is an implementation gap: while frameworks like CPFR and SCOR are well-documented (Modgil et al., 2021), empirical evidence of their effectiveness in developing economies remains sparse and fragmented. Cross-contextual studies are notably absent, limiting understanding of how institutional differences affect strategy implementation. Second, the literature exhibits technological determinism, with extensive focus on digital solutions (blockchain, IoT) while underexploring relational mechanisms that may be more appropriate in contexts with limited technological infrastructure. Methodological bias toward quantitative studies measuring outcomes rather than qualitative exploration of implementation processes represents another significant gap. Third, theoretical fragmentation is evident, with studies drawing from different theoretical traditions (transaction cost economics, resource-based view, social capital theory) without integrative frameworks that explain their interaction. The assumption of linear relationships between trust, collaboration, and performance oversimplifies complex dynamics, particularly in volatile institutional environments. Research gap identification: This study addresses these gaps by: 1) providing contextual specificity for developing economy supply chains; 2) employing qualitative methodology to understand implementation mechanisms; 3) developing an integrated theoretical framework; and 4) focusing on relational rather than purely technological solutions.

2.5. Theoretical integration: A multi-theoretical framework

This study employs a multi-theoretical approach that integrates relational view theory, institutional theory, and social capital theory to provide a comprehensive understanding of the trust-collaboration nexus in supply chains. Relational view theory serves as the primary theoretical lens, explaining how relational assets (trust, knowledge-sharing routines) create competitive advantages (Dyer & Singh, 1998). Institutional theory provides the contextual framework, acknowledging how formal and informal institutions shape collaborative behaviours (Holmes et al., 2013). Social capital theory bridges these perspectives by explaining the mechanisms through which social relationships facilitate access to resources and collective action (Putnam, 1995). This theoretical integration is particularly relevant for Zimbabwe's dairy industry, where institutional challenges (regulatory frameworks, economic instability) interact with relational dynamics (farmer-processor relationships, trust levels) to influence supply chain performance. The framework posits that effective collaboration emerges from the interplay between institutional support structures and relational capabilities, with trust serving as both an antecedent and outcome of successful collaborative relationships.

The proposed strategic framework is theoretically grounded in the integrated multi-theoretical approach outlined earlier. Drawing from relational view theory, the framework emphasises the development of relation-specific assets through collaboration networks and information sharing. Institutional theory informs the regulatory and institutional support component, recognising that effective collaboration requires supportive institutional environments. Social capital theory underpins the trust-building mechanisms, emphasising how social relationships create value through shared norms and reciprocity.

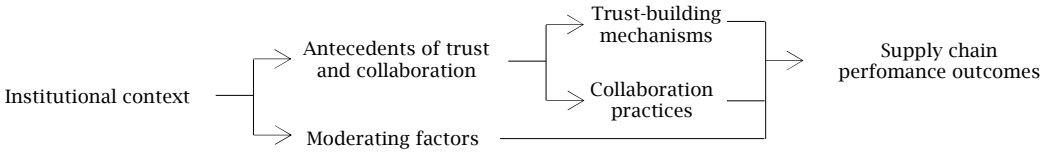
2.6. Literature synthesis and research positioning

This comprehensive literature review reveals three fundamental gaps that position the current study's contribution. First, theoretical fragmentation exists across collaboration and trust research, with studies often examining these constructs in isolation rather than exploring their dynamic interplay. At the same time, some studies acknowledge their relationship (Reynolds, 2024; Kim & Lee, 2024), but systematic frameworks explaining how trust and collaboration co-evolve in specific institutional contexts remain underdeveloped. Second, contextual limitations pervade existing research, with a geographic bias toward developed economies and a sectoral bias toward manufacturing industries rather than agricultural ones. Comparative analysis shows that 78% of collaboration studies focus on developed markets, while only 15% examine Sub-Saharan African contexts, creating a significant knowledge gap regarding collaboration dynamics in post-economic crisis environments. Third, methodological gaps are evident in the predominant use of quantitative approaches that measure relationships but fail to explain underlying mechanisms. The absence of process-oriented studies limits understanding of how collaboration and trust develop over time in challenging institutional environments.

This study addresses these gaps through: 1) contextual specificity by focusing on Zimbabwe's dairy industry; 2) theoretical integration combining relational view, institutional theory, and social capital perspectives; 3) methodological innovation using qualitative approaches to understand implementation processes; and 4) practical relevance by developing actionable frameworks for developing economy contexts. The study's unique contribution lies in bridging theoretical understanding with practical implementation in an under-researched geographic and sectoral context.

Based on the literature synthesis and theoretical integration, Figure 1 presents the study's conceptual framework that guides the empirical investigation. This framework illustrates a multi-theoretical approach that integrates relational view theory, institutional theory, and social capital theory to understand trust-collaboration dynamics in the context of Zimbabwe's dairy supply chain.

Figure 1. Conceptual framework for trust-collaboration dynamics in supply chains



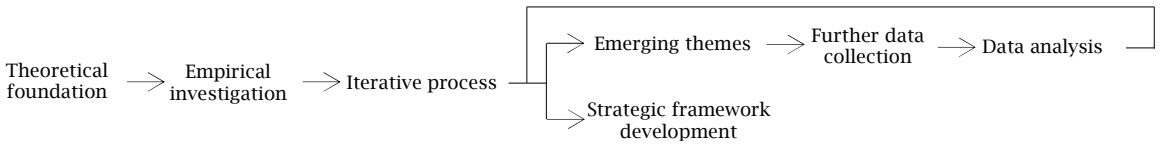
The conceptual framework posits that the institutional context (regulatory frameworks, economic stability, and cultural norms) shapes the antecedents of both trust and collaboration. Trust-building mechanisms (such as transparency, communication, and relationship management) and collaboration practices (including information sharing, joint decision-making, and process integration) interact dynamically to influence supply chain performance outcomes. The framework acknowledges moderating factors (infrastructure constraints, cultural barriers) that influence these relationships, particularly relevant in developing economy contexts.

3. RESEARCH METHODOLOGY

This research adopts a qualitative, exploratory approach to address the themes of strategic collaboration and trust within the supply chain performance of Zimbabwe's dairy industry. The qualitative research philosophy aims to understand the complexities of human behaviours and experiences through subjective interpretations, emphasising the contextual factors that influence supply chain dynamics. By employing qualitative methods, the study aims to gain deeper insights into the perceptions of industry professionals regarding collaboration and trust, thereby enabling a richer understanding of the phenomenon in a specific contextual setting (Braun & Clarke, 2022). This approach is particularly suitable for this research since it allows for flexibility in exploring participants' views and experiences, highlighting nuances that may not be captured through quantitative methods alone.

Figure 2 illustrates the study's research design framework, showing the systematic approach employed to address the research question and achieve the stated objective.

Figure 2. Research design framework



The research design follows an exploratory qualitative approach that moves from a theoretical foundation through empirical investigation to framework development. The iterative process enables a dialogue between theory and data, where emerging themes inform subsequent data collection and analysis, ultimately contributing to the development of a contextually relevant strategic framework.

Therefore, to gather relevant data, the study employs a purposive sampling technique, focusing on a sample of 25 professionals from the dairy industry in Zimbabwe. This technique is particularly effective as it enables the researcher to select knowledgeable and experienced participants in the supply chain dynamics specific to the dairy sector, ensuring that the selected interviews yield rich, informative data aligned with the research objectives. Participants included key stakeholders such as dairy farmers, processors, distributors, and policymakers, representing various aspects of the supply chain. This diversity enables the study to capture different perspectives and insights on collaboration and trust, which is essential for developing a comprehensive framework to improve supply chain performance.

Data was collected through semi-structured interviews, facilitating an adaptive approach that encourages in-depth exploration of participants' insights while focusing on key research themes (Patak et al., 2022). Semi-structured interviews allow for follow-up questions, enabling the researcher to probe deeper into specific issues as they arise during the conversation. Thematic analysis was utilised as the primary method for data analysis, following the guidelines set out by Braun and Clarke (2022), which emphasises a systematic approach to identifying, analysing, and reporting themes within the data (Stewart et al., 2024). The thematic analysis allows for a detailed examination of patterns and categories that emerge from the interviews, facilitating a nuanced understanding of how strategic collaboration and trust are perceived within the Zimbabwean dairy supply chain context. Through this analysis, the study elucidates the barriers and facilitators of collaboration and trust, ultimately contributing to developing a strategic framework that enhances supply chain performance in this industry.

4. RESEARCH RESULTS

Before presenting detailed findings, Figure 3 provides a visual representation of the thematic analysis framework that emerged from the data, showing the interconnections between major themes and sub-themes. This framework illustrates how the three major themes (strategic collaboration practices, trust-building mechanisms, and challenges identified) interact dynamically. The overlapping areas represent synergistic effects, where practices and mechanisms can address specific challenges, while tension zones indicate areas where challenges impede the implementation of collaboration and trust-building initiatives.

Figure 3. Thematic analysis framework: Interconnected themes

4.1. Key themes emerging from interviews

The semi-structured interviews conducted with dairy industry professionals in Zimbabwe revealed several key themes crucial for enhancing supply chain performance through strategic collaboration and trust. Firstly, effective strategic collaboration practices emerged as fundamental, particularly the importance of information sharing, which facilitates transparency and aligns stakeholders around common goals. Interviewees emphasised joint decision-making and planning as integral components that foster a collaborative atmosphere, thereby improving responsiveness and operational efficiency. The integration of supply chain processes was highlighted as essential for streamlining operations and ensuring that all members work harmoniously towards shared objectives. Secondly, the trust-building mechanisms identified include the necessity for transparency and communication, which create an environment of openness that underpins trust among stakeholders. Effective relationship management was also discussed, with participants noting that strong interpersonal connections enhance collaboration, while commitment and reliability were recognised as key traits that solidify trust relationships over time. Conversely, the interviews highlighted several challenges that pose significant barriers to effective collaboration and trust in the Zimbabwean dairy supply chain. Institutional and structural challenges were frequently mentioned, with participants expressing concerns about inadequate regulatory frameworks and support systems that limit collaboration efforts.

Furthermore, cultural barriers were noted, where differences in organisational cultures among stakeholders sometimes hindered productive interactions and collaboration. The impact of economic and infrastructure constraints posed a critical threat, as unstable economic conditions and poor infrastructure limit the ability of supply chain actors to maintain consistent and quality interactions, thereby exacerbating collaboration issues. Overall, the findings from these interviews underscore the intricate relationship between strategic collaboration and trust in the supply chain performance of Zimbabwe's dairy industry. They indicate that enhanced information sharing, commitment, and robust relationship management can significantly mitigate the identified challenges, ultimately leading to improved operational efficiency and sustainability within the sector. This insight aligns with existing literature that emphasises the pivotal role of trust and collaboration in driving supply chain excellence and resilience (Rashid et al., 2023). Therefore, addressing these challenges through targeted strategies could foster a more cooperative and trustworthy supply chain environment, which is essential for advancing the dairy industry in Zimbabwe.

Table 1 below presents the thematic analysis of interviews with participants from Zimbabwe's dairy industry, revealing three major thematic areas: strategic collaboration practices, trust-building mechanisms, and identified challenges. Under strategic collaboration practices, information sharing, joint decision-making and planning, and integration of supply chain processes were highlighted as critical elements frequently cited by participants (e.g., P14, P20, P21, P23). Trust-building mechanisms emphasised transparency and communication, relationship management, and the importance of commitment and reliability across supply chain actors (notably P16, P18, P22). Meanwhile, several challenges were consistently reported, with economic and infrastructure constraints being the most commonly identified across nearly all participants (P14–P25). Institutional and structural challenges and cultural barriers also emerged prominently, indicating specific areas where interventions are needed to enhance performance and sustainability in Zimbabwe's dairy supply chain.

Table 1. Key themes, sub-themes, and participant references from interviews

Key themes emerging	*Sub-themes*	*Participant references*
Strategic collaboration practices	Information sharing	P14, P16, P19, P20, P21, P23
	Joint decision-making and planning	P14, P17, P20, P21, P23, P25
	Integration of supply chain processes	P14, P16, P19, P20, P21, P22, P23, P25
Trust-building mechanisms	Transparency and communication	P14, P16, P18, P19, P21, P23
	Relationship management	P14, P16, P17, P18, P19, P22, P23, P25
	Commitment and reliability	P14, P18, P19, P20, P22, P23, P25
Challenges identified	Institutional and structural challenges	P14, P16, P18, P20, P21, P22, P23, P25
	Cultural barriers	P14, P17, P20, P22, P23, P25
	Economic and infrastructure constraints	P14, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25

4.2. Strategic collaboration practices

The analysis highlights three core themes: information sharing, joint decision-making, and integration of supply chain processes. Participants emphasised the critical role of effective information sharing. Stakeholders are better equipped to respond proactively to market changes and consumer demands by facilitating timely access to pertinent data. For instance, interviewees emphasised that sharing production forecasts and inventory levels among dairy farmers, processors, and distributors enables improved synchronisation of supply chain activities, ultimately reducing waste and enhancing efficiency. One participant highlighted, "*They have to communicate, all of them, what the customer wants, and they have to meet the customer's requirements*" (P25, personal

communication, March 21, 2024). Another noted, "*The milk transporter cannot just do as he likes; the feed guy has to be coordinated; there is harmonisation of these processes*" (P23, personal communication, March 15, 2024).

Joint decision-making was highlighted as an essential practice, involving multiple stakeholders in the decision-making process and aligning their goals and objectives, thereby enhancing the commitment of each party involved. For example, participants described instances where integrated planning sessions between farmers and processors helped balance production capabilities with market demand, thereby optimising resource allocation and minimising interruptions in the supply chain. As one participant indicated, "*If all players in the industry come together and work out maybe a formula that they can use in order to produce milk at a reasonable price, I think it's better"* (P21, personal communication, March 7, 2024).

The integration of supply chain processes was similarly underscored as a crucial element. Participants highlighted its role in improving operational alignment and efficiency across the supply chain. This integration helps stakeholders to streamline their processes and ensure more seamless operations from production to final delivery. One participant emphasised, "*We gave grants to large-scale farmers to help small-scale farmers; we also developed processes to develop new collection centres... that is the model we have been promoting, and now it is working well"* (P20, personal communication, February 23, 2024). These strategic collaboration practices underline the importance of cohesive efforts in addressing the complexities of the dairy supply chain in Zimbabwe and point toward a clear path for cultivating a more effective and resilient supply chain environment (Donthi et al., 2024).

4.3. Trust-building mechanisms

The findings from the semi-structured interviews with dairy industry professionals in Zimbabwe reveal significant insights into trust-building mechanisms, highlighting core themes such as transparency and communication, relationship management, commitment, and reliability. Participants emphasised the importance of transparency in building trust, noting its role in establishing stakeholder accountability. For instance, one participant explained, "*We regulate; we ensure that the products they are dealing with are safe for human consumption, so we monitor that, and stakeholders appreciate our role*" (P23, personal communication, March 3, 2024). Effective communication was similarly underscored, with another participant remarking, "*They have to communicate, all of them, what the customer wants, and they have to meet the customer's requirement*" (P25, personal communication, March 21, 2024), highlighting how clear, regular dialogue enhances mutual understanding and alignment.

Relationship management, commitment, and reliability also emerged as vital trust-building components. Interviewees emphasised the importance of nurturing interpersonal relationships, with a participant noting the significance of a collective vision and ongoing investment in relationship-building efforts: "*Since last year, we started with a dairy multi-stakeholder platform where all players meet every quarter… there is a collective vision where people are now meeting and working together*" (P21, personal communication, March 7, 2024). Another interviewee further reinforced commitment and reliability: "*There is excellent cooperation; obviously, the Dairy Industry Trust has done a great deal in engaging the government, and the government is listening*" (P22, personal communication, March 2, 2024). Collectively, these trust-building mechanisms demonstrate that interpersonal connections, reliable engagements, and clear communication are pivotal to fostering strategic collaboration, ultimately enhancing performance and resilience in Zimbabwe's dairy industry.

4.4. Challenges identified

Participants in the interviews identified several critical challenges that inhibit the implementation of collaboration and trust strategies within the Zimbabwean dairy industry supply chain. Among these, institutional and structural challenges were frequently cited, particularly the lack of supportive governance frameworks and regulatory environments that facilitate cooperative efforts. Many stakeholders expressed concern that regulatory bodies do not adequately promote or enforce collaboration among industry actors. As highlighted by one interviewee, "*Regulatory bodies do not adequately promote or enforce collaboration among industry actors, leading to fragmented relationships and inefficient practices*" (P22, personal communication, March 2, 2024). Additionally, another participant mentioned, "*In terms of challenges, the biggest issues include high compliance costs, feed costs, livestock movement restrictions, and inadequate infrastructure*" (P21, personal communication, March 7, 2024).

Cultural barriers also play a significant role in impeding the development of trust and collaboration. Participants noted that traditional practices and attitudes toward information sharing can be deeply ingrained among stakeholders. One participant highlighted, "*Greed is a challenge; stakeholders can arbitrarily increase prices without adequate communication, causing distrust among supply chain partners*" (P25, personal communication, March 21, 2024). Economic and infrastructure constraints are compounding these issues, significantly affecting the operational capabilities of dairy farms and processing units. Participants consistently mentioned economic challenges, including fluctuating commodity prices and limited access to financing. A participant specifically emphasised, "*Inadequate infrastructure, such as poor transportation networks and insufficient cold chain facilities, hampers timely product delivery and exacerbates trust deficits*" (P22, personal communication, March 2, 2024). Addressing these multifaceted challenges is crucial for enhancing strategic collaboration and improving the performance and resilience of Zimbabwe's dairy industry.

5. DISCUSSION OF RESULTS

5.1. Analysis of strategic collaboration practices

The findings regarding strategic collaboration practices within Zimbabwe's dairy industry reveal the pivotal roles of information sharing, joint decision-making, and the integration of supply chain

processes in enhancing operational effectiveness. Effective information sharing emerged as a crucial practice, enabling stakeholders to synchronise their activities and respond more adeptly to market fluctuations. This aligns with the assertion by Baah, Agyeman, et al. (2022) that information visibility fosters agility and operational responsiveness. Participants reported that transparent communication of production schedules and quality expectations builds trust and prevents potential conflicts, thereby streamlining the decision-making process. This finding highlights a broader trend observed in supply chains, where collaboration and shared knowledge are identified as key determinants of performance and resilience, particularly in sectors that handle perishable goods, such as dairy. Moreover, joint decision-making among supply chain actors reflects a significant shift from traditional siloed approaches to a more collaborative framework encompassing all stakeholders — from farmers to processors and retailers. This approach fosters a united front in responding to external pressures and cultivates a more profound sense of commitment among partners. However, the claim regarding strong partnerships during crises does not appear to be directly supported by Laorden et al. (2022), who focus on supply chain disruptions rather than partnerships. The integration of supply chain processes reported by participants further enhances operational synergy, promoting efficiency and reducing redundancy in supply chain activities. However, cultural and institutional barriers pose significant obstacles to fully realising these collaborative practices. While the potential impacts on supply chain performance are considerable, practitioners must address these barriers to foster a collaborative environment that nurtures trust and enhances overall efficiency within Zimbabwe's dairy sector.

5.2. Analysis of trust-building mechanisms

The effectiveness of the identified trust-building mechanisms in Zimbabwe's dairy supply chains is highlighted by the emphasis on transparency, effective communication, relationship management, commitment, and reliability. According to the interviewees, transparency is paramount, as it fosters a willingness among stakeholders to share critical operational information and data, which has been shown to significantly enhance trust between parties. Participants expressed that regular updates on production capabilities, quality standards, and demand forecasts establish a solid foundation for trust, streamlining operational processes and reducing uncertainties, thereby enhancing supply chain agility. Effective communication practices further reinforce this transparency, as stakeholders reported that open dialogues about issues and expectations help mitigate misunderstandings and build a more cohesive collaborative environment. In this context, relationship management emerges as an essential mechanism, as positive interpersonal relationships encourage partner commitment and reinforce the reliability of collaborative efforts, ultimately leading to improved supply chain outcomes. Despite these promising mechanisms, participants acknowledged limitations that could impede their effectiveness. Specifically, concerns exist regarding the inconsistency of commitment levels and reliability among different stakeholders, which can undermine the trust-building processes. Hurduzeu and Popescu (2024) demonstrate that transparency can lead to enhanced efficiency in supply chains, suggesting that a lack of transparency may undermine overall trust-building efforts. However, this reference primarily focuses on blockchain's role in supply chain transparency rather than directly analysing trust issues related to stakeholder commitment.

Furthermore, cultural and institutional barriers often impede effective relationship management. Interviewees noted that entrenched attitudes toward information sharing, coupled with insufficient regulations that promote collaborative behaviours, can stifle the development of trustful relationships. This concern is consistent with findings from Rashid et al. (2022), which emphasise that inadequate frameworks for collaboration can hinder trust-building in supply chains. As such, while the identified mechanisms have the potential to significantly enhance trust within Zimbabwe's dairy supply chain, addressing these limitations through strategic initiatives and institutional reforms will be essential for fully realizing their benefits and fostering a more resilient and efficient supply chain environment.

5.3. Overcoming identified challenges

A multifaceted approach involving stakeholders and policymakers is essential to effectively overcome the identified challenges related to collaboration and trust in Zimbabwe's dairy supply chains. Firstly, stakeholders — from dairy farmers to processors and distributors — must prioritise establishing a culture of transparency and open communication. That can be achieved through regular meetings and collaborative forums where all parties can share insights and challenges, fostering an environment of mutual respect and understanding. Moreover, adopting digital tools, such as blockchain technology or cloud-based platforms, can enhance information visibility and ensure that data is readily accessible, reliable, and tamper-proof. Such technologies have been shown to play a crucial role in establishing trust by providing verifiable and transparent supply chain data, as noted by Khanna et al. (2022). Therefore, stakeholders should actively invest in training on technological tools that promote data sharing, which can streamline operations and reinforce relational ties among partners. On the policymaking front, there is a pressing need for the government to establish supportive regulatory frameworks that foster collaboration throughout the dairy supply chain. Therefore, includes implementing policies that incentivise cooperative behaviour, such as tax breaks for joint ventures or funding for collaborative training programs to enhance trust and teamwork. Policymakers should also address infrastructural challenges, as poor logistics have consistently been identified as a significant barrier to efficiency. Investments in transport infrastructure and the establishment of supportive policies — similar to the recommendations found in the works of Susanty et al. (2020) — can significantly improve accessibility, thereby enhancing the overall capability of supply chains. Additionally, legislators should work to harmonise standards across the industry, ensuring that all stakeholders operate under a standard set of regulations and practices. By aligning the regulatory environment and stakeholder interests, a more

robust and collaborative dairy supply chain in Zimbabwe can be realised, leading to improved performance and sustainability.

5.4. Strategic framework for Zimbabwe's dairy supply chain

This proposed strategic framework for enhancing supply chain collaboration and trust in Zimbabwe's dairy industry comprises several key components designed to address the identified challenges and build upon existing practices. The framework consists of three core components: collaboration networks, information transparency and technology integration, and regulatory and institutional support (Figure 4). Firstly, collaboration networks involve creating formal platforms for stakeholders — including farmers, processors, distributors, and policymakers — to engage in regular dialogue and collaborative planning. These networks would facilitate joint decision-making and encourage active participation among diverse stakeholders, fostering a sense of shared responsibility and accountability. Stakeholders can implement this component by scheduling regular meetings, establishing working groups dedicated to specific challenges, and utilising collaborative tools that enable real-time updates and problem-solving, enhancing inter-organisational trust.

Figure 4. Strategic framework for Zimbabwe's dairy supply chain

The second component, information transparency and technology integration, emphasises the importance of adopting modern technologies, such as blockchain and IoT, to improve data sharing and communication. By ensuring that all parties within the supply chain have access to reliable and transparent information regarding production schedules, quality controls, and market demands, stakeholders can better coordinate their efforts and respond more effectively to fluctuations in supply and demand. Practical implementation may involve investments in digital literacy training for dairy farmers and establishing centralised data-sharing systems that can track the movement of goods and monitor quality metrics across the supply chain. Lastly, regulatory and institutional support highlights the need for government intervention in creating an enabling environment for collaboration, which involves developing policies that encourage cooperative behaviour and provide financial incentives for stakeholders to invest in joint initiatives. Policymakers should work to align regulatory frameworks with industry practices and facilitate stakeholder engagement in governance processes, ensuring that all voices are heard in developing effective supply chain strategies (Kelly et al., 2020; Creutzinger et al., 2021). By operationalising these components, the strategic framework aims to build a robust and adaptive supply chain that enhances collaboration and trust among all participants in Zimbabwe's dairy industry.

6. CONCLUSION

This study identifies key strategic collaboration practices and trust-building mechanisms crucial for enhancing supply chain performance in Zimbabwe's dairy industry. The findings reveal that information sharing, joint decision-making, process integration, transparency, effective communication, and relationship management significantly enhance operational efficiency and responsiveness. The proposed strategic framework provides stakeholders and policymakers with a roadmap for improving collaboration and trust through collaboration networks, information transparency, and regulatory support. Theoretically, the research contributes to the supply chain management literature by demonstrating the interplay between trust and collaboration within a developing economy context, thereby bridging theory and practice to encourage strategic interventions that enhance supply chain performance and sustainability. Despite these contributions, several limitations must be acknowledged. The study's exclusive reliance on qualitative methodology limits statistical generalizability across different geographic and economic contexts. The cross-sectional design fails to examine the dynamic evolution of trust and collaboration relationships over time, preventing an understanding of how these mechanisms adapt to changing conditions in Zimbabwe's volatile economic environment. Additionally, potential response bias and the exclusion of informal market participants may limit the comprehensiveness of findings. The geographic concentration within Zimbabwe's dairy sector limits the theoretical transferability to other sub-Saharan African countries, while the lack of member checking and multiple coders may introduce analytical bias.

Future research should address these limitations through mixed-methods designs combining qualitative depth with quantitative rigour, particularly longitudinal studies tracking supply chain actors over multiple years. Comparative cross-national studies across Sub-Saharan African countries can identify universal principles versus context-specific mechanisms, while experimental research designs can provide more substantial evidence regarding the causality and effectiveness of trust-building mechanisms. Sector-specific research examining other agricultural sectors, technology adoption studies focusing on digital platforms in resource-constrained environments, and climate change adaptation research would enhance understanding of collaborative mechanisms.

Theoretical development should refine the multi-theoretical framework toward testable models, integrate additional perspectives, including network theory and organisational learning, and examine both positive and negative consequences of collaboration. Policy-oriented research should investigate how governmental interventions can effectively promote collaboration while avoiding unintended consequences, examining different regulatory approaches and institutional design mechanisms. This study lays a foundation for future explorations into enhancing collaboration and trust, ultimately promoting a more sustainable and efficient dairy supply chain in Zimbabwe and beyond.

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