

Elements of Collaborative Relationships and Supply Chain Performance Of SMEs in Bushenyi District

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Abstract: The research investigated how incentive alignment, together with information sharing and joint decision-making, impacts the supply chain performance of small and medium enterprises in Bushenyi District, Uganda. The study employed Relational Exchange Theory to analyze the supply chain performance of SMEs through a cross-sectional quantitative design, which collected data from 327 owners/managers using structured questionnaires. The results from Pearson correlation and multiple regression analysis showed that information sharing and joint decision-making positively affected supply chain performance but incentive alignment failed to produce a significant impact. The research results showed information sharing produced the most significant impact ($\beta = 0.559$, $p < 0.01$) followed by joint decision-making ($\beta = 0.073$, $p < 0.05$) yet incentive alignment did not produce a significant effect ($\beta = -0.068$, $p > 0.05$). The model explained 29.5% of the variance in supply chain performance (Adjusted $R^2 = 0.295$). The research indicates that better communication and collaborative planning serve as essential factors for achieving supply chain efficiency among rural SMEs. The study reveals that informal SME networks face specific challenges when attempting to establish formal reward systems because incentive alignment shows minimal impact. The research demonstrates that Bushenyi requires improved information systems together with enhanced participatory planning and digital infrastructure development to enhance supply chain outcomes. The recommendations include supporting digital communication platforms and providing institutional backing for collaborative decision-making processes and educating stakeholders about incentive-based partnership models.

Keywords: *Collaborative Relationships, Incentive alignment, information sharing, joint decision making, Supply Chain Performance, SMEs, Bushenyi District*

1. Background

Supply chain management (SCM) has become essential for operational efficiency and competitive advantage especially for Small and Medium Enterprises (SMEs) in recent years (Sánchez-Florez et al., 2020). The performance of the entire value chain depends on the nature and quality of collaborative relationships which extend from suppliers to customers (Christopher, 2005; Argyropoulou et al., 2010). The collaborative elements of incentive alignment together with information sharing and joint decision-making serve as crucial factors for enhancing supply chain responsiveness and cost-efficiency and reliability among SMEs. SMEs function as the foundation of most developing economies through their substantial contribution to employment and GDP. SMEs in Uganda drive 90% of the private sector and create jobs for more than 2.5 million people while generating 75% of the national GDP (Uganda Investment Authority, 2019). Bushenyi District SMEs operate in agro-processing and trade and manufacturing fields while depending on local and regional supply chains for their supply and delivery operations. These SMEs face numerous performance challenges that include late deliveries, inconsistent quality and fragmented supplier relationships because their supply chain systems remain weak (Ntayi et al., 2010; Uganda Business Impact Survey, 2020).

The COVID-19 pandemic revealed fundamental structural flaws which exist within Uganda's SME supply chains. The combination of lockdowns and restricted movement resulted in disrupted supply flows and breakdowns in partner coordination which highlighted the need for robust collaborative supply chain structures (Fawcett et al., 2011; Chen et al., 2007). Strong collaborative relationships must be fostered because the current uncertain environment requires them. The studies demonstrate that SMEs no longer operate independently because they now function as interconnected supply chains which produce value through trusted relationships and shared knowledge and coordinated objectives (Javanmardi et al., 2012; Leng & Zailani, 2012). The existing research on procurement and operational practices in Kampala and Arua includes work by Eyaa & Ntayi (2010) and Tukamuhabwa (2011) and Hamiza & Isoh (2019) but there is minimal evidence about how collaborative relationships affect the supply chain performance of SMEs in Bushenyi District. The current research indicates that procurement practices only explain a limited portion of supply

chain performance differences yet fail to investigate the substantial unexplored space of relational dynamics (Eyaa & Ntayi, 2010). This research investigates how collaborative relationship elements specifically incentive alignment information sharing and joint decision-making affect the supply chain performance of SMEs operating in Bushenyi District. The research aims to deliver specific practical solutions that will boost supply chain resilience together with efficiency and responsiveness in rural SME ecosystems.

2. Literature Review

The study uses Relational Exchange Theory because it shows how firms build better performance through long-term trust-based relationships. The theory differs from transactional models because it focuses on sustained collaboration between partners who share mutual commitment and exchange information (Dwyer, Schurr & Oh, 1987; Morgan & Hunt, 1994). The supply chain requires relational norms including incentive alignment and information sharing and joint decision-making to establish a stable and adaptive supply network (Heide & John, 1990; Simatupang & Sridharan, 2005). Research findings validate the importance of this theory for supply chain performance. The literature shows that information sharing between SMEs and their partners builds trust and reduces uncertainty while enabling synchronized operations (Prajogo & Olhager, 2012; Kim, Umanath & Kim, 2005). Joint decision-making enables companies to develop aligned plans and solve problems better and respond to customer need changes (Nyaga, Whipple & Lynch, 2010; Wagner & Bode, 2008). This study demonstrates that incentive alignment does not produce significant effects because Bushenyi District operates through informal systems and trust-based exchanges rather than formal incentives (Zhou & Benton, 2007; Yildiz & Feyzioğlu, 2019). Relational Exchange Theory offers a strong framework to understand how SMEs use collaborative mechanisms to boost supply chain performance in developing regions with weak institutional frameworks and strong relationship dynamics (Fynes, Voss & de Búrca, 2005; Graca, Barry & Doney, 2015; Krause, Handfield & Tyler, 2007).

Incentive Alignment and Supply Chain Performance of SMEs

Supply chain partners need incentive alignment to develop trust and achieve mutual commitment and collaborative work. Supply chain actors including SMEs and their suppliers achieve better coordination and performance results when they share common goals and distribute risks and rewards fairly (Simatupang & Sridharan, 2002; Brinkhoff, Özer & Sargut, 2015). Zhu et al. (2022) demonstrated that incentive alignment enhances both transparency and responsiveness in SME supply chains particularly when markets experience volatility. The lack of incentive alignment in Bushenyi District leads to delivery failures and poor product quality and unreliable suppliers among many SMEs who operate in agro-processing and retail. The situation requires formalized contracts and joint planning to minimize operational challenges.

Mensah and Boateng (2023) demonstrate that aligned incentives help SMEs become more agile when responding to supply chain disruptions. The discovery holds particular importance for Bushenyi's rural area because its SMEs face increased challenges with transportation and logistics. Agyapong et al. (2021) observe that low-capacity environments are typically controlled by informal agreements yet incentive misalignment drives SMEs to abandon potentially beneficial partnerships. The regional circumstances demonstrate an information deficit about how Bushenyi SMEs should link supplier and buyer incentives to achieve performance results which requires empirical research.

Information Sharing and Supply Chain Performance of SMEs

Supply chain actors exchange demand forecasts and inventory levels and order status and market changes in a timely and accurate manner (Li et al., 2009; Boyce, Mano & Kent, 2016). The research community agrees that better information sharing improves supply chain visibility and coordination particularly for SMEs with restricted planning capabilities (Min, 2005; Jain et al., 2009). Kohli and Jensen (2010) demonstrate that digital technology-based information-sharing practices reduce uncertainties while improving joint decision-making processes.

The UBOS (2023) reports show that most SMEs in Uganda depend on phone calls and physical visits for communication which restricts their ability to respond quickly and track their products. Tumusiime and Kato (2024) found that rural SMEs cannot synchronize their procurement and delivery schedules because they lack digital tools. The situation in Bushenyi becomes more severe because SMEs face poor internet connectivity and

insufficient IT literacy. The supply chains of these businesses experience delays together with order duplication and poor inventory accuracy.

Research by Nabimanya & Tukamushaba (2023) and Kumar et al. (2024) demonstrates that implementing information systems partially within SME supply chains produces quantifiable improvements in order accuracy and delivery reliability and responsiveness metrics. The adoption and operationalization of these systems in Bushenyi lacks sufficient research-based understanding. The current lack of research creates an essential knowledge gap about how information-sharing practices affect supply chain performance among SMEs in this area.

Joint Decision Making and Supply Chain Performance of SMEs

The core element of collaborative supply chain management consists of joint decision-making processes that combine shared planning activities with problem-solving and resource distribution (Simatupang & Sridharan, 2002; Cao & Zhang, 2011). Research conducted by Horvath (2001) and Cao et al. (2010) demonstrates that collective decision-making between SMEs and suppliers leads to decreased conflict and improved trust while enhancing flexibility. The volatile demand patterns and perishable nature of goods in Bushenyi District's agro-based businesses require joint decision-making.

Zhu, Wang and Li (2022) demonstrate that SMEs that involve their suppliers in procurement and inventory and delivery scheduling decisions achieve better coordination and lower operational risks. Joint decision-making in rural Uganda faces challenges because of power imbalances and insufficient formal governance systems (Akello et al., 2025). Suppliers maintain control over supply chain decisions because of their scale and capital advantages which results in Bushenyi SMEs having minimal authority over upstream supply chain choices.

Nabimanya and Tukamushaba (2023) highlight that poor institutional backing together with insufficient managerial expertise stops numerous SMEs from taking part in joint planning activities. The structural barrier limits the achievable performance gains that collaborative decision-making could produce. The current research lacks sufficient data about the methods through which Bushenyi SMEs address their limitations and establish fair supply chain governance participation. The research gap has important implications for regional SME support programs.

3. Methodology

The research used a quantitative cross-sectional design to study how collaborative relationships affect supply chain performance in SMEs. The research used a structured questionnaire to gather data from 1,932 SMEs and selected 383 participants according to Krejcie and Morgan's (1970) table. The study received 327 valid responses which resulted in an 85.4% response rate. The research used stratified and simple random sampling methods to achieve business category representation. The main data source consisted of primary data obtained through self-administered questionnaires which assessed collaborative relationships (incentive alignment, information sharing, joint decision-making) as well as procurement practices and information technology and supply chain performance. All items used a five-point Likert scale for measurement and experts validated the instrument while Content Validity Index (CVI) and Cronbach's alpha coefficients between 0.715 and 0.820 confirmed reliability. The data analysis used SPSS software to generate descriptive statistics and perform Pearson correlation and multiple regression analysis while mediation analysis followed Baron and Kenny's (1986) procedure. The study maintained ethical standards by protecting participant confidentiality and anonymity while ensuring voluntary participation throughout the research

4. Results of the Study

The research data showed that Mbarara City SME owners and managers were predominantly male at 64.8% while females made up 35.2%. The majority of respondents possessed a diploma (45.9%) followed by degree holders (33.6%) which indicated an educated population that could understand and respond to supply chain issues. The survey results showed that SMEs operated for 5 to 10 years (49.5%) while 28.4% of the businesses had been in operation for less than five years. The employment size of SMEs revealed that 48.3% of them had

between 10 to 19 staff members which indicated their businesses operated at a small scale with restricted potential for extensive operations.

The supplier demographic profile showed a male majority (62.7%) with diploma qualifications (48.6%) and degree qualifications (35.2%). The operational period of supplier businesses spanned between 5–10 years (59.6%) and less than 5 years (26%) which provided sufficient time to develop supply chain knowledge. The supplier firms employed 39.4% of their staff between 10–19 employees and 29.1% between 20–29 employees which indicates their moderate workforce size but restricted ability to process high-volume orders during peak times. The data indicates that SMEs together with their suppliers in Bushenyi possess adequate experience and educational background yet their small business size restricts their supply chain efficiency.

Pearson Correlation matrix

The study variables underwent Pearson’s Correlation analysis to determine their linear association strength which produced the result r. The Pearson correlation coefficient r exists between -1 and +1 on the value scale. The absence of any relationship between two variables becomes evident when the correlation coefficient equals 0. The correlation coefficient shows positive values when one variable increases in value and the other variable also increases in value. The value of the correlation coefficient shows negative association when one variable increases while the other variable decreases. The continuous nature of study variables made Pearson correlation the best method to assess their variable relationships.

Correlation Matrix

Variables	1	2	3	4	5	6	7
Incentive alignment-1	1						
Information sharing-2	.566**	1					
Joint decision making-3	.156**	.255**	1				
Collaborative relationships-4	.764**	.642**	.617**	1			
Cost effectiveness-5	.462**	.753**	.219**	.660**	1		
SME responsiveness-6	-0.055	.090*	.101**	0.065	.218**	1	
Supply Chain Performance-7	.259**	.539**	.205**	.463**	.779**	.782**	1

** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Incentive alignment and supply chain performance of SMEs

The results Table above indicate that there is a positive and significant relationship between incentive alignment relationships and Supply Chain Performance of SMEs in Bushenyi (r=.259, p<.01). This implies that any positive change in incentive alignment is associated with a positive change in Supply Chain Performance of SMEs in Bushenyi District.

Information sharing and supply chain performance of SMEs

The above results indicate that there is a positive and significant relationship between information sharing relationships and Supply Chain Performance of SMEs in Bushenyi (r=.539, p<.01). This implies that any positive change in information sharing is associated with a positive change in Supply Chain Performance of SMEs in Bushenyi District.

Joint decision-making and supply chain performance of SMEs

The results Table above indicate that there is a positive and significant relationship between joint decision-making relationships and Supply Chain Performance of SMEs in Bushenyi (r=.205, p<.01). This implies that any positive change in joint decision-making is associated with a positive change in Supply Chain Performance of SMEs in Bushenyi District.

Multiple regression analysis

A multiple regression analysis was run to explain the predictive power of the independent variables on the dependent variable and to show the causal relationship among the study variables.

Multiple regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.791	0.144		12.406	0.000
	Incentive alignment	-0.065	0.038	-0.068	-1.709	0.088
	Information sharing	0.442	0.032	0.559	13.719	0.000
	Joint decision making	0.068	0.031	0.073	2.147	0.032
R		.546 ^a				
R Square		0.298				
Adjusted R Square		0.295				
F		92.047				
Sig.		.000 ^b				

a. Dependent Variable: Supply Chain Performance

The results indicate that incentive alignment was not confirmed to have a positive significant relationship with the supply chain performance of SMEs in Bushenyi (Beta = -0.068, P<.01). This implies that changes in incentive alignment do not have any effect on the supply chain performance of SMEs in Bushenyi. The results also indicate that information sharing is a significant predictor of supply chain performance (Beta = 0.559, p<.01). This implies that a unit increase in information sharing will result in to 0.559 unit increase in supply chain performance.

The results further indicated that joint decision making has a significant positive relationship with supply chain performance (Beta = 0.073, p<.01). This implies that a unit increase in joint decision making will result in to 0.073 unit increase in supply chain performance. The results finally indicate that elements of collaborative relationship (incentive alignment, information sharing and joint decision making) explain 29.5% (Adjusted R Square=.295) of the variations in supply chain performance. This also implies that the remaining 70.5% is explained by other factors not considered in this study.

5. Discussion and Recommendations

The research data showed information sharing between partners as the most important element for SMEs in Bushenyi District to achieve better supply chain performance. The study results show that supply chain performance improves when supply chain partners exchange information openly and on time. The study results confirm the findings of Li et al. (2009) and Kohli and Jensen (2010) who demonstrated that information sharing leads to better decision-making and improved demand forecasting and customer satisfaction. The improved information flows in Bushenyi SMEs would help to solve the delivery delays and stock-outs and communication problems with suppliers and clients.

The results of this study show that joint decision-making has a positive and significant relationship with supply chain performance. The study results indicate that collaborative decision-making and problem-solving and planning activities improve operational efficiency and alignment between SMEs and their partners. The study findings support the results of Simatupang and Sidrihanan (2002) and Fawcett et al. (2011) who found that joint decision-making leads to better goal alignment and smoother coordination. The study did not find any

significant relationship between incentive alignment and supply chain performance. The study results may be due to the limited use of formal performance-based incentive structures or the lack of trust-based relationships among SMEs in Bushenyi. The study results indicate that the model explains 29.5% of the variance in supply chain performance, which means that other factors such as technology adoption, procurement practices, infrastructure and external market dynamics also affect supply chain outcomes in the district.

Recommendations

The research indicates that Bushenyi District SMEs should focus on improving information sharing through digital platforms and regular communication forums and supplier engagement mechanisms. The local government and development agencies should provide support for SME capacity development in data management and collaborative planning to improve joint decision-making practices. The lack of significant incentive alignment requires SME operators to receive education about structured incentive systems including performance-based contracts and mutual reward schemes to develop sustainable trust-based relationships. The overall supply chain performance requires interventions that focus on ICT infrastructure development and skills training and financing access to achieve better results.

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