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Supply Chain Performance in the Wooden Furniture Industry: The Effect of Institutional Pressures and Supply Chain Integration in a Developing Country Context

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ABSTRACT

The purpose of this paper is to investigate the relationship between institutional pressures, supply chain integration and supply chain performance in the wooden furniture industry. Cross-sectional survey data collected from 86 registered wooden furniture firms in Uganda were analyzed using Partial Least Square Structural Equation Modeling. The study revealed that institutional pressures are positively and significantly related with supply chain performance and that supply chain integration plays a partial mediating role in the institutional pressures-supply chain performance relationship. Further, our component level analysis of institutional pressures reveals that whereas coercive pressure has a discernible positive influence on both supply chain integration and supply chain performance, mimetic pressure does not, while normative pressure positively influences only supply chain integration. These results underline the need to understand the role of individual components of institutional pressures and integration requirements in strategic supply chain management practice in order to boost supply chain performance of the wooden furniture firms.

KEYWORDS

Institutional pressures;
supply chain integration;
supply chain performance;
wooden furniture;
developing country

1. Introduction

Globally, there has been a remarkable rapid growth in the furniture industry in the past decades due to multiple factors including packing innovations, shipping innovations and decreasing world trade barriers (Han et al., 2009). There has also been a dramatic shift in the supply and flow of furniture in the global market, which has intensified global competition (Han et al., 2009). Eksioglu et al. (2010) noted that furniture companies wishing to succeed in an industry witnessing such dramatic changes must take advantage of globalization and excellent supply chain management. Firms in the furniture industry should cultivate efficient logistics management through choosing the right supply chain models, promoting cooperation with their supply chain partners, and adopting new technologies to obtain a competitive advantage (Eksioglu et al., 2010).

Uganda's wooden furniture industry is steadily expanding due to the growing demand for quality furniture that has motivated several producers, including many foreign

companies from Malaysia, South Africa and China (Kizito et al., 2012). The entry of large scale foreign producers is progressively making the market very competitive, especially for the domestic Small and Medium Enterprise (SME) firms, which dominate the wooden furniture industry (Kizito et al., 2012) – SMEs make up 80% of the wood furniture industry in Uganda (Zziwa et al., 2006). Wooden furniture SMEs should employ supply chain strategies that ensure supply chain efficiency in order to maintain competitiveness (Kizito et al., 2012). Generally, SMEs in Uganda are faced with supply chain deficiencies leading to poor supply chain performance (SCP) (Tukamuhabwa, 2023). The wooden furniture SMEs are not an exception: the wooden furniture industry deserves considerable attention because wood is one of the major natural resources that drive economic growth and development in Uganda (Kizito et al., 2012). Despite this, the SCP of Ugandan wooden furniture firms is evidently underrepresented in the extant literature. For example, besides the general scantiness of published studies on the precursors of SCP in Ugandan firms, the few available recent empirical studies have focused on other issues such as the role of power in agribusiness SMEs (Odongo et al., 2017), supply chain governance structures in the dairy sector (Kataike et al., 2019), supply chain orientation and supply chain risk management capabilities in agro-food processing firms (Tukamuhabwa, 2023).

The extant literature has revealed that SCP dimensions such as quality, safety, sustainability, competitive advantage, cost, delivery and customer satisfaction can be influenced by institutional factors (e.g. Caridi et al., 2010; Durach & Wiengarten, 2017; Polák & Drápalová, 2012; Vanpoucke et al., 2016; Vlachos, 2014, 2016; Zhu et al., 2013). Indeed, reports indicate that the institutional and regulatory environment constrain industrialization in Uganda and elsewhere in Africa (Obwona et al., 2014) – Ugandan industries thrive mainly on the importation of raw materials, which reflects the criticality of inbound supply chains. Institutional theory presupposes that organizational activities can be explained as ways to gather, influence and maintain social impressions (Lu & Koufteros, 2014). This includes coercive isomorphism – pressures exerted on organizations by agencies upon which they are dependent e.g. regulatory institutions and core customers (Akgün & Monios, 2018; Lu & Koufteros, 2014). Normative pressure stems primarily from professional and industrial expectations, which determine conditions and methods of work (DiMaggio & Powell, 1983), and thus compliance is driven by social obligations (Akgün & Monios, 2018). Mimetic institutional isomorphic pressures originate mainly from competitors and other firms that have been considered successful and legitimate (DiMaggio & Powell, 1983). Mimetic pressures can, for example, encourage firms to imitate successful competitors regarding supply chain management practices that help to improve competitive advantage (Zhu et al., 2013).

Researchers (e.g. Cai et al., 2010; Wong & Boon-Itt, 2008) have argued that institutional pressures can be considered as means to improve supply chain integration (SCI). Firms can exert normative pressures on other supply chain members to influence their processes and practices leading to SCI, especially, in situations of high environmental uncertainty. SCI can be in the form of supplier integration, internal integration and customer integration (Cao et al., 2015; Wong & Boon-Itt, 2008). Several studies have established that SCI is fundamental for SCP improvement (Aslam et al., 2018; Bagchi et al., 2005; Frohlich & Westbrook, 2001; Gonzalez et al., 2008; Kumar et al., 2017; Leuschner et al., 2013; Seuring & Muller, 2008). However, others

have considered SCI as a dimension rather than an antecedent of SCP (Al-Shboul et al., 2017). There are various studies that have used the institutional theory to explain practices that may culminate in improved SCP such as reverse logistics (Ye et al., 2013), information technology (Liu et al., 2010) and innovation (Huang & Yang, 2014). However, only a few have studied institutional effects on supply chain integration – the few available studies have moreover investigated the indirect effects with a focus on the developed countries (Huo et al., 2013), whose institutions are known to be more mature and functional than those in developing countries. It is also surprising that besides the fact that the wooden furniture industry is indispensable in people's livelihoods and socio-economic development, it has been underrepresented in the supply chain and operations management literature. In concurrence with scholars (e.g. Huo et al., 2013), there is a further need to investigate the effect of institutional pressures on supply chain integration and performance, especially in a unique context of the wooden furniture industry of a developing economy.

The rest of the paper proceeds as follows. The next section deals with the theoretical foundation. This is followed by literature review and hypotheses development. The fourth section contains the methodology employed, while the section on results and discussion follows before conclusion, implications and limitations are presented.

2. Theoretical foundation

In this study, the institutional theory and resource dependence theory provide complementarity in understanding firms' SCP in the wooden furniture industry. Institutions are made up of governance structures, social arrangements, norms and rules, whereby various political, economic, cultural and social aspects shape behaviors, perceptions and choices of such institutions (Akgün & Monios, 2018; Lu & Koufteros, 2014). DiMaggio and Powell (1983) categorized sources of institutional pressures into coercive pressure, normative pressure and mimetic pressure. Coercive isomorphism emanates from both formal and informal pressures exerted on organizations by agencies they depend on and these pressures could be from governments, for example, in the form of trade regulations, rules, laws, and behavior inducements such as incentives, major customers, suppliers, authorities or agencies that firms depend on (Lu & Koufteros, 2014). Mimetic pressure is mainly from competitors and other firms that are considered successful and legitimate across the industry (DiMaggio & Powell, 1983). Normative pressure stems primarily from professional and industrial expectations, which determine conditions and methods of work (DiMaggio & Powell, 1983). Compliance under normative isomorphism is driven by social obligations and this can be reflected in certifications and accreditations (Akgün & Monios, 2018). Although firms must be both economically and socially rational (Liu et al., 2010), Huo et al. (2013) argue that they may make decisions that lead to conformity to institutional pressures from entities in the environment in which they operate such as customers and suppliers in order to acquire and maintain social legitimacy, rather than economic efficiency. However, it is argued that such decisions may eventually generate economic benefits and efficiency (Rogers et al., 2007). Studies have acknowledged that institutional factors are important for SCI (Huo et al., 2013), as well as improving performance in supply chain operations (e.g. Al-Shboul et al., 2017; Durach & Wiengarten, 2017; Vanpoucke et al., 2016).

Although the institutional theory is important in explaining the source of pressures that motivate firms to integrate and improve their SCP, it is limited in explaining why firms subjected to such pressures actually integrate. One reason could be the need to share complementally resources necessary to respond to such pressures. Moreover, we argue that firms respond to pressures from the institutions they depend on in order to optimize resources and improve performance. Indeed, due to limited resources, the resource dependence theory advocates coordination across functional units in an organization to integrate complex resources such as knowledge and skills to mitigate environmental uncertainties that constrain performance (Eng, 2006; Mohsen & Eng, 2016). According to the resource dependence theory, a firm is understood as an open system, which is dependent on contingencies of other firms and the entire operating environment (Pfeffer & Salancik, 1978). Pfeffer and Salancik (1978) identified vertical integration as one of the strategies that firms can take to minimize environmental dependences. Hence, the resource dependence theory is relevant in terms of explaining the general relationships between firms, their environments, and the actions firms take to reduce such dependences (Hillman et al., 2009). The resource dependence theory has, for example, been used to explain the link between logistics integration and SCP (Kim et al., 2020). It has also helped in explaining how organizations make changes to their internal processes as well as relationships with suppliers and customers in order to adapt to changes in their environments, including compliance to international standards (Singh et al., 2011), which is a response to coercive pressure. Because a firm finds it difficult to possess all resources required for achieving a sustainable competitive advantage in isolation (Handfield, 1994), the resource dependence theory suggests that firms that lack specific resources may be able to acquire them by establishing external relationships, making them dependent upon each other in order to create complementarity of resources necessary to enhance their performance (Kim et al., 2020; Lee et al., 2012; Lii & Kuo, 2016).

3. Literature review and hypotheses development

Today, managing supply chains for enhanced performance has gained increased interest due to its value for firms' success. The primary goal of enhancing SCP is to satisfy the needs of the ultimate customers (Zelbst et al., 2010). The concept of SCP has been operationalized differently with some authors considering it as a one-dimensional construct (e.g. Chowdhury & Mohammed, 2016; Whitten et al., 2012), while others consider it as multidimensional. For example, (Aramyan et al., 2006) considered efficiency, flexibility, and responsiveness as dimensions of SCP, while Al-Shboul et al. (2017) used dimensions of flexibility, customer responsiveness, supplier performance and integration of the supply chain.

The extant literature reveals that research focusing on the antecedents of SCP of firms in the wooden furniture industry is limited. Recent studies have for example focused on additive manufacturing techniques (Murmura & Bravi, 2017), policies to increase the implementation of green supply chain management practices (Susanty et al., 2019), assessing sustainability in the manufacturing process (Hartini et al., 2020), circular economy practices (Susanty et al., 2020) and antidumping actions and financial performance (Zhang & Sun, 2018). More generally, recent studies on the antecedents of SCP

have offered limited attention to institutional pressures and SCI. For example, Pushpamali et al. (2020) have focused on reverse logistics practices, Sindhuja (2021) on security initiatives and robustness, Fatorachian and Kazemi (2021) on industry 4.0, Gu et al. (2021) on patterns of information technology use and supply chain resilience, Odongo et al. (2017) on the role of power and Kataike et al. (2019) on supply chain governance structures.

Flynn et al. (2010) define SCI as the degree to which a firm strategically collaborates with its supply chain partners and collaboratively manages intra and inter organization processes. In the current interconnected market place, SCI has been acknowledged as one of the sources of competitive advantage (Wong & Boon-Itt, 2008). Song and Song (2021) underline that firms wishing to succeed should aim to achieve information integration, process integration and organizational integration across their supply chains. Effective supply chain management requires intra-firm integration of business processes and external integration across suppliers and customers: this involves collaboration, interaction, information flow linkage and business process linkage (Wong & Boon-Itt, 2008). Many of the studies on SCI have emphasized three different types of integration: internal integration, supplier integration and customer integration (e.g. Cao et al., 2015; Wong & Boon-Itt, 2008). SCI represents a change in attitude from adversarial to cooperative relationships within the firm, its suppliers and customers (Cao et al., 2015).

Frohlich and Westbrook (2001) argue that SCI is important in maximization of firms' SCP. Firms' integration with their supply chain partners can minimize product and process environmental burdens, reduce unnecessary wastes and improve supply chain efficiencies (Seuring & Muller, 2008). Due to integration, the roles and relationships of various elements within and across organizations can synergistically contribute to improved environmental programs and performance (Gonzalez et al., 2008). At firm level, Bagchi et al. (2005) asserted that the degree of SCI influences transaction costs and firm efficiency. Similarly, Leuschner et al. (2013) revealed that SCI and firm performance have a positive and significant correlation. Since SCI can be considered as a dynamic capability that firms assimilate over time (Vlachos, 2016), it can significantly influence SCP (Aslam et al., 2018).

Kumar et al. (2017) found that supplier integration, information integration, internal integration and customer integration influence SCP in terms of operational performance, production flexibility and inventory turns, order fulfillment rate and total logistics costs. Huo et al. (2014) observed that different types of SCI practices in different categories of firms had different performance outcomes, where process integration contributes more to the financial performance than internal integration. Similarly, Flynn et al. (2010) found that internal and customer integration are more strongly related to improving performance than supplier integration. Yu and Huo (2018) add that supplier, internal and customer quality integration improve operational performance, customer service level, overall product quality, product support, delivery dependability, pre-sale customer service, delivery speed and volume flexibility. Similarly, Tsanos and Zografos (2016) observed that supply chain information integration enhances performance across the supply chain. Lin et al. (2010) confirmed that the drivers of innovation in channel integration are positively associated with SCP. Further, Zsidisin et al. (2015) established a positive relationship between internal integration, supplier integration and supplier performance. Finally, Kim et al. (2020) argued that logistics integration in the form of

building a strategic relationship for providing logistics services helps the manufacturing firms to improve performance within their supply chains. Notable, however, is that some studies have shown contradictory results as to whether SCI mechanisms such as cross-functional coordination cultivate or inhibit performance (Mohsen & Eng, 2016). The foregoing discourse therefore leads us to hypothesize as below:

H₁: *There is a positive relationship between SCI and SCP*

The institutional theory is premised not only on firms' rational planning and maximizing outputs, but also on the social influence from the environment from which they operate (Lu & Koufteros, 2014). This underscores the importance of garnering, influencing and maintaining social impressions during firm and inter-firm operations (Lu & Koufteros, 2014). Wong and Boon-Itt (2008) argued that institutional norms can be considered as a means to improve SCI, since firms can exert normative pressures on other supply chain members to influence their processes and practices. This is logical because institutional norms, for example, in the form of various supports, incentives, initiatives and policies from the government, suppliers and customers may motivate firms to integrate internally and with their supply chain partners. It is stressed that a strong supply chain member may apply institutional norms to achieve higher level of organizational integration (DiMaggio & Powell, 1983). Institutional norms can also be observed through the use of power to exert pressure that can influence the practices of other parties such as installing information systems which facilitate connectivity and integration (Wong & Boon-Itt, 2008).

Wong and Boon-Itt (2008) revealed that institutional norms such as associational network, local government and local business culture are fundamental in enhancing the level of SCI, especially in situations of high environmental uncertainty. Caridi et al. (2010) also observed that the context in which the firm operates, which in this case can be institutions, influence SCI. Furthermore, Cai et al. (2010) found that government support and interpersonal relationships significantly affect trust, which subsequently influences information integration in terms of information sharing and collaborative planning. Cai et al. (2010) further found that different institutional forces had different effects: interpersonal relationships had a direct positive impact on information sharing, and government support had a direct positive effect on both information sharing and collaborative planning, while legal protection was not found significant. We therefore theorize as follows:

H₂: *There is a positive relationship between institutional pressures and supply chain integration.*

H_{2a} *Coercive pressure is positively related to supply chain integration.*

H_{2b} *Mimetic pressure is positively related to supply chain integration.*

H_{2c} *Normative pressure is positively related to supply chain integration.*

Institutional theorists posit that conformity to social expectations contribute to firm success and survival (DiMaggio & Powell, 1983). Hence, firms operating in similar environmental conditions are expected to adopt similar strategies, which potentially culminate in gaining social acceptance and thus reaping societal resources, necessary for firm's performance and longevity (Lu & Koufteros, 2014). Institution pressures such as coercive pressures affect green supply chain practices and economic, environmental and operational performance (Zhu et al., 2013). Mimetic institutional isomorphic pressures encourage manufacturers to imitate successful competitors to adopt supply chain management practices for improved competitiveness (Zhu et al., 2013). Caridi et al. (2010) found that the contextual variables influence SCI and performance. Such variables could be in the form of institutional contexts in which supply chains operate, which pose pressures that influence SCP. Researchers (Polák & Drápalová, 2012; Vlachos, 2014) have argued that peer and industry conformity allows companies to meet the expectations of purchasers, users, government, producers and suppliers regarding matters such as quality, safety, price, performance and sustainability.

Vlachos (2016) found that institutional factors positively influenced three logistics performance variables of competitive advantage, cost and customer satisfaction. Customer focus – which may involve responding to customer pressures – helps in the mobilization of supply-chain relational capabilities, which positively influence supply-chain outcomes of customer service and financial performance (Lado et al., 2011). Similarly, Huang and Yang (2014) argued that the relationship between logistics innovation and performance depends on the institutional pressure such as pressure from competitors and support from industrial professional groups. Environmental practices occurring through competitive pressure can create better economic performance in the long term (Huang & Yang, 2014). However, Mollenkopf et al. (2011) emphasized that pressure from regulatory changes seem to have a more negative impact on returns management and customer value. Huang and Yang (2014) add that when regulatory pressures cause firms to execute supply chain activities like reverse logistics innovation, the innovation results in enhanced environmental performance but reduced economic performance. It is further claimed, for example, that if firms' motivation to implement reverse logistics innovation comes primarily from competitive pressures, economic gains and benefits will be relatively strategic, reflecting long-term rather than short-term gains (Huang & Yang, 2014). This is also in line with Ye et al. (2013), who provided evidence for the positive relationship between institutional factors and firm performance. The lack of motivation from customer pressures may cause firms along the supply chain to weaken their environmental performance and lose customers, influencing their economic performance (Zhu & Sarkis, 2007). Vanpoucke et al. (2016) argued that institutional pressures from customers, regulators and society can create motivation in terms of legitimization, competitiveness and ecological response that enhances performance in the supply chain in terms of survival, increased profit and environmental performance. Finally, Durach and Wiengarten (2017) reiterated that institutional and cultural contingencies need to be considered when setting up global supply chains in order to mitigate the risk of supply chain failures resulting from increased risk of late upstream deliveries. This therefore leads to the following hypotheses:

H₃: *There is a positive relationship between institutional pressures and SCP*

H_{3a} *Coercive pressure is positively related to supply chain performance.*

H_{3b} *Mimetic pressure is positively related to supply chain performance.*

H_{3c} *Normative pressure is positively related to supply chain performance.*

The foregoing discourse suggests potential positive relationships between institutional pressures and SCP, institutional pressures and SCI, and SCI and SCP. This suggests a possible mediating role of SCI between institutional pressures and SCP. Moreover, some previous empirical studies reveal that the elements of SCI can mediate in the relationship between different independent variables and SCP (e.g. Eng, 2006; Sundram et al., 2016). Huo et al. (2013) found that normative and mimetic pressures are positively related to both system and process integration in supply chains, which positively influence financial performance. This therefore leads to the following hypothesis:

H₄: *Supply chain integration mediates in the relationship between institutional pressures and SCP*

The above hypotheses are based on the theoretical model demonstrated in Figure 1.

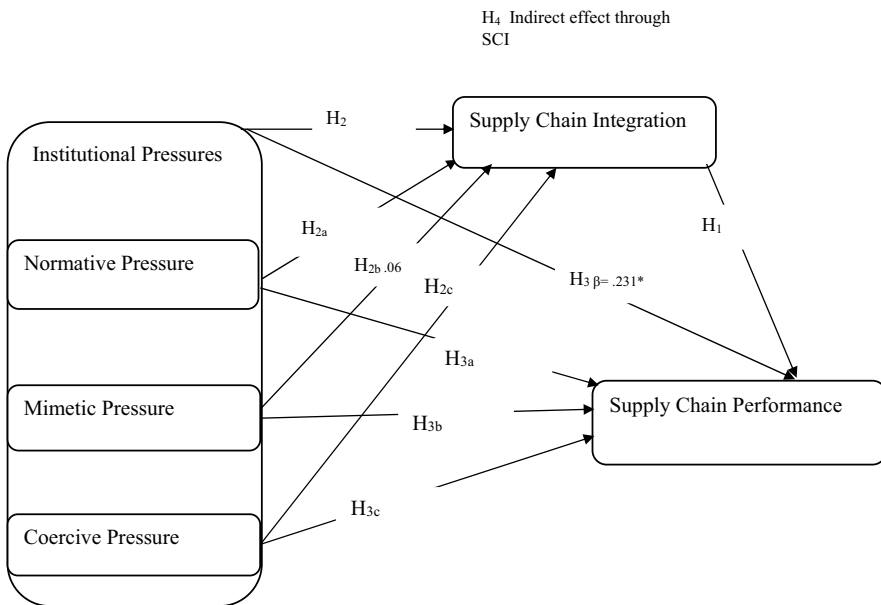


Figure 1. Theoretical Framework.

4. Methodology

4.1 Design, population and sample

This is a cross-sectional quantitative survey, which follows a positivistic epistemological position by adopting a reductionist stance and following pre-specified research hypotheses. We study Ugandan wooden furniture firms in the greater Kampala – the capital city of Uganda – because this region houses relatively higher concentration of wooden furniture manufacturing firms in Uganda (Obwona et al., 2014). The study population comprised of 100 registered furniture retailers/manufacturers operating in Kampala (Uganda Registration Service Bureau, 2019). We took a census of all registered firms as their number (100) was not too large to warrant sampling and because they are easily traceable from respective addresses and transact formal business operations. Many of the wooden furniture firms in Uganda operate in the informal sector, which makes it difficult to access information about them. The unit of analysis was a Ugandan Wood furniture firm and the units of inquiry were employees at the managerial level with considerable knowledge about their supply chain operations. Three respondents per firm were selected to participate in the study, making a grand total of 300 respondents for the one hundred firms. In the end, only 86 out of 100 firms and 247 out of 300 people responded, culminating in response rates of 86% and 82.3% respectively.

4.2 Measurement of variables

Institutional pressures were operationalized using coercive pressure, mimetic pressure and normative pressure dimensions adapted from Liu et al. (2010), Ye et al. (2013), Huo et al. (2013) and Huang and Yang (2014). The measures for supply chain integration were internal integration and external integration (supplier integration and customer integration) adapted from Zhao et al. (2013) and Cao et al. (2015). Finally, supply chain performance was measured using dimensions adapted from Al-Shboul et al. (2017), which consist of flexibility, customer responsiveness and supplier performance. We deliberately ignored supply chain integration as a dimension, which had been used in Al-Shboul et al. (2017) because we considered it as an antecedent rather than a dimension of SCP as hitherto revealed in the literature review section.

4.3 Measurement validation

Before validating the measurement scales, we assessed the suitability of data based on sample size adequacy with the Kaiser–Meyer–Olkin (KMO) and Bartlett tests. The KMO values for all of the variables yielded a cutoff well above 0.5, which is considered acceptable and the Bartlett's test of sphericity in all scales also reached statistical significance. In addition, we assessed the convergent validity of the items using two criteria; standardized item loading of above 0.708 and average variance extracted (AVE) above 0.5, the results in Table 2 indicate that these two criteria were met implying that the items measure what they are intended to measure. Internal consistency was assessed in terms of Cronbach's Alpha and composite reliability by considering indices above 0.7 (Hair et al., 2017). The results in Table 1 revealed that the coefficients for the study variables i.e.

Table 1. Measurement Validation Results for the Global Study Variables.

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Supply Chain Performance	0.903	0.908	0.919	0.509
Supply Chain Integration	0.853	0.856	0.891	0.578
Institutional Pressure	0.866	0.875	0.891	0.622

Source: Results from SmartPLS software 3.3.3.

Table 2. Measurement Validation Results for Components of the Study Variables.

Variables	Components	Item Codes	Item loading	Item Reliability	Ca	rho_A	CR	AVE				
Supply Chain Performance	Supplier performance	SP1	0.805	0.648	0.759	0.76	0.847	0.581				
		SP2	0.733	0.537								
		SP3	0.744	0.554								
		SP4	0.766	0.587								
	Customer responsiveness Flexibility	CR2	0.916	0.839					0.823	0.826	0.919	0.85
		CR3	0.928	0.861					0.834	0.839	0.883	0.602
		FL2	0.78	0.608								
		FL3	0.724	0.524								
		FL4	0.832	0.692								
		FL5	0.764	0.584								
FL6	0.775	0.601										
Supply Chain Integration	Internal Integration	II2	0.868	0.753	0.729	0.74	0.88	0.786				
		II5	0.904	0.817	0.811	0.814	0.876	0.639				
	External integration	CI2	0.753	0.567								
		CI6	0.816	0.666								
		SI2	0.807	0.651					0.729	0.74	0.88	0.786
		SI3	0.82	0.672								
Institutional Pressure	Mimetic Pressure	MP1	0.716	0.513					0.786	0.786	0.854	0.539
		MP3	0.739	0.546								
		MP5	0.755	0.570								
		MP6	0.753	0.567								
		MP7	0.706	0.498								
	Normative pressure	NP2	0.845	0.714	0.756	0.761	0.86	0.671				
		NP4	0.796	0.634	0.773	0.794	0.868	0.688				
		NP7	0.817	0.667								
	Coercive Pressure	CP1	0.887	0.787								
		CP10	0.819	0.671								
		CP5	0.779	0.607								

Source: Results from SmartPLS software 3.3.3.

institutional pressures, SCI and SCP and their respective components were all well above the 0.7 threshold, indicating that the data were reliable.

4.4 Discriminant validity

We further assessed discriminant validity among the study variables using Heterotrait-Monotrait Ratio (HTMT). The values are below the minimum correlation of 0.85 as recommended by Henseler et al. (2015), which shows that the independent variables are distinct from each other in predicting SCP (See Table 3).

4.5 Controlling for common methods bias (CMB)

Common method bias, which is at times referred to as common methods variance or method bias, refers to the potential inflation or deflation of the correlations among observed

Table 3. Discriminant Validity.

Study variables	1	2	3
Institutional pressures (1)			
Supply chain integration (2)	0.731		
Supply chain performance (3)	0.676	0.846	

Source: Results from SmartPLS software 3.3.3.

variables especially in self-report, single method and cross-sectional surveys (Malhotra et al., 2017). This implies that the correlations and other observed measures may lead to incorrect conclusions about the relationship magnitude and significance (Malhotra et al., 2017). The underlying sources of common method variance in self-reported surveys include common rater effects related to the use of a single respondent such as social desirability biases, leniency biases, acquiescence biases, mood state and consistency motif biases (Malhotra et al., 2017; Podsakoff et al., 2003) as well as biases relating to item characteristics and item context effects (Malhotra et al., 2017; Podsakoff et al., 2003). To control for CMB, we used procedural remedies such as keeping questions short and precise, avoiding double-barreled questions and limiting the use of negatively worded items. We ensured respondents' anonymity which enabled them to give unbiased responses. Further, we conducted multiple follow-up calls and e-mail reminders for those who delayed to answer the questionnaire. In addition, we adapted previously validated measurement scales to suit the study context. We also contacted three professional academics and two managers to ensure the items were clear and captured their respective constructs. We further used three respondents for each unit of analysis, whereby we supplied 300 questionnaires in 100 firms.

5. Results and discussion

5.1 Descriptive results

The descriptive results reveal that the majority of the firms were in existence for at least five years (93%) and most of them deal in a mix of both domestic and office furniture (60.5%). The results further show that 9.3% of the firms have less than 5 employees, 57% are in the range of 6–50 employees, 32.6% have 51–100 employees, while 1.2% employ more than 100 people. This implies that the wooden furniture industry in Uganda is dominated by Small and Medium Enterprises (SMEs).

We tested for associations between the study variable using Pearson's correlation coefficient as a prerequisite to assess the direction and significance of the earlier hypothesized relationships between the independent variables and dependent variable. In Table 4 below, we observe that there is a positive and significant relationship between SCI and SCP ($r = .0.75^{***}$, $p < .001$), institutional pressures and SCP ($r = .63^{***}$, $p < .001$), institutional pressures and SCI ($r = 0.66^{***}$, $p < .001$). We also find that each component of institutional pressures is positively and significantly associated with both SCI and SCP.

5.2 Direct hypotheses tests results

To determine the path importance, the validity of the Partial Least square-structural equation model was assessed based on the path coefficients and the significance of the

Table 4. Correlation Analysis.

Study Variables	1	2	3	4	5	6
Coercive Pressure (1)	1.00					
Mimetic Pressure (2)	.58***	1.00				
Normative pressure (3)	.54***	.56***	1.00			
Institutional Pressure (4)	.83***	.86***	.81***	1.00		
Supply chain integration (5)	.67***	.50***	.57***	.66***	1.00	
Supply chain performance (6)	.72***	.48***	.45***	.63***	.75***	1.00

***Correlation is significant at 0.001 levels (2-tailed).

Source: Results from SmartPLS software 3.3.3.

path coefficients. The resulting p-values were obtained using SmartPLS through the bootstrapping process and calculating the p-value for each path. Path coefficients and significance levels were determined by randomly sampling 10,000 instances into the model. The results are presented in Table 5 which is supported by Figure 2

The Figure 2 above shows the results of the outer model in factor loadings and t-values, and the inner model path coefficients and p-values. The results of each proposed hypothesis are summarized in Table 5.

To test for the sub-hypotheses (H_{2a} , H_{2b} , H_{2c} , H_{3a} , H_{3b} , H_{3c}), Figure 3 was constructed and the path importance was also assessed based on the path coefficients and the significance of the path coefficients. The resulting p-values were also obtained using SmartPLS by using bootstrapping process and calculating the p-value for each path. Path coefficients and significance levels were determined by randomly sampling 10,000 instances into the model. The results are presented in Table 5, which is supported by Figure 3

The inner model path coefficient and p-values in Figure 3 show the results of the sub-hypotheses. From our analysis in Table 5, the results indicate that there is a positive and significant relationship between SCI and SCP ($\beta = 0.51$, $p = 0.000$, with lower and upper boundaries of the 95th BCa CI values of 0.34 and 0.68), indicating that when wooden furniture firms perform integrative practices such as frequent cross-functional communication, cooperation and team work as well as early supplier involvement, SCP is likely to improve. Also a positive and significant relationship was established between institutional pressures and SCI ($\beta = 0.66$, $p = 0.000$, with lower and upper boundaries of the 95th BCa CI values of 0.43 and 0.82). This implies that pressures, for example, from major suppliers may force wooden firms to cooperate with them in the form of involving them in new product

Table 5. Direct Hypotheses Tests Results.

Direct effect	β	μ	δ	T Stat	P Values	BCI
Supply chain integration -> Supply chain performance	0.51	0.519	0.101	5.042	0.000	.34-.68
Institutional pressure -> Supply chain integration	0.66	0.64	0.11	6.28	0.000	.43-.82
Institutional pressure -> Supply chain performance	0.23	0.25	0.11	2.2	0.028	.46-.73
Coercive pressure -> Supply chain integration	0.49	0.48	0.08	6.39	0.000	.34-.65
Coercive pressure -> Supply chain performance	0.40	0.37	0.11	3.47	0.001	.19-.63
Mimetic pressure -> Supply chain integration	0.06	0.09	0.12	0.54	0.591	-.22-.27
Mimetic Pressure -> Supply chain performance	0.04	0.08	0.12	0.327	0.751	-.22-.24
Normative pressure -> Supply chain integration	0.27	0.26	0.11	2.50	0.012	.05-.48
Normative pressure -> Supply chain performance	-0.07	-0.06	0.10	0.75	0.451	-.30-.09

Source: Results from SmartPLS software 3.3.3.

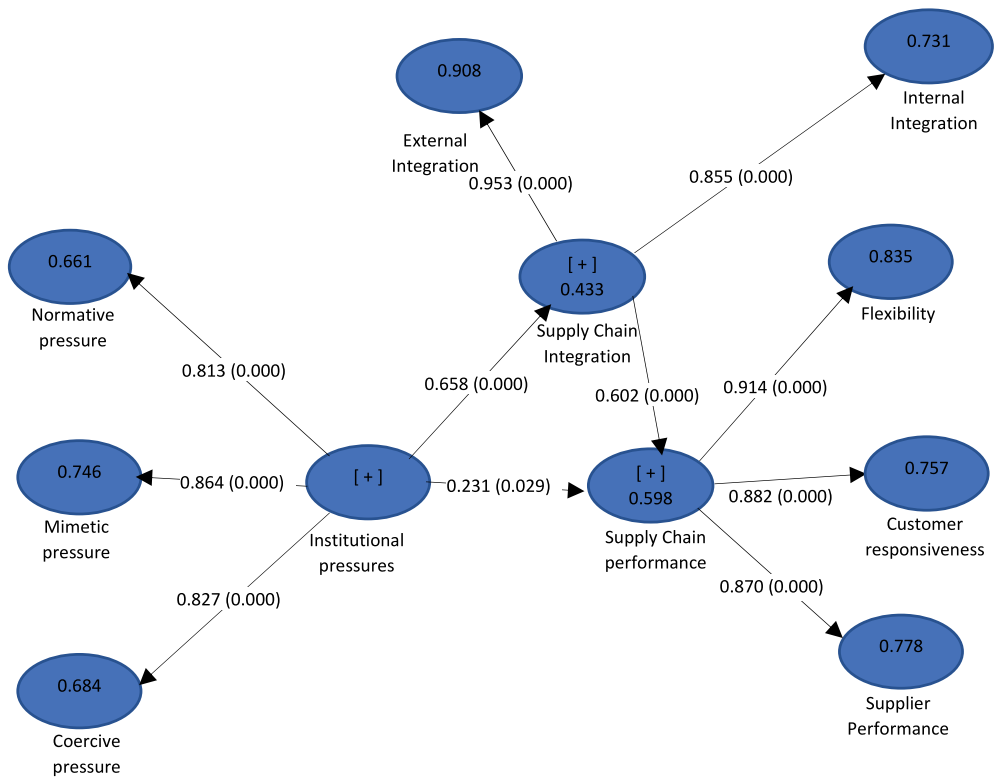


Figure 2. PLS-SEM for SCP with Global Variables. Source: Results from SmartPLS software 3.3.3.

development processes leading to shorter time-to market and improved performance. We also found a positive and significant relationship between institutional pressures and SCP ($\beta = 0.23$, $p = 0.028$, with lower and upper boundaries of the 95th BCa CI values of 0.46 and 0.73). This suggests, for example, that coercive pressures from suppliers in cases where suppliers threaten to withdraw business may force wooden firms to perform as per supplier expectations such as by paying in time and this can increase supplier performance leading to the performance of the entire supply chain. This is because due to interconnectedness, the performance of suppliers upstream affects the downstream chain.

Our further analysis to test for the sub-hypotheses revealed that coercive pressure is positively and significantly associated with both SCI and SCP ($\beta = 0.49$, $p = 0.000$, with lower and upper boundaries of the 95th BCa CI values of 0.34 and 0.65; $\beta = 0.40$, $p = 0.001$, with lower and upper boundaries of the 95th BCa CI values of 0.19 and 0.63), respectively. Normative pressure is also positively and significantly related with SCI ($\beta = 0.27$, $p = 0.012$, with lower and upper boundaries of the 95th BCa CI values of 0.05 and 0.48) but not with SCP ($\beta = -0.07$, $p = 0.451$, with lower and upper boundaries of the 95th BCa CI values of -0.30 and 0.09). Finally, mimetic pressure was found positive and significantly related with SCI but insignificantly related with SCP.

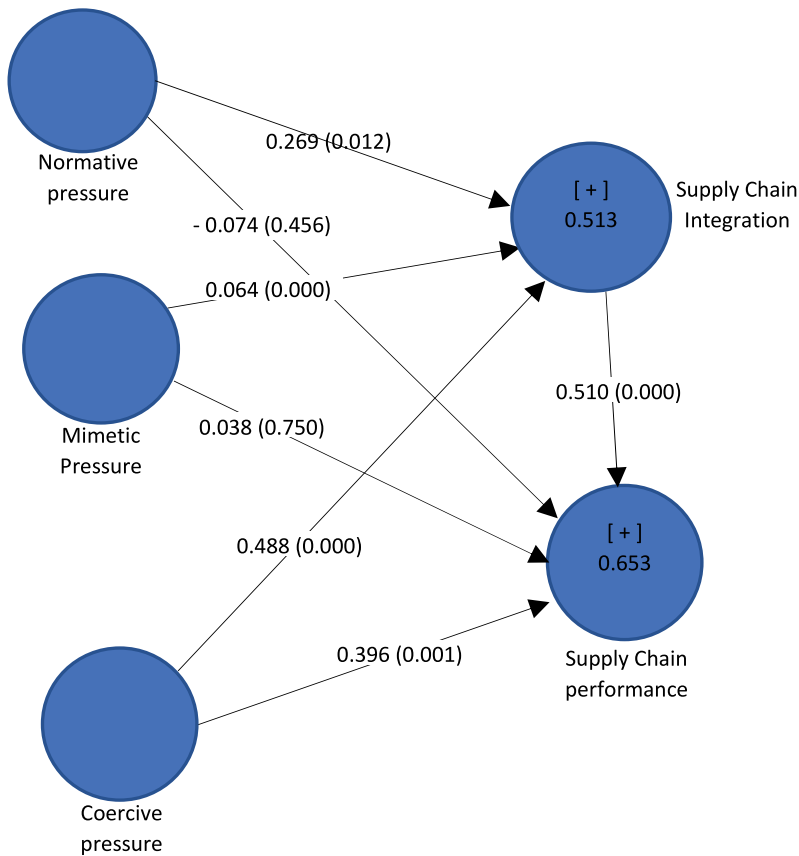


Figure 3. PLS-SEM for SCP with SCI and Individual Components of Institutional Pressures. Source: Results from SmartPLS software 3.3.3.

Table 6. Direct Hypothesis and Mediation Analysis Results for the Main Hypotheses.

Direct effect	β	μ	δ	T Stat	P Values	BCI
Institutional pressure -> Supply chain integration	0.66	0.64	0.11	6.28	0.000	.43–82
Institutional pressure -> Supply chain performance	0.23	0.25	0.11	2.2	0.028	.46–.73
Supply chain Integration -> Supply chain performance	0.60	0.61	0.09	6.7	0.000	.34–.68
Indirect effect	β	μ	δ	T Stat	P Values	BCI
Institutional pressure -> Supply chain integration -> Supply chain performance	0.4	0.39	0.08	4.85	0.000	.27–.60
Total effect	β	μ	δ	T Stat	P Values	BCI
Institutional pressure -> Supply chain integration	0.66	0.64	0.11	6.28	0.000	.43–82
Institutional pressure -> Supply chain performance	0.63	0.64	0.06	9.79	0.000	.46–.73
Supply chain Integration -> Supply chain performance	0.6	0.61	0.09	6.7	0.000	.40–.76

Source: Results from SmartPLS software 3.3.3.

5.3 Mediation testing results

To test for the mediating role of SCI in the relationship between institutional pressures and SCP, we followed Cepeda-Carrión et al. (2017)’s recommendation. From Table 6, the results reveal that SCI has a positive and significant mediating effect in the relationship between institutional pressures and SCP ($\beta = 0.40$, $p = 0.000$, with lower and upper

boundaries of the 95th BCa CI values of 0.27 and 0.60) with Variance Accounted for (VAF) of 63.5%, supporting our theorized indirect effect of institutional pressures through SCI. This implies that SCI plays a partial mediating role between institutional pressures and SCP.

6. Discussion

The results indicate that SCI is a significant predictor of SCP in the wooden furniture firms. This means that a positive change in SCI leads to improved SCP. This implies that when firms integrate internally across functions and with suppliers and customers, their SCP is likely to improve. This is facilitated by routines and processes such as frequent communication among different units within the firm. Similarly, teamwork among members of the firm speeds up the supply chain processes for different products hence shortening the order-to-delivery time. Further, cooperation and coordination between or among the different functions of the firm helps to solve conflicts that may arise to cause unnecessary delays. These findings are supported by the works of Williams et al. (2013) who assert that internal SCI is important for supply chain visibility and responsiveness. Similarly, Yu and Huo (2018) stipulated that internal integration improves operational performance, customer service level, overall product quality, product support, delivery dependability, pre-sale customer service, delivery speed and volume flexibility.

These findings further insinuate that working in partnership with the customers helps wooden furniture firms to understand the needs of customers, thereby enabling them build a customer responsive chain. Similarly, supplier integration, for example, by active involvement of suppliers in new product development helps to shorten the product cycle time thereby shortening the order-to-delivery time as well. The mediating role of SCI further reinforces its criticality for SCP. This finding concurs with Seuring and Muller (2008) who affirm that collaborative organizational actions with supply chain partners to lessen product and process environmental burdens can facilitate reduction of unnecessary wastes and improve supply chain efficiencies. Similarly, Kumar et al. (2017) found that supplier integration and customer integration influence SCP in terms of operational performance, production flexibility and inventory turns, order fulfillment rate and total logistics costs.

Furthermore, the study found a positive and significant relationship between institutional pressures and SCI. This means that SCI in wooden furniture firms is likely to be improved due to institutional pressures. This concurs with Wong and Boon-Itt (2008) who argued that coercive pressures from one party can influence the practices of other parties such as installing information systems, which facilitate connectivity and integration. Such pressure can be from key suppliers who threaten to halt supplies if certain conditions are not met. Fear of losing major suppliers will also force wooden furniture firms to involve suppliers in new product development which enhances supplier integration. Unfavorable government regulations might also force wooden furniture supply chain partners to integrate so as to push for favorable reforms jointly by subjecting government to collective pressure. Normative pressure, for example, emanating from conformity with customers' and suppliers' norms and values improves SCI. These findings are in line with Wong and Boon-Itt (2008) who argued that institutional norms in the form of various supports, incentives, initiatives, associational networks,

local business culture and policies from the government, suppliers and customers can be considered as a means to improve SCI.

However, contrary to the general observation from the literature of the positive relationship between institutional pressures, SCI and SCP, this study found that mimetic pressure has no significant relationship with SCP, while normative pressure is significantly related with only SCI. This implies, for example that, competitive pressure in the wooden furniture industry does not motivate firms to improve their SCP. This disagrees with scholars like Zhu et al. (2013) who maintained that mimetic institutional isomorphic pressures encourage manufacturers to imitate successful competitors to adopt supply chain management practices for improved competitiveness. Similarly, responding to normative pressure, for example, by conforming to industrial norms does not tantamount to enhanced SCP. This again disagrees with Vlachos (2016) who argued that institutional incentives and conformity positively influence logistics performance in terms of cost, customer satisfaction and competitive advantage. The finding also contradicts scholars (e.g. Polák & Drápalová, 2012; Vlachos, 2014), who affirm that peer and industry conformity allows companies to meet the expectations of purchasers, users, government, producers and suppliers regarding matters such as quality, safety, price, performance, and sustainability. This finding is perhaps due to the diverse nature of wooden furniture requirements in Uganda, where customers have idiosyncratic ordering requirements that do not favor standardization.

The study also established that institutional pressures are significant predictors of supply chain performance. This means that institutional pressures are important for improving SCP in the wooden furniture firms in Uganda. However, it was only coercive pressure with a positive and significant effect on SCP. The results therefore imply that when firms are coerced for example by the major suppliers, threatening to take certain actions if they fail to comply with their requests, they tend to streamline their operations to respond easily to the requests by streamlining communication, which improves the overall SCP. This is because being predominantly SMEs, wooden furniture firms in Uganda most likely have low bargaining power and this may limit their supply base for strategic and bottleneck materials if they do not respond to supplier pressure. To the contrary, some researchers (e.g. Huang & Yang, 2014; Mollenkopf et al., 2011) maintain that coercive pressures in the form of regulatory pressures may adversely affect performance. However, our findings confirm Vanpoucke et al.'s (2016) argument that institutional pressures from customers, regulators and society can motivate firms in terms of legitimization, competitiveness and ecological response that enhances SCP in terms of survival, increased profit and environmental performance.

7. Conclusion

The focus of this paper was to examine the relationship between institutional pressures, SCI and SCP in the wooden furniture industry in Uganda. A survey of 86 wooden furniture firms revealed that both institutional pressures and SCI are significant predictors of SCP. This suggests that intra-firm integration, integration with suppliers and customers are perquisites for a wooden furniture firms' SCP, as emphasized by the mediating influence of SCI. The component level analysis of institutional pressures indicated that coercive pressure is positively and significantly related to both SCI and

SCP unlike mimetic pressure. Further, it was found that normative pressure has a positive and significant relationship with SCI and not with SCP in the Ugandan wooden furniture firms.

7.1 Implications for theory and practice

Theoretically, this paper contributes to the available knowledge on SCP in the wooden furniture industry in a developing country context dominated by SMEs. Through the institutional and resource dependence theoretical frameworks, this study shows how the performance of a firm's supply chain can be motivated by external pressures from institutions relevant to a firm's operational efficiency as well as integration exacerbated by resource dependences at firm level and within the supply chain. The study also shows that emphasis should be put on SCI due to its mediating role. The institutional theory as applied in the context of this study underscores the need for firms to scan the environment for institutional factors that might affect the performance of their supply chains, rather than solely concentrating on internal operations. The resource dependence theory reflects the increasing interdependence and interconnectedness of firms along the supply chains and hence the need to integrate in order to benefit from complementary resources. This study therefore exposes the complementariness of both institutional and resource dependence theories in explaining SCP as well as the variations in the influence of each component of institutional pressures on SCI and SCP.

In practice, this study makes various insinuations for firm managers and leaders of different institutions. First, managers need to understand the relevant institutions that might affect the performance of their supply chains and craft appropriate strategic responses. For example, managers should understand the legal requirements such as environmental laws, taxation laws and regulations as well as certification requirements such as ISO and ensure compliance to resultant coercive pressures. This is because failure to comply is likely to attract fines, public discontent and at worst business closure, which tantamount to supply chain breakdown. Firm managers should also understand the requests and expectations of their major suppliers and work toward fulfilling them. This can help to build strong business relationships and supplier confidence, which motivates the supplier to prioritize the firm leading to reliability, flexibility, improved delivery and other aspects of supplier performance. Also, the firm management needs to understand the operations and expectations of customers and respond accordingly. Such response may include product recalls in case of defects as well as resolving other customer complaints such as relating to delivery delays or failures. The resultant customer satisfaction can culminate in customer loyalty, thereby ensuring supply chain continuity since the ultimate focus of supply chain management is customer satisfaction.

Furthermore, firm management should build an atmosphere of intra and inter-firm integration within their supply chains. For example, managers should encourage team work and establish good and strong communication systems so as to encourage free interaction and exchange of information among members. Managers should also encourage strong collaborative activities aimed at boosting SCI such as supplier development and early supplier involvement. Managers should also encourage exchange of information with customers, where feedback for example on delivery performance and quality can facilitate performance improvement. In addition, the government and other

institutions beyond the supply chain such as regulatory bodies should understand that the pressures they exert on firms have ramifications for SCP. They should therefore impose measures cognizant of the potential consequences to firms' SCP.

7.2 Study limitations and further research directions

Similar to most research studies, the current study has conceptual and methodological limitations. First, the cross-sectional design of this study does not capture changes with lapse of time. Behavioral elements such as integration develop over time and are appropriately understood through longitudinal studies. The study is also limited to registered firms operating in the greater Kampala region. In a country with a significant informal sector, the findings may not represent the entire wooden furniture industry in Uganda. Further studies may extend the scope to the informal sector in the entire country. Moreover, for external validity purposes, future similar studies should consider other countries due to cultural and other institutional differences. In addition, case based qualitative studies should also be conducted to have an in-depth understanding of the reasons behind the findings in this study. Finally, there is a likelihood of a stronger mediating role of SCI between normative pressures in particular and SCP, which can be explored further.

Disclosure statement

No potential conflict of interest was reported by the authors.

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