The impact of Logistics Information Sharing and the Mediating Effect of Logistics Performance on Buyer Trust

Renger Kanani[1]

Abstract:
The purpose of this study is to examine the effect of information sharing and the mediating effect of logistics performance in order accuracy and delivery timeliness on buyer trust. Arguing from social capital theory, logistics and supply chain management literature, seven hypotheses were developed. To test the proposed hypotheses, Smart PLS3 was used to estimate the partial least squares structural equation model (PLS-SEM) from 91 buyer-supplier relationships within the printing industry. The findings revealed that the sharing of logistics information has a positive influence on the accuracy of order, delivery timeliness and buyer trust. Moreover, order accuracy and delivery timeliness have a positive influence on the buyers' trust in supplier competency. The mediating effect of logistics performance demonstrated that the effect of information sharing on buyer trust is partially mediated by order accuracy and delivery timeliness.

Keywords: logistics information sharing, order accuracy, delivery timeliness, trust

Introduction

There is no doubt that in today's business world, firms are increasingly facing competition at a global level. Because of relaxed cross border restrictions on trade in many countries, products and investments from one country are finding their ways to markets in other countries (Kanani, 2016). Therefore, to win customer orders and survive in the ever-changing business environment, firms are constantly under pressure to seek means of differentiating themselves from their competitors and retaining their customers. Building customer trust is viewed as one of the decisive ways of retaining customers, by transforming loose business relationships into long-term relationships (Fischer, 2013). Trust is considered to be a powerful commercial asset (Fischer, 2013), mostly because the presence of trust creates commitment in a business relationship, the benefit of which is to lower transactional costs, induce desirable behaviour, reduce the extent of formal contracts, facilitate dispute resolution (Sahay, 2003) and increase the likelihood of rebuy from the same supplier (Jambulingam et al., 2009). On the other hand, the absence of trust can have severe cost implications and, consequently, erode competitive advantage (Fischer, 2013). Both buyers and suppliers regard lack of trust in a relationship as one of the major causes of inefficient business relationships (Sahay, 2003). Therefore, because of its importance, the concept of trust has continued to receive enormous attention in business relationship studies.

A number of the studies on trust have examined different strategies suppliers can use to increase buyers' trust. Some of these strategies include improving information sharing (Tian et al., 2008; Tong and Crosno, 2011; Fernández-Monroy et al., 2018; Susanty et al., 2018), the quality of the

[1] University of Dar es Salaam Business School, Tanzania
Email: kananranger@gmail.com

shared information, service quality (Kim et al., 2011) and investing in relation specific assets (Tian et al., 2008). This study is particularly interested in the role logistics information sharing and logistics performance play in building buyers' trust. Well performing logistics processes may partly contribute to a customer's commitment to the relationship by providing the best customer comparative net value, enhancing their satisfaction, eventually leading to a strong buyer-supplier relationship (Tuan, 2017). From this reasoning, it is logical to argue that a high logistics performance can enhance buyers' trust by increasing their belief in a supplier's ability to meet their needs. Nevertheless, despite the plethora of research contributions on the concept of trust, there are still limited insights into the relationship between logistics performance and trust.

Logistics performance can be captured by hard measures, such as service, cost and return on investments, and soft measures, such as customer satisfaction and loyalty (Tuan, 2017). This study focuses on logistical service measures. Specifically, this study investigates the influence of order fulfilment accuracy and delivery timeliness on buyer trust. Additionally, this study examines the direct and indirect effect of information sharing on buyer trust through logistical performance measures. The rest of this paper is organised in the following way. Section two presents a literature review and the proposed hypotheses, followed by the research methods in section three. Section four presents evaluations of the measurement model and a structural model as well as the tests of the proposed hypotheses discussed in section two. Finally, section five outlines the theoretical contributions of this study, the managerial implications, its limitations and possible extensions by future studies.

Theoretical Review and Research Hypotheses

This study uses social capital theory which focuses on the social relationships of individuals, groups and organisations as well as the benefits gained from these relationships (Liao et al., 2012). Social capital theory literature in supply chain and logistics management regards trust as a critical relational capital that facilitates cooperative activities (Ha, 2011), as well as the creation and maintenance of close relationships among supply chain partners (Zhang and Huo, 2013). It is considered to be the soul of supply chain management (Fu et al., 2016). In a trusting relationship, the buyer expects the supplier to (1) fulfil its obligations, (2) behave in a predictable manner, and, (3) act and negotiate fairly, irrespective of the buyer's ability to control suppliers' behaviours (Kulangara et al., 2016; Huo et al., 2017). Thus, when the buyer trusts the supplier, the buyer's sense of the supplier's opportunism and transaction uncertainty diminishes (Zhang and Huo, 2013), and therefore, the buyer is likely to continue buying from the same supplier.

Most of the literature distinguishes two types of trust: goodwill trust or benevolent trust, and competency trust (Ha, 2011; Huo et al., 2017; Fu et at., 2017). Goodwill trust refers to the buying firm's belief that the supplier can act in its best interest, even when the chance of benefiting from opportunistic behaviour arises, while competency trust refers to the buying firm's belief that the supplier has the expertise required to perform the job effectively and reliably (Jambulingam et al., 2009). Competency trust includes trust in ability, knowledge/skills and, business judgement (Ha, 2011). Goodwill trust tends to develop gradually in the course of business interactions between the buying and the selling firms (Ha, 2011). From the perspective of goodwill trust, trust can be viewed as a belief that develops over a long term. However, trust can also develop in the early stages of the relationship, based on the competency of the supplier. Once a contract triggers a buyer-supplier relationship, both buyer and supplier naturally develop trust feelings by experiencing the contributions of the other party. Thus, from the competency

trust line of reasoning, it is worthwhile to investigate the role of suppliers' logistics performances in influencing buyer trust. The relationships between logistics performance and trust, and how these two variables can be influenced by the sharing of logistics information are discussed further in the subsequent subsections.

Logistics Information Sharing and Logistics Performance

Information sharing is a crucial connector of the relationship between buyer and supplier, rather than ownership (Lotfi et al., 2013; Sukoco et al., 2018). Information sharing in the buyer-supplier relationship context refers to the extent to which the critical and proprietary information is available to both buyer and supplier (Kumar and Pugazhendhi, 2012; Kembro and Näslund, 2014; Sukoco et al., 2018). It can also be viewed as the degree to which each party discloses information that may facilitate the other party's activities (Kulangara et al., 2016). There is much information that can be shared in the supply chain ranging from tactical information, such as purchasing, operations, scheduling and logistics information, to strategic information, such as long-term corporate objectives, market trends, customer information and long-term logistics strategies (Kumar and Pugazhendhi, 2012; Kembro and Näslund, 2014). This study focuses on the sharing of logistical information, including the order fulfilment progress, the appropriateness of order specifications and order changes.

Several studies (e.g. Li et al., 2014; Ha et al., 2011; Oh and Kim, 2011) have confirmed that increased information sharing can enhance performance. The extent to which the information is shared can create opportunities for firms to work collaboratively to remove inefficiencies and, thus, improve the buyer-supplier relationship (Kumar and Pugazhendhi, 2012). In this regard, earlier studies have identified several advantages of information sharing in the supply chain. Among these advantages are reduction of uncertainty, early problem detection, quick responses to customers, better tracing and tracking, as well as reduced cycle times from order to delivery (Lotfi et al., 2013).

Building on the earlier studies on information sharing, this study argues that the sharing of logistical information reduces the uncertainty associated with timeliness of deliveries, as problems that might delay order delivery on time are identified and sorted early. Likewise, the problems concerning order specification can be sorted early before the order is finalised. In this regard, we propose the following hypotheses:

H1a: There is a positive association between logistics information sharing and order accuracy.

H1b: There is a positive association between logistics information sharing and order delivery timeliness.

Logistics Performance and Buyer's Trust

The relationship between performance and trust is well documented (Revilla and Knoppen, 2015; Shin et al., 2018; Abdallah et al., 2017; Ryu et al., 2009; Panahifar et al., 2018; Mesic et al., 2018). However, most of these studies have treated trust as an antecedent of performance. For example, Mesic et al. (2018) identified trust as one of the determinants of supply chain performance in the food industry. Shin et al. (2018) studied relationship quality in the maritime logistics industry and concluded that trust has a positive influence on supply chain performance in this industry. Susanty et al. (2018) concluded that trust has a positive impact on supply chain performance in terms of reducing unnecessary costs, activities and waiting times for material

delivery while enhancing the quality of deliveries. Likewise, in the study of hospital supply chain performance, Abdallah et al. (2017) demonstrated trust as a reliable tool for improving supply chain performance by enhancing flexibility, efficiency and the quality of the order fulfilment process, while decreasing the costs related to monitoring activities. Several other studies have indirectly demonstrated the effect of trust on performance. For example, Ryu et al. (2009) and Panahifar et al. (2018) demonstrated that trust has a positive influence on collaboration among supply chain members, which in turn influences positively supply chain performance. Hua et al. (2009) theorized and confirmed trust as the mediator of the influence of distribution demand management flexibility on distribution performance.

Despite the overwhelming treatment of trust as an antecedent of performance, this study treats trust as an outcome of performance. In line with competency trust reasoning, we argue that a supplier's logistics performance can influence buyer trust, especially in the early stages of their relationship (see Ha et al., 2011). When the supplier has a short delivery cycle, orders arrive at the buyer's premises as promised and deliveries consistently meet the buyer's logistics specifications, the buyer's belief and confidence in the supplier's competency and reliability grows. This belief is termed in social capital theory as competency or ability trust (Jambulingam et al., 2009). From this discussion, we propose the following hypothesis

H2a: There is a positive association between order accuracy and buyer trust in supplier competency.

H2b: There is a positive association between order delivery timeliness and buyer trust in supplier competency.

Mediation Effect of Logistics Performance

Earlier studies in buyer-supplier relationships have argued that a higher level of trust tends to develop when information asymmetry and behavioural uncertainty are low (Dyer and Chu, 2000). Information sharing may reduce information asymmetry, improve transparency and, therefore, facilitate the development of trust (Tian et al., 2008). Research has shown a very strong linkage between information sharing and trust. Kulangara et al. (2016) revealed that information sharing reduces fear of opportunism by the supplier and, thus, increases the buying firm's trust in the supplier. Another study conducted by Tian et al. (2008) in logistics outsourcing showed that logistics service providers' information sharing has a positive impact on logistics service users' trust. Susanty et al. (2018) further confirmed the relationship between information sharing and trust in their study of the procurement of raw cotton.

The impact of information sharing on trust can be explained more clearly by considering its impact on logistics performance measures, in this case, order accuracy and timeliness. When the supplier shares logistical information that is relevant to ensuring order accuracy and timeliness of delivery, the buyer is expected to increase its trust in the ability of the supplier to keep its promises. Following the discussion above, we propose the following hypotheses:

H3a: There is a positive association between logistics information sharing and buyer trust in supplier competency.

H3b: Order accuracy mediates the positive influence of logistics information sharing on buyer trust in supplier competency.

H3c: Order delivery timeliness mediates the positive influence of logistics information sharing on buyer trust in supplier competency.

Figure 1, below, shows a research model that reflects the linkages relating logistics information sharing, logistics performance (order accuracy and delivery timeliness) and buyer trust. According to the model, logistics information sharing influences buyer trust directly and through the mediating effect of order accuracy and delivery timeliness. This model is built on the premise that buyer trust is influenced by the information sharing (Tian et al., 2008; Kulangara et al., 2016; Susanty et al., 2018) and supplier performance.

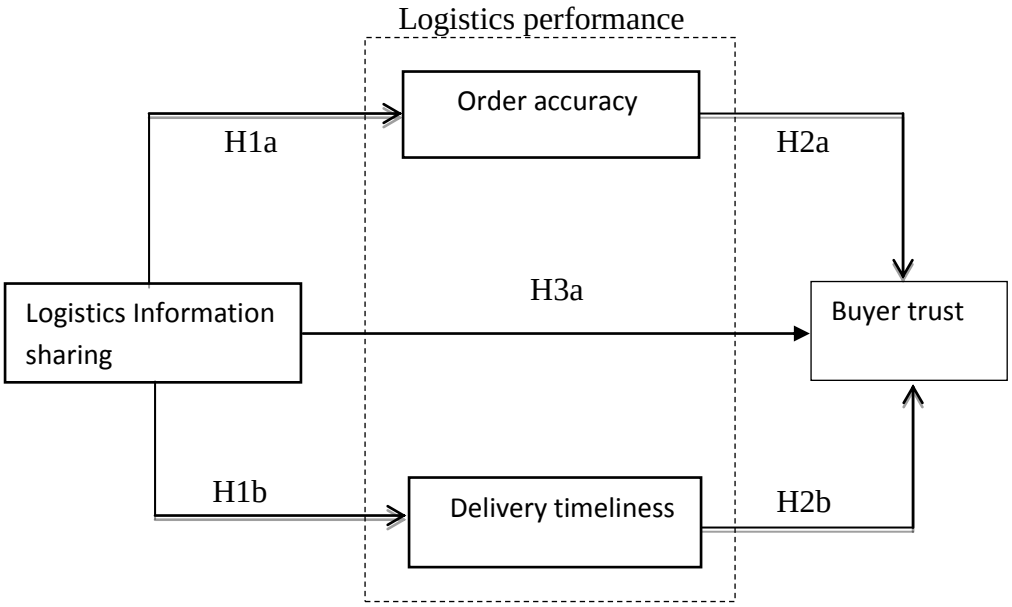

Figure 1: Conceptual model of the relationship between logistics information sharing, logistics performance and buyer trust

Research Method

Research Setting and Data Collection

Data used in this study was collected from the printing and reproduction of recorded media industry in Tanzania. This industry has 48 large firms, 119 small firms and total sales of about 175328 million Tanzanian shillings (URT, 2013). The unit of analysis was the relationship between printing firms and the buyers of their services. A webmail survey, with a structured self-administered questionnaire, was used to solicit responses from the buyers of printing and designing services. Most of the questions in the questionnaire were adapted from other studies, as shown in subsection 3.1, and the responses to our research variables were gauged in a seven-point Likert scale, ranging from strongly disagree to strongly agree. However, prior to data collection, the questionnaire was discussed with academics, and the practitioners from the printing firms using a think-loud technique (see Campanelli, 1997; Ruane, 2005). These discussions provided valuable insights which helped to adapt some of the questions to our research setting and produce an improved questionnaire. The questionnaire was discussed again with one practitioner from the printing industry and the final questionnaire was developed.

Most of the approached printing firms declined to participate in the study and those which agreed to participate declined to share their customer contacts with the researchers. After several follow-ups, some firms agreed to email the questionnaire to their customers rather than sharing customer contacts with the researcher. Eventually, 100 questionnaires were received, of which 91 were deemed fit to be used for further analysis.

Measurements

All constructs in this research were operationalized using multi items reflective scales measured by a 7-points Likert scale, with 1 representing strongly disagree and 7 representing strongly agree. The measurement items (Table1) were adapted from previous studies and adjusted to fit the context of this study.

Table 1: List of measurement items and factor loadings

Scales	*Items forming each scale. Response format: 7 points Likert scale*	*Key references*
Buyer trust (TRUST)	TRUST3: We have trust in this supplier's skills and expertise in this business TRUST4: This supplier always gives us reliable information and advice TRUST5: We trust this supplier's ability to deliver high quality products most of the time	Huo et al., 2017 ; Ha et al., 2011
Order accuracy (ACCUR)	ACCUR1: This supplier rarely supplies products of wrong specifications. ACCUR3: This suppler rarely uses wrong materials for our orders. ACCUR4: This supplier rarely makes mistakes in designing our products.	Vaidyanathan and Devaraj, 2008; Wong et al., 2018
Delivery timeliness (DELT)	DELT1: The order from this supplier always arrives on the promised date/time. DELT2: The time between placing an order and receiving deliveries from this supplier is always short. DELT3: The amount of time our order stays in the queue is always short when buying from this supplier.	Vaidyanathan and Devaraj, 2008; Wong et al., 2018
Logistics information sharing (INFOS)	INFOS1: This supplier always informs us in advance about the status of our order. INFOS2: This supplier always informs us in advance about any delays in fulfilling our order.	Zahay and Handfield, 2004; Tian et al., 2008; Susanty et al., 2018

Information sharing is the only exogenous construct in this study. It refers to the degree to which parties in a transaction are freely and actively providing information to each other (Heide and John, 1992; Tian et al., 2008). If information is shared in a timely manner, it provides sufficient time to respond promptly and efficiently to transactional problems and environmental events (Tian et al., 2008). Researchers have operationalized information sharing, depending on the nature of shared information being investigated. For example, Zahay and Handfield (2004) focused on the sharing of manufacturing information, while Tian et al. (2008) focused on the sharing of business and technology development information. This study focused on the sharing of logistics information. Thus, the two measures were designed to capture the extent to which buyer and supplier share logistics information related to the status of order, possible delays and changes in raw materials specifications.

Order accuracy, delivery timeliness and buyer trust constructs are endogenous constructs. Order accuracy concerns how closely the shipment matches a buyer's order specifications upon arrival. Delivery timeliness refers to whether the orders are delivered to the buyer as promised (Vaidyanathan and Devaraj, 2008). Both order accuracy and delivery timeliness were measured with three items each, adapted with adjustments from Vaidyanathan and Devaraj (2008) and Wong et al. (2018). Likewise, buyer trust in supplier competency was also operationalized using three measurement items, adapted with adjustments from other studies on trust (Huo et al., 2017; Ha et al., 2011)

Data Analysis and Results

Partial least squares structural equation modelling (PLS-SEM) and SmartPLS 3.0 software were used to estimate and test the proposed hypotheses. PLS-SEM was applied because of the complexity of the model in relation to sample size (Hair et al., 2017; Fiedler and Sarstedt, 2014). Additionally, because of its high statistical power, PLS-SEM is more likely to capture any significant effect, when it is indeed present than the covariance based structural equation modelling (CB-SEM) (Fiedler and Sarstedt, 2014; Sarstedt et al., 2017).

Evaluation of Measurement Model

The measurement model was assessed by evaluating the indicators' reliability, internal consistency reliability, convergent validity (Table 1, below) and discriminant validity (Table 2, below) The loadings of all indicators were above the recommended threshold of 0.7 and more than 50 percent of their variances were explained by the latent constructs, confirming the indicators' reliability (Hair et al., 2017). The composite reliabilities (ρ_c) and Cronbach's alphas (α) of all constructs were above the suggested minimum value of 0.7 for adequate internal consistency reliability (Sarstedt et al., 2017).

Table 1: Reliability and validity statistics

Constructs	Items	Loadings	Alpha	CR	AVE	VIF
Information sharing	INFOS1	0.932	0.85	0.93	0.87	2.16
	INFOS2	0.930				2.16
Order Accuracy	ACCUR1	0.880	0.84	0.90	0.76	1.74
	ACCUR3	0.855				2.30
	ACCUR4	0.872				2.22
Delivery timeliness	DERT1	0.868	0.85	0.91	0.76	1.74
	DERT2	0.885				2.44
	DERT3	0.866				2.28
Buyer trust	TRUST3	0.911	0.89	0.93	0.93	2.60
	TRUST4	0.886				2.35
	TRUST5	0.914				2.87

The average variance extracted (AVE) was used to assess convergent validity. The results showed that the AVE value of every construct was well above the acceptable value of 0.5 (Hair et al., 2017). This finding provides support for convergent validity and demonstrates that every construct explains more than 50 percent of the variance in its indicators (Sarstedt et al., 2017). Discriminant validity was assessed by Heterotrait-Monotrait (HTMT) criterion and HTMT inference (see Table2, below). The HTMT criterion confirmed that all constructs were

empirically distinct, since all values in the HTMT matrix were well below the conservative threshold value of 0.85. Likewise, the HTMT inference results were in favour of discriminant validity, as all confidence intervals for the HTMT inference did not contain the value of one (Henseler et al, 2015; Hair et al., 2017).

Table 2: Measurements model validity assessment: $HTMT_{85}$ Criterion and $HTMT_{inference}$

Construct	ACCUR	INFOM	DERT	TRUST
ACCUR	-			
INFOM	0.587[0.348; 0.756]	-		
DERT	0.519[0.280; 0.714]	0.675[0.407; 0.832]	-	
TRUST	0.644[0.293; 0.715]	0.747[0.541;0.880]	0.735[0.512; 0.864]	-

Note: The values in brackets represent the HTMT biased correlated 95% confidence interval

Assessment of Common Method Bias

Common method variance (CMV) refers to the amount of spurious covariance shared among variables because of the common method used in collecting data (Malhotra et al., 2006). It is a common problem in survey research. When CMV is present in the data, it can inflate observed correlations and provide spurious support for the hypotheses being tested (Sharma et al., 2009). It can also deflate the correlation among variables and render the results insignificant (Kock, 2015). This study used a full collinearity test to examine CMV. The findings in Table 3 below show that all the constructs had variance inflated factor (VIF) values of less than the proposed threshold of 3.3 (see Kock, 2015). Based on these results, we can conclude that CMV did not pose a threat in this study.

Table 3: Full collinearity test for common method variance: Inner model VIF values

Independent variables	Dependent Variables			
	ACCUR	INFOM	DERT	TRUST
ACCUR		1.7292	1.8042	1.6129
INFOM	1.7021		2.2775	2.1815
DERT	1.7021	2.2212		1.9078
TRUST	1	2.842	2.6346	

Structural Model Evaluation and Hypotheses Testing

The criteria applied to assess the structural model included the variance inflated factor (VIF), the coefficient of determination (R^2), the f^2effect size and Stone-Geisser's Q^2 criterion for external consistency (see Table 4, below). All the VIF values were below the recommended maximum value of 5, suggesting absence of a collinearity problem among the constructs. The literature suggests the minimum R^2values of 0.25, 0.50 and 0.75 for weak, moderate and substantial predictive power, respectively (Hair et al., 2017). The review of R^2 values showed that information sharing explains slightly above a quarter of the variance of order accuracy ($R^2 = 27\%$) and around a third of the variance of delivery timeliness($R^2 = 33\%$). These three constructs together explain more than half of the variance of buyer trust ($R^2 = 58\%$). Moreover, the endogenous constructs' Q^2 values, which were estimated by using the blindfolding procedure, were all above zero. From these Q^2 values, it is clear that the model demonstrates acceptable predictive accuracy.

Testing of direct effects hypotheses

The hypotheses 1a, 1b and 3a predicted that logistics information sharing has a positive relationship with order accuracy, delivery timeliness and buyer trust. The path coefficients demonstrated the presence of very strong positive and significant relationships between logistics information sharing and order accuracy (H1a; β=0.517, t= 5.58***), and delivery timeliness (H1b; β=0.577, t= 6.13***) and buyer trust (H3a; β=0.308, t= 3.09***). Moreover, the analysis shows that order accuracy has a strong positive and significant influence on buyer trust (H2a; β=0.262, t= 2.75**), and that the positive effect of delivery timeliness on buyer trust is even much stronger than that of order accuracy (H2b; β=0.355, t= 3.38***).

Table 4: Structural model estimates and hypotheses tested

Structural paths	Coefficient (β)	t-values	Biased Correlated Bootstrap 95% C.I.	f^2	Decision
INFORM -> ACCURAC (H1a)	0.517	5.58***	[0.301; 0.668]	0.37	Accepted
INFORM -> DERT (H1b)	0.577	6.13***	[0.351; 0.720]	0.50	Accepted
ACCURAC -> TRUST (H2a)	0.262	2.75**	[0.103; 0.459]	0.12	Accepted
DERT -> TRUST (H2b)	0.355	3.38***	[0.135; 0.544]	0.19	Accepted
INFORM -> TRUST (H3a)	0.308	3.09***	[0.131; 0.549]	0.13	Accepted
R^2 order accuracy	0.27				
R^2 delivery timeliness	0.33				
R^2 Buyer trust	0.58				
Q^2 order accuracy	0.18				
Q^2 delivery timeliness	0.23				
Q^2 Buyer trust	0.41				

Notes: ** significant at p<0.01 (1-tailed); *** significant at p<0.001 (1-tailed); f^2 = effect size; Bootstrapping 95% CI based on 500 bootstrap samples

Testing of indirect effects hypotheses

In testing the mediation hypotheses, we used a bootstrapping approach with 500 samples and followed the procedure recommended by Hair et al. (2017). The results of bootstrapping are presented in the Table 5 below. These results revealed a very strong and significant total mediating effect of order accuracy and delivery timeliness (β= 0.34, t= 4.14***). Likewise, the analysis of specific indirect effects demonstrated that the relationship between logistics information sharing and buyer trust is positively and significantly mediated by order accuracy (β= 0.205, t= 2.29*) and delivery timeliness (β= 0.201, t=3.13***), thereby providing support for H3b and H3c. The significance of the direct relationship between logistics information sharing and buyer trust (p<0.001) revealed that the mediating effects of both order accuracy and delivery timeliness are partial. Additionally, these mediating effects are complementary, since the products of the beta coefficients of the direct effect of information sharing with the indirect effect of order accuracy (β_2= 0.308× β_3= 0.205=0.063) and delivery timeline (β_2= 0.308×β_4=0. 201=0.062) are all positive.

Table 5: Tests of mediating effects

Effect	Coefficient (β)	t-values	Biased Correlated Bootstrap 95% C.I.
Total effect:	β_1 = 0.34	4.14***	[0.194; 0.51]
Direct effect:			
INFORM -> TRUST (H3a):	β_2 = 0.308	3.09***	[0.131; 0.549]
Indirect effect:			
INFORM -> ACCURAC -> TRUST (H3b)	β_3 = 0.205	2.293 *	[0.055; 0.280]
INFORM -> DERT -> TRUST (H3c)	β_4 = 0.201	3.133***	[0.084; 0.347]

Notes: * $p < 0.05$ (1-tailed); ** $p < 0.01$ (1-tailed); Bootstrapping 95% CI based on 500 bootstrap samples

Discussion and Implications

Building on social capital theory and logistics management literature, this study has investigated the impact of information sharing, order accuracy and delivery timeliness on buyer trust. Unlike other studies on trust, this study introduced two logistics performance measures, order accuracy and delivery timeliness, as mediators of the effect of information sharing on trust.

Theoretical Contributions

The contributions of this study are threefold. The first contribution concerns the antecedent of trust. The role of trust in strengthening and developing fruitful business relationships in the supply chain cannot be overemphasised. Earlier studies have provided empirical evidence on the impact of trust on various relationship constructs, such as joint operational activities (Liao et al., 2012), buyers' commitment (Tian et al., 2008), suppliers' innovative capability (Kulangara et al., 2016) and satisfaction (Fernández-Monroy, 2018) and performance (Gaur et al., 2011; Oh and Kim, 2011; Tuan, 2016; Xu et al., 2016). In recent years, there has been a surge of research on the link between trust and performance in the supply chain (Abdallah et al., 2017; Mesic et al., 2018; Shin et al., 2018; Susanty et al., 2018). As discussed in section 2.1, the contributions of this research have concentrated on treating trust as an antecedent of performance. This study enriches the knowledge of trust and performance by introducing logistical performance measures as antecedents of buyer trust. Specifically, it has confirmed that buyer trust in the supply chain can be enhanced by an increase in order accuracy (H2a) and delivery timeliness (H2b).

Consistent with previous studies, such as Tian et al. (2008) and Kulangara et al. (2016), this study has empirically illustrated the positive influence of logistics information sharing on buyer trust (H3a). Despite the presence of empirical evidence for the positive relationship between information sharing and trust, the empirical evidence found by this study provides credence to the existing findings on the information sharing-trust relationship (see Tian et al., 2008; Kulangara et al., 2016).

The second contribution of this study concerns the impact of logistics information sharing on logistics performance, in this case, order accuracy and delivery timeliness. Several studies have concluded that information sharing enhances performance (Li et al., 2014; Sukoco et al. 2018). While these studies have treated performance as one construct in their hypotheses, this study went a step further by unpacking logistics performance into order accuracy and delivery timeliness. The significant positive relationship between logistics information sharing and order accuracy (H1a) and delivery timeliness (H1b) has shed more light on the information sharing-performance relationship.

The last contribution of this study entails the mediating effect of order accuracy (H3b) and delivery timeliness (H3c). These hypotheses were built on the notion that information sharing between the seller and the buyer enhanced buyer trust through improving order accuracy and delivery timeliness. The results revealed that both order accuracy and delivery timeliness partially mediate the effect of information sharing on buyer trust. While the mediating effect of order accuracy is moderate ($p<0.05$), that of delivery timeliness seems to be strong. These mediating findings shed more light on the mechanism by which information sharing influences buyer trust.

Managerial Implications

The managerial implications of this study concern the need for directing efforts towards building customer trust. Trust is an important element in creating customer commitment to a relationship. If buyer trust in the supplier is weak, the buyer becomes less committed to the relationship (Tian et al., 2008). As a result, the occurrence of subsequent transactions becomes doubtful and vulnerable. Thus, because of such a high importance of trust in future business assurance, some researchers have described it as an order qualifier (Doney and Cannon, 1997; Kulangara et al., 2016). That is to say, it is an attribute that a supplier must build in order to be taken seriously and to enter into the buyer's list of possible suppliers. There are different ways that a supplier can build trust and encourage the buyer to commit to relationships, such as investing in relation specific assets (Tian et al., 2008). This study has viewed logistics performance as another avenue for building buyer trust. Therefore, managers should strive for high order accuracy and high delivery timeliness in order to win customer trust and to qualify for future business consideration.

Furthermore, this study emphasizes that it is important for suppliers to share information with the buyer that can enable them to achieve order accuracy and delivery timeliness. For example, in the case of a delay in the delivery of raw materials from the supplier's suppliers, the supplier should share that information with the buyer early and discuss possible solutions, such as using alternative materials that serve the same purpose. In this way, the likelihood of the supplier delivering the order to the buyer on time increases. Moreover, in the case of any changes to the specifications or if the specifications are not clear, the supplier should communicate with the buyer. In this way, the order accuracy and delivery timeliness can be improved and, eventually, the buyer's trust in the supplier's competency is enhanced.

Limitations and Conclusions

Generally, the concept of trust has continued to attract the attention of researchers in logistics and supply chain management. Despite the rich body of knowledge on trust, this research has provided three important contributions. Firstly, it has demonstrated the role of order accuracy and delivery timeliness in building buyer trust. Secondly, this study has revealed that the sharing of logistics information between the supplier and the buyer is important in ensuring that the order is accurate and that delivery is timely. Thirdly, this study has demonstrated the mechanisms by which information sharing enhances buyer trust. That is to say, logistics information sharing partially influences buyer trust through enhancing order accuracy and delivery timeliness.

This study has several limitations which deserve attention by future research on trust. Firstly, this study has considered only three antecedents of buyer trust: order accuracy, delivery timeliness

and information sharing. Future studies could examine whether trust can be influenced by other logistical performance measures, such as logistical information accuracy (Wang et al., 2015) and quality, delivery quality (Wong et al., 2018), delivery flexibility (Green et al. 2008) and ordering procedure efficiency as potential variables for extending this study.

Moreover, even though trust can be formed in the early stages of a relationship, based on the competence of the supplier in meeting customer expectations, it can also develop over time by accumulation through the exchange experiences that indicate the kind of behaviour to expect from the supplier. In this regard, in addition to introducing other logistical performance measures, future studies might consider relationship duration as a relevant moderator of the relationship between logistical performance measures and trust. Lastly, the data used to test the hypotheses in this study was cross-sectional and since trust tends to develop over time, it might be interesting to use longitudinal data.

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