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INFORMATION COMMUNICATION TECHNOLOGY MEDIATION ON SUPPLIER RELATIONSHIP MANAGEMENT AND ORGANISATIONAL PERFORMANCE

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ABSTRACT

This study sought to assess the mediation effect caused by information communication technology on supplier relationship management and organizational performance. RAOSOFT sample size calculator was used to calculate the sample size of 160 employees from firms in the packaging printing industry in Harare, Zimbabwe. A cross-sectional survey design was adopted for the study. Supplier relationship management positively influenced the adoption of information communication technology. Moreover, the mediating role of information communication technology on the relationship between supplier relationship management and organizational performance was also established. The study adds to the existing supply chain body of knowledge by exploring the mediation role of information communication technology in supplier relationship management and organizational performance. The results corroborate earlier studies on the relationships between information communication technology and organizational performance. The study focused on the packaging printing industry in Harare, Zimbabwe, which affected the generalization of the findings. Therefore, future studies on the mediation effect of ICT on SRM and organizational performance should be conducted in other industries in Zimbabwe and the Southern Africa region.

Keywords: information communication technology, organizational performance, supplier relationship management,

A. INTRODUCTION

Over the years, organizations have accepted organizational performance as no longer dependent on their ability and internal effort but greatly influenced by external stakeholders, including suppliers of goods and services (Denhere et al., 2023; Yehualaa, 2023). This influence has gone beyond individual organizations but involves the whole supply chain (Tukimin et al., 2019). The global market opening, rapid technological developments, ever-changing consumer demands, and global challenges, including economic, climate change and wars, have led organizations to establish long-term collaborative relationships with suppliers

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of critical goods and services (Ambekar et al., 2021; Bimha et al., 2020; Mukucha & Chari, 2023; Denhere et al., 2023).

The development of effective supplier relationship management systems has seen suppliers positively contribute to organizational performance (Sasol, 2021; Chatterjee et al., 2023; Denhere et al., 2023). Supplier relationship management (SRM) is thus viewed as a driving force behind the survival of organizations within a supply chain, especially in developing countries such as Zimbabwe, as they operate in a dynamic and challenging economic environment (Dash et al., 2018; Butt, 2019; Chatterjee et al., 2023). This calls for organizations to establish effective SRM, systems that are ICT supported, and develop a quality buyer-supplier relationship that is characterized by trust, commitment, information and knowledge sharing, flexibility to respond to changing demands, reputation, and loyalty (Yehualaa, 2023). The adoption of these SRM systems affirms the importance of the mediating role of ICT in the buyer-supplier relationship and its contribution to organizational performance (Flechsig et al., 2022). These SRM systems are viewed as the organization's innovations in supplier management, as the information technology solutions are compatible across all the supply chains (Chatterjee et al., 2023).

In Zimbabwe (a developing economy), the current unfriendly economic environment, which includes a shortage of foreign currency, the loss of confidence in the local currency, and ever-changing government policies, have affected the supply chain practices of local firms (Bimha et al., 2020). This has resulted in organizations failing to implement their SRM systems fully. Therefore, the main objective of the current study is to assess the effect of ICT's mediating role on supplier relationship management and its ultimate contribution to organizational performance. The study's main question is, "How does ICT mediation on supplier relationship management contribute to organizational performance?" This will be achieved by establishing 1) the impel of supplier relationship management (SRM) and ICT on organizational performance, 2) determining whether ICT influences organizational performance, and 3) ascertaining whether ICT plays a mediation role in the relationship between SRM and organizational performance.

While previous studies on Zimbabwe industries affirmed the appreciation by firms of the importance of establishing long-term collaborative relationships with suppliers of critical goods and services (Chari, 2016; Munyimi & Chari, 2018; Gumbo, 2019; Milambo & Phiri, 2019). However, these prior studies did not include the ICT mediating role in the SRM and organizational performance relationship, creating a knowledge gap on the ICT mediation role.

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Thus, the current study endeavors to bridge the observed knowledge gap by including ICT as a mediator in the relationship between SRM and organizational performance for organizations in the packaging printing industry in Harare, Zimbabwe. The literature review will precede the introduction section.

B. LITERATURE REVIEW

Supplier Relationship Management

While SRM is viewed as a comprehensive technique to manage suppliers and develop a collaborative relationship that ensures an uninterrupted supply of goods and services (Sriyakul et al., 2019; Chartered Institute of Procurement and Supply, 2019; Chikazhe et al., 2023). The development of these SRM systems is the organization's migration from the traditional transactional relationship to a more collaborative relationship that concentrates more on the social structure of the relationship as it is influenced by the social behavior of the transacting parties to the buyer-supplier relationship (Cropanzano et al., 2017; Ojha et al., 2023). Thus, it is greatly influenced by social exchange theory, which focuses on the transacting parties' social behavior. The need for organizations to develop collaborative relationships with suppliers of critical goods and services has elevated SRM to a strategic pillar of the procurement function as firms realize their important contribution to organizational performance (Mukamutembe & Mulyungi, 2018). Developing an SRM system includes three main elements: supplier selection, development, and resource allocation, which are critical for establishing an effective SRM system. Establishing an effective SRM system has compelled organizations to develop a rugged supplier selection, evaluation, and assessment strategy that guarantees suppliers' effective contribution to organizational performance (Bouhnik et al., 2017). The development of IT-based supplier selection processes has assured a critical analysis of potential suppliers before full engagement (Flechsig et al., 2022). Therefore, the supplier selection process is no longer influenced by the acquisition cost factor but also by other factors, including the supplier's ability to deliver quality goods on time, flexibility, adoption of the latest ICT, and capability to respond to consumer demands (Ambekar et al., 2021). Organizations have, in turn, demanded supplier certification by independent public standards organizations, including the International Standards Organization (ISO) and Global Gap (Tukimin et al., 2019). However, Organisations can institute supplier development programs (SDP) for suppliers who commit to building a long-term relationship.

SDP is thus deliberate commitment to avail resources to suppliers to better their performance and capability" (Bai & Sarkis, 2016; Dastyar & Paanek, 2019). These resources can be tangible (capital equipment investment) or intangible (staff training). As a result of significant benefits, including enhanced new product development turnaround time, enhanced capacity utilization, product quality, and reduced production cost, SDPs have gained recognition among manufacturing firms. It should, however, be noted that before resources are committed to supplier development programs, a clear vision of gaining positive organizational performance for both parties in the relationship is established (Bai & Sarkis, 2016; Cropanzano et al., 2017). Initiating SDP increases suppliers' satisfaction levels as it is a commitment to the success of the collaborative relationship (Dastyar & Paanek, 2019; Mukucha & Chari, 2022). It should also be noted that for the successful implementation of the SRM systems, adequate resource allocation is key for the effective contribution to organizational performance (Denhere et al., 2023). These include financial, information, physical, and human resources (Aduro et al., 2020; Hao, 2022). Buying organizations may also provide supply chain finance (SCF), designed to recapitalize suppliers and prevent them from collapsing in difficult economic environments (Moretto & Caniato, 2021).

Information Communication Technology

ICT systems within the procurement function have positively influenced procurement practices and SRM (Ambekar et al., 2021). Organizations are, therefore, compelled to adequately resource the procurement function with an ICT infrastructure to positively contribute to organizational performance (Chikazhe et al., 2023; Denhere et al., 2023). This study understands ICT as facilitating business through information exchange between suppliers and the packaging industry. Information exchange occurs through ICT tools and software programs to enhance just-in-time, vendor-managed inventory and vendor relationship management. The enhancement of these SRM systems through ICT tools affirms the underpinning theory for this study of technological mediation.

Organizational Performance

Organizational performance is viewed as the "firm's ability to achieve its goals and objectives, which are assessed through a set of indicators that are either financial or non-financial" (Singh et al., 2016; Denhere et al., 2023). Financial indicators include return on investment (ROI), Net Profit, and Shareholder value, whereas non-financial indicators include

customer satisfaction, corporate social responsibility (CSR), and environmental sustainability. However, it should be noted that organizational performance is influenced by two main factors: internal (supplier, customer, and employee relationships) and external (macro-economic, political and climate changes) (Bakotic, 2016). An organization is therefore viewed as achieving its objectives upon satisfying its customer demands while meeting stakeholders' expectations, including shareholders, government, and employees (Singh et al., 2016; Dash et al., 2018). Previous studies have proved that collaborative buyer-supplier relationships have helped manufacturing organizations strengthen their competitive advantage through improved organizational performance (Matar & Eneizan, 2018; Vibhakar, 2023). It is, therefore, empirical for organizations to adopt financial and non-financial indicators when measuring performance as they complement each other while giving an objective view to all stakeholders (Rahim et al., 2018; Denhere et al., 2023).

In summary, the reviewed literature has affirmed the positive contribution of supplier relationship management to organizational performance. This compels organizations to establish effective SRM systems with robust supplier selection, assessment and evaluation systems that ensure suppliers positively contribute to organizational performance. These SRM systems, as per literature, are to be supported by an ICT infrastructure that improves communication between the parties to the buyer-supplier relationship through effective information sharing and can integrate with the suppliers' system. The lack of an explicit role of ICT in reviewed literature in SRM propelled the current study to explore the mediation effect of ICT on SRM and organizational performance for firms in the packaging printing industry. The ICT mediating role was explored in the study from an industry operating in a developing economy perspective, where economic challenges ranged from social, political, and financial challenges (including shortages of foreign currency).

Empirical studies have shown that supplier relationship management (SRM) has gained recognition as the organization persuades the development of long-term collaborative relationships with suppliers of critical goods and services to mitigate supply chain risks (Islami & Latkovikj, 2022). This has placed SRM as a critical pillar of supply chain management, as suppliers' performance has also impacted the whole supply chain. In their study of Indian firms, Chatterjee et al. (2023) focused on understanding the factors that influence organizational performance and concluded that supplier relationship management had a beneficial impact on organizational performance. Amoako-Gyampah et al. (2019) and Yehualaa (2023) again confirmed the beneficial impact of SRM on organizational performance. Coupled with the

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current global supply chain challenges, organizations should consider SRM as a strategic element that deserves fair recognition in the strategic realm of the organization, as suppliers play a critical role in the quality of the customer service delivered (Denhere et al., 2023). Based on the conclusions of previous studies, it is hypothesized that

H_1: Supplier relationship management positively influences organizational performance.

Since the turn of the century, technological advancement has driven individuals and organizations to embrace technology in their daily processes. Organizations have thus complied with the fast-changing information communication technology to remain competitive globally. Such technology's development has also influenced how organizations interact with suppliers (Kumar et al., 2020). Organizations have consented to the mediation role of information technology, as information is shared in real-time, thus improving decision-making. Previous studies have established the beneficial effect on SRM (Yeniyurt et al., 2019; Chatterjee et al., 2023). ICT has, thus, enabled organizations to implement supplier relationship management systems, such as Supplier Quality Management (SQM) systems, that have helped organizations monitor their supplier performance and establish supplier development needs. In support of this notion, Kumar et al. (2020) in their studies affirmed the positive influence of ICT on supplier relationship management, as it improved organizations' interactions with suppliers. Again, Jääskeläinen (2021) confirmed in his study the crucial role ICT played in supplier relationship management. Thus, we propose the following hypotheses:

H_2: ICT has a positive role on supplier relationship management.

ICT continues to play a critical role in the success of any organization. The embracing of the digital world has allowed organizations to remain competitive in the global arena as information is available in real-time through the use of technologies such as Robotics Process Automation, Internet of Things (IoT), Artificial Intelligence (AI), and Block Chain Technology (BCT) (Flechsig et al., 2022). Earlier studies by Roushdy et al. (2015) and Khan & Siddqui (2018) reiterated that ICT enabled organizations to gather adequate information in real-time, allowing them to make informed decisions. Considering the above conclusions from earlier studies, it can be hypothesized that:

H_3: ICT has a positive effect on organizational performance.

Organizations must develop a strong social structure with suppliers for effective supplier relationship management. The development of such a strong social structure requires organizations to invest in information and communication technology infrastructure that will establish clear lines of communication and allow effective information sharing between parties

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in the buyer-supplier relationship (Denhere et al., 2023). Roy & Satpathy (2019), in their study on the strategic alliance between information-intensive service and supply chain integration, also affirmed the effect of ICT on organizational performance. Ambekar et al. (2021) again, in their study on the "impact of purchasing practices, supplier relationships, and use of information technology on firm performance, weighed in support of the supplier relationship management and ICT relationship. Therefore, it is difficult or almost impossible for organizations to claim an effective supplier relationship management system in place without the support of ICT (Denhere et al., 2023). What is important in any relationship is the ability to share quality information that is accurate and on time to make critical decisions that will positively contribute to organizational performance. The preceding debate indicates direct relationships among SRM, ICT, and organizational performance. Based on the above conclusions, we propose the following hypothesis:

H_4: ICT mediates the supplier relationship management and organizational performance relationship.

A conceptual framework was developed to highlight the relationship between the research constructs further. The development of the descriptive conceptual framework was based on a thorough review of the literature and the above discussions. The conceptual framework was developed using the social exchange theory (Cropanzano et al., 2017) and the theory of technological mediation (Boer & Kudina, 2022). Studies by Chatterjee et al. (2023) on developing an integrative model for electronic vendor relationship management and Chari (2016) on supplier relationship management and competitiveness in the Bakery industry also informed the development of the conceptual framework in Figure 1 below.

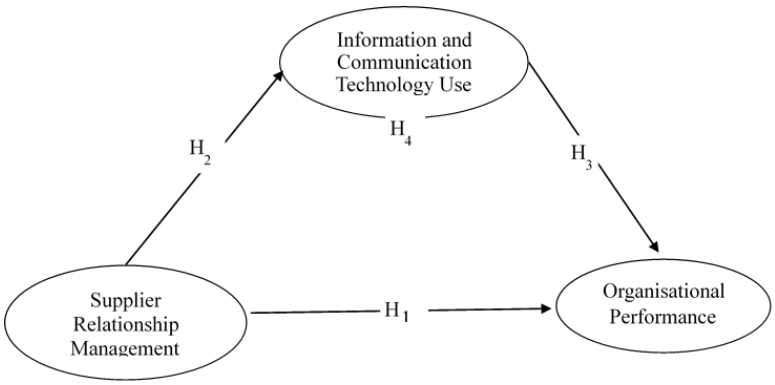

Figure 1. Conceptual framework

Source: Research Data (Author, 2023)

C. RESEARCH METHOD

A cross-sectional survey design was adopted, and the study population consisted of managerial employees from the packaging printing industry in Harare, Zimbabwe. The RAOSOFT sample size calculator was used to come up with a sample size of 160 participants from an estimated population of 275 employees involved in the procurement process for firms affiliated with the Federation for Print Masters in Zimbabwe (FPMZ), which has a total membership of 42 organizations operating in Zimbabwe. Before responding to the questionnaire, participants had to consent to voluntary participation in writing (by ticking in the voluntary consent box). During the research, ethical principles were taken into consideration. These included confidentiality, anonymity, right of participant's withdrawal and risk to participants. The sample size of 160 participants was considered adequate for the study, as most firms in the packaging printing industry are SMEs who are considered to exhibit a very small staff complement in the procurement function. The participants included chief executive officers, managing directors, procurement directors, procurement managers, senior managers, and buyers. A simple random sampling method was used to select respondents involved in the procurement process of these firms.

A structured questionnaire with Likert-type questions ranging from 1 (strongly disagree) to 5 (strongly agree) was used in this study, which was developed by borrowing items from previous related studies.

Between July and September 2023, 160 questionnaires were randomly distributed via email to participants, allowing them to attend to the questionnaire at their own set time. FPMZ provided the emails of respondents randomly selected from a list of 42 organizations operating in Zimbabwe as of July 2023. A cover letter highlighting the non-disclosure of the respondents' identity, their voluntary participation in the study, and the researcher's assurance of confidentiality of their responses was attached to the questionnaire. Data was analyzed using SPSS v24 and presented in tables and figures.

The demographic information of all packaging printing industry employees who participated in the current study is presented in Table 1.

Table 1. Demographics profile

Characteristics	Variable	Frequency	Percentage
Age	21-30 years	5	3.65
	31-40 years	39	28.47
	41-50 years	83	60.58
	Above 50 years	10	7.30
Gender	Male	111	81.02
	Female	26	18.98
Professional Qualification	Certificate	6	4.38
	Diploma	15	10.95
	Degree	93	67.88
	Masters	23	16.79
	Doctorate	0	0
Position	Buyer	30	21.90
	Procurement Manager	55	40.15
	Procurement Director	33	24.09
	Managing Director	15	10.95
	Chief Executive Officer	4	2.92
Working Experience	Below	4	2.92
	6-10 years	24	17.52
	11- 15 years	44	32.12
	16 – 20 years	33	24.09
	< 21 years	32	23.36

Source: Research Data (Author, 2023)

Of the 160 distributed questionnaires, 137 were handed back and were usable. Thus, a response rate of 85.63% is considered satisfactory for data analysis as it is above the recommended 68% (Holtom et al., 2022). Based on the results in Table 1, a greater number of respondents (67.9%) were 41 years and above, while males dominated (81.02%) the study, compared to females (18.98%). Most respondents (84.67%) who participated in the current study had a professional qualification of a first degree (bachelor's degree) or above, with 78.1% occupying senior management posts. In addition, most (79.6%) respondents had 10 or more years of work experience.

A confirmatory factor analysis was conducted to validate the scale. The Kaiser-Meyer-Olkin measure and Bartlett's Test of Sphericity were used to determine sampling adequacy for the study. SPSS V24 and AMOS V24 were used for scale validation and data analysis. Table 2 presents the results of the sampling adequacy test.

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Table 2. Sampling Adequacy Test Results

KMO and Bartlett's Test[a]		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.671
Bartlett's Test of Sphericity	Approx. Chi-Square	618.329
	df	136
	Sig.	.000

a. Based on correlations

Source: Research Data (Author, 2023)

The study sampling adequacy was tested at KMO .671, above the minimum acceptable set at KMO .600. At the same time, Bartlett's Test of Sphericity was $p<0.000$ against a minimum requirement set to be significant at $p<0.05$, with 70.60% of the total variance explained by the data.

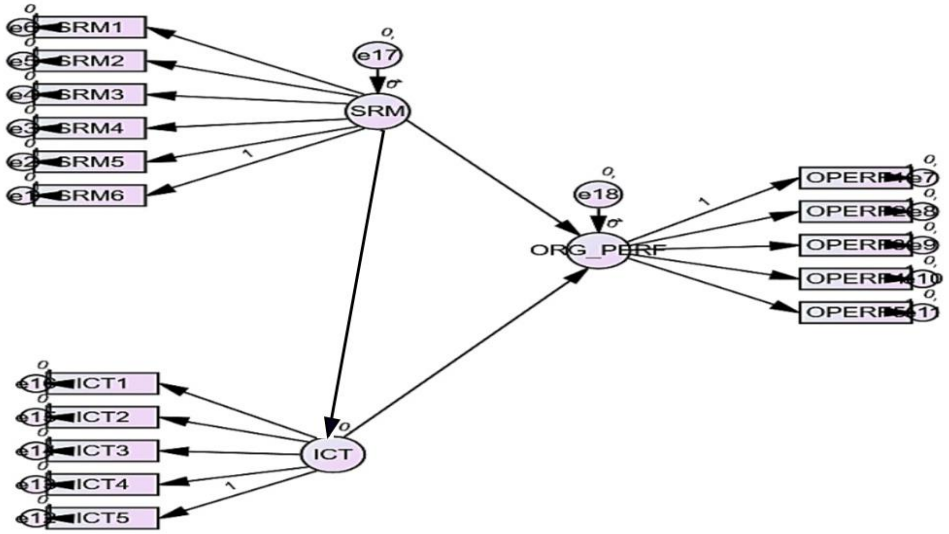

Figure 2. CFA Diagram
Source: Research Data (Authors, 2023)

Cronbach's alpha was adopted to test the reliability. The reliability test results are presented in Table 3.

Table 3. Reliability Test results

Variable	**Cronbach's alpha**	**No of Items**
Supplier relationship management,	.703	6
Organisational Performance	.729	5
Information and Communication Technology	.623	5

Source: Research Data (Author, 2023)

As highlighted in Table 3, the reliability statistics of the research instruments and coefficients for all variables surpassed the minimum level of .6, as Sauders et al. (2019)

commended. Validity was tested using the convergent and discriminant tests. Table 4 presents the results of the convergent validity test.

Table 4. Convergent validity test results

Construct	Item	Standard Factor Loading	Individual Item Reliability	Cronbach's Alpha	Composite Reliability
Supplier relationship management,	SRM 1	0.690	0.687	0.703	0.774
	SRM 2	0.720	0.704		
	SRM 3	0.695	0.680		
	SRM 4	0.739	0.704		
	SRM 5	0.743	0.708		
	SRM 6	0.748	0.721		
Organisational Performance	OPERF1	0.729	0.680	0.729	0.797
	OPERF2	0.702	0.678		
	OPERF3	0.694	0.674		
	OPERF4	0.701	0.643		
	OPERF5	0.697	0.664		
Information and Communication Technology	ICT 1	0.716	0.652	0.623	0.735
	ICT 2	0.686	0.667		
	ICT 3	0.783	0.769		
	ICT 4	0.652	0.658		
	ICT 5	0.661	0.647		

SRM =Supplier relationship management, OPERF=Organisational Performance, ICT= Information and Communication Technology

Source: Research Data (Author, 2023)

Results in Table 4 show that standard factor loading and individual item reliability were above the minimum recommended threshold of .4 (Amirrudin et al., 2021). Additionally, Cronbach's alpha and composite reliability results were satisfactory. Discriminant validity was tested by comparing Average Variance Extracted (AVEs) and Squared Inter-Construct Correlations (SICC). The discriminant validity results are presented in Table 5.

Table 5. Discriminant test results

Construct	M	SD	SRM	OPERF	ICT
Supplier relationship management (SRM)	4.01	.815	**.652**		
Organisational Performance (OPERF)	3.80	.807	.198	**.703**	
Information and Communication Technology (ICT)	3.62	.823	.237	.301	**.597**

Note: Diagonal elements in bold represent AVEs

Source: Research Data (Author, 2023)

Minimum requirements for the discriminant validity test were attained, as all AVEs were above .5 and greater than SICCs. The reliability and validity test results confirmed that the scale was valid, which paved the way for data analysis through structural equation Modelling.

D. RESULTS AND DISCUSSIONS

Table 6. Descriptive statistics for the three variables, SRM (Supplier relationship management), OPERF (organizational performance), and ICT (information and communication technology).

Table 6. Descriptive Statistics

	N	Min	Max	Mean		Std. Deviation
Variables	**Statistic**	**Statistic**	**Statistic**	**Statistic**	**Std. Error**	**Statistic**
SRM1	137	2	5	4.20	.103	.895
SRM2	137	2	5	4.17	.073	.641
SRM3	137	3	5	4.32	.078	.677
SRM4	137	2	5	3.89	.076	.665
SRM5	137	1	5	4.14	.110	.962
SRM6	137	1	5	3.32	.120	1.048
MEAN				**4.01**	**.093**	**.815**
OPERF1	137	2	5	4.04	.071	.621
OPERF2	137	2	5	3.74	.089	.772
OPERF3	137	1	5	3.57	.113	.984
OPERF4	137	1	5	3.57	.098	.854
OPERF5	137	2	5	4.07	.092	.806
MEAN				**3.80**	**.093**	**.807**
ICT1	137	3	5	4.32	.082	.716
ICT2	137	1	5	4.05	.092	.798
ICT3	137	1	5	1.74	.120	1.050
ICT4	137	1	5	3.76	.079	.690
ICT5	137	1	5	4.24	.099	.862
MEAN				**3.62**	**.094**	**.823**

Source: Research Data (Author, 2023)

Table 6 shows the average statistical mean for supplier relationship management (SRM) (4.01), confirming the strong presence of SRM systems amidst organizations in the packaging printing industry. The presence of an SRM system assists in developing a strong buyer-supplier

relationship built on trust and commitment, as the sharing of information is vital to the organizational competitiveness of both parties in the relationship (Schmidt et al., 2022). The findings support earlier studies by Oduro et al. (2020), who concluded that the presence of an SRM system in hospitals in emerging economies positively impacted their organizational performance. The study findings again affirmed the contribution to business risk reduction of an effectively managed SRM system. This resonates with previous studies by Ojha et al. (2023) on social exchange in a buyer-supplier relationship, where an effective SRM system positively contributed to organizational performance.

The average statistical mean for OPERF of 3.80 affirmed the positive organizational performance of organizations in the packaging printing industry, with supplier relationship management contributing to the performance. The findings support earlier studies by Amoako-Gyampah et al. (2019) on firms operating in developing economies, where conclusions were made on the positive contribution of an effective SRM system to organizational performance. As highlighted in Table 7, the study findings show an average statistical mean for ICT of 3.62, which moderately supports ICT compared to SRM. These findings resonate with those of Chatterjee et al. (2023), who, in their studies, conclude that ICT plays a crucial role in establishing and managing the buyer-supplier relationship. However, the findings also noted a very low mean of 1.74 (ICT3) of packaging printing organizations having websites that are supplier interactive where suppliers can access orders or the organization's forecast requirements. This presents a shortcoming in the private sector, as the Zimbabwe public sector has developed interactive supplier websites where suppliers can access requirements and tenders (Chikazhe et al., 2023). The convergent validity requirements were met, which paved the way for testing the research hypotheses.

In testing Hypotheses, CMIN/DF (2/DF), Goodness of Fit Index (GFI), Adjusted GFI (AGFI), Normed Fit Index (NFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) were among the measurement model fit indices considered. A satisfactory match was found in the measurement model (CMIN/DF = 1.885; GFI=.908; AGFI=.934; NFI=.922; TLI=.951; CFI=.927; RMSEA=.039). A good model should have a 2/DF between 0 and 5, with lower values indicating a better match (Garnier-Villarreal & Jorgensen, 2020; Shi & Li, 2021). In addition, values of GFI, AGFI, NFI, TLI, and CFI specify a good fit when closer to 1, and for RMSEA to be considered acceptable, it should fall within the range of 0.05 and 0.10 (Shi & Li, 2021). Table 7 contains the results for Hypotheses H_1–H_3.

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Table 7. Hypotheses test results

Code	Hypothesis	T	Sig (2-tailed)	Remarks
H_1	Supplier relationship management positively influences organizational performance.	2.758	.154***	Supported
H_2	ICT has a positive role on supplier relationship management.	2.077	.106***	Supported
H_3	ICT has a positive effect on organizational performance.	2.917	.189***	Supported

Source: Research Data (Author, 2023)

As shown in the Table 7 above, H_1 was supported (T=2.758, Sig=.154***). This implies that supplier relationship management is critical in influencing organizational performance. As for H_2, the results show a strong positive relationship between SRM and ICT (T=2.077, Sig=.106***). This shows that H_2 is supported, implying that supplier relationship management practices influence the adoption or use of ICT. Finally, H_3 was supported (T=2.917, Sig=.189***), indicating that ICT use influences organizational performance.

Mediation results show that the measurement models (CMIN/DF=1.799, GFI=.913, AGFI=.929, NFI=.919, TLI=.948, CFI=.931, and RMSEA=.041) had an acceptable match. Table 8 presents the results of ICT's mediation role in the SRM-OPERF relationship.

Table 8. Hypothesis (Mediation) test results

Hypothesis	Path	Path Coefficient	Description	Comment
H_4	SRM → ICT → OPERF	0.353^{***}	ICT partially mediates the impact of supplier relationship management on OPERF	H_4 is supported
Note: ***Significant at p<0.001				

Source: Research Data (Author, 2023)

The mediation test results in Table 8 support H_4. This implies that ICT plays a crucial part in the relationship pitting supplier relationship management and organizational performance. This explains why the packaging industry should incorporate ICT to augment the relationship between SRM and OP.

One of the objectives of this study was to establish whether supplier relationship management (SRM) influences the packaging printing industry. The study found that SRM has a beneficial impact on the performance of the packaging and printing industry as shown by the average mean in Table 6 of 4.01 and a standard deviation of .815 (SRM) and the supported

hypothesis H_1 (Supplier relationship management positively influences organizational performance). The findings concur with previous studies by Oduro et al. (2020); Schmidt et al. (2022); Sriyakul et al. (2019); Butt (2019), who all affirmed the positive contribution of supplier relationship management to organizational performance.

This implies that the relationship between suppliers and the packaging manufacturing industry should be improved so that the packaging industry can perform well. Failure to improve SRM can compromise business management, leading to performance challenges within the industry (Amoako-Gyampah et al., 2019).

This study also sought to determine whether SRM influences ICT use in the packaging industry in Zimbabwe. The study's findings indicate that SRM influences ICT adoption if the business dreams of better performance, as shown in Table 8, with an average mean of 3.62 and a standard deviation of .823 (ICT). This concurs with previous studies on information sharing and strategic partnership in supply chain management by Khan & Siddqui (2018). Thus, we call for ICT to facilitate SRM. ICT also facilitates information exchange between a company, its suppliers, and consumers (Chikazhe et al., 2023).

Another objective of the current study was to investigate whether ICT positively influences the performance of the packaging printing industry. The study concluded that ICT plays a crucial part in influencing the performance of the packaging industry as hypothesis H_3 (ICT has a positive effect on organizational performance). To improve productivity, customer engagement, and competitive advantage, ICT is used in business to offer tools and systems that enable effective communication, data management, analysis, and decision-making processes (Roy & Satpathy, 2019; Yeniyurt et al., 2019).

The main objective of the current study was to assess the mediation impact of ICT on the relationship between SRM and organizational performance within the packaging printing industry in Zimbabwe. The study concludes that ICT is crucial in the relationship between ICT and packaging industry performance. The study also established that investments in ICT infrastructure improve communication between organizations and suppliers, bridging the cultural divide. However, a greater number of organizations within the packaging printing industry have not developed supplier-interactive websites (i.e., availing requirements on the website). While existing reviewed literature focused on specific technologies that influenced supplier relationship management, such as Artificial Intelligence (AI), Block Chain Technology (BCT), and Robotics process automation (RPA) (Wadesango et al., 2023). The current study took a holistic approach by examining the influence of ICT on SRM and

organizational performance for firms in packaging manufacturing firms. Thus, it provides an objective view of ICT adoption within the packaging manufacturing industry.

Concerning theoretical implications, the current study's results on the impact of supplier relationship management on the performance of the packaging industry corroborate existing literature that affirms the contribution of SRM to organizational performance (Sriyakul et al., 2019; Amoako-Gyampah et al., 2019; Yehualaa, 2023; Chikazhe et al., 2023). In addition, the current study concluded a direct relationship between SRM, ICT and the organizational performance of the packaging industry. These results are in harmony with the extant literature that claims almost the same position (Bai & Sarkis, 2016; Chikazhe et al., 2023; Dastyar & Paanek, 2019; Sriyakul et al., 2019). Moreover, this study established the mediation role of ICT on the relationship between SRM and organizational performance. This confirms that technological mediation's underpinning theory on the buyer-supplier relationship's social exchange contributes to organizational performance. The SRM systems within the packaging printing sector influenced organizations to establish ICT infrastructure to improve communication and grow business. This study contributes to the current body of knowledge on supplier relationship management by exploring the mediation effect of ICT on supplier relationship management–the organizational performance relationship.

As for managers, this study provides insight into the need to continue resourcing the procurement function to develop an improved SRM system that improves business performance, especially in an emerging market such as Zimbabwe. Thus, it is essential for management within the packaging business to develop ICT programs that include low-cost electronic transmitters to track product information. In addition, businesses may automate processes and improve communication by leveraging technology, such as Robotics Process Automation, which leads to speedier decision-making and increased production. For instance, ICT may assist suppliers in gathering, storing, and analyzing enormous volumes of data (Big Data Analysis), making it simpler to see trends and formulate wise judgments. This can be achieved by incorporating programs to enhance just-in-time, vendor-managed inventory, and vendor relationship management. Management within the packaging industry can adopt ICT, which correlates to digital data transportation, storage, and recovery. ICT enhances a business's efficiency, effectiveness, and ability to respond timeously to customer requirements. The integration of ICT systems between the organization and its suppliers enables effective sharing of critical information, such as market trends, which will benefit the organization and the whole supply chain. This calls for packaging management to invest in new ICT systems to improve

supplier communication. Thus, resource allocation for investment in ICT infrastructure to SRM must be driven from the business strategic level to ensure support from all stakeholders.

The study was conducted in a specialized sector of the packaging printing industry in Harare, Zimbabwe, with shortcomings that posed a challenge in generalizing the findings and providing justification for further study. Therefore, additional research should be undertaken on the rest of the packaging industry and other sectors of the Zimbabwe economy to assess the mediation effect of ICT on buyer-supplier relationship management and organizational competitiveness. Geographically, the study was only limited to the packaging printing industry in Harare, Zimbabwe, whose findings are also affected by the country's economic challenges; thus, future studies on the mediation impact of ICT on SRM and organizational performance should be conducted in other countries in the Southern Africa region, whose economies are more stable. Future studies should also investigate the impact of specific technologies, including Artificial Intelligence (AI) and Robotics, on supplier relationship management and organizational performance for companies in Zimbabwe. Part of the findings for this study showed that most organizations in the packaging printing industry do not host a website that extensively interacts with suppliers; therefore, future studies should assess and compare the website interaction of suppliers on one hand and customers since these are stakeholders on the extreme ends of the supply chain.

E. CONCLUSIONS

The study's main objective was to examine the mediation role of ICT on SRM and its ultimate contribution to the organizational performance of firms in the packaging printing industry. The study concluded that while most of the firms in the packaging printing industry had established SRM systems, they had limited supplier development programs, and the involvement of suppliers in new product development was very limited, as indicated by the moderate mean. Conclusions were also made about the fact that there was limited investment in ICT infrastructure that supports SRM systems, as most of the firms indicated that suppliers do not access order requirements on their websites. The firms have not invested in developing their website to interact with suppliers. Therefore, firms within the packaging printing industry should strategically invest in ICT infrastructure that supports the SRM as it positively contributes to organizational performance.

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