Original Research Article

The Moderating Influence of Enterprise Resource Planning on the Relationship Between Electronic Order Processing and Supply Chain Performance of manufacturing Firms in Uasin Gishu County, Kenya.

ABSTRACT

Kenyan manufacturing firms face challenges in supply chain performance, including fierce competition, high production costs, and delayed product availability, requiring improved efficiency and cost-cutting strategies. The aim of this study was to investigate the moderating effect of enterprise resource planning on the relationship between electronic order processing system and supply chain performance among manufacturing firms in Uasin Gishu County, Kenya. The study utilized resource-based theory, explanatory research design, a census approach, and a closed ended questionnaire to collect data from 270 heads of 9 departments in 30 manufacturing firms in Uasin Gishu County. A hierarchical regression model was used to test all the study hypotheses. Results of the control variables indicate that firm age (β=.190, *P* = .021) significantly influences supply chain performance while firm size (β=.101, *P*=.223) does not. These control variables explain 4.8% of the variance in supply chain performance (R^2 of .048). Furthermore, the electronic order processing system (β=.837, *P*=.000) and enterprise resource planning (β=0.117, *P*=.003) significantly influence supply chain performance. Finally, enterprise resource planning moderated the link between electronic order processing system and supply chain performance (β=.132, *P* =.000). This moderation model indicates an improved R^2 of .579 and a change in R^2 of .083 implying that all the variables in the study account for 57.9% and 8.3% of the variance in supply chain performance. This study contributes to knowledge by examining the interaction of enterprise resource planning and the study variables. The study suggests that manufacturing firms should adopt electronic order processing systems and ERP to enhance supply chain efficiency. In addition, policymakers and managers should develop policies and strategies that encourage investments in these technologies, as they have been found to influence supply chain performance and competitive advantage.

Keywords: Supply Chain Performance, Electronic Order Processing System, Enterprise Resource Planning, Moderation

1. INTRODUCTION

Supply Chain Management (SCM) is vital for businesses globally, as it encompasses logistics management, which includes planning, implementing, and controlling purchasing, warehousing, inventory management, production, transportation, and order fulfillment. In today's competitive landscape, effective supply chain performance is essential for maintaining a competitive edge. Companies must adapt to rapidly changing business conditions, necessitating innovative techniques for flexibility and responsiveness (1). The increasing costs associated with supply chains compel businesses to enhance efficiencies, thereby reducing transportation and inventory carrying costs. This focus on cost reduction is critical for global competitiveness, as superior supply chain performance can lead to financial gains and increased productivity (2,3).

Supply Chain Performance (SCP) refers to the effectiveness and efficiency with which manufacturing firms manage and optimize the various components of their supply chain (4). According to (5) SCP encompasses a broad range of activities essential for the smooth operation and success of supply chain operations. These activities include the strategic sourcing of raw materials, streamlined production processes, efficient logistics, and the distribution systems that deliver products to consumers.

Supply chain performance measures how well a supply chain delivers products to customers, balances costs, and utilizes resources effectively (6). This definition underscores the importance of SCP as a multifaceted concept that spans beyond mere delivery metrics to include the strategic management of costs and resources across the entire supply chain (7). Effective SCP involves optimizing processes to ensure that products are delivered in a timely and cost-efficient manner while maintaining high levels of quality and customer satisfaction.

Strategic management perspective refers to the strategic alignment of a firm's supply chain operations with its business goals to maximize overall profitability (8). This perspective emphasizes the critical role of SCP as a core element of corporate strategy, highlighting how the alignment between supply chain activities and broader business objectives is essential for driving long-term success and competitive advantage (9). By strategically managing the supply chain, firms can ensure that their operational capabilities are fully leveraged to support and achieve the strategic ambitions of the business.

In Africa, the adoption of advanced technologies like artificial intelligence is transforming supply chain practices. Countries are leveraging AI to enhance visibility, reduce waste, and ensure timely deliveries, addressing the unique challenges posed by the continent's diverse supply chain environments, including agriculture, mining, and manufacturing (10). For instance, Rwandan manufacturing firms have reported significant improvements in performance through cost reduction and effective stock management (11). Moreover, the integration of electronic order processing systems and e-supply chain management practices is becoming increasingly prevalent across African nations, which can lead to improved efficiency and competitiveness in the global market (12).

Focusing on Kenya, the manufacturing sector is crucial, contributing significantly to the GDP and employment. The sector is expected to grow from 7.2% of GDP in 2022 to 20% by 2030, driven by strategic initiatives aimed at enhancing manufacturing capabilities (13). However, the performance of manufacturing firms in Uasin Gishu County, which has 30 registered firms, remains suboptimal due to inadequate automation in their supply chain and logistics processes (14).

2. THEORETICAL AND LITERATURE REVIEW

RESOURCE BASED THEORY

This study is guided by the Resource-Based Theory whose proponent was Birger in the year 1984 (15). Resource-Based Theory (RBT) emerged in strategic management literature in the 1980s and gained prominence as a framework for understanding competitive advantage. Developed by scholars such as (16) and (17), RBT posits that a firm's competitive advantage stems from its unique bundle of resources and capabilities (18). These resources can be tangible or intangible (for instance, intellectual property), and capabilities refer to the firm's ability to deploy and leverage these resources effectively.

This theory aligns with the current study, as Resource-Based Theory serves as a lens to examine how various organizational resources, such as technology and managerial capabilities, influence supply chain performance (19). The application of the Resource-Based Theory (RBT) in guiding electronic order processing systems, enterprise resource planning, and supply chain performance of manufacturing firms involves leveraging specific sets of resources that are bundled into valuable, scarce, and hard-to-imitate capabilities. The RBT emphasizes the importance of internal resources and capabilities over external opportunities, focusing on how these internal assets can create sustainable competitive advantages for firms. In the context of electronic order processing systems, the RBT can help firms understand how to utilize their resources effectively to enhance operational efficiency and performance (20).

The RBT framework can guide manufacturing firms in optimizing their electronic order processing systems by emphasizing the strategic use of resources like information technology (IT) in supply chain communication systems (21). By embedding IT within the supply chain process, firms can develop higher-order organizational capabilities, such as supply chain capabilities, that are firm-specific and difficult for competitors to replicate. This approach aligns with the RBT's focus on creating and sustaining competitive advantage through the strategic deployment of valuable and unique resources.

Furthermore, the RBT can be instrumental in enhancing enterprise resource planning (ERP) systems within manufacturing firms (22). By aligning ERP systems with the firm's core competencies and valuable resources, companies can streamline operations, improve decision-making processes, and enhance overall supply chain performance. The RBT's emphasis on leveraging internal capabilities to drive competitive advantage can guide firms in optimizing their ERP systems to support efficient resource allocation, data management, and process integration.

2.1 Influence of Electronic Order Processing Systems on Supply Chain Performance

Several studies have been done in different contexts on how electronic order processing systems influence supply chain performance. For example, (23) explored the effect of electronic order processing on effective supply chain performance in the energy sector in Kenya. The study applied a mixed research design where both qualitative and quantitative techniques were used. The study employed stratified random sampling technique in coming up with a sample size of 152 respondents from a total of 246 target population in the energy sector. All the variables, that is, electronic data interchange, e-tendering, and supply chain integration, were found to have an influence on effective supply chain management processes in the energy sector.

The influence of electronic order processing system has also been examined by (24) in the manufacturing sector in Bangladesh. The study focused on how electronic order processing systems enhance the efficiency and effectiveness of supply chains. The research design employed both qualitative and quantitative methods to gather comprehensive data from respondents. The study used a purposive sampling technique to select 180 respondents from a total population of 300 manufacturing firms. The Unified Theory of Acceptance and Use of Technology (UTAUT) was utilized as the theoretical framework to understand the adoption and impact of these systems on supply chain performance. Results confirm that electronic order processing systems significantly improve supply chain performance.

In addition, (25) investigated the influence of electronic order processing systems on supply chain performance in the automotive industry in Pakistan. The findings revealed that electronic data interchange, e-procurement, and real-time order tracking significantly contributed to improved supply chain performance. Furthermore, (26) analyzed the effect of electronic order processing systems on supply chain performance in Kenya's textile firms. The Technology-Organization-Environment framework was utilized to evaluate the factors influencing electronic order processing system adoption and how this influences supply chain performance. The study found that electronic data interchange, electronic invoicing, and integrated supply chain management systems significantly enhanced supply chain performance.

Electronic order processing systems and supply chain performance have also been explored by (27) in the electronics industry in China. The study aimed to determine how these systems can improve supply chain efficiency and reduce lead times. The study applied the Resource-Based View (RBV) theory to understand the strategic advantages provided by electronic order processing systems on supply chain performance. Key findings indicated that electronic order processing and supply chain visibility tools significantly improved supply chain performance. Additionally, (28) investigated the influence of electronic order processing systems on supply chain performance in the food and beverage manufacturing sector in Indonesia. The study found that the electronic supply chain has a significant impact on operational performance in terms of quality, productivity, and cost reduction. Based on the above discussion, we propose:

HI: ***Electronic order processing system positively and significantly influences supply chain performance.***

2.2 Influence of Enterprise Resource Planning on Supply Chain Performance

The relationship between these variables has been established extensively in literature. For example, (29) focused on the influence of enterprise resource planning (ERP) implementation on supply chain performance. The study used a survey and descriptive research design to investigate the impact of ERP implementation on supply chain performance. The results suggest that ERP systems have a modest role in achieving supply chain integration, but can improve supply chain reliability, responsiveness, flexibility, and cost reduction thus enhancing supply chain performance.

A study by (30) focused on enterprise resource planning and supply chain performance of sugar manufacturing companies in Kenya. The study used a quantitative approach to examine the relationship between ERP implementation and supply chain performance in the Kenyan sugar industry. The results show that ERP has a significant and a positive relationship between ERP implementation and supply chain performance.

Also, (31) studied the impact of enterprise resource planning in supply chain management practices in Egyptian logistic companies. The results indicate that ERP can improve supply chain decision-making, standardize processes, and enhance supply chain collaboration and transparency which enhances supply chain performance.

The impact of ERP systems and supply chain management practices on firm performance in Turkish Companies was examined by (32). The study used a survey-based quantitative approach to examine the relationship between ERP, supply chain management practices, and firm performance. The results show that both ERP systems and supply chain management practices have a positive impact on competitive advantage and firm performance.

Also, (33) did a study on the effect of enterprise resource planning system implementation on performance of organizations supply chain activities in Kenya. The study used a survey-based descriptive research design to investigate the impact of ERP implementation on supply chain performance in the Coca-Cola Company. The results indicate that ERP implementation positively influences supply chain performance in terms of cost reduction, lead-time, planning and forecasting.

Likewise, (34) studied the impact of enterprise resource planning system implementation on supply chain management in South Arabia. The results show that ERP implementation improved supply chain visibility, integration, and performance in areas such as inventory management, order fulfilment, and supplier collaboration. Furthermore, (35) focused on the impact of enterprise resource planning systems on supply chain management in Australia. Findings from this study indicate that ERP can enhance supply chain integration, information sharing, and optimization of supply chain processes, leading to improved supply chain performance.

Prior research informed the selection of ERP as a moderator in this study. For example, (36) investigated the moderating role of enterprise resource planning in business model innovation by comparing two groups of small and medium-sized enterprises in Spain and discovered conflicting results. (36) suggest conducting future research in different contexts, focusing on large enterprises and using different antecedents, as this could potentially provide an interesting contribution to the field of integrating enterprise resource planning.

(37) investigated the moderating effect of ERP on the growth-profitability relationship in young SMEs in Denmark, using both longitudinal and cross-sectional survey data. Their findings show that ERP significantly moderates the relationship between target firms' growth and return on investment (profitability). However, studies done by (38) and (39) revealed that ERP does not moderate the relationship between the variables in their studies and recommended further studies to be carried out in different contexts to test these relationships; thus, this study intends to fill this gap by examining the moderating role of ERP on the relationship between electronic order processing systems and supply chain performance. Hence, we propose:

H2: ***Enterprise resource planning positively and significantly influences supply chain performance.***

H3: ***Enterprise resource planning moderates the relationship between electronic order processing systems and supply chain performance.***

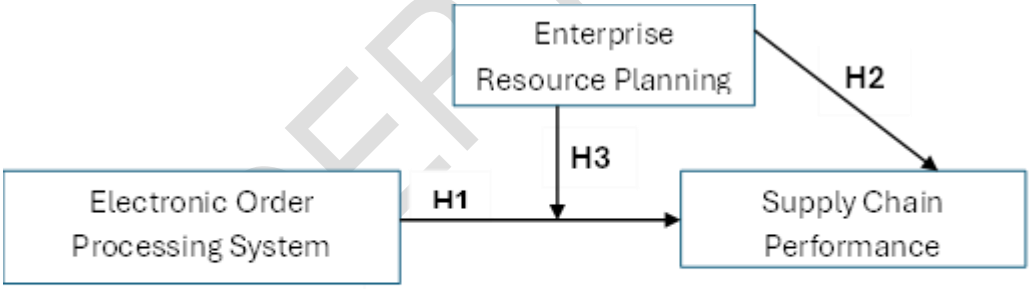

Figure1: Conceptual Framework

3. METHODOLOGY

3.1 Research Design and Data Collection

Explanatory research design and a census approach and purposive sampling techniques were adopted in collecting data using a closed-ended questionnaire from the respondents. The specific respondents were 1 head of department from 9 departments, whose functions are closely related to the study variables in each of the 30 firms, hence 9 × 30 = 270.

These include 30 supply chain heads of department, 30 logistics heads of department, 30 operations heads of department, 30 production heads of department, 30 total quality heads of department, 30 material handling heads of department, 30 marketing heads of department, 30 finance heads of department, and 30 ICT heads of department.

3.2. Measurements of the Variables

The measurements of variables in this study were adopted from previous studies and modified to suit the current study. Two control variables were monitored during the analysis in this study. The first one was firm age, which was measured in terms of the years the firm has been in operation, and firm size measured in terms of the numbers of employees. These variables were controlled during the analysis because literature indicates that they affect supply chain performance (40). Measurements of electronic order processing systems were adopted from (41), while ERP was measured using items adopted from (42), and supply chain performance was adopted from (43) and (44). All these were measured using a 5-point Likert scale, where 1 represents "strongly disagree" and 5 represents "strongly agree."

4. RESULTS AND DISCUSSION

4.1 Response Rate and Demographics of the Respondents

Two hundred and seventy (270) questionnaires were distributed to respondents, of which 243 (90%) were fully completed and found to be useful for the study and used in the study, while 27 (10%) were not returned by the sampled participants. This response rate was deemed satisfactory, as suggested by (45). Table 1 shows that 54.7% (n = 133) of research participants were men and 45.3% (n = 110) were women; most respondents, 86% (n = 209), were those aged above 26 years, while those aged below 25 years represented 24% (n = 34). Findings further show that 47.3% (n = 115) had a diploma, followed by those with at least a certificate (23%, n = 56), and only 0.4% (n = 1) had a PhD. The results also revealed that many of the firms, 84.4%, have been in operation for more than 11 years (n = 205), with the least (15.7%, n = 38) being those that have been in operation for less than 10 years, 5.9%. Results of firm size show that the majority, 81.1%, were firms with more than 201 employees (n = 197).

Table 1: Demographic Profile of the Respondents

Demographic Factor		Frequency	Percentage %
Gender	Male	133	54.7
	Female	110	45.3
Total		**243**	**100**
Age	Below 20 Years	5	2.1
	21-25 years	29	11.9
	26-30 years	70	28.8
	31-35 years	77	31.7
	Above 36 years	62	25.5
Total		**243**	**100**
Level of Education	High school	26	10.7
	Certificate	56	23.0
	Diploma	115	47.3
	Undergraduate	41	16.9
	Master's Degree	04	1.6
	PHD	01	0.4
Total		**243**	**100**
Firm age	Below 5 years	15	6.2
	6-10 years	23	9.5
	11-15 years	128	52.7
	Above 16 years	77	31.7
Total		**243**	**100**
Firm size	Below 50 employees	13	5.3
	51-100 employees	11	4.5
	101-200 employees	22	9.1
	Above 201 employees	197	81.1
Total		**243**	**100**

4.2 Descriptive Statistics, Reliability and Correlation

Table 2 displays the results of the descriptive, reliability, and correlation analyses. The table shows that the electronic order processing system had the highest mean score of 4.14 and a standard deviation of.766. This was followed closely by supply chain performance (mean = 4.06 and standard deviation =.932), while enterprise resource planning had the least mean of 3.80 and standard deviation of 1.197. The research instrument's reliability results indicate that all variables had a Cronbach's alpha value above .7. Supply chain performance had the highest reliability score of α =.915, enterprise resource planning had α =.892, and electronic order processing systems had the lowest α =.871. The correlation analysis in the table shows that electronic order processing systems had the most significant connection with supply chain performance (r =.686, $P < 0.01$), while enterprise resource planning had the least but significant association with supply chain performance (r = 0.398, $P < 0.01$).

Table 2: Descriptive, Reliability, and Correlation Analysis Results

Variable	Mean	SD	α	Correlation		
Supply Chain Performance	4.06	.932	.915	1		
Electronic Order Processing Systems	4.14	.766	.871	.686**	1	
Enterprise Resource Planning	3.80	1.197	.892	.398**	.391**	1

NOTE: SD - Standard deviation, ** Correlation is significant at the 0.01 level (2-tailed).

4.3 HYPOTHESES TESTING

The study tested two direct and one moderation hypotheses as per the objectives presented of the study. However, before testing these hypotheses, it was worth confirming if the two control variables, firm age and firm size influences supply chain performance and the amount of variance they explain this dependent variable. The choice of these two control variables is based on prior literature (40) which indicates that they have a significant influence on supply chain performance.

4.4 RESULTS

A hierarchical regression model was used in testing all the hypotheses beginning with the effects of the controls. Table 3 presents the results of this analysis. Model 1 of the Table shows results for the control variables. Findings indicate that firm age significantly and positively influences supply chain performance in manufacturing firms as indicated by β=.190. However, results show that firm size was found to be insignificant β= .101, P= .223. Model 1 further reveals that the two control variables explain 4.8% of the variance in supply chain performance as shown by R^2= .048, F-statistics = 6.045, which was significant at P=.000 indicating the model Fit.

Model 2 of Table 3 presents the results of H1 while controlling for firm age and firm size. Results show that both the controls were insignificant in this model as shown by P above .05. This Model reveals an improved R^2 = .478 implying that all the variables in this model (Firm age, firm size, electronic order processing system, cumulatively explains 47.8% of the variance in supply chain performance. The change in R-Square (ΔR^2) = .430, implies that when control variables are held constant, electronic order processing systems accounts for 43% of the variance in supply chain performance. Results further show that the model was fit as shown by F=196.581 which was significant at P=.000. In addition, findings reveal that electronic order processing system β= .837, P=.001. Based on these findings, H1 is supported by the study.

In Model 3 of the same Table, the study examined the direct influence of electronic resource planning on supply chain performance while keeping controls and independent variable constant. Results in Table 3 Model 3, show a significant model fit with F-statistics = 8.869, P = .003. Results further reveal a much better R^2 = .496, indicating that all the variables in this Model 3 explain 49.6% of the variance in supply chain performance. In addition, results show ΔR^2 = .019, implying that when the controls and the independent variables are held constant, the moderator variable, electronic resource planning, contributes to 1.9% of the variance in supply chain performance. Most importantly, electronic resource planning was found to have a direct, positive and significant influence on supply chain performance, as indicated by β = .117, P = .003. Based on these results, hypothesis H2 is also supported by the study.

Finally, Model 4 of Table 3 presents the results of H3. Findings show that both the control variables, electronic order processing system, enterprise resources planning were all insignificant in this Model as indicated by P greater than .05. However, enterprise resource planning has a moderating influence on the relationship between electronic order processing system and supply chain performance (β = .132, P = .000. This Model shows R^2 = 0.579, F= 46.490, P= .000, indicating that all the variables in this model explains 57.9% of the variance in supply chain performance. The change in

R^2 of .083 implies that when all the variables are held constant, the moderation term contributes 8.3% of the variance in supply chain performance. These results also support H3.

These results are further illustrated by Fig. 2, which shows that supply chain performance increases when a firm adopts both electronic order processing systems and enterprise resource planning in its operations, as this increases effectiveness and efficiency. However, supply chain performance reduces gradually with less adoption of both electronic order processing systems and enterprise resource planning. Thus, enterprise resource planning acts as a solution of low electronic order processing system in the supply chain management of the manufacturing firms.

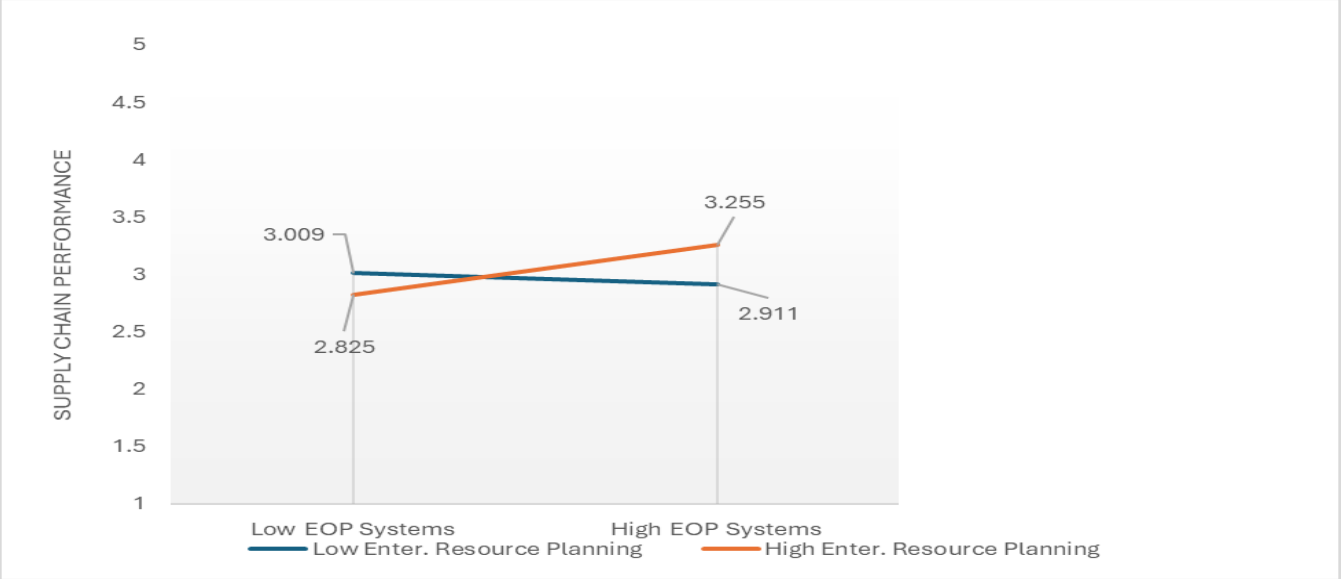

Fig. 2. Moderating Role of ERP on Electronic order processing systems and Supply Chain Performance

Table 3: Hierarchal Regression Results

Variables	Model 1		Model 2		Model 3		Model 4	
	β	*p-v*	β	*p-v*	β	*p-v*	β	*p-v*
Firm Age	.190*	.021	.095	.121	.078	.198	.007	.905
Firm Size	.101	.223	-.082	.193	-.083	.182	-.042	.463
Electronic order processing			.837***	.000	.770***	.000	-.083	.549
Enterprise Resource planning					.117***	.000	.040	.291
Electronic order pro * ERP							.132***	.000
R^2	.048		.478		.496		.579	
ΔR^2	.048		.430		.019		0.083	
F	6.045**		196.581***		8.869**		46.690***	

NOTE: *P < .05, ** P < .01, *** P < .001.

4.5 DISCUSSION

The main objective of this study was to examine the moderating influence of enterprise resource planning on the link between electronic order processing system and supply chain performance. The study findings indicate that electronic order processing systems positively influence supply chain performance. These results are supported by (23) who did a study on how electronic order processing systems effectively influences supply chain performance in the energy sector in Kenya. This is also in line with a study done by (24) who found that electronic order processing systems significantly enhances supply chain performance in the manufacturing sector in Bangladesh.

The findings of this study are in line with (46) who suggests that electronic order processing system serves as a comprehensive software solution meticulously crafted to streamline order execution processes, ensuring not only the efficient fulfillment of orders but also the maintenance of optimal stock levels while mitigating the risk of manual data entry errors, hence enhancing supply chain performance. This system encompasses the end-to-end processing of customer orders, providing real-time order tracking and integration with supply chain management activities (47). This is furthers supported by (48) who found that this system leverages digital networks to process customer orders, communicate

seamlessly with inventory databases, and interface with shipping systems to facilitate the efficient and accurate fulfillment of orders, thus improving supply chain performance of firms.

Results of this study also confirms that enterprise resource planning significantly influences supply chain performance. This is in line with (30) who focused on enterprise resource planning and supply chain performance of sugar manufacturing companies in Kenya and found a strong relationship between these variables. In addition, our study is supported by (29) who found that ERP systems have a modest role in achieving supply chain integration, but can improve supply chain reliability, responsiveness, flexibility, and cost reduction, hence strengthening supply chain performance. This can also be supported by the work of results (31) whose study indicates that ERP can improve supply chain decision-making, standardize processes, and enhance supply chain collaboration and transparency. (32) also supports our finding who suggests that both ERP systems and supply chain management practices have a positive impact on competitive advantage and firm performance. Hence firms need to invest resources in these systems to remain competitive in the marketplace.

Hypothesis H3 on the moderation process was also confirmed in this study. This finding provides knew knowledge in literature. ERP systems facilitate collaboration among different departments and stakeholders within the organization, as well as with suppliers and customers (49). This collaboration leads to better communication, reduced errors, and improved overall supply chain performance. ERP systems automate many manual processes, reducing the need for manual data entry and minimizing the risk of errors. This automation increases efficiency, allowing firms to focus on strategic activities and improve their overall performance. As indicated in Figure 2, firms should invest in both electronic order processing systems and ERP as this improves firm performance through effective and efficient supply chain performance.

4.6 CONCLUSION

The current study provides valuable insight to manufacturing managers on the importance of embracing electronic order processing systems and ERP to improve their companies' supply chain performance. The study concludes that the electronic order processing system has significantly improved communication and collaboration between departments, leading to faster order fulfillment and increased customer satisfaction and supply chain performance. The findings underscore the critical role of integrated systems in optimizing supply chain performance and the nuanced impact of ERP as a moderating factor. ERP was found to enhance the relationship between these two variables.

4.7 THE STUDY IMPLICATIONS

The findings of this study have significant theoretical implications for the understanding of supply chain performance in manufacturing firms, particularly in the context of the integration of various management systems. The positive correlations identified between electronic order processing systems and enterprise resource planning with supply chain performance suggest that these systems are critical components that enhance operational efficiency and effectiveness.

The study reinforces the theoretical framework that posits the integration of various management systems as a vital factor in improving supply chain performance. The significant positive effects of each system on supply chain performance highlight the necessity for firms to adopt a holistic approach to supply chain management, where different systems work synergistically rather than in isolation.

In addition, the positive correlations and significant influence of electronic order processing systems and ERP on supply chain performance suggest that policymakers and managers should develop policies and strategies that encourage investments in these technologies. This could be facilitated through grants, subsidies, or tax incentives for firms that adopt advanced supply chain technologies.

Given the significant impact of these systems on supply chain performance, policies and strategies should also focus on training and development programs for employees. This would ensure that the workforce is equipped with the necessary skills to effectively utilize these systems, thereby maximizing their potential benefits. The study indicates that ERP systems have a moderating effect on supply chain performance. Policymakers and managers should promote the adoption of ERP systems through awareness campaigns and support programs, as they can enhance the integration and efficiency of various supply chain processes.

4.8 Limitations and Recommendation for further studies

The study suggests further research on the impact of various management systems on supply chain performance, including the conditions under which ERP systems enhance or hinder performance; potential mediating factors can also

be considered in future studies; employee training; and organizational culture. Longitudinal studies could also be considered in the future to help understand the long-term effects of these systems, and specific industries could be explored to determine their validity. Finally, this study was done in Uasin Gishu County, in the Republic of Kenya, with a focus on only 30 firms and a sample size of 270. Future studies should consider expanding the scope and the sample size to validate the findings of the current study.

DISCLAIMER (Artificial intelligence)

Author(s) hereby declares that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

REFERENCES

1. Attaran, M. (2020, July). Digital technology enablers and their implications for supply chain management. In Supply Chain Forum: An International Journal (Vol. 21, No. 3, pp. 158-172). Taylor & Francis.
2. Dissanayake, K., & Pal, R. (2023). Sustainability dichotomies of used clothes supply chains: a critical review of key concerns and strategic resources. *The International Journal of Logistics Management*, 34(7), 75-97.
3. Sarkar, B., Sarkar, M., Ganguly, B., & Cárdenas-Barrón, L. E. (2021). Combined effects of carbon emission and production quality improvement for fixed lifetime products in a sustainable supply chain management. *International Journal of Production Economics*, 231, 107867.
4. Yumurtacı Hüseyinoğlu, I. Ö., Kotzab, H., & Teller, C. (2020). Supply chain relationship quality and its impact on firm performance. *Production Planning & Control*, 31(6), 470-482.
5. Kazmi, S. W., & Ahmed, W. (2022). Understanding Dynamic Distribution Capabilities to Enhance Supply Chain Performance: A Dynamic Capability View. Benchmarking: *An International Journal*, 29(9), 2822-2841
6. Kamble, S. S., & Gunasekaran, A. (2020). Big Data-Driven Supply Chain Performance Measurement System: A Review and Framework for Implementation. *International Journal of Production Research*, 58(1), 65-86.
7. Gupta, S., & Ramachandran, D. (2021). Emerging Market Retail: Transitioning From a Product-Centric to A Customer-Centric Approach. *Journal Of Retailing*, 97(4), 597-620.
8. Tripathi, S., & Roy, S. S. (2024). Linking supply chain performance with organizational strategic performance–a review and research agenda. *International Journal of Productivity and Performance Management*, 73(7), 2037-2067.
9. Dhaigude, A. S., Kapoor, R., Gupta, N., & Padhi, S. S. (2021). Linking Supply Chain Integration to Supply Chain Orientation and Performance–A Knowledge Integration Perspective from Indian Manufacturing Industries. *Journal Of Knowledge Management,* 25(9), 2293-2315.
10. Atadoga, A., Osasona, F., Amoo, O. O., Farayola, O. A., Ayinla, B. S., & Abrahams, T. O. (2024). The role of IT in enhancing supply chain resilience: a global review. *International Journal of Management & Entrepreneurship Research*, 6(2), 336-351.
11. Aliakbari, S., Vafaie, F., Namayan, F., & Seidi, M. (2019). Investigating factors affecting supply chain agility and creating competitive advantage in public hospitals in Ilam province. *Journal of Ilam University of Medical Sciences*, 27(3), 37-46.
12. Fatorachian, H., & Kazemi, H. (2021). Impact Of Industry 4.0 On Supply Chain Performance. *Production Planning & Control*, 32(1), 63-81.
13. Jepchumba, N. (2023). The Influence of Fourth Party Logistics Services on Performance of Manufacturing Sector in Kenya: A Study in Food and Beverage Manufacturing Firms. *Rowter Journal,* 2(2), 71-84.
14. Odhiambo, H., Onyango, R., Kibet, Y., & Kimutahi, G. (2017). Effect of logistics activities on performance of agro processing firms in Uasin Gishu County, Kenya. *Journal of Business and Management*, 19(12), 21-28.
15. Barney, J. B. (2021). The Emergence of Resource-Based Theory: A Personal Journey. *Journal Of Management*, 47(7), 1663-1676.
16. Wernerfelt, B. (1984), “A resource-based view of the firm”, Strategic Management Journal, Vol. 5, pp. 171-80.
17. Barney, J.B. (1991), “Firm resources and sustained competitive advantage”, *Journal of Management,* Vol. 17, pp. 99-120.
18. Uyanik, M. (2023). Resource-Based View in Marketing Literature. *Journal Of Business and Management Studies*, 5(4), 29-39.
19. Chatterjee, S., Rana, N. P., & Dwivedi, Y. K. (2024). How Does Business Analytics Contribute to Organisational Performance and Business Value? A Resource-Based View. Information Technology & People, 37(2), 874-894.

20. Chae, B. K., Yang, C., Olson, D., & Sheu, C. (2020). The impact of advanced analytics and data accuracy on operational performance: A contingent resource-based theory (RBT) perspective. *Decision support systems,* 59, 119-126.
21. Kakhki, M. D., & Sajadi, S. M. (2024). Business Analytics Affordances for Supply Chain Value Creation: A Technology-Organization-Environment Perspective. *International Journal of Production Economics*, 109367.
22. Nawaiseh, K. H. A., Alawamleh, H., Al Shibly, M., Almari, M., Orabi, T. A., Jerisat, R., & Badadwa, A. (2022). The Relationship Between the Enterprise Resource Planning System and Maintenance Planning System: An Empirical Study. *Information Sciences Letters*, 11(5), 1-11.
23. John, A. (2018). Effect Of Green Supply Chain Management Practices on The Performance of Manufacturing Firms in Kenya. GSJ, 6(8), 669.
24. Saleheen, F., & Habib, M. M. (2023). Supply Chain Resilience During Disruption: A Study on Supply Chain Performance Measurement. *International Supply Chain Technology Journal*, 9(2).
25. Al-Doori, J. A. (2019). The Impact of Supply Chain Collaboration on Performance in Automotive Industry: Empirical Evidence. *Journal Of Industrial Engineering and Management,* 12(2), 241-253.
26. Musau, E. G. (2021). Antecedents And Consequences of Integration of Supply Chain Information Systems into The Textile Supply Chain. A Kenyan Textile Supply Chain Perspective. *Journal Of Transport and Supply Chain Management*, 15, 10.
27. Hao, J., Shi, H., Shi, V., & Yang, C. (2020). Adoption Of Automatic Warehousing Systems in Logistics Firms: *A Technology–Organization–Environment Framework. Sustainability,* 12(12), 5185.
28. Saryatmo, M. A., & Sukhotu, V. (2021). The Influence of The Digital Supply Chain on Operational Performance*: A Study of The Food and Beverage Industry in Indonesia. Sustainability,* 13(9), 5109.
29. Koh, S. L., Ganesh, K., Pratik, V., & Anbuudayasankar, S. P. (2022). Impact of ERP implementation on supply chain performance. *International Journal of Productivity and Quality Management*, 14(2), 196-227.
30. Omondi, J. A. (2019). Enterprise Resource Planning And Supply Chain Performance Of Sugar Manufacturing Companies In Kenya (Doctoral dissertation, University of Nairobi).
31. Aziz, M. A., Ragheb, M. A., Ragab, A. A., & El Mokadem, M. (2018). The impact of enterprise resource planning on supply chain management practices. *The Business & Management Review,* 9(4), 56-69.
32. Ince, H., Imamoglu, S. Z., Keskin, H., Akgun, A., & Efe, M. N. (2020). The impact of ERP systems and supply chain management practices on firm performance: case of Turkish companies. *Procedia-Social and Behavioral Sciences*, 99, 1124-1133.
33. Nyoro, G. N. (2021). Effect of Enterprise Resource Planning System Implementation on Performance of Organizations Supply Chain Activities in Kenya (A Case of Coca Cola Company Nairobi).
34. Qureshi, M. R. N. M. (2022). Evaluating enterprise resource planning (ERP) Implementation for sustainable supply chain management. *Sustainability*, 14(22), 14779.
35. Fauzi, T. H. (2022). Impact of enterprise resource planning systems on management control systems and firm performance. *Uncertain Supply Chain Management*, 745-754.
36. Molina-Castillo, F.-J., Rodríguez, R., López-Nicolas, C., & Bouwman, H. (2022). The role of ERP in business model innovation: Impetus or impediment. *Digital Business*, 2(2), 100024.
37. Schlichter, J., Klyver, K., & Haug, A. (2021). The moderating effect of ERP system complexity on the growth–profitability relationship in young SMEs. *Journal of Small Business Management,* 59(4), 601-626. doi: 10.1111/jsbm.12502
38. Shaiti, H., & Al-Matari, Y. (2020). Internal audit function characteristics and the quality of internal control systems: Moderating the effect of enterprise resource planning system maturity. *Asian Economic and Financial Review*, 10(9), 1012.
39. Nugraha, D. P., Janis, E., & Bisri, B. (2022). The Effect Of Enterprise Resource Planning In Increasing Firm's Value. *Jurnal Ekonomi Dan Manajemen, 16(1), 64-76.*
40. *Yang, X., & Wang, J. (2023). The relationship* between sustainable supply chain management and enterprise economic performance: does firm size matter? *Journal of Business & Industrial Marketing,* 38(3), 553-567.
41. Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2010). Supply Chain Logistics Management (3rd Ed); Boston, Mass: McGraw-Hill.
42. Jayeola, O., Sidek, S., Abdul-Samad, Z., Hasbullah, N. N., Anwar, S., An, N. B., ... & Ray, S. (2022). The mediating and moderating effects of top management support on the cloud ERP implementation–financial performance relationship. *Sustainability,* 14(9), 5688.
43. Arshad, Z., & Gondal, M. Y. (2013). Impact of working capital management on profitability a case of the Pakistan cement industry*. Interdisciplinary Journal of contemporary research in business*, 5(2), 384-390.
44. Ul-Hameed, W., Mohammad, H., Shahar, H., Aljumah, A., & Azizan, S. (2019). The effect of integration between audit and leadership on supply chain performance: Evidence from UK based supply chain companies. *Uncertain Supply Chain Management*, 7(2), 311-328.

45. Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., & Messer, B. L. (2009). Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social science research*, 38(1), 1-18.
46. Ahn, J., Bae, J., Min, B. J., & Lee, S. J. (2022). Operation Validation System to Prevent Human Errors in Nuclear Power Plants. *Nuclear Engineering and Design,* 397, 111949.
47. Dolgui, A., & Ivanov, D. (2022). 5G In Digital Supply Chain and Operations Management: Fostering Flexibility, End-To-End Connectivity and Real-Time Visibility Through Internet-Of-Everything. *International Journal of Production Research*, 60(2), 442-451.
48. Giannakis, M., Spanaki, K., & Dubey, R. (2019). A Cloud-Based Supply Chain Management System: Effects on Supply Chain Responsiveness. *Journal Of Enterprise Information Management*, 32(4), 585-607.
49. Chan, Y., & Chin, S. W. (2021). Evaluating the Enterprise Resource Planning (ERP) System of a Bread Manufacturing Organisation from the Perspectives of Stakeholders. *Journal of Techno-Social,* 13(2), 39-55.