International Journal of
Supply Chain and Logistics
(IJSCL)

E-Procurement Practices and Procurement Performance of Insurance Firms in Kenya

CARI Journals

International Journal of Supply Chain and Logistics
ISSN 2520-3983 (Online)
Vol. 9, Issue No. 10, pp 35 - 55, 2025
www.carijournals

E-Procurement Practices and Procurement Performance of Insurance Firms in Kenya

[1*]Faith Whitney Murugi Ndwiga, [2]Dr. Rebecca Mutia

[1,2]School of Business, KCA University

Abstract

Purpose: This study sought to examine the influence of e-procurement practices specifically electronic tendering, electronic ordering, electronic sourcing, and electronic invoicing on procurement performance among insurance firms in Kenya. Grounded in Transaction Cost Theory, Resource-Based View Theory, Diffusion of Innovations Theory, and the Technology Acceptance Model, the study was guided by the premise that the integration of technology-driven procurement systems can significantly improve operational efficiency and accountability in procurement processes.

Methodology: A descriptive survey design was employed, targeting 63 insurance firms registered with the Insurance Regulatory Authority. Data were collected through structured questionnaires administered to procurement managers, and both descriptive and inferential statistics were used to analyze the findings.

Findings: The study revealed that e-procurement practices collectively enhance procurement performance by improving efficiency, reducing transaction costs, and promoting transparency in procurement operations. Specifically, electronic tendering, electronic ordering, and electronic sourcing were found to have a positive and significant influence on procurement performance, indicating their critical role in improving procurement speed, supplier relations, and cost control. While electronic invoicing also demonstrated a positive influence, its impact was relatively modest, suggesting a need for improved integration and user adoption. The study concludes that the adoption and effective utilization of e-procurement practices significantly contribute to enhanced procurement performance in the insurance sector.

Unique Contribution to Theory, Practice and Policy: By embracing comprehensive e-procurement systems, insurance firms can strengthen operational efficiency, ensure compliance, and improve service delivery. The study recommends that insurance firms invest in robust digital infrastructure, staff training, and continuous system upgrades to fully leverage the benefits of e-procurement in achieving strategic procurement excellence.

Keywords: *Electronic Tendering, Electronic Ordering, Electronic Sourcing, Electronic Invoicing and Procurement Performance*

Background of the Study

The insurance sector plays a crucial role in the economic development of Kenya by providing financial security, risk mitigation, mobilizing domestic savings, and promoting investment (Insurance Regulatory Authority [IRA], 2019). As a significant component of the financial services industry, the insurance sector contributes to employment creation, revenue generation, and economic stability. According to IRA (2023), the sector accounted for approximately 2.5% of Kenya's Gross Domestic Product (GDP) which underscores the sector's importance in driving financial inclusion, protecting assets, and supporting long-term economic growth. Insurance firms operate in a dynamic and highly regulated environment marked by growing competition, evolving customer expectations, and rapid technological advancements. The operational environment is shaped by regulatory frameworks set by the IRA, fluctuating market demands, and macroeconomic conditions. In such a context, improving internal processes such as procurement is vital to enhancing efficiency, reducing operational costs, and maintaining competitiveness (Chakladar, 2021). Procurement is a core function within insurance firms that significantly influences cost management, service delivery, and organizational performance (Paul et al., 2024). Traditionally, procurement processes in the insurance sector were manual, involving physical paperwork, face-to-face interactions, and prolonged approval cycles, which resulted in inefficiencies such as delays, increased costs, and lack of transparency.

The adoption of electronic procurement practices has emerged as a strategic solution to address these inefficiencies. E-procurement refers to the application of digital platforms and information technologies in managing procurement activities, including supplier selection, tendering, contract management, ordering, and payments. The implementation of e-procurement can enhance procurement performance by streamlining operations, reducing procurement cycle times, improving accuracy, and ensuring regulatory compliance (Nawi & Roslan, 2016). Key e-procurement practices such as e-sourcing, e-tendering, e-ordering, and e-payment systems have been shown to improve transparency, accountability, and real-time data access, thereby supporting better decision-making and enhancing supplier relationship management. These capabilities are critical in helping insurance firms achieve procurement agility, mitigate risks, and optimize service delivery. Furthermore, the integration of e-procurement practices aligns with global procurement standards and supports the strategic objectives of insurance firms in Kenya. It strengthens stakeholder confidence, improves financial accountability, and enhances regulatory alignment. As such, embracing e-procurement is essential for insurance firms seeking to improve procurement performance and sustain long-term competitiveness in a fast-evolving economic landscape (Makudza et al., 2023).

Statement of the Problem

Procurement plays a critical role in determining the operational success of any organization, as it significantly influences cost control, the quality of inputs, and the timeliness of service delivery

(Paul et al., 2024). In the Kenyan insurance sector, firms are increasingly facing a range of procurement-related challenges that compromise the effectiveness and efficiency of their operations. The challenges include reliance on manual procurement systems, delayed processing of procurement orders, limited transparency, insufficient accountability, and poor supplier performance monitoring (Kajwang, 2021). Such inefficiencies result in elevated operational costs, frequent delays in acquiring essential resources, and ineffective supplier relationship management, all of which disrupt service delivery, reduce customer satisfaction, and diminish the competitiveness of insurance firms (Mebrate & Shumet, 2024). The growing complexity of procurement requirements, combined with high operational expenditures, has further strained the procurement functions of insurance firms. This limits the firms' ability to respond to the dynamic business environment and undermining their pursuit of strategic objectives. In response to the challenges, e-procurement has emerged as a viable solution. E-procurement practices are known to streamline procurement processes, enhance transparency and accountability, facilitate real-time tracking of procurement activities, and support improved supplier collaboration. The automation of procurement tasks through e-procurement systems may enable insurance firms to reduce costs, minimize fraud risks, and achieve timely delivery of goods and services (Zulkarnain et al., 2023). Furthermore, electronic systems provide a platform for better regulatory compliance and adherence to internal procurement policies.

Despite the recognized benefits of e-procurement, there remains limited empirical research focusing specifically on its impact on procurement performance within Kenya's insurance sector. Existing studies have examined related areas, but with different contextual focuses. Previous studies have highlighted the potential of e-procurement in improving organizational processes but have not adequately addressed its direct impact on procurement performance within Kenya's insurance sector. For instance, Isango (2024) examined e-procurement and organizational performance in Tanzania, focusing on overall firm outcomes rather than procurement-specific metrics, thus presenting a conceptual gap. Similarly, James and Osoro (2023) investigated e-procurement in Kenyan county governments, creating a contextual gap since their findings cannot be generalized to insurance firms that operate under different regulatory and operational frameworks. Consequently, limited empirical evidence exists on how e-procurement practices influence procurement performance in Kenya's insurance industry. This study, therefore, sought to fill both the conceptual and contextual gaps by examining the relationship between e-procurement practices and procurement performance among insurance firms in Kenya.

Objectives of the Study

i To determine the extent to which of electronic tendering influences procurement performance of insurance firms in Kenya
ii To assess how electronic ordering influences procurement performance of insurance firms in Kenya

iii To analyze the relationship between electronic sourcing and procurement performance of insurance firms in Kenya

iv To evaluate how electronic invoicing influences procurement performance of insurance firms in Kenya

Theoretical Review

Transaction Cost Theory

The Transaction Cost Theory (TCT) was introduced by Oliver Williamson in the 1979 and seeks to explain why firms exist, how they operate, and the costs associated with economic transactions (Williamson & Masten, 2016). The theory primarily focuses on the costs incurred when engaging in market exchanges, such as search costs, bargaining costs, monitoring costs, and enforcement costs. According to the theory, businesses must choose between conducting transactions internally or externally depending on which option is more cost-effective. When transaction costs such as the costs of negotiating, monitoring, and enforcing contracts are too high in an open market, firms tend to internalize such activities within their structures to minimize inefficiencies (Rindfleisch, 2019). One of the key components of transaction costs is search and information costs, which refer to the expenses involved in identifying and evaluating potential suppliers or buyers. Another critical element is bargaining and contracting costs, which arise from negotiating and structuring agreements. Additionally, monitoring and enforcement costs occur when ensuring compliance with contract terms, while asset specificity relates to investments that are tailored to particular transactions and may discourage external procurement due to dependency risks (Williamson, 2007). These costs determine whether a firm should rely on external suppliers or manage transactions internally.

The Transaction Cost Theory underpins the objective of determining the extent to which electronic tendering influences procurement performance of insurance firms in Kenya by illustrating how the adoption of e-tendering minimizes inefficiencies and costs associated with traditional procurement processes. In the context of Kenyan insurance firms, electronic tendering streamlines supplier identification, evaluation, and contract management through automated systems, thereby reducing search, negotiation, and monitoring costs that are central to transaction cost considerations. By digitizing the tendering process, firms can achieve greater transparency, faster decision-making, and reduced risks of opportunism or fraud, which enhances overall procurement performance. Thus, the theory explains that when firms adopt electronic tendering to lower transaction costs and enhance coordination efficiency, they are more likely to realize improved procurement outcomes such as cost savings, timeliness, and supplier reliability.

Resource-Based View Theory

The Resource-Based View Theory was proposed by Birger Wernerfelt in 1984 and later expanded by Jay Barney in 1991 (Parboteeah & Zakaria, 2023). The theory argues that an organization's sustainable competitive advantage is derived from its internal resources and capabilities rather than

external market conditions. These resources must be valuable, rare, inimitable, and non-substitutable for a firm to maintain superior performance over time (Wernerfelt, 2016). In electronic ordering in procurement, the RBV theory suggests that firms that leverage technology-driven procurement practices can enhance efficiency, reduce costs, and improve decision-making, ultimately leading to better procurement performance. Electronic ordering systems streamline procurement processes by automating purchase requests, approvals, and supplier communication, minimizing human errors and enhancing transaction speed. The theory underpins the objective by explaining how electronic ordering serves as a strategic technological resource that enhances procurement performance among insurance firms in Kenya. Through the RBV lens, electronic ordering systems are viewed as valuable and inimitable assets that enable firms to optimize procurement processes by reducing transaction costs, improving order accuracy, and accelerating approval workflows, outcomes that collectively strengthen operational efficiency and competitive advantage. Insurance firms that effectively integrate electronic ordering into their procurement frameworks transform technology from a basic operational tool into a distinctive capability that improves responsiveness and supplier management, key aspects of procurement performance. This integration aligns with RBV's assertion that firms achieve superior performance when they develop and deploy resources that competitors find difficult to imitate or substitute (Barney & Hesterly, 2019).

Diffusion of Innovations Theory

The Diffusion of Innovations (DOI) Theory, proposed by Everett Rogers in 1962 explains how new ideas, technologies, and practices spread within a society or an organization. According to the theory, the diffusion process occurs over time through communication channels among members of a social system. Rogers (1962) categorized adopters into five groups: innovators, early adopters, early majority, late majority, and laggards, depending on their willingness and speed in adopting new innovations. The theory outlines five key attributes that influence the adoption rate of an innovation: relative advantage, compatibility, complexity, trialability, and observability. The theory underpins the objective of analyzing the relationship between electronic sourcing and procurement performance of insurance firms in Kenya by explaining how the perceived attributes of e-sourcing influence its adoption and subsequent impact on procurement outcomes. The theory suggests that organizations adopt innovations such as e-sourcing when they perceive a clear relative advantage, such as enhanced efficiency, transparency, and cost savings, compared to traditional sourcing methods. Furthermore, the degree of compatibility of e-sourcing with existing procurement systems, the simplicity of its use, and the opportunity to observe its success in peer firms collectively shape the adoption decision and utilization intensity, which ultimately affect procurement performance outcomes such as cost efficiency, supplier quality, and process effectiveness. Therefore, by applying the theory, the study establishes a conceptual basis for understanding how the adoption and integration of electronic sourcing practices drive improved procurement performance among insurance firms (Greenhalgh et al., 2005).

Technology Acceptance Model

The Technology Acceptance Model, proposed by Davis in 1989, suggests that two key factors that is perceived ease of use and perceived usefulness determine the likelihood of a user adopting a new technology (Davis & Granić, 2024). Perceived ease of use refers to the degree to which an individual believes using a particular technology would be free of effort, while perceived usefulness is the degree to which an individual believes that using the technology will enhance their job performance. TAM is widely applied in contexts where the acceptance of new technologies is critical, such as e-procurement systems, which involve the use of technology to streamline procurement processes. By applying TAM to e-procurement, the model helps to explain how factors like ease of use and usefulness influence the decision to adopt e-invoicing as part of procurement practices. The theory underpins the objective on how electronic invoicing influences procurement performance of insurance firms in Kenya by providing a theoretical explanation of the behavioral and perceptual factors that drive technology adoption. The model posits that when procurement staff perceive e-invoicing systems as useful in enhancing procurement efficiency, they are more inclined to adopt and effectively use these systems, thereby improving procurement performance outcomes (Venkatesh & Davis, 2000). Similarly, if users find the system easy to use, their acceptance and consistent utilization of e-invoicing technology increase, resulting in more streamlined procurement operations. Within the Kenyan insurance context, TAM explains that organizational performance improvements are contingent upon the level of acceptance and behavioral intention of employees to use e-invoicing platforms. The theory thus links the perceptions of technology usefulness and ease of use to measurable procurement performance indicators such as efficiency, accuracy, and cost-effectiveness.

Conceptual Framework

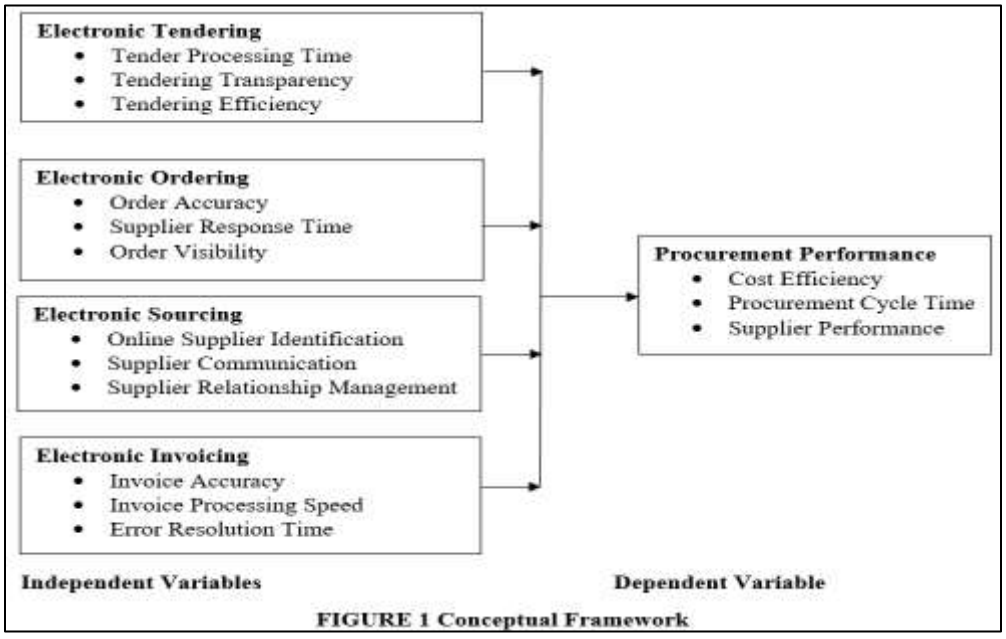

FIGURE 1 Conceptual Framework

Research Methodology

The study adopted a descriptive survey design. The target population of the study comprised all 63 insurance firms registered under Insurance Regulatory Authority (2024). The firms are categorized into three groups: Reinsurance Companies, General Insurance Companies, and Long-Term (Life) Insurance Companies. The unit of observation comprised of procurement managers from each of the insurance firm. A total of 63 managers were targeted. A census approach was applied in the study. The study made use of primary data. Structured questionnaires were used to collect primary data, which was captured using a 5-point Likert scale of 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree. To analyse quantitative data, descriptive statistics such as percentages, means, and standard deviation was and the results were presented in the form of figures and frequency tables. The degree of relationship between independent and dependent variables were determined using inferential statistics (regression and correlation). The SPSS programme was used to generate the statistics. The program was also used to refine data using a multiple regression analysis that showed the link between dependent and independent variables. The model for this study is as illustrated below:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where;

β_0= Regression constant or intercept, β_1, β_2, β_3 and β_4 are the independent variables unknown coefficients, **Y** = Procurement Performance, X_1 = Electronic Tendering, X_2= Electronic Ordering, X_3= Electronic Sourcing, X_4 = Electronic Invoicing and ε = Error term.

Results

The study issued 63 questionaires to procurement managers of the various insurance firms involved in the study. 50 questionnaires were fully filled and returned for analysis. This represented a response rate of 79.4%. The response rate was considered adequate for the study. This was according to Lavrakas (2018) who noted that that a response rate of 60% or more is considered sufficient for analysis and in making inferences.

Descriptive Results

Electronic Tendering

The first objective of the study was to assess the influence of electronic tendering on procurement performance among insurance firms in Kenya. Respondents were asked to indicate their level of agreement with various statements relating to the use of electronic tendering systems in their organizations. The results, as summarized in Table 1, reveal varying perceptions across the indicators, with an overall mean score of 3.337 and a standard deviation of 1.026, indicating a generally neutral but moderately varied set of responses. The highest-rated statement was that electronic tendering has reduced the time taken to process tenders (mean = 4.000, SD = 0.980).

This implies that most respondents agreed that e-tendering enhances efficiency by shortening tendering timelines. This finding supports Abolhasani and Azar (2021), who found that automation in tendering significantly accelerates procurement cycles by minimizing manual processes and redundant administrative procedures. It also aligns with Mutinda et al. (2020), who observed that time efficiency is one of the most immediate benefits of e-tendering adoption in Kenyan public sector procurement.

Similarly, respondents agreed that electronic tendering enhances transparency by providing an auditable trail of procurement processes (mean = 3.960, SD = 1.002). This suggests that e-tendering contributes positively to accountability and traceability, key components of procurement performance. The moderate standard deviation indicates a fair level of consensus among respondents. These findings are in line with Ngugi and Gakure (2020), who reported that e-tendering platforms foster openness and reduce opportunities for corruption in competitive bidding processes. In contrast, respondents remained neutral on statements that e-tendering improves the speed of bid evaluation and awarding (mean = 3.000, SD = 1.080) and that it minimizes favoritism or bid manipulation (mean = 3.280, SD = 0.970). The neutrality and moderate deviations here imply that while automation is perceived to enhance efficiency, human discretion and procedural bottlenecks may still slow down evaluations or allow room for bias. These results partly differ from Mugo and Karanja (2019), who found that e-tendering significantly curtails subjective judgment in procurement decision-making.

Respondents also showed neutral agreement with the statements that electronic tendering reduces paperwork and administrative costs (mean = 3.360, SD = 1.040) and enables efficient tracking and monitoring of tenders from submission to awarding (mean = 2.760, SD = 1.130). The higher standard deviations here indicate greater variation in responses, suggesting differences in implementation maturity or system effectiveness across insurance firms. According to Ochieng and Njoroge (2022), such inconsistencies are common in sectors where e-procurement integration is partial or unevenly adopted. The statement that e-tendering enables better supplier evaluation through automated scoring and comparison recorded a neutral response (mean = 3.000, SD = 1.050). This indicates that although the system's potential for objectivity exists, it may not yet be fully utilized or integrated within all firms' procurement workflows. Similar concerns were raised by Kihara (2021), who noted that incomplete system customization and user training can limit the benefits of e-tendering tools.

The results on overall suggest that electronic tendering moderately influences procurement performance, primarily by improving efficiency and transparency, though its impact on evaluation speed, fairness, and monitoring remains limited. The moderate standard deviation (1.026) across all items indicates a reasonable spread in perceptions, reflecting that while some firms experience tangible benefits, others are still in the early stages of effective system utilization.

TABLE 1 Descriptive Statistics on Electronic Tendering

Electronic Tendering	N	Mean	Standard Deviation
Electronic tendering has reduced the time taken to process tenders in our organization	50	4.000	0.808
The use of e-tendering has improved the speed of bid evaluation and awarding	50	3.000	1.062
Electronic tendering enhances transparency by providing an auditable trail of procurement processes	50	3.960	0.961
The use of e-tendering minimizes cases of favoritism or bid manipulation	50	3.280	1.184
Electronic tendering has reduced paperwork and administrative costs in our procurement process.	50	3.360	1.087
The system allows for efficient tracking and monitoring of tenders from submission to awarding	50	2.760	1.050
E-tendering enables better supplier evaluation through automated scoring and comparison	50	3.000	1.026
Overall Score	50	3.337	1.026

Electronic Ordering

The second objective of this study sought to assess how electronic ordering influences procurement performance among insurance firms in Kenya. Descriptive analysis results on electronic ordering are presented in Table 2. The findings reveal that respondents agreed that electronic ordering had improved the accuracy of purchase orders (mean = 3.640, SD = 1.091). This suggests a relatively strong consensus that automation minimizes manual entry errors, enhancing data accuracy and order precision. This finding aligns with Morioka et al. (2016), who observed that automation in order processing enhances order accuracy and reduces operational inefficiencies. Respondents also agreed that electronic ordering enhances transparency in the procurement process (mean = 3.520, SD = 1.210). The moderate standard deviation indicates some variability in responses, implying that while most firms experience improved transparency, the extent of this benefit may depend on the level of system integration and user competence. This result is consistent with findings by Ngeno and Mwaura (2020), who established that e-procurement systems foster transparency by providing real-time audit trails and reducing opportunities for manipulation.

However, respondents were generally neutral regarding whether electronic ordering ensures that order specifications match actual deliveries (mean = 2.720, SD = 1.184). This neutrality may indicate limited system functionality in verifying supplier compliance or inconsistencies in supplier data integration. Similar observations were made by Awuor et al. (2019), who noted that while e-ordering enhances process efficiency, discrepancies may persist if suppliers do not fully adopt compatible digital systems. Likewise, respondents were neutral on whether electronic ordering minimizes duplication of orders (mean = 3.120, SD = 1.162) and reduces the time taken for suppliers to acknowledge orders (mean = 2.520, SD = 1.210). These moderate mean scores

with relatively high standard deviations suggest divergent experiences among firms possibly due to differences in system maturity or supplier responsiveness. This supports the argument by Osoro and Muturi (2018) that the success of e-ordering systems depends largely on supplier integration and training levels.

In addition, neutrality was expressed on statements that the system allows for real-time tracking of supplier responses (mean = 2.760, SD = 1.191), provides real-time visibility of order status (mean = 2.600, SD = 1.205), and enables easy tracking of orders from placement to delivery (mean = 2.640, SD = 1.214). These findings imply that while electronic ordering is in use, many firms may not be leveraging its full functionality for real-time monitoring, possibly due to system limitations or inadequate ICT infrastructure. On average, the overall mean score of 2.940 (SD = 1.184) indicates a neutral perception of electronic ordering's influence on procurement performance. This suggests that while insurance firms recognize certain benefits such as improved accuracy and transparency the full potential of electronic ordering systems remains underutilized. These results partially support the study objective by demonstrating that electronic ordering contributes to procurement efficiency, though inconsistently across firms.

TABLE 2 Descriptive Statistics on Electronic Ordering

Electronic Ordering	N	Mean	Standard Deviation
Electronic ordering has improved the accuracy of purchase orders	50	3.640	1.233
The use of electronic ordering ensures that order specifications match actual deliveries	50	2.720	1.264
Electronic ordering minimizes duplication of orders	50	3.120	1.362
Electronic ordering has reduced the time taken for suppliers to acknowledge orders	50	2.520	1.417
The system allows for real-time tracking of supplier responses	50	2.760	1.182
The electronic ordering system provides real-time visibility of order status	50	2.600	1.019
Procurement staff can easily track orders from placement to delivery	50	2.640	0.994
Electronic ordering has enhanced transparency in the procurement process	50	3.520	0.999
Overall Score	50	2.940	1.184

Electronic Sourcing

The third objective of this study sought to assess how electronic sourcing influences procurement performance among insurance firms in Kenya. Respondents were asked to indicate their level of agreement with several statements related to electronic sourcing practices, and the results are summarized in Table 3. The findings revealed that most respondents agreed that their organizations effectively use online platforms to identify and evaluate potential suppliers (mean = 4.08, SD = 1.18). This relatively high mean and moderate standard deviation suggest a strong and consistent perception across firms that electronic sourcing enhances supplier identification and evaluation.

This finding aligns with Obicci (2015), who established that e-sourcing enhances procurement performance by promoting transparency and facilitating better supplier selection processes. Similarly, Basheka and Mutebi (2017) noted that electronic supplier evaluation reduces sourcing time and enhances procurement decision quality.

Respondents also agreed that electronic sourcing had improved the speed of supplier selection and onboarding (mean = 3.68, SD = 1.26), indicating moderate consensus among respondents. This result underscores the role of e-sourcing in streamlining procurement cycles and reducing administrative bottlenecks, consistent with studies by Boateng (2016) and Rotich and Okello (2015), which found that automation in sourcing processes accelerates supplier integration and enhances operational efficiency. Furthermore, respondents agreed that digital communication with suppliers had improved the efficiency of procurement transactions (mean = 3.64, SD = 1.31). The moderate mean and slightly higher standard deviation imply that while most respondents acknowledged this improvement, perceptions varied slightly across firms, possibly reflecting differences in the extent of digital adoption. This is consistent with the findings of Karimi and Namusonge (2014), who emphasized that digital communication platforms improve coordination, reduce paperwork, and enhance the accuracy of procurement records.

The study also found strong agreement that electronic sourcing has improved collaboration and long-term relationships with suppliers (mean = 4.00, SD = 1.22). This suggests that e-sourcing not only enhances transactional efficiency but also fosters relational outcomes, supporting the view by Croom and Brandon-Jones (2017) that digital sourcing tools promote supplier relationship management and joint value creation. However, respondents expressed neutrality on whether their organizations used electronic platforms to communicate procurement requirements with suppliers (mean = 3.40, SD = 1.46), used digital tools to monitor and assess supplier performance (mean = 3.32, SD = 1.51), or that electronic platforms facilitated timely resolution of procurement-related disputes (mean = 3.36, SD = 1.49). The lower means and relatively higher standard deviations suggest varied levels of implementation and mixed experiences across firms. These findings indicate that while foundational aspects of e-sourcing are in place, advanced features such as supplier performance monitoring and dispute resolution through digital platforms remain underutilized. This observation resonates with Osei-Tutu et al. (2018), who noted that many organizations in developing economies are still in the early stages of e-procurement maturity, focusing more on transactional than strategic electronic sourcing functions.

The composite mean score of 3.64 (SD = 1.475) indicates that respondents generally agreed that electronic sourcing positively influences procurement performance, though the wide standard deviation reflects some inconsistency in practice across firms. These results reinforce the study's objective that electronic sourcing is a significant determinant of procurement performance, enhancing efficiency, supplier collaboration, and decision-making.

TABLE 3 Descriptive Statistics on Electronic Sourcing

Electronic Sourcing	N	Mean	Standard Deviation
Our organization effectively uses online platforms to identify and evaluate potential suppliers.	50	4.08	1.345
Electronic sourcing has improved the speed of supplier selection and onboarding	50	3.68	1.542
Our organization uses electronic platforms to communicate procurement requirements with suppliers.	50	3.40	1.512
Digital communication with suppliers has improved efficiency in procurement transactions	50	3.64	1.584
Electronic sourcing has improved collaboration and long-term relationships with suppliers.	50	4.00	1.344
Our organization uses digital tools to monitor and assess supplier performance.	50	3.32	1.525
Electronic platforms facilitate timely resolution of procurement-related disputes with suppliers	50	3.36	1.471
Overall Score	50	3.64	1.475

Electronic Invoicing

The fourth objective of the study sought to assess the influence of electronic invoicing on procurement performance among insurance firms in Kenya. Respondents were presented with several statements relating to the use of electronic invoicing and asked to indicate their level of agreement. Table 4 presents the descriptive results. The results revealed that respondents agreed that electronic invoicing has significantly reduced invoice discrepancies in the procurement process (mean = 3.60, SD = 0.912) and reduced the time taken to process invoices (mean = 3.52, SD = 0.938). The relatively high mean values, coupled with low standard deviations, indicate a strong and consistent agreement among respondents that e-invoicing enhances the accuracy and efficiency of invoice handling. These findings align with Mutunga and Makhamara (2020), who observed that electronic invoicing promotes accuracy, transparency, and time efficiency in financial documentation, thereby improving overall procurement performance.

However, the study found that respondents were neutral on whether automation of invoicing had minimized delays in supplier payments (mean = 2.56, SD = 1.041). This suggests a moderate level of uncertainty or variability in experiences across firms, possibly due to differences in integration levels of e-invoicing systems with payment platforms. Similarly, respondents disagreed that electronic invoicing ensured invoices matched purchase orders and deliveries accurately (mean = 2.40, SD = 1.013) and that the approval process for invoices was faster (mean = 2.48, SD = 1.126). The higher standard deviations in these statements reflect divergent perceptions among respondents, implying that while some firms may have achieved seamless system integration, others still face implementation challenges such as data mismatches and workflow bottlenecks.

Moreover, respondents disagreed that errors in invoices were detected and corrected faster through e-invoicing (mean = 2.56, SD = 1.021) and that back-and-forth corrections were reduced (mean = 2.32, SD = 1.045). This finding diverges from Adero and Ochieng (2021), who established that e-invoicing reduces manual errors and facilitates faster reconciliation. The discrepancy could be attributed to the technological maturity of insurance firms in Kenya, where full automation and staff adaptation are still evolving. Respondents also disagreed that disputed invoices were resolved more efficiently compared to manual invoicing methods (mean = 2.48, SD = 1.092), further emphasizing potential gaps in system reliability or user competence.

The aggregate mean score of 2.74 (SD = 1.021) indicates a neutral perception towards the effect of electronic invoicing on procurement performance among insurance firms. While e-invoicing appears to have enhanced accuracy and reduced processing time, its broader potential in automating approval processes, minimizing payment delays, and improving dispute resolution remains underutilized. These results suggest that the positive impact of e-invoicing is contingent upon the degree of system integration, user training, and organizational readiness. Although the study partially supports previous findings that e-invoicing can improve procurement efficiency (Mutunga & Makhamara, 2020; Adero & Ochieng, 2021), it also highlights contextual limitations in the Kenyan insurance sector that may hinder full realization of these benefits.

TABLE 4 Descriptive Statistics on Electronic Invoicing

Electronic Invoicing	N	Mean	Standard Deviation
Electronic invoicing has significantly reduced invoice discrepancies in our procurement processes	50	3.60	1.074
The system ensures that invoices match purchase orders and deliveries accurately	50	2.40	1.026
Electronic invoicing has reduced the time taken to process invoices	50	3.52	0.875
The approval process for invoices is faster with electronic invoicing	50	2.48	1.058
Automation of invoicing has minimized delays in supplier payments	50	2.56	1.069
Errors in invoices are detected and corrected faster with electronic invoicing	50	2.56	1.084
Electronic invoicing reduces the back-and-forth corrections required in invoice processing.	50	2.32	1.030
Disputed invoices are resolved more efficiently compared to manual invoicing methods	50	2.48	0.954
Overall Score	50	2.74	1.021

Procurement Performance

Table 5 presents the descriptive statistics on procurement performance among insurance firms in Kenya. The results reveal that respondents largely agreed with the statements measuring procurement performance, as indicated by an overall mean score of 4.503 and a standard deviation of 0.965, suggesting strong consensus and consistency in their perceptions. Specifically,

respondents agreed that their firms had been able to reduce procurement costs through e-procurement adoption (mean = 4.48, SD = 0.92). The high mean value indicates that e-procurement tools such as online bidding, automated tender evaluation, and digital payment systems have effectively minimized administrative and transaction costs. This observation supports the findings of Nawi and Roslan (2016), who reported that e-procurement enhances cost savings by eliminating paperwork and reducing manual processing expenses.

Additionally, respondents agreed that procurement processes ensured cost-effective sourcing of goods and services (mean = 4.48, SD = 0.97). The relatively low standard deviation suggests that most firms experienced consistent cost efficiency benefits. This result corroborates Rashid and Alhassan (2020), who found that e-sourcing platforms improve supplier competition and lead to better pricing and value for money. The study further found that e-procurement had reduced administrative costs related to procurement (mean = 4.72, SD = 0.89), indicating a very strong consensus among respondents. This result reinforces the view of Kiarie and Wanyoike (2016), who concluded that e-procurement systems significantly lower administrative overheads by automating documentation, approvals, and reporting.

Respondents also agreed that their firms had reduced procurement cycle time through automated procurement processes (mean = 4.60, SD = 0.95). The high mean suggests that automation has led to faster requisition approvals, supplier selection, and order fulfilment. This is consistent with Boateng et al. (2019), who observed that automation in procurement reduces lead time and improves operational responsiveness. Similarly, the respondents agreed that their firms maintained a structured supplier evaluation system that ensures high performance (mean = 4.52, SD = 0.91). This reflects the integration of supplier performance management tools within e-procurement systems, which enhance transparency and accountability. The result supports Karimi and Njeru (2017), who emphasized that systematic supplier evaluation fosters continuous improvement and supplier reliability.

Moreover, the study established that suppliers consistently met delivery timelines as per contractual agreements (mean = 4.40, SD = 0.98), and that e-procurement had improved the accuracy of supplier deliveries and order fulfilment (mean = 4.32, SD = 0.96). The results suggest that automated ordering and tracking systems improve communication and compliance with delivery schedules. This finding is consistent with Mutua (2018), who noted that e-procurement enhances coordination and reduces errors in supplier transactions. Overall, the consistently high mean scores across all indicators imply that insurance firms in Kenya have realized substantial benefits from e-procurement in terms of cost reduction, process efficiency, and supplier performance. The relatively low standard deviation (below 1.0 for all items) further indicates strong agreement among respondents, signifying a uniform and positive experience with e-procurement implementation across the sector.

TABLE 5 Descriptive Statistics on Procurement Performance

Procurement Performance	N	Mean	Standard Deviation
Our firm has been able to reduce procurement costs through e-procurement adoption	50	4.480	1.030
Procurement processes in our firm ensure cost-effective sourcing of goods and services	50	4.480	1.038
E-procurement has reduced administrative costs related to procurement	50	4.720	0.844
Our firm has reduced procurement cycle time through automated procurement processes	50	4.600	0.983
Our firm has a structured supplier evaluation system that ensures high performance	50	4.520	1.107
Suppliers consistently meet delivery timelines as per contractual agreements	50	4.400	0.990
E-procurement has improved the accuracy of supplier deliveries and order fulfilment	50	4.320	0.763
Overall Score	50	4.503	0.965

Inferential Statistics

Correlation Analysis

The purpose of the correlation analysis was to determine the degree of correlation between e-procurement practices (e-tendering, e-sourcing, e-ordering, e-invoicing) and procurement performance. Table 6 displays the correlation analysis results. The results shows that electronic tendering and procurement performance of insurance firms in Kenya positively and significantly correlates. This is shown by a Pearson Correlation coefficient of 0.419 and p-value of 0.002<0.05. The results bear the implications that enhancing electronic tendering practices in the operations of the insurance firms contributes significantly to enhanced procurement performance levels of the firms. This tallies with findings from Olusola and Adebayo (2019) who established that the shift to electronic platforms significantly improves efficiency, leading to faster contract awards and reduced administrative burdens. The results also established that that electronic ordering and procurement performance of insurance firms in Kenya positively and significantly correlates. This is shown by a Pearson Correlation coefficient of 0.425 and p-value of 0.002<0.05. The results bear the implications that enhancing electronic ordering practices in the operations of the insurance firms contributes significantly to enhanced procurement performance levels of the firms. The results concurs with Morioka et al. (2016) who found that e-ordering systems substantially reduces lead times and minimizes costs associated with traditional manual methods.

The results further revealed that electronic sourcing and procurement performance of insurance firms in Kenya positively and significantly correlates. This is shown by a Pearson Correlation coefficient of 0.452 and p-value of 0.001<0.05. The results bear the implications that enhancing

electronic sourcing practices in the operations of the insurance firms contributes significantly to enhanced procurement performance levels of the firms. According to Shukla (2016), electronic sourcing facilitates superior price discovery and intensifies competition among suppliers, thus contributing to overall procurement efficiency. From the correlation results, electronic invoicing and procurement performance of insurance firms in Kenya positively and significantly correlates. This is shown by a Pearson Correlation coefficient of 0.284 and p-value of 0.046<0.05. The results bear the implications that enhancing practices around electronic invoicing in the operations of the insurance firms contributes significantly to enhanced procurement performance levels of the firms. The results are consistent with Byiringiro and Madichie (2022) who established existence of a strong positive correlation between electronic invoicing and procurement performance while assessing how E-procurement practices affects performance of Rwandese public institutions.

TABLE 6 Correlation Results

		Electronic Tendering	Electronic Ordering	Electronic Sourcing	Electronic Invoicing	Procurement Performance
Electronic Tendering	Pearson Correlation	1				
	Sig. (2-tailed)					
Electronic Ordering	Pearson Correlation	.088	1			
	Sig. (2-tailed)	.544				
Electronic Sourcing	Pearson Correlation	.099	.404	1		
	Sig. (2-tailed)	.494	.004			
Electronic Invoicing	Pearson Correlation	.267	.133	.086	1	
	Sig. (2-tailed)	.061	.357	.553		
Procurement Performance	Pearson Correlation	.419	.425	.452	.284	1
	Sig. (2-tailed)	.002	.002	.001	.046	
	N	50	50	50	50	

Regression Analysis

The model summary out was utilized to depict the degree of relationship between the independent variables and the dependent variable. The model summary further shows the percentage accounted by the independent variables on the dependent variable. According to the results presented in table

7, the R-Value established in the study was 0.650. This implies that there exists a moderate relationship between e-procurement practices and procurement performance of insurance firms in Kenya. Similarly, the coefficient of determination represented by R-Square value was 0.423 implying that 42.3% of procurement performance of insurance firms in Kenya can be accounted by e-procurement practices comprising of electronic tendering, electronic sourcing, electronic ordering, and electronic invoicing.

TABLE 7 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.650[a]	.423	.372	.502

a. Predictors: (Constant), Electronic Tendering, Electronic Sourcing, Electronic Ordering, and Electronic Invoicing

The Analysis of Variance (ANOVA) was incorporated in the study to assess whether the model linking dependent variables with the independent variable was statistically significant. According to the results displayed in table 8, the p-value was 0.000 which was less than 0.05. This bear the implication that the model linking the dependent and the independent variables of the study was statistically significant. It was therefore considered a good fit for the study for assessing the relationships.

TABLE 8 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.323	4	2.081	8.242	.000[b]
	Residual	11.360	45	.252		
	Total	19.682	49			

a. Dependent Variable: Procurement Performance
b. Predictors: (Constant), Electronic Tendering, Electronic Sourcing, Electronic Ordering, and Electronic Invoicing

The regression coefficients were utilized in the study to show how changes in the independent variables changes the dependent variable. According to the results presented in table 9, electronic tendering positively and significantly influences procurement performance of insurance firms in Kenya. This is shown by a beta value of 0.363 and a p-value of 0.008<0.05. This bear the implications that increasing electronic tendering practices with one unit increases the procurement performance of insurance firms with 0.363 units. The results tallies with Abolhasani and Azar (2021) who noted that e-tendering consistently streamlines procurement processes by reducing reliance on manual operations and accelerating procurement cycles. The results further revealed that electronic ordering positively and significantly influences procurement performance of

insurance firms in Kenya. This is shown by a beta value of 0.253 and a p-value of 0.046<0.05. This bear the implications that increasing electronic ordering practices with one unit increases the procurement performance of insurance firms with 0.253 units. According to Schutte and Coetzee (2018), e-ordering systems not only reduces administrative costs but also improves relationships with suppliers. This leads to enhanced procurement performance through increased transparency and faster order fulfillment thus contributing to a firm's competitive advantage.

The results also established that electronic sourcing positively and significantly influences procurement performance of insurance firms in Kenya. This is shown by a beta value of 0.143 and a p-value of 0.018<0.05. This bear the implications that increasing electronic sourcing practices with one unit increases the procurement performance of insurance firms with 0.143 units. The results tallies with Obicci (2015) who demonstrated that electronic sourcing significantly improves performance through cost reduction, enhanced quality of procurement decisions, and improved compliance with procurement policies. From the model coefficient results, electronic invoicing positively but insignificantly influences procurement performance of insurance firms in Kenya. This is shown by a beta value of 0.127 and a p-value of 0.258>0.05. This bear the implications that increasing electronic invoicing practices with one unit increases the procurement performance of insurance firms with 0.127 units. The results concurs with Mutunga and Makhamara (2020) who established that e-invoicing significantly affects organizational performance and that businesses can realize substantial benefits from adopting electronic invoicing practices.

TABLE 9 Model Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Predictors	**B**	**Std. Error**	**Beta**	**T**	**sig.**
(Constant)	1.461	.505		2.894	.006
Electronic Tendering	.363	.130	.300	2.798	.008
Electronic Ordering	.253	.123	.258	2.049	.046
Electronic Sourcing	.143	.058	.650	2.454	.018
Electronic Invoicing	.127	.111	.144	1.145	.258

Conclusion

The study concludes that electronic tendering significantly enhances procurement performance among insurance firms in Kenya through improved efficiency and transparency in tender processes. Electronic ordering significantly enhances procurement performance among insurance firms in Kenya. While neutral responses were observed in areas such as order tracking and verification, inferential statistics demonstrate that firms with stronger adoption of electronic ordering achieve better procurement outcomes. In addition, electronic sourcing plays a critical role in enhancing procurement performance in Kenyan insurance firms by improving supplier identification, evaluation, collaboration, and operational efficiency. Electronic invoicing

contributes to partial improvements in procurement efficiency, particularly by reducing invoice discrepancies and processing time

Recommendations

The study recommends that insurance firms enhance system integration and customization of electronic tendering platforms to streamline all stages of procurement. Insurance firms should strengthen electronic ordering practices by integrating systems with suppliers, investing in ICT infrastructure, and providing user training to maximize functionality, particularly for real-time tracking and order verification. Insurance firms should expand the use of electronic sourcing beyond basic functions to include digital communication of requirements, supplier performance monitoring, and dispute resolution. Lastly, insurance firms should enhance integration of electronic invoicing with procurement and financial systems to improve accuracy, reduce delays, and minimize disputes. Staff training should be prioritized to ensure effective adoption and handling of exceptions. E-invoicing should be implemented alongside other e-procurement practices, such as e-tendering and e-ordering, to maximize efficiency gains.

References

Abolhasani, S., & Azar, A. (2021). The role of electronic tendering in procurement performance in Malaysia's public and private sectors. *Journal of Public Procurement and Governance, 12*(2), 45-61.

Awuor, D., Kibuine, M., & Akwalu, E. (2024). Effect Of Electronic Sourcing On Procurement Performance In Siaya County, Kenya. *International Journal of Economics, Commerce and Management, 12*(10), 189–200.

Barney, J. B., & Hesterly, W. S. (2019). *Strategic management and competitive advantage: Concepts and cases* (6th ed.). Pearson.

Basheka, B. C., & Mutebi, A. (2017). Public procurement reforms and performance in developing countries: A case of Uganda. *International Journal of Procurement Management, 10*(2), 178–196.

Boateng, S. (2016). The role of e-procurement in improving procurement performance in the Ghanaian public sector. *Journal of Public Procurement and Contract Management, 3*(1), 45–60.

Byiringiro, K. D., & Madichie, N. (2022). E-procurement practices and performance of public institutions in Rwanda: A case of Kicukiro District. *The Strategic Journal of Business & Change Management*, 9 (4), 744 – 760.

Chakladar, R. (2021). How Do Insurers Reduce Cost and Become Efficient. *Journal of Scientific and Engineering Research, 8*(11), 190–194.

Croom, S., & Brandon-Jones, A. (2017). Key issues in e-procurement: Procurement performance and relationship management. *Journal of Supply Chain Management, 53*(4), 67–83.

Davis, F. D., & Granić, A. (2024). *The Technology Acceptance Model*. Springer International Publishing.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2005). *Diffusion of innovations in service organizations: Systematic review and recommendations*. The Milbank Quarterly, 82(4), 581–629.

IRA. (2019). *National Survey On Enterprises Perception Of Insurance In Kenya*. Welcome - Insurance Regulatory Authority. https://ira.go.ke/assets/file/National%20perception%20survey%20on%20enterprises%20perception%20of%20insurance%20in%20Kenya1.pdf
IRA. (2023). *About IRA Kenya*. Insurance Regulatory Authority. https://ira.go.ke/about-ira-kenya/
IRA. (2024). *Registered Insurers 2024*. Insurance Regulatory Authority. https://ira.go.ke/resource/registered-insurers-2024/
Isango, E. (2024). An Assessment of the Impact of E-Procurement Practices on Organizational Performance in Tanzania. *NG Journal of Social Development*, *14*(2), 237–241.
James, L. L., & Osoro, A. (2023). E-procurement practices and procurement performance in Turkana County, Kenya**.** *The Strategic Journal of Business & Change Management,* 10 (2), 882–900.
Kajwang, B. (2021). Challenges Facing Insurance Brokers In Kenya. *European Journal of Business and Strategic Management*, *1*(1), 1–7.
Karimi, J., & Namusonge, G. (2014). Influence of e-procurement practices on performance of procurement functions in public universities in Kenya. *European Journal of Business Management, 6*(17), 223–230
King, W. R., & He, J. (2006). *A meta-analysis of the Technology Acceptance Model*. Information & Management, 43(6), 740–755.
Lavrakas, P. (2018). *Encyclopedia of Survey Research Methods*, Los Angeles. Sage Publications
Makudza, F., Jaravaza, D. C., Govha, T., Mukucha, P., & Saruchera, F. (2023). Enhancing supply chain agility through e-procurement in a volatile frontier market. *Journal of Transport and Supply Chain Management*, *17*
Mebrate, Y., & Shumet, K. (2024). Assessing the impact of procurement practice on organizational performance. *Cogent Business & Management*, *11*(1).
Morioka, R., Yamamoto, T., & Ueda, K. (2016). The impact of electronic ordering on procurement performance in Japanese manufacturing firms. *International Journal of Production Economics,* 181, 1-12.
Mutunga, J. M., & Makhamara, D. F. H. (2020). E-Invoicing And The Performance Of Small And Medium Enterprises In Nairobi City County Kenya. *Strategic Journal of Business & Change Management*, *7*(3).
Nawi, M., & Roslan, S. (2016). The Benefits and Challenges of E-procurement Implementation: A Case Study of Malaysian Insurance Companies. *International Journal of Economics and Financial Issues, 6*(7), 329–332.
Obicci, A. P. (2015). *E-Procurement and Performance of Service Organizations in Uganda.* [Unpublished master's thesis]. Bugando University - CUHAS.
Olusola, O. A., & Adebayo, O. T. (2019). Impact of electronic tendering on procurement performance in the public sector: Evidence from Nigeria. *International Journal of Public Administration, 42(9), 787-798.*
Osei-Tutu, E., Agyekum, K., & Adjei-Kumi, T. (2018). Electronic procurement implementation challenges in developing countries. *Journal of Construction Project Management and Innovation, 8*(2), 1923–1942.
Parboteeah, P., & Zakaria, R. (2023). *Resource-Based Theory*. SAGE Publications, Inc.

Paul, P., Ogugua, J., & Eyo-Udo, N. (2024). Advancing strategic procurement: Enhancing efficiency and cost management in high-stakes environments. *International Journal of Management & Entrepreneurship Research*, *6*(7), 2100–2111.

Rindfleisch, A. (2019). Transaction cost theory: past, present and future. *AMS Review*, *10*(1-2), 85–97.

Rogers, E. M. (1962). *Diffusion of innovations.* Collier-Macmillan.

Rotich, G. K., & Okello, B. (2015). Analysis of the influence of e-procurement practices on organizational performance among large-scale manufacturing firms in Nairobi, Kenya. *International Journal of Business and Commerce*, *4*(9), 45–58

Schutte, C. S., & Coetzee, S. A. (2018). The influence of electronic procurement on procurement performance in South African listed firms. *South African Journal of Business Management*, 49(1), 35-46.

Shukla, A. (2016). Literature Review of Adoption of E Procurement Practices by Construction Industries. [Unpublished research paper].

Venkatesh, V., & Davis, F. D. (2000). *A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies*. Management Science, 46(2), 186–204.

Wernerfelt, B. (2016). *Adaptation, Specialization, and the Theory of the Firm: Foundations of the Resource-Based View*. Cambridge University Press.

Williamson, O. E. (2007). Transaction Cost Economics: An Introduction. *SSRN Electronic Journal*. 3(4), 56-64

Williamson, O. E., & Masten, S. (Eds.). (2016). *Transaction Cost Economics*. Edward Elgar Publishing.

Zulkarnain, Z., Muda, I., & Kesuma, S. A. (2023). Factors Determining The Adoption of E-Procurement in Developing Countries: A Systematic Literature Review. *International Journal of Social Service and Research*, *3*(2), 585–594.