

E-Procurement Implementation and Procurement Efficiency at NamPower, Namibia: A Mixed-Methods Assessment

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Abstract: Electronic procurement has increasingly become an important component of digital transformation in public and state-owned organisations. E-procurement systems are intended to reduce administrative burdens, shorten procurement processing times, improve information management, and strengthen the overall efficiency of procurement operations. However, the implementation of an electronic system does not automatically guarantee improved organisational performance, as the realisation of efficiency gains may depend on system quality, employee competence, organisational readiness, and the integration of the system into existing organisational processes. This article assesses the effect of e-procurement implementation on procurement efficiency at NamPower, Namibia. A mixed-methods design was employed, incorporating quantitative survey data from 116 respondents and qualitative interviews with 10 procurement officers, system administrators, and departmental managers. Quantitative data were analysed using descriptive statistics and Partial Least Squares Structural Equation Modelling (PLS-SEM), while qualitative data were analysed thematically. The findings demonstrate that e-procurement has contributed substantially to procurement efficiency at NamPower. Procurement System Quality recorded a high mean score of 4.060 (SD = 0.720), while User Competence emerged as the strongest direct predictor of Procurement Performance ($\beta = 0.408$, $p < .001$). Organisational Readiness was also a significant predictor ($\beta = 0.290$, $p = .010$). Qualitative findings strongly corroborated the quantitative evidence, with nine of the ten interview participants reporting improvements in efficiency, particularly through reduced paperwork, faster transaction processing, automated supplier notifications, and reduced administrative workload. Nevertheless, system integration challenges and inadequate training constrained the full realisation of efficiency gains. The article concludes that e-procurement has improved procurement efficiency at NamPower, but its effectiveness depends substantially on the organisation's ability to develop user competence, strengthen organisational readiness, and improve interoperability between procurement and other enterprise systems.

Keywords: e-procurement, Procurement Efficiency, Procurement System Quality, User Competence, Organisational Readiness, NamPower, Namibia, Digital Procurement

I. Introduction

Public procurement is an important component of organisational and public-sector performance because organisations depend on procurement systems to acquire goods, services, equipment, and other resources required for effective operations. Procurement efficiency is particularly important in public enterprises because delays, excessive administrative procedures, poor information flows, and inefficient transaction processes can increase operational costs and affect organisational performance. Globally, public procurement represents a substantial proportion of economic activity, with procurement expenditure accounting for approximately 12–20% of gross domestic product in many economies (Ahn, 2024). Consequently, improving the efficiency of procurement processes has become an important component of public-sector reform and digital transformation.

Traditional procurement systems have commonly depended on paper-based documentation, manual approvals, physical movement of procurement records, and fragmented communication between procurement officers and suppliers. Such processes can create administrative delays and make it difficult to monitor procurement transactions efficiently. The World Bank (2021) identifies bureaucratic inefficiencies, weak monitoring mechanisms, limited transparency, and other institutional challenges as persistent concerns within procurement systems in developing economies. These challenges have encouraged governments and public organisations to adopt electronic procurement as a means of improving procurement processes.

E-procurement refers to the use of electronic platforms and information technologies to conduct procurement activities, including tender publication, supplier registration, bid submission, evaluation, contract award, and supplier management (Afolabi et al., 2022). By moving procurement activities from manual processes to digital platforms, e-procurement can reduce paperwork, automate repetitive activities, improve information availability, and facilitate faster communication. These capabilities create the potential for substantial improvements in procurement efficiency.

Empirical studies (Waiganjo & Ambambi, 2026) have generally associated e-procurement with improvements in procurement cycle times, transaction efficiency, administrative costs, supplier coordination, and organisational

performance. Khan et al. (2023) found that digital procurement systems can improve procurement efficiency by reducing procurement cycle times and administrative costs. Rane et al. (2023) similarly found that digital procurement platforms improve coordination and real-time information sharing within supply-chain processes. Kithinji and Wanjau (2021) documented significant reductions in procurement cycle times following e-procurement implementation in Kenyan state corporations. These findings suggest that digital procurement can generate efficiency gains when appropriately implemented.

However, technology alone does not necessarily produce improved procurement outcomes. Al-Swidi and Saleh (2021) found that organisational readiness and management commitment are important determinants of successful e-procurement implementation. The effectiveness of an electronic procurement system can therefore depend on whether employees possess the necessary skills, whether organisational policies support digital processes, whether adequate infrastructure exists, and whether the system is integrated with other organisational technologies.

This issue is particularly relevant within Namibia, where empirical evidence concerning the operational outcomes of e-procurement in public enterprises remains limited. NamPower has implemented an electronic procurement platform intended to streamline procurement operations, reduce processing times, improve supplier participation, and strengthen procurement performance. Nevertheless, limited empirical evidence has been available concerning whether the implementation has produced measurable improvements in procurement efficiency.

The present article addresses this gap by focusing specifically on the effect of e-procurement implementation on procurement efficiency at NamPower. The analysis considers procurement system quality, user competence, management support and system integration, and organisational readiness as important dimensions of digital procurement implementation. The article combines quantitative and qualitative evidence to provide a comprehensive assessment of whether and how e-procurement has improved procurement efficiency.

II. Research Objective

The article assesses the effect of e-procurement implementation on procurement efficiency at NamPower.

III. Research Question

How does e-procurement implementation affect procurement efficiency at NamPower?

IV. Hypothesis

The study tested the following hypothesis:

H₁: E-procurement implementation has a significant positive effect on procurement efficiency.

V. Literature Review

Concept of E-Procurement

E-procurement represents the digital transformation of conventional procurement activities through the use of information and communication technologies. It encompasses electronic tendering, supplier registration, bid submission, evaluation, contract management, purchasing, and other procurement-related transactions (Afolabi et al., 2022). The central rationale for adopting e-procurement is to make procurement processes faster, more accessible, more traceable, and less dependent on manual administration.

Afolabi et al. (2022) argue that electronic procurement platforms can reduce administrative burdens by enabling procurement activities to be performed electronically. Automated supplier databases, electronic tendering, digital contract management, and real-time monitoring can reduce the amount of manual intervention required during procurement transactions.

From an efficiency perspective, these capabilities are important because procurement involves multiple stages and actors. Manual processes can create delays when documents have to move between procurement officers, managers, finance departments, suppliers, and other stakeholders. Digital systems can reduce such delays by allowing information to be submitted, reviewed, approved, and stored electronically.

Rane et al. (2023) emphasise the importance of real-time information sharing in digital supply-chain environments. When procurement information is accessible electronically, procurement officers can obtain information more quickly and coordinate activities more effectively. E-procurement therefore has the potential to transform procurement from a predominantly administrative function into a more strategic organisational capability.

Procurement Efficiency

Procurement efficiency refers broadly to the ability of an organisation to obtain required goods and services using appropriate resources while minimising unnecessary delays, administrative burdens, and transaction costs. In the context of e-procurement, efficiency is reflected in areas such as processing time, reduction of paperwork, transaction speed, information accuracy, communication, and administrative workload.

The relationship between e-procurement and efficiency has received considerable empirical attention. Khan et al. (2023) found that digital procurement adoption improved procurement efficiency by reducing procurement cycle times and administrative costs. This suggests that one of the principal mechanisms through which e-procurement affects organisational performance is the elimination of unnecessary manual activities.

Kithinji and Wanjau (2021) similarly found that electronic procurement produced significant reductions in procurement cycle times among state corporations in Kenya. Their findings are particularly relevant to NamPower because both contexts involve public or state-owned organisations operating within African institutional environments.

Wanyoike (2021) also examined e-procurement implementation and procurement efficiency in the public sector in Kenya and reported positive effects of digital procurement on procurement efficiency. These findings collectively support the expectation that electronic systems can reduce delays and improve transaction processing when appropriately implemented.

Procurement System Quality and Efficiency

The quality of the procurement system represents an important technological dimension of e-procurement implementation. A system that is easy to use, reliable, accurate, responsive, and capable of processing procurement transactions efficiently is more likely to generate operational benefits.

The Technology–Organisation–Environment framework identifies technological characteristics as an important dimension influencing technology adoption and effectiveness (Tornatzky & Fleischer, 1990). In e-procurement environments, system quality includes characteristics such as functionality, reliability, compatibility, usability, and integration capability.

Afolabi et al. (2022) argue that technological characteristics influence the extent to which digital procurement systems can improve organisational processes. Similarly, Khan et al. (2023) demonstrate that digital procurement systems can improve performance when the technological infrastructure supports effective transaction processing.

The NamPower study measured Procurement System Quality through items relating to ease of use, transaction processing, information accuracy, supplier communication, and reduction of paperwork. These dimensions directly reflect the operational mechanisms through which digital procurement can improve efficiency.

User Competence and Procurement Efficiency

The effectiveness of an electronic procurement platform depends substantially on the ability of employees to use it. User competence includes employees' technical skills, understanding of electronic procurement procedures, confidence in using the platform, training, and access to technical support.

The Resource-Based View provides an important theoretical explanation for the role of user competence. Barney (1991) argues that organisational resources and capabilities can provide sustainable performance advantages when they are valuable and difficult to replicate. In a digital procurement environment, employees' knowledge and skills represent an important organisational capability.

Muhwezi (2021) similarly demonstrates the importance of competence in e-procurement implementation. Digital systems may possess extensive technical capabilities, but organisations may fail to realise those capabilities if employees lack the skills required to use advanced functionalities.

The evidence from NamPower strongly supports this perspective. User Competence was the strongest direct predictor of Procurement Performance, with a standardised path coefficient of $\beta = 0.408$ and $p < .001$. This indicates that differences in user competence were strongly associated with differences in procurement performance.

Organisational Readiness and Procurement Efficiency

Organisational readiness refers to the extent to which an organisation possesses the technological infrastructure, policies, culture, employee willingness, and resources necessary to support digital transformation. Al-Swidi and Saleh (2021) argue that organisational readiness and management commitment are important determinants of successful e-procurement implementation.

The TOE framework explains that technology adoption cannot be separated from organisational conditions. Even technically sophisticated systems may fail to deliver expected outcomes when organisations lack adequate infrastructure, supportive policies, skilled personnel, or an organisational culture that supports technological innovation (Tornatzky & Fleischer, 1990).

At NamPower, Organisational Readiness was a significant direct predictor of Procurement Performance, with $\beta = 0.290$ and $p = .010$. This finding suggests that the efficiency benefits of e-procurement depend partly on the organisation's preparedness to integrate digital procurement into its operations.

Management Support and System Integration

Management support is often identified as an important condition for successful technology implementation. Senior managers provide resources, establish organisational priorities, encourage employee adoption, and facilitate institutional changes required for digital transformation (Waiganjo, 2016).

However, the NamPower findings provide a more nuanced interpretation. Management Support and System Integration did not directly predict Procurement Performance at a statistically significant level ($\beta = 0.201$, $p = .107$). Instead, the construct strongly influenced Organisational Readiness, with $\beta = 0.798$ and $p < .001$.

The qualitative evidence explains this result. Seven of the ten participants identified compatibility problems and data silos between the e-procurement system and other enterprise systems, including finance, inventory, and ERP systems. These integration problems required some manual reconciliation, thereby limiting the efficiency gains that could otherwise have been achieved through full automation.

Kioko and Kihara (2021) similarly found that management support can strengthen procurement infrastructure but requires complementary organisational capabilities before measurable performance improvements can be achieved. This suggests that management commitment is necessary but insufficient when technological interoperability remains weak.

E-Procurement and Administrative Workload

One of the principal efficiency benefits associated with electronic procurement is the reduction of administrative workload. Manual procurement systems require employees to prepare, duplicate, circulate, store, and retrieve substantial quantities of documentation. Electronic systems can automate many of these activities.

Afolabi et al. (2022) identify reduced administrative burdens as one of the principal benefits of electronic procurement. Khan et al. (2023) similarly associate digital procurement with reduced administrative costs and shorter procurement cycle times.

This relationship was particularly evident in the NamPower findings. Interview participants repeatedly referred to reduced paperwork and faster transaction processing as major benefits of the electronic procurement system. The qualitative evidence therefore provides a practical explanation for the positive quantitative assessment of system quality.

E-Procurement and Procurement Cycle Time

Procurement cycle time is an important indicator of efficiency because delays in procurement can affect the availability of required goods and services and may create additional administrative costs. Digital procurement systems can shorten cycle time by automating notifications, approvals, document management, and other processes.

Kithinji and Wanjau (2021) documented significant cycle-time reductions following e-procurement implementation in Kenyan state corporations. The NamPower findings similarly indicate that electronic processing reduced the time required to move procurement transactions through different stages.

Nine of the ten interview participants reported noticeable efficiency improvements following e-procurement adoption, with reduced paperwork and faster transaction processing emerging as the dominant themes.

VI. Theoretical Framework

Technology–Organisation–Environment Framework

The Technology–Organisation–Environment framework developed by Tornatzky and Fleischer (1990) provides an appropriate theoretical basis for examining e-procurement implementation. The framework proposes that technology adoption and effectiveness are influenced by technological, organisational, and environmental contexts.

The technological context includes characteristics such as system quality, compatibility, and integration. In the context of NamPower, these characteristics are reflected in the quality and functionality of the e-procurement platform and its ability to communicate with other organisational systems.

The organisational context includes management support, employee competence, organisational readiness, resources, culture, and internal capabilities. These factors are particularly important because digital systems require employees and organisational structures capable of using and supporting the technology.

The environmental context encompasses external factors such as regulatory requirements, stakeholder expectations, and institutional pressures. Public enterprises operate within regulatory environments where procurement processes must satisfy governance and accountability requirements.

The NamPower findings support the TOE perspective because both technological and organisational factors were important to procurement performance. Procurement System Quality received a high mean score, while User Competence and Organisational Readiness significantly predicted Procurement Performance.

Resource-Based View

The Resource-Based View complements the TOE framework by explaining why organisations using similar technologies may achieve different performance outcomes. Barney (1991) argues that organisational resources and capabilities can provide performance advantages when they are valuable and difficult to replicate.

Within e-procurement, the electronic platform itself represents a technological resource, but the value of that resource depends on the organisation's ability to use it effectively. Employee knowledge, digital skills, organisational processes, management capabilities, and institutional routines can therefore determine whether technological investment produces measurable performance improvements.

The finding that User Competence was the strongest predictor of Procurement Performance provides strong support for the RBV perspective. The quantitative result was reinforced by the qualitative evidence, in which eight of ten participants identified training and competence gaps as a major challenge.

VII. Conceptual Framework

The conceptual framework positions e-procurement implementation as the explanatory construct and procurement efficiency as the principal outcome.

E-procurement implementation is conceptualised through four interrelated dimensions: Procurement System Quality, User Competence, Management Support and System Integration, and Organisational Readiness. Procurement efficiency is reflected in improved transaction processing, reduced paperwork, shorter processing times, reduced administrative workload, improved information availability, and more efficient procurement operations.

The framework assumes that higher-quality electronic procurement systems, greater user competence, stronger management support, effective system integration, and greater organisational readiness should contribute to improved procurement efficiency. However, the empirical findings suggest that the relationships are not necessarily direct or uniform. In particular, Management Support and System Integration influenced Organisational Readiness more strongly than Procurement Performance directly.

The conceptualisation of e-procurement implementation in the study comprises system quality, user competence, integration capability, and management support, while organisational readiness is positioned as an important contextual factor affecting performance outcomes.

VIII. Methodology

Research Philosophy

The study adopted a pragmatist philosophy. Pragmatism is appropriate where a research problem requires the integration of quantitative and qualitative evidence to develop a practical understanding of an organisational phenomenon (Creswell & Creswell, 2021). The use of quantitative evidence enabled the study to examine statistical relationships between e-procurement implementation and procurement performance, while qualitative evidence provided contextual explanations for the statistical findings.

Research Design

A mixed-methods design was employed. The quantitative component involved a structured questionnaire administered to employees involved in procurement-related activities, while the qualitative component involved interviews with selected procurement stakeholders. The study also incorporated desktop research.

The quantitative and qualitative components provided complementary forms of evidence. The quantitative analysis established statistical relationships, while the qualitative analysis helped explain how and why e-procurement influenced procurement efficiency. Mixed-methods integration therefore strengthened the interpretation of the findings (Creswell & Plano Clark, 2018).

Population and Sampling

The target population consisted of approximately 145 employees involved in procurement-related functions at NamPower. These included procurement officers, supply-chain managers, procurement administrators, and other personnel directly engaged in procurement activities.

The quantitative sample was determined using Yamane's (1967) formula, producing a target sample of 106 respondents. Stratified random sampling was used to ensure representation across relevant departments and procurement units. The final quantitative dataset contained 116 usable responses from 130 questionnaires distributed, representing an 89.2% response rate.

For the qualitative component, purposive sampling was used to select 10 senior procurement officers, system administrators, and departmental managers with direct experience of e-procurement implementation and use.

Data Collection

Data were collected using a structured questionnaire and semi-structured interviews. The questionnaire employed five-point Likert-scale items ranging from strongly disagree to strongly agree. The items assessed Procurement System Quality, User Competence, Management Support and System Integration, Organisational Readiness, and Procurement Performance.

The Procurement System Quality scale assessed ease of use, transaction processing, accuracy of procurement information, supplier communication, and reduction of paperwork. User Competence assessed employee skills, training, confidence, understanding of electronic procurement procedures, and technical support. Procurement Performance included measures relating to procurement efficiency and processing time.

The interviews explored participants' experiences concerning the effects of e-procurement on procurement operations and specifically asked how the system had improved or hindered procurement efficiency.

Data Analysis

Quantitative data were analysed using IBM SPSS Statistics 26 and SmartPLS 4. Descriptive statistics were used to assess the distribution of responses, while reliability and validity tests were conducted before inferential analysis. PLS-SEM was subsequently employed to examine the relationships between the study constructs. Qualitative data were analysed using thematic analysis following Braun and Clarke's (2021) six-phase approach. The analysis generated 87 initial codes, which were consolidated into 16 sub-themes and subsequently five overarching themes. Saturation was reached after the eighth interview. The integration of quantitative and qualitative evidence allowed the researchers to compare statistical findings with participants' experiences. This was particularly important for understanding the role of user competence and system integration in explaining procurement efficiency.

IX. Results

Descriptive Assessment of E-Procurement Implementation

The quantitative results indicate generally positive perceptions of e-procurement at NamPower. Procurement System Quality recorded a mean of 4.060 with a standard deviation of 0.720. User Competence recorded a mean of 3.935,

Management Support and System Integration recorded a mean of 3.999, and Organisational Readiness recorded the highest mean of 4.069.

The relatively high mean values indicate that respondents generally perceived the electronic procurement environment positively. The median for all constructs was 4.00, suggesting that responses were concentrated around the agreement categories of the five-point Likert scale.

The Procurement System Quality result is particularly relevant to procurement efficiency because it indicates that respondents generally perceived the system as capable of supporting procurement transactions. A mean of 4.060 suggests that the technological infrastructure was broadly regarded as effective.

Procurement System Quality and Efficiency

The findings indicate that Procurement System Quality was positively associated with procurement performance. The high mean score demonstrates that employees generally viewed the e-procurement system as functional and useful.

The qualitative findings provide further support. Nine of the ten interview participants reported noticeable improvements in procurement efficiency following implementation. Reduced paperwork and faster transaction processing were the dominant sub-themes. Participants explained that electronic approvals and automated supplier notifications reduced the amount of time required to process procurement transactions.

The qualitative findings therefore provide an operational explanation for the high Procurement System Quality score. Rather than simply indicating that employees liked the system, the findings demonstrate that system functionality translated into tangible changes in procurement processes.

User Competence as a Determinant of Efficiency

User Competence emerged as the strongest direct predictor of Procurement Performance, with $\beta = 0.408$ and $p < .001$. This was the strongest direct relationship in the structural model.

The finding indicates that the technological system alone does not determine procurement outcomes. Employees' ability to use the system effectively is a central factor in determining whether the organisation realises the benefits of digital procurement.

The qualitative evidence strongly corroborates this finding. Eight of the ten interview participants identified inadequate training as a persistent challenge. Participants reported that some employees had received initial training when the system was introduced but had not received sufficient refresher training. New employees were particularly affected by the lack of continuing training.

The convergence between the quantitative and qualitative findings strengthens the conclusion that user competence is central to procurement efficiency. The finding is also consistent with the RBV, which emphasises organisational capabilities as important sources of performance (Barney, 1991).

Organisational Readiness and Efficiency

Organisational Readiness was the second significant direct predictor of Procurement Performance, with $\beta = 0.290$ and $p = .010$. The result indicates that procurement efficiency depends partly on the organisation's preparedness to support digital procurement. Organisational readiness encompasses technological infrastructure, policies, employee willingness to adopt digital technologies, innovation orientation, and organisational culture. These dimensions provide the institutional environment within which the e-procurement platform operates. The finding supports Al-Swidi and Saleh's (2021) argument that technological adoption requires organisational readiness and management commitment. It also corresponds with the TOE framework, which conceptualises organisational conditions as an important determinant of technology effectiveness.

Management Support and System Integration

Management Support and System Integration did not have a statistically significant direct relationship with Procurement Performance ($\beta = 0.201$, $p = .107$). However, the construct had a strong relationship with Organisational Readiness ($\beta = 0.798$, $p < .001$).

The qualitative findings provide an important explanation for this result. Seven participants identified compatibility problems and data silos between the e-procurement system and other enterprise systems. In some cases, employees still had to export and import information manually between procurement, finance, inventory, and ERP systems.

These findings indicate that management support alone cannot generate maximum efficiency when system interoperability remains incomplete. The organisation may have management commitment and appropriate resources, but if different digital systems cannot communicate effectively, manual reconciliation remains necessary.

This finding is consistent with Kioko and Kihara (2021), who argue that management support must be complemented by organisational capabilities and appropriate infrastructure to generate measurable procurement performance improvements.

X. Discussion

E-Procurement as a Driver of Procurement Efficiency

The findings demonstrate that e-procurement has produced meaningful improvements in procurement efficiency at NamPower. The high Procurement System Quality mean of 4.060, combined with the qualitative evidence from nine of

ten participants, provides strong evidence that electronic procurement has improved the operational efficiency of procurement activities.

The finding is consistent with Khan et al. (2023), who found that digital procurement systems improve procurement efficiency by reducing transaction times and administrative costs. It is also consistent with Kithinji and Wanjau (2021), whose study of Kenyan state corporations found significant reductions in procurement cycle times after e-procurement implementation.

The qualitative evidence from NamPower provides additional insight into the mechanisms through which these efficiency improvements occurred. Employees reported reduced paperwork, faster approvals, automated notifications, and less time spent on administrative activities. These changes indicate that efficiency gains resulted not merely from the existence of a digital system but from the automation of previously manual procurement activities.

The Importance of Human Capital

Perhaps the most important finding is that User Competence was the strongest predictor of Procurement Performance. This suggests that the effectiveness of e-procurement is strongly dependent on human capital.

The finding provides empirical support for Barney's (1991) RBV. The technological platform is a resource, but employees' ability to use that resource effectively determines the extent to which it produces organisational value. An organisation may therefore invest heavily in sophisticated procurement technology without achieving equivalent performance improvements if employees lack appropriate skills.

The qualitative evidence reinforces this interpretation. Participants reported gaps in training and confidence, particularly in advanced functions such as contract management, supplier evaluation, and reporting. This indicates that basic system availability is not sufficient. Employees need continuous opportunities to develop and maintain digital procurement competencies.

Muhwezi (2021) similarly emphasises the importance of user capability in successful e-procurement implementation. The findings therefore suggest that NamPower's future digital procurement investments should include human-capital development as an integral component rather than treating training as a one-time implementation activity.

Organisational Readiness as an Enabling Condition

Organisational Readiness was also found to have a significant positive effect on Procurement Performance. This finding confirms that e-procurement is an organisational transformation rather than merely a technological project.

The TOE framework explains this result by recognising that technological innovations operate within organisational contexts (Tornatzky & Fleischer, 1990). Adequate infrastructure, supportive policies, employee willingness, organisational culture, and management resources can determine whether the system becomes embedded in organisational processes.

The finding also supports Al-Swidi and Saleh (2021), who identified organisational readiness and management commitment as important determinants of e-procurement success.

Efficiency Gains and Remaining Integration Constraints

Although the findings demonstrate substantial efficiency improvements, they also reveal that NamPower has not yet achieved the full efficiency potential of e-procurement. The persistence of system integration problems means that some procurement activities continue to require manual intervention. Seven interview participants reported compatibility issues and data silos. These findings are important because digitalisation can create the appearance of automation while leaving inefficient processes in place when systems operate independently.

The implication is that future efficiency improvements require interoperability. The e-procurement platform should communicate seamlessly with financial, inventory, ERP, and other relevant organisational systems. Removing manual reconciliation would allow NamPower to build on the efficiency gains already achieved.

Evidence from the Mixed-Methods Integration

The strength of the findings is enhanced by convergence between the quantitative and qualitative evidence. Quantitatively, Procurement System Quality recorded a mean of 4.060 and User Competence was the strongest predictor of Procurement Performance. Qualitatively, nine of ten participants identified efficiency improvements while eight identified training and competence gaps. The integration therefore provides evidence that the positive effects of e-procurement are real but conditional. The system has improved efficiency, but employees' capabilities determine how effectively the technology is utilised.

The integration matrix explicitly identifies convergence concerning procurement efficiency: the quantitative finding of high system quality and the qualitative efficiency theme both confirm that e-procurement improves efficiency, while the qualitative findings explain the mechanism through reduced paperwork.

XI. Implications of the Findings

Managerial Implications

The findings have several implications for NamPower management. First, investment in e-procurement should be accompanied by continuous employee training. Since User Competence was the strongest predictor of Procurement Performance, training should not be limited to the initial implementation stage.

Second, management should prioritise system interoperability. Procurement, finance, inventory, and ERP systems should be integrated to minimise manual data reconciliation. The findings indicate that system integration gaps currently

constrain some of the efficiency benefits generated by e-procurement. Third, management should monitor procurement efficiency through measurable indicators such as processing time, requisition-to-order time, approval time, administrative workload, and the proportion of procurement activities completed electronically.

Theoretical Implications

The findings contribute to the application of the TOE framework and RBV within a Namibian public-enterprise context. The TOE framework is supported by the evidence that technological quality and organisational readiness are important for procurement performance. The RBV is reinforced by the finding that user competence is the strongest predictor of performance.

The findings therefore demonstrate that digital procurement effectiveness should not be understood purely as a technological phenomenon. It is the interaction between technology, organisational readiness, and human capabilities that determines whether e-procurement generates measurable efficiency gains.

Policy Implications

At the policy level, the findings support the development of digital competency standards for procurement personnel. The existing regulatory environment should increasingly recognise that effective electronic procurement requires appropriately skilled users. The study recommends the development of a standardised e-procurement readiness and competency framework applicable to public enterprises. It further recommends minimum digital competency standards for procurement officers operating electronic procurement systems.

XII. Conclusion

This article assessed the effect of e-procurement implementation on procurement efficiency at NamPower. The findings provide strong evidence that e-procurement has improved procurement efficiency through reduced paperwork, faster transaction processing, automated notifications, reduced administrative workload, and improved management of procurement activities.

The quantitative findings demonstrated that Procurement System Quality was positively perceived, with a mean score of 4.060 (SD = 0.720). More importantly, User Competence emerged as the strongest direct predictor of Procurement Performance ($\beta = 0.408$, $p < .001$), while Organisational Readiness was also a significant predictor ($\beta = 0.290$, $p = .010$). The PLS-SEM model explained 72.0% of the variance in Procurement Performance, demonstrating substantial explanatory power.

The qualitative evidence reinforced the quantitative results. Nine of ten participants reported substantial efficiency improvements, particularly through reduced paperwork and faster processing. However, eight participants identified training and competence gaps, while seven reported system integration challenges.

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