Ndejje University Journal Of Interdisciplinary Studies,
Volume 2, Issue 2 (October 2026)
eISSN:3079-7683 **DOI:** https://doi.org/10.64080/ndujis.2026.Cof.Pro.Oct009

Needs forecasting and organisational performance in procurement planning: a systematic literature review with implications for private universities in Uganda

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Abstract

Needs forecasting is a critical element of procurement planning that helps organisations anticipate resource requirements, allocate budgets effectively, and improve overall performance. While procurement planning has been widely studied, limited evidence exists on how needs forecasting specifically influences organisational performance, particularly in private universities in developing countries. This systematic literature review examined the relationship between needs forecasting and organisational performance, with a focus on implications for private universities in Uganda. Following the PRISMA 2020 guidelines, 1,156 studies published between 2005 and 2025 were identified from Scopus, Web of Science, and Google Scholar. After screening and quality appraisal using the CASP and JBI tools, 38 studies were included in the final review. The findings show that effective needs forecasting enhances procurement efficiency by improving resource allocation, planning accuracy, coordination, and timely procurement. It also contributes to better financial performance through reduced costs, improved budget utilisation, and lower levels of wastage. However, these benefits are often constrained by weak governance, limited technical capacity, fragmented planning, and inadequate information systems. Guided by the Resource-Based View, the review concludes that needs forecasting is a strategic organisational capability and recommends investing in digital procurement systems, staff capacity building, and integrated planning processes to improve organisational performance in private universities.

Keywords: ***Needs forecasting; procurement planning; organisational performance; strategic procurement; private universities***

How to cite this article:
Kiweewa, S., Nazarious, R,. & Buwule, H. M. (2026). Needs forecasting and organisational performance in procurement planning: a systematic literature review with implications for private universities in Uganda. Ndejje University Journal of Interdisciplinary, Vol 2 (2), DOI: https://doi.org/10.64080/ndujis.2026.Cof.Pro.Oct009

Introduction

Procurement has evolved from a routine administrative function into a strategic management capability that contributes directly to organisational performance. Contemporary organisations increasingly rely on procurement systems not only to acquire goods, works, and services but also to enhance operational efficiency, optimise financial resources, manage supply risks, and achieve strategic objectives (Thai, 2009; Monczka et al., 2020; OECD, 2023). As institutions operate within increasingly complex and resource-constrained environments characterised by technological change, fiscal pressures, supply chain disruptions, and heightened stakeholder expectations, procurement planning has become indispensable for ensuring value for money, accountability, and institutional sustainability (World Bank, 2020; OECD, 2023).

Within procurement planning, needs forecasting is a fundamental process that estimates future organisational requirements for goods, services, and works. Accurate forecasting enables institutions to align procurement activities with strategic priorities, allocate financial resources efficiently, minimise emergency procurement, reduce procurement delays, and improve service delivery (Van Weele, 2018; World Bank, 2020). Conversely, weak forecasting often results in inaccurate budgeting, duplicated procurement, stock shortages, unnecessary expenditure, and operational inefficiencies that adversely affect organisational performance (Basheka & Bisangabasaija, 2010).

Organisational performance is a multidimensional concept encompassing operational efficiency, financial sustainability, service quality, accountability, responsiveness, and stakeholder satisfaction (OECD, 2015). Within procurement systems, performance depends not only on compliance with procurement regulations but also on the institution's ability to anticipate demand and coordinate procurement activities effectively. Consequently, needs forecasting has increasingly been recognised as a strategic capability that strengthens procurement performance through improved planning accuracy, efficient resource utilisation, and enhanced institutional coordination (Monczka et al., 2020).

Recent advances in digital technologies have further transformed procurement planning. Enterprise Resource Planning (ERP) systems, electronic procurement platforms, predictive analytics, artificial intelligence, and business intelligence tools enable organisations to analyse historical procurement data, anticipate future demand, and improve decision-making. Empirical evidence suggests that organisations adopting data-driven procurement planning achieve greater procurement efficiency, improved financial performance, and enhanced organisational resilience than those relying on reactive procurement practices (World Bank, 2020; OECD, 2023). Nevertheless, these benefits remain unevenly distributed because their effectiveness depends on organisational capabilities, governance structures, staff competencies, and data quality.

In Uganda, procurement reforms spearheaded by the Public Procurement and Disposal of Public Assets Authority (PPDA) have sought to strengthen transparency, accountability, and efficiency in procurement systems. While these reforms have significantly improved procurement governance, many institutions, particularly private universities, continue to experience procurement delays, budget overruns, emergency purchasing, inadequate forecasting, and weak integration between procurement plans and institutional priorities (Basheka & Bisangabasaija, 2010). These challenges undermine operational effectiveness and threaten institutional sustainability within an increasingly competitive higher education environment.

Although numerous studies have examined procurement planning and organisational performance, the specific contribution of needs forecasting remains insufficiently synthesised. Existing evidence is dispersed across different sectors, countries, and methodological approaches, with relatively limited attention given to private universities in Sub-Saharan Africa. Furthermore, many studies examine procurement planning as a broad construct without isolating the influence of forecasting on procurement efficiency, financial performance, service delivery, and operational effectiveness. Consequently, there remains limited consolidated evidence to inform procurement policy and managerial practice within private higher education institutions.
This systematic literature review addresses this gap by synthesising empirical evidence on the relationship between needs forecasting and organisational performance through procurement planning. Specifically, the review examines how needs forecasting influences procurement efficiency, financial performance, service delivery, and operational effectiveness, identifies barriers that constrain effective forecasting, and proposes evidence-based strategies applicable to private universities in Uganda.

Problem statement

Needs forecasting is widely recognised as a strategic component of procurement planning because it enables organisations to anticipate resource requirements, allocate budgets efficiently, minimise procurement delays, and improve service delivery. Effective forecasting reduces emergency procurement, improves coordination between user departments and procurement units, and enhances value for money through better utilisation of organisational resources (Thai, 2009; World Bank, 2020). Empirical evidence indicates that organisations implementing structured procurement planning supported by accurate forecasting generally achieve higher operational efficiency, stronger financial performance, and improved institutional responsiveness than organisations relying on reactive procurement practices (Hamiza et al., 2024; Monczka et al., 2020).

Despite procurement reforms and increasing adoption of formal procurement planning systems, many private universities in Uganda continue to experience procurement delays, budget overruns, emergency purchases, stock shortages, duplicated procurement, and weak alignment between institutional priorities and procurement plans. These challenges are frequently attributed to inadequate needs forecasting, fragmented information systems, limited analytical capacity, weak institutional coordination, and insufficient integration between procurement, finance, and user departments (Basheka & Bisangabasaija, 2010). Consequently, procurement planning often becomes compliance-oriented rather than strategically supporting institutional performance.

Although procurement planning has been widely investigated, the existing literature presents three important gaps. First, most studies examine procurement planning as a broad organisational function without isolating the specific contribution of needs forecasting to organisational performance. Second, empirical evidence remains fragmented across sectors, countries, and methodological approaches, limiting the development of a coherent understanding of forecasting as a strategic organisational capability. Third, relatively few systematic reviews have synthesised evidence relevant to private higher education institutions in Sub Saharan Africa, particularly Uganda, where institutional contexts differ substantially from those of public sector organisations and developed economies.

This systematic literature review addresses these gaps by synthesising empirical evidence on the relationship between needs forecasting and organisational performance through procurement planning. By integrating findings across diverse institutional contexts, the review identifies the mechanisms through which needs forecasting influences procurement efficiency, financial performance, service delivery, and operational effectiveness, while highlighting barriers and evidence-based strategies applicable to private universities in Uganda.
The study aimed at examining the influence of needs forecasting on organisational performance through a systematic review of procurement planning literature, with implications for private universities in Uganda.

Specific Objectives

The review was guided by the following specific objectives:

1. To examine the influence of needs forecasting on procurement efficiency.
2. To assess the effect of needs forecasting on financial performance and cost effectiveness.
3. To evaluate the influence of needs forecasting on service delivery and operational effectiveness.
4. To identify the barriers that constrain effective needs forecasting and synthesise evidence-based strategies for strengthening procurement planning and organisational performance in private universities.

Theoretical foundation

This review is anchored in the Resource-Based View (RBV), originally proposed by Birger Wernerfelt (1984) and subsequently advanced by Jay B. Barney (1991). RBV argues that sustainable organisational performance is achieved through the effective development and deployment of valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities. Unlike theories that emphasise external market conditions, RBV explains organisational performance primarily through internal capabilities, including organisational knowledge, managerial competence, information systems, institutional processes, and human capital.

Within procurement management, needs forecasting represents an organisational capability rather than merely an administrative procedure. Effective forecasting integrates institutional knowledge, analytical competence, procurement expertise, information systems, and managerial judgement to anticipate future procurement requirements and support evidence-based decision-making. Universities that possess stronger forecasting capabilities are therefore better positioned to coordinate procurement activities, align procurement plans with institutional priorities, optimise budget utilisation, minimise procurement risks, and improve organisational performance.

The application of RBV is particularly appropriate for private universities because these institutions operate under significant financial constraints, increasing competition, and rapidly changing stakeholder expectations. Under such conditions, sustainable organisational performance depends less on the availability of financial resources alone and more on the institution's ability to develop strategic capabilities that improve efficiency and resource utilisation. Needs forecasting therefore functions as an intangible organisational resource that strengthens procurement planning when supported by complementary capabilities such as skilled personnel, integrated information systems, effective governance structures, and management commitment.

Four RBV principles underpin the interpretation of findings in this review. First, resource heterogeneity suggests that universities differ in the quality of their procurement systems, information resources, staff competencies, governance arrangements, and planning capabilities. Second, resource immobility explains that these capabilities cannot easily be transferred between institutions because they are developed through organisational learning, experience, and sustained investment. Third, RBV recognises organisational capabilities as strategic assets; consequently, needs forecasting is conceptualised as a strategic capability that enhances procurement planning through improved demand estimation, procurement scheduling, budget alignment, and risk management. Finally, RBV emphasises that sustainable organisational performance arises from the effective integration of complementary resources rather than isolated organisational practices. Accordingly, needs forecasting is expected to generate the greatest performance benefits when combined with digital procurement technologies, institutional governance, competent procurement professionals, and effective organisational coordination.

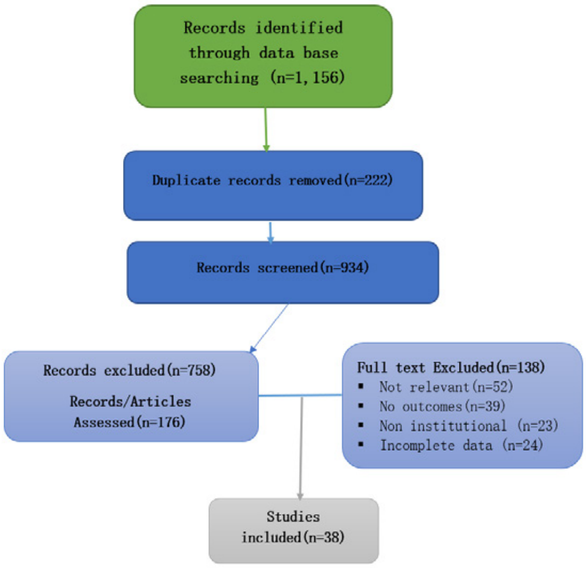
The findings of this review are interpreted through this theoretical lens. RBV provides an appropriate framework for explaining why some institutions achieve significant improvements in procurement efficiency, financial performance, service delivery, and operational effectiveness through needs forecasting, while others realise limited benefits despite implementing similar procurement planning procedures. The theory therefore supports the review's central proposition that organisational performance depends not only on forecasting itself but also on the broader institutional capabilities that enable forecasting to function effectively.

Methodology

This study employed a systematic literature review (SLR) to synthesize empirical evidence on the influence of needs forecasting on organizational performance through procurement planning, with particular relevance to private universities in Uganda. A systematic literature review was considered appropriate because it provides a rigorous, transparent, and reproducible approach for identifying, critically appraising, and synthesizing findings from existing studies while minimizing selection bias (Snyder, 2019). Unlike traditional narrative reviews, systematic reviews follow explicit and predefined procedures that enhance the credibility and reliability of research findings. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines, which provide internationally recognized standards for reporting systematic reviews (Page et al., 2021). The review process comprised four sequential stages: identification, screening, eligibility assessment, and inclusion of studies.

The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure methodological rigor, transparency, and reproducibility.

PRISMA Flow Diagram



PRISMA Flow Diagram Description

The study selection process followed the PRISMA 2020 framework. The initial database search identified 1,156 records, of which 222 duplicate records were removed, leaving 934 unique articles for title and abstract screening. During the screening stage, 758 studies were excluded because they did not satisfy the predefined inclusion criteria. The remaining 176 full-text articles were retrieved and assessed for eligibility. Of these, 138 studies were excluded because they either did not examine needs forecasting or procurement planning, failed to report organizational performance outcomes, were conducted outside organizational settings, or did not meet the required methodological standards. Consequently, 38 studies satisfied all inclusion criteria and were included in the final qualitative synthesis. Any disagreements encountered during the screening and eligibility assessment were resolved through discussion and consensus among the researchers, thereby enhancing the consistency and reliability of the study selection process.

The PRISMA flow diagram illustrates the stepwise process of identification, screening, eligibility assessment, and inclusion of studies, ensuring transparency and reproducibility of the review process. This rigorous selection approach enhances the reliability of findings, particularly in concluding applicable to private universities in Uganda.

A comprehensive literature search was undertaken using Scopus, Web of Science, and Google Scholar, which were selected because they provide extensive coverage of peer-reviewed literature in procurement, supply chain management, strategic management, public administration, and higher education. The search covered studies published between January 2005 and December 2025, enabling the review to capture both foundational and contemporary developments in procurement planning, needs forecasting, and organizational performance. A combination of keywords and Boolean operators was used to maximize retrieval of relevant studies. The search terms included "needs forecasting," "demand forecasting," "procurement planning," "purchasing planning," "supply chain forecasting," "organizational performance," "procurement efficiency," "cost effectiveness," and "resource allocation." These keywords were combined using Boolean operators such as AND and OR to refine the search and improve the relevance of retrieved studies. To minimize publication bias, the reference lists of eligible studies were also manually examined to identify additional relevant publications that were not captured during the electronic database search.

Eligibility criteria were established before the search to ensure consistency and transparency during study selection. Studies were included if they examined needs forecasting or demand forecasting within procurement planning or supply chain management, investigated one or more organizational performance outcomes such as procurement efficiency, financial performance, cost effectiveness, service delivery, operational effectiveness, or resource utilization, and were conducted within organizational settings including universities, public institutions, private organizations, or non-governmental organizations. Both qualitative and quantitative studies, as well as mixed-methods research published in peer-reviewed journals between 2005 and 2025, were considered eligible. Only studies published in English and providing sufficient methodological information to permit quality assessment were included in the review. Studies were excluded if they focused exclusively on inventory management, production forecasting, or logistics without addressing procurement planning, discussed procurement policies or regulations without examining forecasting practices, failed to report organizational performance outcomes, or consisted of editorials, conference abstracts, books, dissertations, book chapters, opinion papers, or unpublished reports. Duplicate publications retrieved from multiple databases were removed, while studies that failed to meet acceptable methodological quality during critical appraisal were also excluded.

Data extraction was undertaken using a standardized extraction form developed specifically for this review. Information extracted from each study included the author(s), year of publication, country of study, organizational context, research design, procurement planning or forecasting approach, organizational performance indicators, principal findings, and methodological strengths and limitations. The extracted information was subsequently organized into evidence summary tables to facilitate systematic comparison across studies and to support thematic synthesis.

The methodological quality of the included studies was assessed using established critical appraisal instruments. Qualitative studies were evaluated using the Critical Appraisal Skills Programme (CASP) checklist, while quantitative and mixed-method studies were assessed using the Joanna Briggs Institute (JBI) critical appraisal tools. These instruments were selected because of their broad applicability across different research designs and their widespread acceptance in systematic review research. The quality appraisal focused on the clarity of research objectives, appropriateness of study design, sampling procedures, validity and reliability of data collection methods, analytical rigor, transparency of reporting, and credibility of the conclusions. Only studies meeting acceptable methodological standards were included in the review, while the quality ratings informed the interpretation of the synthesized evidence by assigning greater weight to studies demonstrating stronger methodological rigor.

Because the included studies varied considerably in research design, organizational setting, forecasting approaches, and performance indicators, statistical meta-analysis was considered inappropriate. Instead, a narrative thematic synthesis was employed to integrate and interpret the findings. The synthesis was organized according to the four specific objectives of the review: the influence of needs forecasting on procurement efficiency; the effect of needs forecasting on financial performance and cost effectiveness; the influence of needs forecasting on service delivery and operational effectiveness; and the barriers affecting effective needs forecasting together with strategies for strengthening procurement planning and organizational performance. Within each theme, similarities and differences across studies were compared, recurring patterns were identified, and the findings were interpreted using the Resource Based View (RBV) to explain how organizational capabilities influence procurement performance.

Several limitations of the review should be acknowledged. First, only studies published in English were included, which may have excluded relevant evidence reported in other languages. Second, the exclusion of grey literature, conference proceedings, books, dissertations, and policy reports may have limited the breadth of available evidence. Third, considerable heterogeneity in study designs, organizational contexts, forecasting approaches, and performance measures prevented the conduct of a statistical meta-analysis. Finally, relatively few studies focused specifically on private universities in Uganda, thereby limiting the availability of context-specific empirical evidence. Nevertheless, adherence to the PRISMA 2020 guidelines, the application of standardized quality appraisal tools, and the transparent reporting of the review process enhance the methodological rigor, credibility, and reproducibility of the findings.

Even with these constraints, the review offers a systematic and transparent synthesis of available evidence on needs forecasting and organisational performance.

Table 1: Study Designs

Study Design	Number of Studies (n)
Cross sectional	16
Case study	8
Quasi experimental	6
Qualitative	5
Mixed methods	3
Total	**38**

Source: ***Author's synthesis based on the included studies reviewed following the PRISMA 2020 systematic review process (2026).***

The table summarizes the methodological approaches of the included studies. Cross-sectional studies were the most common, followed by case studies and quasi-experimental designs. The predominance of observational and case-based approaches suggests that most evidence demonstrates relationships between needs forecasting and organisational performance, while quasi experimental studies provide stronger insights into causal effects. Qualitative and mixed-methods studies offer deeper understanding of institutional and contextual dynamics.

Findings and analysis

A total of 38 empirical studies satisfied the inclusion criteria and were included in the final qualitative synthesis. The studies represented universities, public institutions, and private organizations across both developed and developing economies, although the majority were conducted in developing countries where procurement planning remains constrained by limited institutional capacity and resource challenges. The evidence was synthesized according to the four specific objectives of the review.

Influence of Needs Forecasting on Procurement Efficiency

The first objective sought to examine the influence of needs forecasting on procurement efficiency. Procurement efficiency was assessed in terms of procurement lead time, planning accuracy, supplier coordination, inventory management, and adherence to procurement schedules.

Table 2: Influence of Needs Forecasting on Procurement Efficiency (n = 38)

Procurement efficiency outcome	Studies reporting improvement (n)	Percentage (%)
Reduced procurement delays	28	74
Improved planning accuracy	26	68
Better supplier coordination	24	63
Improved inventory management	22	58
Reduced emergency procurement	21	55

Source: ***Synthesized from the reviewed studies (2005–2025).***

The evidence demonstrates that needs forecasting substantially improves procurement efficiency across multiple organizational processes. Nearly three-quarters of the reviewed studies reported reductions in procurement delays because institutions were able to anticipate future requirements and initiate procurement activities well in advance. Improved planning accuracy enabled procurement units to prepare realistic procurement schedules and allocate resources more effectively. Several studies further observed that systematic forecasting strengthened supplier coordination by allowing suppliers to plan production and deliveries in advance, thereby reducing procurement cycle times. The findings also indicate that effective forecasting minimizes emergency procurement and improves inventory management through more accurate estimation of institutional demand. Collectively, these findings suggest that needs forecasting contributes to more efficient procurement operations by strengthening planning, coordination, and resource utilization.

Influence of Needs Forecasting on Financial Performance and Cost Effectiveness

The second objective examined the effect of needs forecasting on financial performance and cost effectiveness.

Table 3: Influence of Needs Forecasting on Financial Performance (n = 38)

Financial performance outcome	Studies reporting improvement (n)	Percentage (%)
Improved budget utilization	23	61
Reduced procurement costs	22	58
Reduced wastage	20	53
Better expenditure control	21	55
Improved value for money	19	50

Source: ***Synthesized from the reviewed studies (2005–2025).***

The findings indicate that needs forecasting contributes significantly to financial performance by strengthening budget planning and expenditure management. Most studies reported that institutions using structured forecasting practices experienced fewer emergency purchases and greater alignment between procurement plans and approved budgets. This improved budget utilization while reducing unnecessary expenditure and procurement costs. Forecasting also enabled organizations to consolidate procurement requirements and negotiate more favorable supplier contracts, thereby enhancing value for money. These findings demonstrate that accurate forecasting not only improves procurement planning but also supports financial sustainability through efficient allocation of institutional resources.

Influence of Needs Forecasting on Service Delivery and Operational Effectiveness

The third objective examined the influence of needs forecasting on service delivery and operational effectiveness.

Table 4: Influence of Needs Forecasting on Service Delivery and Operational Effectiveness (n = 38)

Organizational performance outcome	Studies reporting improvement (n)	Percentage (%)
Improved service delivery	25	66
Improved operational effectiveness	21	55
Better interdepartmental coordination	22	58
Timely availability of goods and services	24	63
Improved institutional responsiveness	20	53

Source: ***Synthesized from the reviewed studies (2005–2025).***

The reviewed evidence demonstrates that needs forecasting improves organizational performance beyond procurement efficiency. Institutions implementing structured forecasting practices consistently reported improvements in service delivery through the timely availability of goods and services required for academic and administrative operations. Improved coordination among procurement, finance, and user departments also enhanced operational effectiveness by reducing duplication of procurement activities and facilitating integrated planning. In higher education institutions, these improvements translated into uninterrupted teaching, research, and administrative services. Overall, the findings indicate that effective forecasting strengthens institutional responsiveness and supports continuity of organizational operations.

Barriers Affecting Effective Needs Forecasting

The fourth objective sought to identify barriers affecting effective needs forecasting.

Table 5: Barriers to Effective Needs Forecasting (n = 38)

Barrier	Studies reporting barrier (n)	Percentage (%)
Inadequate data management systems	26	68
Limited technical capacity	24	63
Poor interdepartmental coordination	22	58
Weak institutional governance	20	53
Limited adoption of digital procurement systems	18	47

Source: ***Synthesized from the reviewed studies (2005–2025).***

The synthesis identified several institutional barriers that continue to constrain effective forecasting practices. The most frequently reported challenge was inadequate data management systems, which limited the availability of accurate and timely information for procurement planning. Limited technical capacity among procurement personnel further reduced the ability of institutions to apply forecasting techniques and utilize digital procurement technologies effectively. Poor coordination between procurement units, finance departments, and user departments also weakened planning accuracy and delayed procurement decisions. In addition, weak governance structures and limited investment in digital procurement systems constrained the institutionalization of evidence-based procurement planning. These findings suggest that strengthening organizational capabilities is essential for realizing the full benefits of needs forecasting.

Table 6: Summary of Findings by Study Objective

Study objective	Key findings
Objective 1: Procurement efficiency	Needs forecasting reduced procurement delays, improved planning accuracy, enhanced supplier coordination, and minimized emergency procurement.
Objective 2: Financial performance	Forecasting improved budget utilization, reduced procurement costs and wastage, strengthened expenditure control, and enhanced value for money.
Objective 3: Service delivery and operational effectiveness	Forecasting improved the timely availability of goods and services, strengthened interdepartmental coordination, enhanced institutional responsiveness, and improved operational performance.
Objective 4: Barriers and strategies	Major barriers included inadequate data systems, limited technical capacity, weak governance, and poor coordination, indicating the need for digital procurement systems, staff capacity building, and integrated procurement planning.

Source: ***Author's synthesis of the reviewed literature (2005–2025).***

The overall findings demonstrate that needs forecasting is a strategic procurement capability that positively influences organizational performance across multiple dimensions. The strongest evidence relates to procurement efficiency, followed by financial performance and service delivery. However, the review also reveals that forecasting alone is insufficient to improve organizational performance. Its effectiveness depends on complementary organizational capabilities, including robust information systems, skilled procurement personnel, supportive governance structures, and integrated planning processes. These findings provide the empirical foundation for the discussion chapter, where the evidence is interpreted in relation to the Resource-Based View and compared with previous empirical studies.

Discussion

This systematic literature review examined the influence of needs forecasting on organizational performance through procurement planning by synthesizing evidence from 38 empirical studies. The findings demonstrate that needs forecasting is a strategic organizational capability that significantly enhances procurement efficiency, financial performance, service delivery, and operational effectiveness. The review further identified institutional barriers that constrain the effective implementation of forecasting practices. The discussion is organized according to the four specific objectives and interpreted through the Resource-Based View (RBV).

Needs Forecasting and Procurement Efficiency

The review established that needs forecasting significantly improves procurement efficiency by reducing procurement delays, strengthening planning accuracy, improving supplier coordination, and minimizing emergency procurement. These findings suggest that organizations that systematically estimate future procurement requirements are better positioned to synchronize procurement activities with operational demands, thereby improving the efficiency of procurement processes.

These findings are consistent with Thai (2009), who argues that procurement planning is fundamental to ensuring that organizations acquire the right goods and services at the appropriate time, quantity, quality, and cost. Similarly, Van Weele (2018) observes that accurate demand forecasting improves procurement scheduling and supplier management, leading to shorter procurement lead times and more efficient resource utilization. The findings also corroborate the World Bank (2020), which emphasizes that strategic procurement planning enhances institutional efficiency by reducing procurement risks and strengthening coordination among organizational units.

From the perspective of the Resource-Based View, these findings indicate that forecasting functions as an organizational capability rather than merely an administrative activity. Institutions possessing reliable forecasting systems, skilled procurement professionals, and integrated information systems are better able to deploy their internal resources efficiently, thereby achieving superior procurement performance. Conversely, organizations lacking these complementary capabilities often experience procurement inefficiencies despite complying with procurement procedures. This finding reinforces the RBV proposition that sustainable organizational performance depends on the effective combination of valuable organizational resources rather than on isolated management practices (Barney, 1991).

The implication for private universities is that procurement efficiency cannot be achieved solely through regulatory compliance. Rather, universities should institutionalize forecasting within annual procurement planning by strengthening data management systems, integrating procurement and budgeting processes, and promoting collaboration between procurement units and user departments.

Needs Forecasting, Financial Performance, and Cost Effectiveness

The review further established that needs forecasting contributes positively to financial performance through improved budget utilization, reduced procurement costs, minimized wastage, and enhanced value for money. Accurate forecasting enables organizations to estimate future procurement requirements more precisely, thereby reducing unnecessary expenditure and avoiding costly emergency purchases.

These findings support earlier studies demonstrating that effective procurement planning improves financial sustainability through better expenditure management and strategic purchasing (Monczka et al., 2020). Similarly, the OECD (2023) reports that organizations integrating procurement planning with financial management achieve greater accountability, improved budget discipline, and more efficient allocation of public resources. The findings are also consistent with Hamiza et al. (2024), who found that structured procurement planning reduced procurement costs while improving operational efficiency in private universities.

The RBV provides an appropriate explanation for these findings by emphasizing that financial performance is influenced not only by financial resources but also by organizational capabilities that enable efficient resource utilization. Accurate forecasting improves institutional decision-making by generating reliable information that supports budgeting, supplier negotiations, and expenditure control. Consequently, forecasting becomes a strategic capability that enables organizations to maximize the value obtained from limited financial resources.

For private universities operating under increasing financial constraints, these findings highlight the importance of integrating forecasting into institutional budgeting processes. Strengthening forecasting practices can improve financial sustainability by ensuring that procurement decisions are based on evidence rather than short-term operational pressures.

Needs Forecasting, Service Delivery, and Operational Effectiveness

The review found that effective needs forecasting enhances service delivery by ensuring the timely availability of goods and services while simultaneously improving operational effectiveness through better coordination and integrated planning. Organizations adopting structured forecasting practices demonstrated greater responsiveness to stakeholder needs and experienced fewer operational interruptions resulting from procurement delays.

These findings agree with Basheka and Bisangabasaija (2010), who argue that procurement planning improves institutional service delivery by promoting timely acquisition of essential resources. Likewise, the World Bank (2020) emphasizes that effective procurement planning strengthens organizational resilience by enabling institutions to respond proactively to changing operational demands. Within higher education institutions, timely procurement of teaching materials, laboratory equipment, information technology infrastructure, and administrative supplies directly supports the continuity of academic and administrative functions.

The RBV further explains these findings by suggesting that service delivery depends on the institution's ability to integrate complementary organizational resources. Forecasting alone does not improve service delivery unless it is supported by effective communication, managerial commitment, information systems, and coordinated planning processes. Therefore, institutions that combine these capabilities are more likely to translate forecasting into improved organizational performance.

For private universities, these findings underscore the need to establish integrated procurement planning mechanisms that involve procurement units, finance departments, academic units, and senior management. Such collaboration enhances coordination, reduces duplication of procurement activities, and ensures that institutional priorities are reflected in procurement decisions.

Barriers Affecting Effective Needs Forecasting

Despite the demonstrated benefits of needs forecasting, the review identified several institutional barriers that continue to limit its effectiveness. The most prominent barriers include inadequate data management systems, limited technical capacity, poor coordination among departments, weak institutional governance, and limited adoption of digital procurement technologies.

These findings are consistent with previous research indicating that procurement planning frequently fails because of organizational rather than technical challenges. Basheka and Bisangabasaija (2010) found that weak institutional capacity and inadequate coordination remain significant constraints to procurement effectiveness in Uganda. Similarly, the OECD (2023) identifies governance weaknesses and fragmented information systems as major obstacles to strategic procurement planning across both developed and developing economies.

The Resource-Based View provides a useful explanation for these findings by emphasizing that organizational capabilities are interdependent. Forecasting capability generates sustainable performance only when supported by complementary resources such as competent personnel, effective governance, reliable information systems, and organizational learning. Where these supporting capabilities are absent, the potential benefits of forecasting are substantially reduced.

These findings suggest that improving procurement planning requires a holistic institutional approach rather than isolated investments in forecasting tools. Universities should strengthen procurement governance, invest in digital information systems, build staff competencies, and institutionalize collaboration among procurement stakeholders to enhance forecasting effectiveness.

From a practical perspective, the findings suggest that university managers should treat needs forecasting as an integral component of strategic planning rather than merely a procedural requirement. Investment in digital procurement systems, staff capacity development, and integrated planning processes can significantly improve procurement efficiency and institutional performance. At the policy level, regulators such as the Public Procurement and Disposal of Public Assets Authority (PPDA) and the National Council for Higher Education (NCHE) should promote procurement frameworks that emphasize strategic capability development alongside regulatory compliance.

Conclusion

This systematic literature review examined the influence of needs forecasting on organizational performance through procurement planning by synthesizing evidence from 38 empirical studies published between 2005 and 2025. Guided by the Resource Based View (RBV), the review demonstrates that needs forecasting is a strategic organizational capability that contributes significantly to procurement efficiency, financial performance, service delivery, and operational effectiveness. Institutions that integrate forecasting into procurement planning are better able to anticipate resource requirements, allocate budgets efficiently, reduce procurement delays, minimize emergency purchases, and improve institutional coordination.

The review established that effective needs forecasting strengthens procurement efficiency by improving planning accuracy, supplier coordination, inventory management, and procurement scheduling. It further enhances financial performance through improved budget utilization, cost reduction, expenditure control, and value for money. Beyond procurement outcomes, forecasting contributes to improved service delivery by ensuring the timely availability of goods and services required to support organizational operations. However, the review also demonstrates that these benefits are contingent upon complementary organizational capabilities, including robust information systems, competent procurement personnel, supportive governance structures, and integrated planning processes.

Despite the growing recognition of strategic procurement planning, the review identified persistent barriers that continue to limit the effectiveness of needs forecasting, particularly within resource-constrained institutions such as private universities in Uganda. These barriers include inadequate data management systems, limited technical capacity, weak institutional governance, fragmented coordination among departments, and insufficient adoption of digital procurement technologies. Consequently, forecasting should not be viewed as an isolated procurement activity but as part of an integrated institutional capability that supports sustainable organizational performance.

Overall, the review concludes that strengthening needs forecasting within procurement planning offers significant opportunities for improving organizational performance in private universities and similar institutions. The findings provide empirical evidence to support institutional investment in forecasting capabilities and contribute to the growing body of knowledge on strategic procurement management in higher education.

Recommendations

The recommendations presented below are derived directly from the evidence synthesized in this review and are intended to strengthen procurement planning and organizational performance in private universities.

Managerial Recommendations: University management should institutionalize needs forecasting as an integral component of strategic planning and annual budgeting rather than treating it solely as a procurement compliance requirement. Procurement planning should be closely integrated with institutional strategic plans and financial management systems to ensure that procurement decisions accurately reflect organizational priorities. Universities should also invest in digital procurement technologies, including Enterprise Resource Planning (ERP) systems, electronic procurement platforms, and data analytics tools, to improve forecasting accuracy and facilitate evidence-based decision-making. Furthermore, continuous professional development should be provided to procurement personnel and user departments to enhance analytical competencies in forecasting, procurement planning, and data management. Strengthening collaboration among procurement, finance, academic, and administrative departments through integrated planning committees will further improve coordination and reduce procurement inefficiencies.

Policy Recommendations: Regulatory bodies, particularly the Public Procurement and Disposal of Public Assets Authority (PPDA) and the National Council for Higher Education (NCHE), should strengthen procurement governance frameworks by promoting strategic procurement planning alongside regulatory compliance. National procurement guidelines should encourage the adoption of digital procurement systems, standardized forecasting procedures, and performance monitoring mechanisms that enable institutions to evaluate the effectiveness of procurement planning. In addition, sector-wide capacity-building initiatives should be expanded to enhance forecasting competencies among procurement professionals working within higher education institutions.

Recommendations for Practice: Private universities should establish institutional data management systems capable of generating reliable procurement information to support forecasting and decision-making. Management should promote a culture of evidence-based planning by ensuring that procurement decisions are informed by historical procurement data, projected institutional requirements, and regular needs assessments. Universities should also establish monitoring and evaluation frameworks that periodically assess the accuracy of procurement forecasts and their contribution to organizational performance, thereby facilitating continuous improvement of procurement planning practices.

Recommendations for Future Research: Future studies should empirically validate the Integrated Framework for Strategic Procurement Planning proposed in this review using quantitative, qualitative, and mixed-methods research designs within private universities. Longitudinal studies are particularly needed to examine how forecasting capabilities influence organizational performance over time and to establish causal relationships between procurement planning and institutional outcomes. Further research should also investigate the influence of emerging technologies, including artificial intelligence, predictive analytics, machine learning, and digital procurement platforms, on forecasting accuracy and procurement performance within resource-constrained institutional environments. Comparative studies involving public and private universities across Sub-Saharan Africa would further enhance understanding of contextual factors influencing procurement planning and organizational performance.

CONTRIBUTION OF THE REVIEW

This review makes several important contributions to theory, methodology, practice, and policy.
From a theoretical perspective, it extends the application of the Resource-Based View by conceptualizing needs forecasting as a strategic organizational capability that enhances organizational performance through its interaction with complementary institutional resources, including governance structures, human capital, and digital information systems.

Methodologically, the review demonstrates the application of the PRISMA 2020 framework in procurement research and illustrates how systematic narrative synthesis can be used to consolidate evidence drawn from diverse organizational settings and research designs. This provides a transparent and reproducible approach for future systematic reviews within procurement and supply chain management research.

Practically, the review provides evidence-based guidance for university managers and procurement professionals seeking to improve procurement efficiency, financial performance, and service delivery through structured forecasting practices. The findings highlight the importance of investing in forecasting systems, institutional capacity development, and integrated procurement planning.

From a policy perspective, the review provides evidence that can inform procurement reforms within higher education institutions by emphasizing strategic capability development alongside regulatory compliance. The findings are particularly relevant to policymakers, university governing councils, PPDA, and NCHE in strengthening procurement governance and promoting sustainable institutional performance.

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