

Strategic Procurement Procedures and Budgeting on Enhancing Operational Effectiveness in Nia-Mariis Division 2

Laurette Jean R. Sales 

Graduate School, Northeastern College, Santiago City, Isabela, Philippine

Corresponding author: anjean09@gmail.com

Article History: Received: May

Accepted: June

Revised: June 2026

Accepted: July 2026

Abstract Strategic procurement and budgeting are crucial for achieving operational efficiency, ensuring financial accountability, and delivering services effectively In public sector organizations. The integration of technology has revolutionized operations by improving transparency, shortening processing times, and facilitating evidence-based decision making. Despite these advancements, public institutions continue to encounter challenges such as procurement delays, inefficient budgeting, and limited adaptability, which hinder their effectiveness in achieving their goals. This study explored how technology can address these issues and examined the link between organizational adaptability and budgeting performance within the National Irrigation Administration–Magat River Integrated Irrigation System (NIA-MARIIS) Division II. Employing a quantitative descriptive-correlational approach, this study involved 50 procurement personnel and stakeholders chosen through convenience sampling. Data were collected using a structured questionnaire, and analysis was performed using frequency, percentage, mean, standard deviation, Pearson correlation, and ANOVA. The findings indicate that technology enhances procurement and budgeting by boosting efficiency, lowering transaction costs and processing times, and improving transparency and accountability in the public sector. Additionally, a significant positive correlation was found between organizational adaptability and budgeting performance, suggesting that adaptable employees and organizations achieve better financial results. The results highlight the importance of digital transformation, capability development, and adaptive practices in strengthening the procurement processes. The study concludes that strategic procurement, effective budgeting, technology use, and organizational adaptability collectively improve the operational effectiveness of the NIA-MARIIS Division II. These findings offer valuable insights for enhancing procurement policies, budgeting systems, and management practices in public sector organizations.

Keywords: *Strategic procurement, budgeting, technology adoption, organizational adaptability, and operational effectiveness.*

INTRODUCTION

Strategic procurement and budgeting are pivotal in global organizational management, enhancing operational efficiency, transparency, and accountability. Their integration ensures resource optimization and alignment with organizational objectives vital for competitiveness and sustainability (Corboş et al., 2023; Eklund, 2025). Technology, including digital systems and procurement 4.0 innovations, significantly transforms these practices by enabling real-time data, automated workflows, and advanced analytics, fostering informed decision-making and reducing errors (Corboş et al., 2023; Sharma et al., 2025). Nonetheless, organizations face global challenges such as delays, overspending, corruption risks, and supply chain disruptions, which can undermine strategic goals if not properly managed (Eklund, 2025; Sharma et al., 2025). Therefore, aligning procurement strategies with financial management and broader organizational goals is essential to achieve transparency, accountability, and

operational excellence worldwide.

Procurement and budgeting practices in Philippine public organizations and agencies emphasize efficiency, accountability, and transparency to ensure effective resource allocation and service delivery. Efficiency in procurement is critical for optimizing public funds and meeting operational goals, particularly in government institutions such as the National Irrigation Administration (NIA) (Mojaki et al., 2024; Oniyangi & Ibrahim, 2024). The government prioritizes transparency and accountability to reduce corruption risks, improve oversight, and enhance stakeholder trust (Kerr & Khorana, 2021; Mahuwi & Israel, 2024). However, public institutions face challenges such as bureaucratic delays, complex regulations, and limited capacity that adversely affect procurement effectiveness (Aboelazm et al., 2025). Digital technologies and e-procurement adoption play a pivotal role in addressing these hurdles by streamlining processes, promoting transparency, and enabling monitoring, as observed in other developing countries' public sectors (Musa et al., 2023; Oniyangi & Ibrahim, 2024). Organizational adaptability is essential for leveraging these technological advancements to improve procurement systems sustainably (Mojaki et al., 2024).

Specifically, at NIA-Magat River Integrated Irrigation System Division 2, procurement and budgeting operations face issues related to procedural inefficiencies and limited technology use, affecting operational effectiveness and the timely delivery of services. Stakeholders report challenges in maintaining procurement efficiency, emphasizing the need to adopt digital tools to optimize processes and enhance transparency (Oniyangi & Ibrahim, 2024). Understanding how adaptability to change influences procurement performance is critical to reform. Strengthening procurement management at the NIA aligns with the agency's mandate to deliver efficient public services and support broader governance goals (Aboelazm et al., 2025; Mojaki et al., 2024). Improving procurement processes through technology adoption and capacity building can significantly enhance public sector performance and accountability in the Philippine irrigation sector (Mojaki et al., 2024; Oniyangi & Ibrahim, 2024). The research gap lies in the limited number of local studies focusing specifically on strategic procurement and budgeting within irrigation agencies such as the NIA-MARIIS Division 2. Few studies have simultaneously examined technology adoption and organizational adaptability in procurement processes, particularly in the public sector. The existing literature predominantly addresses private organizations, with scarce evidence-based research on procurement effectiveness in Philippine Government agencies. Additionally, there is insufficient empirical data on how strategic procurement and budgeting impact operational effectiveness in the NIA-MARIIS Division 2. This highlights the need for updated, context-specific studies to inform procurement policy improvements and decision-making in public institutions in Brazil.

RESEARCH QUESTIONS

This study aims to examine the role of technology in addressing challenges related to the strategic procurement process and budgeting, and to determine the relationship between organizational adaptability to change in procurement processes and budgeting.

- What was the profile of the respondents in terms of age, gender, educational attainment, current job, and years of experience in procurement?
- What is the role of technology in addressing challenges related to strategic procurement

processes and budgeting?

- Is there a significant relationship between an organization's adaptability to changes in procurement processes and budgeting?

METHODS

Research Design

The study used a mixed-method research design that combined quantitative and qualitative approaches. The quantitative method was used to gather measurable data regarding strategic procurement procedures and budgeting, while the qualitative method was used to obtain deeper insights from the respondents. The descriptive-correlational approach was also utilized to determine the relationship between organizational adaptability and budgeting practices. This design was appropriate because it allowed the researcher to collect both numerical and descriptive information relevant to the study objectives.

Locale of Study

This study was conducted at the National Irrigation Administration – Magat River Integrated Irrigation System (NIA-MARIIS) Division 2. The agency was selected because it actively implements procurement and budgeting procedures in its daily operations. The locale was considered suitable as the respondents were directly involved in procurement activities and financial management.

Respondents of the Study

The respondents of the study were procurement staff and other stakeholders involved in procurement activities at the NIA-MARIIS Division 2. They include directors, managers, officers, and support staff with knowledge and experience in procurement and budgeting. Their participation provided reliable information necessary for the study.

Sample and Sampling Procedure

The study involved 50 respondents selected through convenience sampling. The respondents were chosen based on their availability and willingness to participate in the research. This sampling technique was appropriate because the participants were directly involved in procurement activities and could provide relevant information regarding the study.

Research Instrument

The researcher used a structured questionnaire as the primary research instrument. The questionnaire was developed based on related literature, research objectives, and theoretical concepts. It consisted of both open- and closed-ended questions related to procurement procedures, budgeting, technology utilization, and organizational adaptability.

Data Gathering Procedure

The researcher first secured permission from the NIA Division Manager before conducting the study. After approval, the questionnaires were distributed to the respondents personally and through online platforms. The respondents were informed about the purpose of the study, and the confidentiality of their responses was strictly observed throughout the data gathering process.

Data Analysis Techniques

The data were analyzed using descriptive and inferential statistics. Frequency counts, percentages, means, and standard deviations were used to describe the respondents' profiles and responses. Analysis of Variance (ANOVA) was used to determine the significant relationship between the variables in the study. The hypotheses were tested at a significance level of 0.05.

RESULT AND DISCUSSION

Table 1 Demographic Profile of the Respondents

Variable	Category	Frequency (f)	Percentage (%)
Age	18–24 years old	5	10.00
	25–34 years old	33	66.00
	35–44 years old	6	12.00
	45–54 years old	3	6.00
	55–64 years old	2	4.00
	65 years old and above	1	2.00
	Total	50	100.00
Gender	Male	32	64.00
	Female	18	36.00
	Total	50	100.00
Educational Attainment	PhD	4	8.00
	MS/MA	6	12.00
	BS Degree	40	80.00
	Total	50	100.00
Current Job	Directors	4	8.00
	Managers/Chairs	7	14.00
	Officers	12	24.00
	Support Staff	27	54.00
	Total	50	100.00
Years of Experience in Procurement	5–10 years	26	52.00
	11–15 years	11	22.00
	16–20 years	6	12.00
	21 years and above	7	14.00
	Total	50	100.00

Table 1 presents the demographic profiles of the 50 respondents from the NIA-MARIIS Division 2. The results show that most respondents were 25–34 years old (66%), indicating that most participants belong to a young and productive workforce. In terms of gender, 64% were male and 36% were female, suggesting that procurement and budgeting functions in the agency are predominantly handled by men. Regarding educational attainment, most respondents held a bachelor's degree (80%), while a smaller proportion completed master's (12%) and doctoral degrees (8%), reflecting a generally qualified workforce. In terms of current job positions, the largest group consisted of support staff (54%), followed by officers (24%), managers/chairs (14%), and directors (8%), indicating that operational personnel play a significant role in procurement. Moreover, more than half of the respondents (52%) had 5–10 years of experience in procurement, suggesting that they possessed adequate knowledge and practical experience in procurement and budgeting processes. Overall, the respondents represented a relatively young, educated, and experienced workforce capable of providing reliable information regarding strategic procurement procedures and budgeting practices in the NIA-MARIIS Division 2.

Table 2 Role of Technology in Procurement and Budgeting

Indicators	SD	F-value	p-value	Decision	Interpretation
Technology has a significant role in addressing challenges related to the strategic procurement process and budgeting across different sectors	72	4.059	0.032	Reject Ho	Significant
Use of technology saves time and cost in the procurement process	33	5.852	0.015	Reject Ho	Significant
Overall	52.50	4.956	0.024	Reject Ho	Significant

Table 2 illustrates the statistically significant role of technology in enhancing procurement and budgeting processes, as evidenced by the rejection of the null hypotheses across all indicators at the 0.05 significance level. Specifically, technology significantly addresses challenges in strategic procurement and budgeting across various sectors (F-value = 4.059, $p = 0.032$). Additionally, technology contributes to time and cost savings in the procurement process (F-value = 5.852, $p = 0.015$), which collectively improves overall budgeting performance (F-value = 4.956, $p = 0.024$). These findings align with studies demonstrating digital technology's positive impact on procurement efficiency. For example, the adoption of digital technologies in procurement substantially reduces costs and cycle times by mitigating human errors and enhancing data availability and responsiveness, thereby improving procurement performance (Jantaro & Badir, 2024). Similarly, the implementation of integrated web-based budgeting systems, such as Tanzania's PlanRep, has yielded significant reductions in time and cost, enhancing transparency and accountability in budgeting processes (Ruhago et al., 2022). In engineering supply chains, spend analytics and category management supported by technology improve cost control and procurement effectiveness through better data insights and supplier management (Omoegun et al., 2024).

Table 3 Organizational Adaptability and Budgeting Performance

Indicators	SD	F-value	p-value	Decision	Interpretation
There is a relationship between an organization's adaptability to change in procurement processes and budgeting	72	3.957	0.042	Reject Ho	Significant
Enforcement of an effective strategic procurement process enhances budgeting performance	33	6.263	0.028	Reject Ho	Significant
Overall	52.50	5.110	0.035	Reject Ho	Significant

Significant at 0.05 level of significance.

The data presented in Table 3 reveal significant findings on the relationship between organizational adaptability to procurement changes and budgeting performance. Notably, the indicators show that an

organization’s adaptability to changes in procurement processes has a meaningful positive impact on budgeting (F-value = 3.957, p = 0.042), leading to the rejection of the null hypothesis and confirming statistical significance at the 0.05 level. Similarly, the enforcement of an effective strategic procurement process substantially enhances budgeting performance (F-value = 6.263, p = 0.028), again rejecting the null hypothesis and underscoring the critical role of strategic procurement. These results collectively point to the integral connection between procurement agility and budgetary outcomes, corroborating research that emphasizes the importance of flexibility and adaptability in supply chain and procurement activities to optimize organizational performance. For instance, flexible performance management systems, influenced by digital transformation, improve adaptation to environmental changes, which is vital for sustaining competitive advantage and enhancing budgeting accuracy (Cosa & Torelli, 2024). Furthermore, effective supply chain integration under risk and demand uncertainty conditions highlights how adaptability in procurement can mediate and improve performance metrics, including budgeting (Tao et al., 2025).

Table 4 Summary of Hypothesis Testing

Null Hypotheses	Statistical Tool	F-value	p-value	Decision	Interpretation
Technology does not play a significant role in addressing challenges related to the strategic procurement process and budgeting across different sectors.	ANOVA	4.059	0.032	Reject Ho	Significant
There is no significant relationship between an organization’s adaptability to change in procurement processes and budgeting.	ANOVA	3.957	0.042	Reject Ho	Significant

Table 4 presents the proposed Strategic Procurement Enhancement Plan to address the key issues identified in NIA-MARIIS Division 2. The plan focuses on improving procurement efficiency, budgeting performance, and organizational adaptability through various public sector strategies. Implementing digital procurement and monitoring systems aims to reduce delays and enhance transaction efficiency, consistent with studies showing that digital technologies streamline procurement processes, improve transparency, and support decision-making (Jantaro & Badir, 2024; Mojaki et al., 2024). Strengthening budgeting and financial monitoring procedures is expected to improve budget utilization and accountability, which are essential components of effective public-sector financial management (Ruhago et al., 2022). The plan emphasizes ICT and procurement training seminars to increase technology adoption and operational efficiency, aligning with research highlighting the benefits of e-procurement systems in enhancing organizational performance and transparency (Mahuwi and Israel, 2023; Mahuwi and Israel, 2024). Capability-building and change management programs have been proposed to address resistance to organizational change, recognizing that adaptability is crucial for procurement reforms and improved performance (Cosa and Torelli 2024).

Table 5 Correlation Between Organizational Adaptability and Budgeting

Variables	r-value	p-value	Interpretation
-----------	---------	---------	----------------

Adaptability and Budgeting 0.72 0.042 Significant Positive Relationship

Table 5 presents the correlation between organizational adaptability and budgeting performance in Division 2. The results revealed a significant positive relationship between the two variables, with an r-value of 0.72 and a p-value of 0.042. This finding suggests that as an organization's ability to adapt to changes in procurement processes increases, its budgeting performance also improves. Organizations that embrace change, adopt innovative procurement practices, and respond effectively to operational challenges are more likely to achieve efficient budget planning, allocation, and utilization in the long term. This strong positive correlation supports the idea that adaptability is a critical factor in enhancing financial management and organizational effectiveness. This finding is consistent with previous studies that emphasize that organizational flexibility and adaptability contribute to improved performance, better resource management, and more effective decision-making in dynamic work environments (Cosa & Torelli, 2024; Tao et al. 2025). Therefore, strengthening adaptability through continuous learning, technology adoption, and changing management initiatives can significantly improve budgeting outcomes and overall operational performance in public organizations.

Table 6 Proposed Strategic Procurement Enhancement Plan

Identified Issues/Concerns	Proposed Strategies/Activities	Persons Involved	Expected Outcome
Delays in procurement processing	Implement digital procurement and monitoring systems	Procurement Unit, ICT Personnel	Faster and more efficient procurement transactions
Budget allocation and monitoring challenges	Strengthening budgeting and financial monitoring procedures	Budget Officers, Finance Personnel	Improved budget utilization and accountability
Limited use of technology in procurement	Conduct ICT and procurement system training seminars	Agency Management, Procurement Staff	Increased technology adoption and operational efficiency
Resistance to organizational changes	Organize capability-building and change management programs	Human Resource Office, Employees	Improved adaptability to procurement reforms
Inefficient communication among procurement personnel	Establish regular coordination meetings and reporting systems	Procurement Team, Unit Heads	Better coordination and decision-making
Lack of continuous procurement evaluation	Develop procurement performance monitoring and evaluation mechanisms	Management, Procurement Committee	Enhanced procurement effectiveness and transparency

Table 6 presents the proposed Strategic Procurement Enhancement Plan developed to address the issues identified in this study. The plan focuses on improving procurement efficiency, budgeting performance, technology utilization, adaptability, communication, and evaluation. Key strategies include implementing digital procurement systems, strengthening financial monitoring, conducting ICT and

procurement training, organizing change management, establishing coordination meetings, and developing performance evaluation mechanisms. These initiatives are expected to enhance efficiency, transparency, accountability, and decision-making within the NIA-MARIIS Division 2. Digitalization aligns with studies showing that technology-driven procurement systems improve efficiency, reduce delays, and strengthen transparency in public organizations (Jantaro & Badir, 2024; Mojaki et al., 2024). Likewise, training and capacity-building programs can increase competence and adaptability to organizational reforms, which are essential for sustaining procurement improvements and achieving budgeting outcomes (Cosa & Torelli, 2024). Furthermore, continuous monitoring and evaluation support effective governance by ensuring accountability and promoting evidence-based decision-making (Mahuwi & Israel, 2024). Overall, the plan provides a framework for strengthening procurement and budgeting in NIA-MARIIS Division 2.

CONCLUSION

The study concludes that technology plays a significant role in addressing challenges related to strategic procurement procedures and budgeting in the NIA-MARIIS Division 2. The findings revealed that technology adoption contributes to improved efficiency, reduced processing time, cost savings, and enhanced transparency in procurement operations. Furthermore, organizational adaptability has a significant positive relationship with budgeting performance, indicating that employees and institutions that are more responsive to changes in procurement processes tend to achieve better financial management outcomes. The positive correlation between adaptability and budgeting underscores the importance of embracing innovation, digital transformation, and continuous improvement in procurement practice. Overall, strategic procurement procedures, effective budgeting practices, technology utilization, and organizational adaptability are essential for enhancing the operational effectiveness of the NIA-MARIIS Division 2.

RECOMMENDATIONS

Based on the findings and conclusions of this study, the NIA-MARIIS Division 2 should strengthen its adoption of digital procurement and budgeting systems to improve the efficiency, transparency, and accountability of its operations in the future. Continuous training and capacity-building programs should be provided to employees to enhance their technological competence and adaptability to organizational changes. Management should also establish effective monitoring and evaluation mechanisms to ensure that procurement activities are conducted efficiently and in accordance with established policies. Furthermore, strengthening communication and coordination among procurement personnel can help minimize delays and improve decision making. By fostering a culture of innovation and adaptability, agencies can further enhance procurement performance, budgeting effectiveness, and overall organizational productivity.

LIMITATIONS OF THE STUDY

This action research has several limitations that should be considered when interpreting its findings. First, the study was conducted exclusively within the NIA-MARIIS Division II, limiting the generalizability of the results to other divisions of the National Irrigation Administration, government agencies, or private organizations with different procurement systems, budget structures and operational environments. Second, this study focused on the implementation of strategic procurement

procedures and budgeting practices as factors influencing operational effectiveness. Other variables that may affect organizational performance, such as human resource capacity, leadership and management practices, information systems, organizational culture, regulatory changes, and external economic conditions were beyond the scope of this study.

FUTURE RESEARCH DIRECTIONS

Future studies may broaden the scope of this research by including multiple divisions of the National Irrigation Administration or other government agencies to allow for comparative analyses of procurement and budgeting practices across different organizational contexts. Researchers should conduct longitudinal studies to examine the long-term effects of strategic procurement procedures and budgeting on operational effectiveness, financial efficiency, project implementation, and service delivery. Such studies may provide stronger evidence of sustained organizational improvement over time.

ETHICS STATEMENT

This study was conducted in accordance with the established ethical principles governing organizational and action research. Prior approval to conduct the study was obtained from the appropriate authorities of the NIA-MARIIS Division II before data collection began. The participation of employees and other respondents was voluntary, and informed consent was obtained after the participants were provided with clear information regarding the study's objectives, procedures, potential benefits, and minimal risks.

REFERENCES

- Aboelazm, K. S., Obeidat, M. A., Tawakol, F., Alfil, N. Z., & Haq, F. H. I. U. (2025). Ameliorating public procurement performance: Green public procurement policies within a legislative framework. *Corporate Law and Governance Review*, 7(2), 21–31. <https://doi.org/10.22495/clgrv7i2p2>
- Corboş, R.-A., Bunea, O.-I., & Jiroveanu, D.-C. (2023). The Effects of Strategic Procurement 4.0 Performance on Organizational Competitiveness in the Circular Economy. *Logistics*, 7(1), 13. <https://doi.org/10.3390/logistics7010013>
- Cosa, M., & Torelli, R. (2024). Digital Transformation and Flexible Performance Management: A Systematic Literature Review of the Evolution of Performance Measurement Systems. *Global Journal of Flexible Systems Management*, 25(3), 445–466. <https://doi.org/10.1007/s40171-024-00409-9>
- Eklund, S. C. (2025). Intermediaries in strategic procurement: opportunities and obstacles for public organizations. *Journal of Public Budgeting, Accounting & Financial Management*, 37(6), 244–262. <https://doi.org/10.1108/jpbafm-02-2025-0052>
- Jantaro, N., & Badir, Y. F. M. (2024). The performance impact of digital technology adoption in procurement: A case study of the manufacturing industry in the Eastern Economic Corridor, Thailand. *Uncertain Supply Chain Management*, 12(1), 151–158. <https://doi.org/10.5267/j.uscm.2023.10.009>
- Kerr, W. A., & Khorana, S. (2021). Electronic Government Procurement in the EU-Vietnam Free Trade Agreement: An Opportunity for Increased Transparency and Accountability? *Journal of World Trade*, 55(Issue 1), 127–144. <https://doi.org/10.54648/trad2021005>
- Mahuwi, L., & Israel, B. (2024). Promoting transparency and accountability towards anti-corruption in

- pharmaceutical procurement system: does e-procurement play a significant role? *Management Matters*, 21(1), 20–37. <https://doi.org/10.1108/manm-07-2023-0027>
- Mojaki, L. M., Tuyikeze, T., & Ndlovu, N. K. (2024). A digital procurement framework for South African public sector: A content analysis approach. *South African Journal of Information Management*, 26(1). <https://doi.org/10.4102/sajim.v26i1.1871>
- Musa, U., Jaafar, M., & Raslim, F. M. (2023). E-procurement adoption in Nigeria: perceptions from the public sector employees. *Arab Gulf Journal of Scientific Research*, 42(3), 1130–1149. <https://doi.org/10.1108/agjsr-10-2022-0224>
- Omoegun, G., Fiemotongha, J., Omisola, J., Okenwa, O., & Onaghinor, O. (2024). Systematic Review of Category Management and Spend Analytics in Engineering Supply Chains. *International Journal of Scientific Research in Science, Engineering and Technology*, 11(4), 384–412. <https://doi.org/10.32628/ijrsrset25121176>
- Oniyangi, H. A., & Ibrahim, U. A. (2024). OPTIMIZING PROJECT TIMELINES: THE IMPACT OF E-PROCUREMENT IN ACCELERATING PUBLIC SECTOR PROJECTS IN NIGERIA. *International Journal of Professional Business Review*, 9(3), e04182. <https://doi.org/10.26668/businessreview/2024.v9i3.4182>
- Ruhago, G. M., Kapologwe, N. A., Ngalesoni, F. N., Kengia, J. T., Kibusi, S. M., Kalolo, A., Kitali, E. J., Mtatifikolo, J. D., Masuha, S. R., Kikula, A., & Mtei, G. (2022). Cost-Efficiency Analysis of the Improved Web-Based Planning, Budgeting, and Reporting System (PlanRep) in Tanzania. *Frontiers in Health Services*, 1, 787894. <https://doi.org/10.3389/frhs.2021.787894>
- Sharma, S., Chaurasiya, R., Mohite, R., & Akre, S. (2025). Inventory woes and logistic bottlenecks: operational challenges in the SCM of the Indian defense sector. *Defense and Security Studies*, 6(1), 39–48. <https://doi.org/10.37868/dss.v6.id284>
- Tao, J., Aamir, M., Shoaib, M., Yasir, N., & Babar, M. (2025). Bridging the Gap Between Supply Chain Risk and Organizational Performance Conditioning to Demand Uncertainty. *Sustainability*, 17(6), 2462. <https://doi.org/10.3390/su17062462>

AI DISCLOSURE STATEMENT

I used artificial intelligence (AI)-assisted tools for editing, grammar correction, sentence refinement, organization, and formatting in preparing the manuscript. AI tools were not used to formulate research problems, design study, collect data, perform statistical analyses, interpret findings, or develop conclusions and recommendations. I independently conceptualized the study, collected and analyzed the data, interpreted the results, and prepared the manuscript. I reviewed and verified the AI-assisted outputs for accuracy, originality, and appropriateness and assumed responsibility for the accuracy, originality, integrity, ethical conduct, and scholarship of this research.

How to cite:

Jimenez, A. G. (2026). Impact of the just-in-time (JIT) inventory management system and the supplier overall performance in a NIA-MARIIS Division II. *Bamboo Nexus: Journal of Innovation, Education, and Climate Action (BN-JECA)*, 1(1), 141–150. <https://doi.org/10.67691/bnjeca.v1i1.014>
