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Assessing The Efficiency of Procurement-To-Pay Systems in Zambia's Nonprofit Organizations: A Case Study of Catholic Relief Services Zambia (CRS)

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Abstract

This study evaluates the efficiency of Procure-to-Pay (P2P) systems in nonprofit organizations, focusing on Catholic Relief Services Zambia (CRS). The study integrates Business Process Improvement (BPI) theory and the Technology Acceptance Model (TAM) to analyze how process optimization and technology adoption enhance procurement efficiency. Using a quantitative research design, data were collected from 100 staff members through questionnaires, document analysis, and performance metrics. Key performance indicators (KPIs) such as procurement cycle times and cost reductions were analyzed using statistical methods, including Pearson correlation analysis. The findings revealed significant improvements in operational efficiency and cost reduction following the implementation of the P2P system. The requisition-to-purchase order processing time decreased by 80%, while the requisition-to-payment cycle was reduced by 22%. Correlation analysis showed a strong positive relationship between P2P system implementation and operational efficiency ($r = 0.955$, $p < 0.01$). Challenges were noted during implementation, including technical issues and data migration difficulties. Post-implementation challenges such as system integration and supplier performance tracking persisted. Strategies including regular training, system upgrades, and process re-engineering were implemented, with 46.5% of respondents reporting significant improvements in system performance. While focused on CRS Zambia, the findings provide actionable insights for similar organizations aiming to modernize their procurement processes. Limitations include the focus on a single organization, reliance on quantitative methods, and a short-term assessment. Future research should explore longitudinal studies, qualitative insights, and broader organizational contexts to assess the long-term sustainability of P2P systems in nonprofit sector. The study underscores the transformative potential of P2P systems in improving procurement efficiency and donor accountability.

Keywords: Procure-to-Pay (P2P), operational efficiency, procurement efficiency, Nonprofit organizations, Business Process Improvement (BPI), Technology Acceptance Model (TAM), Procurement

1. Introduction

The procurement function is crucial for organizational efficiency, particularly in nonprofit organizations, where resource constraints and donor accountability are key concerns. This study evaluates the efficiency of Procure-to-Pay (P2P) systems within nonprofit organizations, focusing on Catholic Relief Services Zambia (CRS). The P2P process, which spans requisition generation to payment, ensures the timely and cost-effective procurement of goods and services. However, many nonprofits face challenges in streamlining their P2P systems due to limited resources, complex regulations, and fragmented processes, leading to delays, higher costs, and inefficiencies.

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While previous research has examined procurement efficiency in both private and public sectors, there remains a gap in understanding P2P performance in nonprofit organizations, which operate in dynamic environments influenced by donor requirements, regulatory constraints, and unpredictable funding (Sodhi & Tang, 2019). Studies suggest that effective P2P systems enhance cost control, reduce cycle times, and strengthen vendor relationships (Kidd, 2005; Karjalainen et al., 2009). This study addresses this gap by assessing the efficiency of CRS's P2P system through Business Process Improvement (BPI) theory, identifying inefficiencies, and proposing improvements. Using a quantitative approach, data was gathered through surveys and documentation analysis. This research enhances the understanding of P2P efficiency in nonprofit settings and provides actionable insights for process optimization in similar organizations.

1.2 Problem statement

Nonprofit organizations in Zambia play a vital role in addressing societal needs and advocating for various causes. However, their ability to execute their missions effectively is often hindered by operational inefficiencies, particularly in procurement processes, which are critical to organizational performance (Abdulkadir, 2014). A key challenge is the historically paper-based and fragmented nature of procurement systems (Nethercot, 2023). Financial transactions are often documented manually, leading to poor coordination between departments and resulting in procurement delays, inaccurate data, inefficiencies in payment processing and financial reporting, and an inadequate supplier performance evaluation system (Nethercot, 2023). These issues align with broader trends in the nonprofit sector, where procurement functions are often underdeveloped due to resource constraints and low technological adoption (Boateng et al., 2016).

In response to these challenges, Catholic Relief Services Zambia (CRS) implemented a Procure-to-Pay (P2P) system in July 2021 to improve procurement efficiency. While P2P systems have demonstrated benefits such as cost reduction, increased transparency, and enhanced supplier relationships in various sectors (Croom & Brandon-Jones, 2017; Lee et al., 2015), their effectiveness in the nonprofit sector, particularly in Zambia, remains underexplored. This study addresses this gap by evaluating the extent of P2P system adoption at CRS, identifying challenges encountered during implementation, and assessing its impact on procurement efficiency. The findings will provide insights into optimizing P2P systems and contribute to the broader discourse on procurement modernization within the nonprofit sector (Salinas, 2017).

1.3 Research objectives

1. To evaluate the impact of implementing P2P systems on operational efficiency.
2. To identify challenges encountered in implementing P2P systems
3. To determine strategies to enhance efficiency of procure-to-pay systems in Zambia's nonprofit organizations.

2. Literature Review

This section focuses on the empirical research relevant to addressing the research objectives.

2.1. Historical Development of P2P Systems

The evolution of procurement systems, particularly the shift from manual processes to fully automated Procurement-to-Pay (P2P) systems, can be traced back to the late 1980s. The first generation of procurement systems was focused primarily on automating individual processes such as requisitioning and purchase orders. However, it was not until the mid-1990s that fully integrated P2P systems started to emerge, which combined procurement with payment processes to create an end-to-end solution (Leenders, et al., 2006).

As the digital age developed, P2P systems became more advanced, incorporating sophisticated features such as real-time data analytics, integration with Enterprise Resource Planning systems, and electronic invoicing capabilities (Monczka, et al., 2015). These developments have paved the way for organizations, particularly non-profits, to move from resource-intense manual processes to electronic systems that improve efficiency, reduce costs, and ensure transparency.

Comparative Studies on Manual vs Automated P2P Processes

The move from manual systems to P2P systems represents a noteworthy leap in efficiency. A comparative study by (Chartered Institute of Procurement & Supply (CIPS), 2020) explored the differences between manual and automated P2P systems across fifty different organizations. The findings revealed that automated P2P systems reduced procurement processing times by about 50%, while manual processes were prone to delays, data errors, and inefficiencies. Furthermore, the study revealed that organizations using P2P systems reported a 25% increase in compliance with procurement policies compared to those still reliant on manual processes

Technological Advancements in P2P Systems

Recent advancements in machine learning and artificial intelligence (AI) have transformed the P2P landscape. According to (Deloitte, 2021), AI-powered P2P systems can predict procurement trends, automate supplier evaluation processes, and ensure compliance by regularly monitoring transactions against set procurement policies. In addition, AI-based virtual assistants are increasingly being used to manage routine procurement queries, thus freeing up human resources to focus

on strategic procurement decisions (Deloitte, 2021).
A study by (KPMG, 2020) found that organizations that adopted AI-based P2P systems observed a 45% increase in process automation, leading to almost 30% reduction in errors associated with manual-based procurement processes. These innovations, while still relatively new, are proving to be important for the future of P2P systems, particularly in non-profit organizations where budgets are constrained, and efficiency is paramount.

Adoption of P2P Systems in Non-profit Organizations
The adoption of P2P systems in non-profit organizations has been slower compared to the corporate sector, largely due to the financial constraints faced by non-profits, which often lack the required resources to invest in advanced technology (Rajasekaran & Rajasekaran, 2014). However, studies show that when nonprofits do adopt P2P systems, the benefits can be significant.

A case study by the (Financial Executive Institute, 2017) examined the implementation of P2P system at a non-profit organization, exploring the challenges faced and the benefits realized in terms of efficiency and transparency. This case study offered valuable insights into the practical aspects of adopting P2P systems in the non-profit sector.
Further, (Smith & Jones, 2018) provided an in-depth examination of how non-profit organizations improved their financial management through the adoption of a P2P system. Their case study emphasized key lessons learned from the implementation process. This study contributes to understanding the real-world impact of P2P systems on financial management within nonprofits.
In a larger context, (Doe & Roe, 2018) conducted a literature review on the impact of P2P systems on non-profit organizations, published in the International Journal of Public Sector Management. Their literature review discussed various studies on the implementation and impact of P2P systems, highlighting common challenges and benefits experienced by nonprofits.

Additionally, (Brown & Patel, 2020), explores the efficiency gains achieved through effective use of P2P systems in non-profit organization. The article underscores the process improvements and cost savings that can result from P2P system implementation and offered practical insights into the advantages of these systems.
Lastly, (Green & White, 2021) addressed the common challenges faced by nonprofits when implementing P2P systems. They provided strategies for overcoming these challenges, making their work a valuable resource for nonprofits seeking to navigate the complexities of P2P system adoption.

Metrics for Evaluating Efficiency
Research on metrics for evaluating the efficiency of P2P systems in nonprofit organizations highlight the importance of identifying key performance indicators (KPIs) that measure procurement processes. A report by (Institute, 2019) explored the adoption of P2P systems in a nonprofit, focusing on metrics such as procurement cycle times, cost reduction, and supplier lead time to assess efficiency. Similarly, (Clark & Williams, 2020) provides insights into optimizing procurement processes through P2P systems by evaluating metrics like cost, order accuracy, data accuracy and compliance with internal procurement policies, which are critical to ensuring system success.

Johnson and Brown (2021) offered a broader perspective through a literature review, unifying various studies that highlight metrics such as cost savings and first-time match rate as central to evaluating P2P system efficiency in non-profit organizations. Patel, (2020) further supports this notion by discussing a framework for assessing P2P system efficiency, emphasizing automation rates in requisition approval times, purchase orders and invoice approval times as key measures of success. Green and White (2022) add to the conversation by identifying key performance metrics such as transaction cost per order, throughput time and error rate in procurement as essential tools for measuring the overall effectiveness of P2P systems in non-profit organization procurement processes.

These articles and case studies collectively provide a detailed view of the various metrics that can be used to evaluate the efficiency of P2P systems in non-profit organizations, offering both theoretical frameworks and practical examples.

Challenges
The implementation of P2P systems in developing countries, such as Zambia, has unique challenges. According to a study by (Transparency International, 2019), several non-profits in developing countries are faced with infrastructural limitations, limited technological expertise, and budgetary constraints that make the adoption of P2P systems challenging. In Zambia, for example, (Araujo, et al., 2017) cited issues related to internet connectivity challenges and limited access to trained IT professionals as major barriers to the successful implementation of P2P systems.

Despite these challenges, P2P systems offer a way to improve transparency, accountability, and financial efficiency in nonprofit organizations in Zambia. Catholic Relief Services (CRS), for instance, has made significant strides in adopting a P2P system that has resulted in cost savings and improved procurement cycles (Nethercot, 2023). Nevertheless, further investments in technology infrastructure and capacity building are needed to fully realize the potential of P2P systems in

Zambia and other developing countries.

Strategies to Enhance Efficiency

Enhancing the efficiency of P2P systems in non-profit organizations is cardinal for streamlining procurement operations, fostering greater transparency and minimizing costs. Automating routine processes such as purchase requisitions, invoice approvals, and payment processing reduces cycle times and minimizes human errors (Patel, 2020). According to the findings from a study conducted by (Brown & Patel, 2020), automation improved the accuracy and speed of procurement transactions. Higgins and Dawson (2021) further argued that the adoption of cloud-based P2P systems facilitates real-time tracking of procurement activities, leading to increased transparency and operational efficiency.

Another significant approach involved the standardization of procurement processes. Standardization assisted in reducing inconsistencies by ensuring uniformity across procurement activities, such as using standardized templates for purchase orders and contracts, thereby enhancing organizational compliance (Clark & Williams, 2020). This strategy was particularly beneficial for nonprofits operating in decentralized environments or across multiple regions, as it promoted uniformity and accountability (Green & White, 2022). In addition, standardized processes improved data reliability, which is essential for conducting evaluations and audits, especially in nonprofit settings where accountability to donors is paramount.

An additional strategy for improving efficiency is supplier relationship management. Establishing and nurturing long-term partnerships with suppliers enables nonprofits to secure more favorable pricing and enhanced service levels, ultimately contributing to higher procurement efficiency (Kaufmann et al., 2021). According to Johnson and Brown (2021), maintaining open lines of communication with suppliers and conducting regular performance reviews ensured alignment with organizational goals. Barrows and Neely (2019) found that early supplier involvement in procurement planning assisted to identify potential challenges early on, thereby mitigating risks that could disrupt procurement operations
Lastly, data-driven decision-making is increasingly recognized as an essential strategy for improving P2P efficiency. By utilizing procurement analytics, organizations can track key performance metrics, such as cost savings, purchase order cycle times, and compliance rates, thereby enabling data-informed decision-making (Clark & Williams, 2020). Johnson and Brown, (2021) found that the ability to analyze real-time procurement data allowed nonprofits to quickly identify inefficiencies and take corrective action. Furthermore, the use of dashboards and reporting tools provided decision-makers with immediate insights into procurement processes, thereby enhancing responsiveness and overall operational performance (Higgins & Dawson, 2021).

Gaps in literature

Despite increasing research on Procure-to-Pay (P2P) systems in nonprofit organizations, several gaps remain. One key gap is the lack of longitudinal studies assessing the sustainability of P2P systems over time. While existing studies highlight immediate benefits such as cost savings and efficiency improvements (Patel, 2020), there is limited research on long-term challenges, including integration with legacy systems, scalability, and continuous staff training (Green & White, 2022). Understanding how P2P systems perform beyond initial adoption is crucial for ensuring their long-term viability.

Additionally, the literature primarily focuses on large, well-resourced nonprofits, leaving smaller organizations—especially those in low-resource environments like Zambia—underrepresented (Clark, 2020). Smaller nonprofits face distinct challenges, such as financial and technological constraints, which impact their ability to adopt and optimize P2P systems (Johnson & Brown, 2021). As a result, findings from larger organizations may not be fully generalizable to the broader nonprofit sector.

Another overlooked area is the human and organizational factors influencing P2P success. While most studies emphasize technical and financial metrics (e.g., cost savings, cycle time), few explore the role of staff competence, engagement, and change management in adoption and sustainability (Patel, 2020; Green & White, 2022). These factors are critical, as resistance to change can hinder system effectiveness.
Moreover, broader organizational impacts of P2P systems remain underexplored. Most studies focus on operational efficiency (Clark, 2020), but fewer examine their effects on donor accountability, internal transparency, and mission fulfillment (Johnson & Brown, 2021). Since nonprofits are mission-driven, assessing how P2P systems support their goals is essential.

Finally, comparative studies between nonprofits and other sectors, such as the public or for-profit sectors, are scarce. Such comparisons could offer valuable best practices and benchmarking opportunities, helping nonprofits optimize their procurement strategies (Brown & Patel, 2020). Addressing these gaps would enhance understanding and improve P2P implementation in nonprofit organizations.

2.2. Theoretical framework

This study adopted Business Process Improvement (BPI) theory as a foundational framework for analyzing and enhancing

the efficiency of the P2P systems within non-profit organizations, particularly CRS. BPI provided a structured approach to assessing organizational processes, identifying inefficiencies, and streamlining workflows to improve overall performance (Harmon, 2014). In the context of procurement, BPI is valuable in diagnosing process bottlenecks, reducing cycle times, and enhancing resource allocation—all critical areas for nonprofit organizations operating under tight budgetary constraints (Davenport & Short, 1990). The use of BPI theory in this study was supported by substantial literature that highlights its effectiveness in improving operational efficiencies.

In addition to BPI theory, the study integrated the Technology Acceptance Model (TAM) to assess the role of technology in enhancing P2P system efficiency. TAM, originally developed by (Davis, 1989), posits that two primary factors perceived usefulness and perceived ease of use determine user acceptance of technology. Given that P2P systems are largely technology-driven, understanding how staff at CRS interacted with and adopted these systems was crucial to evaluating their overall efficiency. Research has demonstrated that successful adoption of procurement technologies can significantly improve process outcomes, reduce errors, and increase transparency (Venkatesh & Davis, 2000); (Vaidya, et al., 2006).

By combining BPI theory with TAM, this study provided a holistic evaluation of P2P systems, considering both process and technology factors. This integrated approach allowed for a more comprehensive understanding of the challenges and opportunities in optimizing procurement processes within nonprofit organizations.

2.3. Conceptual framework

The conceptual framework for the study is illustrated in Figure 1.

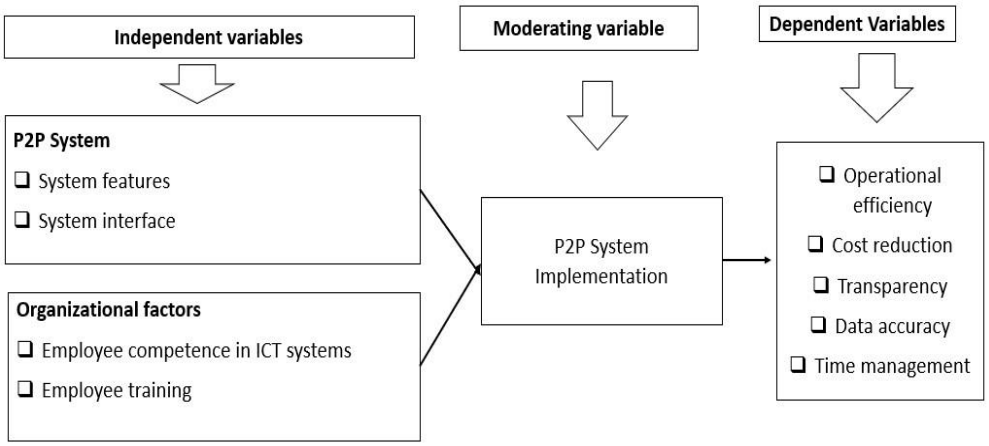

Figure 2.1: Conceptual framework (Source: Author's constructions)

3. Methodology

This study employs a quantitative case study research design to assess the operational efficiency of the Procure-to-Pay (P2P) system at Catholic Relief Services Zambia (CRS). The case study approach provides an in-depth examination of P2P system implementation within CRS, while the quantitative framework ensures objectivity and generalizability.

A structured survey was used as the primary data collection tool, targeting 133 CRS employees involved in using the P2P Sytem. A sample of 100 respondents was determined using Taro Yamane's formula (Yamane, T. , 1967) to ensure statistical significance. Stratified random sampling was applied to capture diverse perspectives across different job roles and experience levels, enhancing the validity and reliability of the findings.

Data were collected through electronic questionnaires featuring Likert scale items to measure operational efficiency, cost reduction, transparency, data accuracy, and time management. Additionally, document analysis was conducted to examine internal procurement records and assess key performance metrics such as procurement cycle time and data accuracy to provide objective system evaluation.

Quantitative data were processed using SPSS, employing descriptive statistics and correlation to establish relationships between independent and dependent variables. Reliability testing via Cronbach's Alpha ensured internal consistency of survey instruments. Ethical considerations included informed consent, confidentiality, and adherence to institutional review board guidelines.

This methodological approach ensures a robust and comprehensive evaluation of P2P system effectiveness at CRS, contributing to best practices in nonprofit procurement management.

4. Results and Discussion

86 responses were obtained from a sample of 100 distributed questionnaires, resulting in a response rate of 86%. This high level of participation indicates strong stakeholder engagement and a vested interest in evaluating the P2P system.

The substantial response rate enhances the statistical power and reliability of the dataset, facilitating rigorous analysis and improving the generalizability of findings related to the system's operational efficiency, challenges encountered, and potential optimization strategies. These results are expected to provide meaningful insights into the P2P system's impact on procurement processes within the organization, contributing to a more comprehensive understanding of its effectiveness.

4.1. Demographics

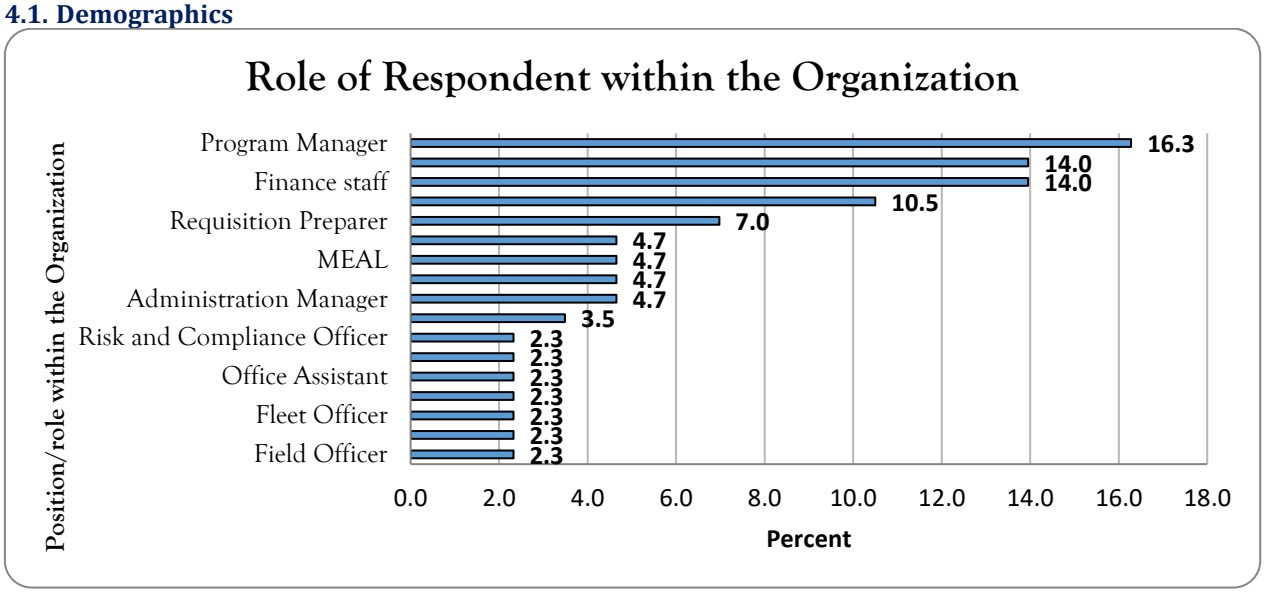

Figure 2: Position of respondent within CRS

Figure 2 outlines the roles of survey respondents within CRS, showing that Program Managers form the largest group at 16.3%, with Procurement and Finance Staff following at 14% each. These positions are critical to procurement, as Program Managers manage project budgets, while Procurement and Finance staff handle procurement and payment processing, respectively. Other roles, such as MEAL staff, Administration Managers, and support roles, are represented in smaller percentages, underscoring a diverse respondent base but with a significant focus on program and finance functions, which are central to procurement activities.

4.2. Impact of P2P systems on operational efficiency

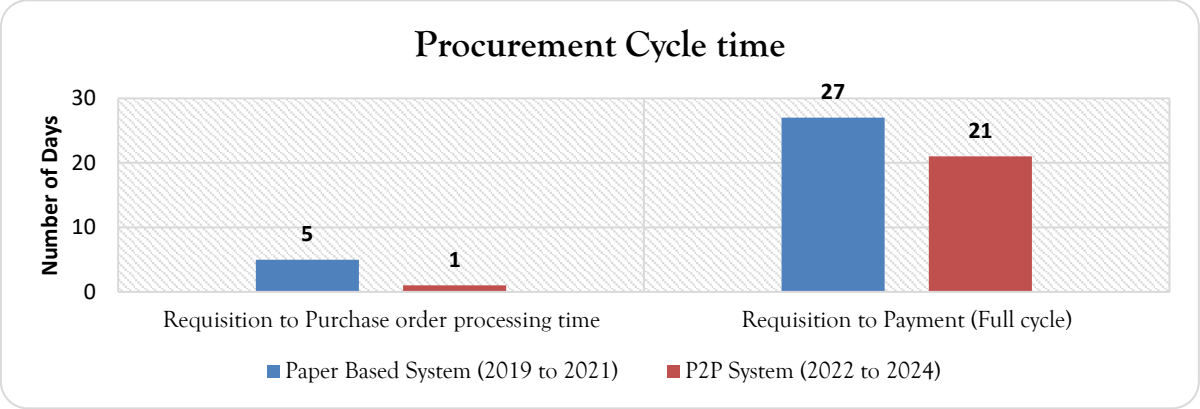

Figure 3: Procurement cycle time

A comparative analysis of procurement cycle times indicates that the P2P system significantly reduced both the requisition-to-purchase order processing time and the full requisition-to-payment cycle. Specifically, the requisition-to-purchase order phase experienced an 80% reduction, decreasing from an average of 5 days under the paper-based system to 1 day with the P2P system. Similarly, the full requisition-to-payment cycle was shortened by 22%, from 27 days to 21 days. These results underscore the P2P system's effectiveness in minimizing manual interventions and administrative delays, thereby expediting procurement processes. This aligns with Business Process Improvement (BPI) Theory, which emphasizes the importance of automation and streamlined workflows in enhancing operational efficiency (Davenport & Short, 1990).

4.3. Inferential Statistics – P2P system implementation and operational efficiency

Correlations

		P2P System implementation	Operational efficiency
P2P System implementation	Pearson Correlation	1	.955**
	Sig. (2-tailed)		.000
	N	86	86
Operational efficiency	Pearson Correlation	.955**	1
	Sig. (2-tailed)	.000	
	N	86	86

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 4: P2P system implementation and operational efficiency

The results in figure 4 suggest that there is a highly significant and strong positive relationship between the implementation of the P2P system and operational efficiency, with a correlation of 0.955 at the 0.01 significance level. This implies that improving the P2P system could lead to substantial gains in operational efficiency, and vice versa.

4.4. P2P system impact of data accuracy

The findings also demonstrate the P2P system's positive impact on data accuracy within the procurement process. A majority of respondents (48.8%) rated the system's impact on data accuracy as "Good," and 25.6% rated it as "Very Good." Key factors contributing to improved accuracy included reduced data entry errors (26%) and enhanced purchase order precision (27%), both outcomes attributed to the automation capabilities of the P2P system. Furthermore, the system's ability to provide an enhanced audit trail (17%) and accurate spend tracking (12%) highlights its role in fostering reliable and transparent data records. These results validate the Technology Acceptance Model (TAM), which posits that perceived usefulness, such as improved data quality, significantly influences user acceptance of technological systems and improves data driven decision making (Davis, 1989).

4.5. P2P System's impact on cost savings

The findings indicate that the P2P system has had a notable impact on cost savings within the organization. A significant proportion of respondents (60.5%) reported that the P2P system contributed to cost savings "to a large extent," while 20.9% indicated that the impact was "to a moderate extent." An additional 9.3% of respondents observed cost savings "to a very large extent," underscoring the perceived financial benefits associated with the system's implementation. In contrast, a small percentage of participants reported minimal or no impact, with 7% indicating "not at all" and 2.3% selecting "to a small extent."

4.6. Impact of P2P system on procurement process transparency

The majority of respondents (67.4%) reported a "very positive impact," while an additional 20.9% indicated a "positive impact." A smaller proportion (9.3%) observed a "moderate impact," and only 2.3% stated that the P2P system had "no impact" on transparency. These findings suggest that the P2P system has significantly improved transparency in procurement processes, likely by enhancing visibility into transaction records, approvals, and supplier interactions. Transparency is essential in nonprofit organizations, particularly those reliant on donor funding, as it reinforces accountability and fosters trust among stakeholders (Van der Valk & Rozemeijer, 2009).

The findings from this study suggest that P2P systems not only enhance operational efficiency but also foster a culture of data-driven decision-making. This aligns with (McKinsey & Company, 2024) who highlights that better data supports activities and decisions across the sourcing life cycle, from developing category strategies and assessing potential suppliers to executing negotiations and managing ongoing supplier performance.

4.7. Challenges encountered when implementation P2P system

The study identified several challenges during the implementation of the P2P system, with technical issues being the most prevalent. System functionality and integration difficulties were reported by 47% of respondents during implementation and 34.9% post-implementation, indicating significant barriers to seamless compatibility with existing infrastructure. These challenges are consistent with literature that highlights the complexity of integrating new systems into legacy environments (Moe & Newman, 2004). Data migration issues, reported by 26% of respondents, compounded these technical difficulties, emphasizing the need for comprehensive data governance and planning (Seddon et al., 2010).

Organizational challenges were less pronounced, with only 9% of respondents noting resistance to change. This low resistance is likely attributed to the high ICT proficiency of 95% of users, which facilitated smoother adaptation and minimized concerns associated with technological adoption (Kotter & Schlesinger, 2008; Markus, 2004). Furthermore,

77% of respondents received P2P training, with 76% rating it positively, supporting the importance of structured training in ensuring successful implementation (Seddon et al., 2010). The high level of satisfaction with training and the ease of learning (67.5%) reinforces the value of user-friendly design and tailored capacity-building efforts (Davis, 1989; Heeks, 2006).

Process-related challenges, including workflow bottlenecks (11.6%) and limited system customization (4.7%), were identified in the post-implementation phase. These issues highlight the need for ongoing user involvement in system design and customization to better align the P2P system with organizational needs (Heeks, 2006). Together, these findings emphasize the importance of technical readiness, effective training, and system alignment in overcoming challenges during system implementation.

4.8. Strategies to enhance efficiency of P2P systems

Key strategies included regular training sessions, system upgrades, targeted technical interventions, and organizational process re-engineering, all contributing to improved system performance and operational effectiveness.

Regular Training Sessions emerged as the most frequently reported strategy, cited by 39.5% of respondents. This emphasis on continuous user education is consistent with literature that underscores the importance of training in facilitating system adoption and enhancing user competence (Seddon et al., 2010). The high satisfaction with training programs demonstrates their significant role in addressing user-related challenges and improving system performance.

System Upgrades, reported by 30.2% of respondents, were another crucial strategy. These upgrades addressed technical limitations and introduced enhanced functionalities, which is aligned with the need for iterative improvements to maintain system relevance in dynamic environments. Regular upgrades help ensure that the system remains functional and meets evolving organizational needs.

Targeted technical interventions, including automated data validation (7.0%), hardware upgrades (4.7%), and real-time analytics (4.7%), were implemented to enhance data accuracy, system performance, and decision-making. Notably, automation was identified as a crucial driver of process efficiency, aligning with findings in (Heeks 2006). Additionally, real-time analytics facilitated more responsive decision-making.

Organizational and Process Re-Engineering, including dedicated support teams (4.7%), aimed to align system functionalities with organizational workflows and improve operational efficiency. The integration of technology with business processes was crucial in minimizing bottlenecks and ensuring sustained system performance.

Overall, 46.5% of respondents rated these strategies as effective, with 14% deeming them very effective. This confirms that a multi-faceted approach involving technical improvements, user training, and organizational alignment was successful in overcoming implementation challenges and optimizing P2P system efficiency, consistent with best practices in digital transformation (Croom & Brandon-Jones, 2007).

5. Conclusion and Recommendations

This study evaluated the efficiency of the Procure-to-Pay (P2P) system implemented at Catholic Relief Services (CRS) Zambia, focusing on its impact on operational efficiency, challenges, and strategies for improvement. The findings revealed significant operational improvements, including an 80% reduction in requisition-to-purchase order processing time (from five days to one day) and a 22% reduction in the requisition-to-payment cycle (from 27 days to 21 days). These reductions demonstrate the system's capacity to automate time-consuming processes, streamlining procurement operations. Additionally, data accuracy improved, with respondents reporting fewer errors and better audit trails.

Challenges were identified, particularly technical issues with system compatibility and integration, and data migration difficulties. Post-implementation challenges included ongoing technical problems, supplier performance tracking, and workflow bottlenecks. Limited customization and insufficient training were also noted as barriers.

Strategies to enhance system efficiency included regular training, system upgrades, process re-engineering, automated data validation, and real-time analytics. These strategies were generally rated as effective, with respondents acknowledging substantial improvements in system performance. The findings highlight the importance of continuous improvement efforts to maximize the P2P system's potential and ensure sustained benefits for nonprofit organizations.

Recommendations for future research

1. Comparative Studies: Future research could compare P2P system implementations across diverse nonprofit organizations to explore contextual factors influencing success and challenges.
2. Longitudinal Studies: Examining the long-term impact of P2P systems, including their adaptability to evolving

technological and organizational needs, would provide deeper insights.

3. Integration with Emerging Technologies: Exploring the integration of advanced technologies like artificial intelligence and blockchain with P2P systems could reveal new avenues for enhancing efficiency and transparency.

Recommendations for practice

1. Enhance Training Programs: Regular and tailored training for staff should be prioritized to address skill gaps and improve user confidence in the P2P system.
2. Invest in System Integration: Resolve compatibility issues with legacy systems and improve features such as supplier performance tracking and workflow customization to ensure seamless operations.
3. Leverage Data Analytics: Utilize advanced reporting tools and real-time dashboards to gain insights into procurement performance, compliance, and spending patterns, enabling data-driven decision-making.
4. Focus on Continuous System Improvement: Regularly review and upgrade the P2P system to ensure it aligns with organizational objectives and adapts to evolving operational and strategic needs

Limitations

The study's primary limitations include its focus on a single organization, Catholic Relief Services Zambia, which restricts the generalizability of its findings to other nonprofits. The exclusive use of quantitative methods limited the exploration of qualitative factors like organizational culture and user experiences. Additionally, the three-year post-implementation assessment provided a short-term perspective, leaving long-term sustainability and scalability unaddressed. Lastly, reliance on self-reported data introduced potential response bias, highlighting the need for caution in interpreting the findings and the importance of further research to validate and expand upon these insights.

Conflict of Interest

The authors declare that they have no conflicting interests

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Data Availability statement

The data used to support the findings of this study are available from the corresponding author upon request.

Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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