INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2026, Vol. 7, No. 9, 4190 – 4210
http://dx.doi.org/10.11594/ijmaber.07.09.29

Research Article

From Digital Financial Administration to Institutional Transformation: Developing the Integrated Digital Financial Administration Framework (IDFAF) Through a Qualitative Case Study

Glenda A. Pozon, Peter G. Narsico*

College of Management, Business, and Accountancy, Cebu Institute of Technology-University, Cebu City, 6000, Philippines

Article history:
Submission 30 August 2026
Revised 15 September 2026
Accepted 23 September 2026

**Corresponding author:*
E-mail:
petergnarsico@gmail.com

ABSTRACT

While the digital transformation has begun to impact the administrative and financial aspects of higher education, there has been scant research on how the digitization of tuition monitoring and communication systems can help facilitate broader institutional transformation. This qualitative case study explored the experiences of accounting personnel and other system users after the implementation of the Digitized Tuition Monitoring and Communication Management System in a higher education institution. Open-ended survey responses were used to collect data which were analysed using Braun and Clarke's reflexive thematic analysis. The twelve emergent themes were improved communication, real time access to financial information, financial transparency, operational efficiency, user-friendliness, leadership support, accessibility, automation, training needs, technical glitches and system reliability, resistance to change, and payment delays. Together, these themes illustrated that effective digital financial administration is not only about technological implementation, but also about organizational processes, user experiences and continuous institutional learning. The study conceptualized the Integrated Digital Financial Administration Framework (IDFAF) through conceptual synthesis that grouped the findings into five higher-order conceptual constructs, namely, the Digitized Tuition Monitoring and Communication System, Digital Administrative Processes, User and Organizational Experience, Continuous Improvement, and Institutional Transformation. The framework conceptualizes digital financial administration as a dynamic and iterative process, in which technological capabilities, organizational support, and continuous improvement interact to reinforce transparency, administrative efficiency, service quality, and institutional effectiveness. The study makes an empirical and conceptual contribution by offering an evidence-based framework that may help higher education institutions implement, assess and continuously improve digital

How to cite:
Pozon, G. A., & Narsico, P. G. (2026). From Digital Financial Administration to Institutional Transformation: Developing the Integrated Digital Financial Administration Framework (IDFAF) Through a Qualitative Case Study. *International Journal of Multidisciplinary: Applied Business and Education Research*. *7*(9), 4190 – 4210. doi: 10.11594/ijmaber.07.09.29

financial administration initiatives. Future studies will validate and refine the framework across a range of institutional settings.

***Keywords**: Digital financial administration, Higher education, Institutional transformation, Thematic analysis, Tuition monitoring, Qualitative case study*

Introduction

Universities around the globe are facing mounting pressure to embrace digital transformation to improve their administrative processes. Besides the importance given to the use of educational technologies for the improvement of teaching and learning, administrative activities such as management of student accounts, financial communication and monitoring of tuition fees have also emerged as places of institutional innovation (Fernández et al., 2023). The pressure on universities to improve the student experience and operational efficiency remains the need for timely financial data, open payment systems, and effective communication channels (AlDreabi et al., 2024). The old way of handling tuition was bad communications and manual record keeping. This leads to delays, increased chances of errors and deterioration of the quality of financial services rendered to students. Similar improvements have been observed in other financial settings. In a study of microfinancing operations in the Philippines, digitized procedures improved processing speed and accuracy, while easier access to customer data also supported more efficient financial processes (Andres et al., 2024). Some universities have developed integrated digital platforms to enable institutional digital transformation, enhance communication between students, parents and administrative staff, and accelerate financial processes (Jiang & Wang, 2026).

The contemporary research indicates the improved operational efficiency of the digitized administrative systems by providing the real-time access to the financial data, decreasing the manual labor, increasing the transparency of the organizations, and speeding up the communication among the stakeholders (Jiang & Wang, 2026; Yanney et al., 2026). Integrated tuition monitoring systems enable students to better monitor payment history, outstanding balances, and financial obligations and accounting personnel to more efficiently perform administrative duties. Moreover, these systems contribute to institutional accountability by generating accurate financial data that leads to evidence-based decision-making, better revenue management and increased transparency in educational administration (Xu, 2025).

The qualitative comments from the accounting staff also point to the impact of the digital transformation on the daily operation of the institution. Several participants commented that they could more effectively track tuition, access financial information in real time, communicate more efficiently, automate tuition payment reminders, and engage students. Many respondents said that the digital platforms had resulted in greater responsiveness in financial services, because of less manual processing, fewer errors and more transparency. Participants also identified ongoing issues such as technological problems, inconsistent system performance during busy times, limited user training and resistance to organisational change and varying levels of digital literacy. The results suggest that successful digital administrative systems are not only a matter of technological innovation, but also of other factors such as organizational readiness, leadership support, technical reliability, and continuous user development (Nambisan et al., 2024).

However, although there is a large body of literature on digital transformation in higher education, a significant part of the current literature has focused on technological adoption, system implementation, digital maturity or quantitative measurements of organizational efficiency (Fernández et al., 2023). There is much research about how these systems are implemented but less about the lived experience of the people using them on a day-to-day basis – the accounting staff whose views illuminate the benefits and practical limits of digital adoption. Such experiences are useful evidence to support systems, system design and institutional policies to support sustainable digital transition and constant service improvement. (AlDreabi et al., 2024).

This study fills this gap by exploring the experiences of accounting staff in the implementation and use of a Digitized Tuition Monitoring and Communication System in a higher education institution. The study has the qualitative thematic method of analyzing their stories in order to find common patterns of success, organizational and technical factors influencing the system's effectiveness, and provide practical insights for improving digital financial services. This study contributes to the emerging knowledge about digital governance in higher education by focusing on the views of system users. It demonstrates that sustainable administrative transformation is contingent upon the convergence of technological innovation, organizational support, user capability, and continuous institutional learning (Mergel et al., 2019; Nambisan et al., 2024).

Colleges and universities are going digital with systems that track tuition and talk to students, and the potential for better financial management is huge. But if we are to understand the implications of these systems for more general terms of routine administrative practice we need to move beyond the evaluation of technological performance. Personnel experience with the systems, organizational conditions that support successful implementation and lasting obstacles to system effectiveness. Digital currency platforms are being adopted by schools and colleges." However, the qualitative lived experiences of the administrative users are poorly described and need contextually specific research to inform institutional policy and practice (Fernández et al., 2023).

This gap is addressed in the present study by answering the following research questions: (1) How has the institution's implementation of the Digitized Tuition Monitoring and Communication System affected tuition monitoring and financial communication? (2) What are the daily administrative operational experiences of the accounting staff in the use of the system? (3) What is the perception of the users on the system in terms of usability, efficiency and effectiveness in supporting tuition management? (4) "What are the organizational, technical and human factors contributing to the successful implementation or challenges of the system?" (5) What are the emerging themes from the participants' experiences of transparency, operational efficiency and service delivery? (6) What recommendations can be made based on the experience of the participants to further improve the effectiveness, sustainability and user responsiveness of the Digitized Tuition Monitoring and Communication System? These questions seek to build a full understanding of the impacts of digital financial management systems on administrative practices and the progress toward more transparent, efficient, and student-centered financial services in higher education institutions.

Unlike previous research that mainly investigates digital transformation in higher education through the lenses of technology adoption, system implementation, or organizational efficiency, this study offers an empirically-derived conceptual framework that explains the more general ways in which digital financial administration enables institutional transformation. The study distils the participants' lived experiences into higher order conceptual constructs and proposes the Integrated Digital Financial Administration Framework (IDFAF). The framework provides a theoretically informed and evidence-based model for understanding, implementing and continuously improving digital financial administration in higher education institutions.

Material and Methods

Research Design and Context

This study adopted a qualitative single-case study conducted in a private higher education institution in Cebu City, Philippines to investigate the implementation and daily use of a Digitized Tuition Monitoring and Communication System in a higher education institution. The single-case study design was deemed appropriate, as it allows for an in-depth exploration of a contemporary phenomenon in its real-life organizational context, especially when the boundary between technological innovation, administrative processes, and user experiences is unclear (Yin, 2018; Hyett et al., 2014). Rather than focusing on quantitative indicators to assess system performance, this study aimed to describe the experience of accounting staff in the tuition monitoring process, financial communication and other administrative duties. The qualitative design allowed for the capture of participants' views regarding the strengths of the system, challenges to its operation, effects on the organization, and the perceived contribution to the efficiency of the institution.

The investigation was conducted at a private higher education institution in Cebu City, Philippines, which had adopted an integrated digital platform for tuition monitoring and communication as part of its ongoing digital transformation initiatives. The study focused on the Office of Accounting where the system is used on a daily basis to track student accounts, financial communication, recording of payment transactions, and decision-making relative to tuition management. As the system is now embedded in the financial operations of the institution the setting provided a fertile ground to investigate the effects of digital technologies on administrative practices, communication processes, transparency and service delivery. The study examined the implementation of digital financial management systems in higher education by embedding the investigation within the natural organizational context in which the system operates, providing context-specific insights into both the opportunities and challenges, which is consistent with qualitative case study research that seeks to understand complex phenomena within their authentic organizational environments (Yin, 2018; Hyett et al., 2014).

Research Participants

The respondents of this study were the employees of the Accounting Office of a private higher education institution in Cebu City, Philippines who are directly involved in the implementation and day to day use of the Digitized Tuition Monitoring and Communication System. They included accounting clerks, tellers, student accounts analysts, supervisors and other administrative staff whose duties required them to regularly interact with the system for tuition monitoring, payment processing, financial communication and student account management. These were the people who were doing the operational activities on a daily basis with the support of the digital platform and hence, they had first-hand knowledge about the system's functioning, implementation process, benefits and practical challenges. The experiences yielded rich qualitative evidence of system's impacts on administrative work and institutional service delivery.

We used a purposeful sampling technique, which is a non-probability sampling method commonly used in qualitative research, to select participants who are information-rich and can provide meaningful insights into the phenomenon under study (Campbell et al., 2020). Participants were eligible if they used the Digitized Tuition Monitoring and Communication System directly in their routine work duties. Those with little or no experience with the system were excluded because they were unable to adequately describe the implementation or operational impact of the system. Data collection continued until the participants' narratives were sufficiently deep and diverse in perspectives to answer the research questions of the study. The persons with the rich practical experience in the area of the system's utilization, organizational adaptation and digital transformation of the institution's financial administration were deliberately selected for the study which will contribute to the fact that the findings reflect authentic accounts of system utilization.

Research Instrument and Data Collection

The data source in this study was the written narrative responses of the participants on their experiences with the Digitized Tuition Monitoring and Communication System. The study employed a qualitative open-ended survey instrument rather than a standardized questionnaire with fixed response categories; the goal was to obtain detailed descriptions of participants experiences, perceptions and reflections on implementation and day-to-day use of the system. The instrument solicited participants' views on the system's impact on tuition monitoring, financial communication, operational efficiency, transparency/usability, organizational support, implementation challenges and suggestions for improvement. Open-ended qualitative survey questions are particularly valuable for accessing participants' own views and generating rich textual data for thematic analysis (Braun et al., 2021; Braun & Clarke, 2021). The instrument provided rich qualitative data with the possibility for the respondents to describe their experiences in their own words, capturing the complexity of digital transformation in the financial administration of the institution.

Data collection was done after obtaining the necessary institutional approvals and coordination with the Accounting Office. The study invited regular users of the Digitized Tuition Monitoring and Communication System who are eligible to participate in the study on a voluntary basis. The open-ended survey was sent electronically on institutional digital platforms, thus allowing the respondents to answer the instrument at their convenience and with minimal interference in their day-to-day work. The electronic format was particularly appropriate for accounting personnel whose work demands can intensify during enrollment, tuition payment, and other peak transaction periods. Rather than requiring participants to leave their work for scheduled interviews, the instrument allowed them to respond at a convenient time and to reflect on their experiences before completing their narratives. This approach helped balance the need for detailed qualitative accounts with the operational demands of the participants' work. Completed responses were pooled together in one data set and screened carefully for completeness before analysis. Participants were informed about the purpose of the study, that participation was voluntary and that their responses would remain confidential and would only be presented in aggregate or anonymized form. This was in line with the ethical principles for research with human participants of the American Psychological Association (APA, 2017). This technique enabled the collection of genuine and reliable stories, promoted ethical research practices, and motivated participants to give truthful accounts of their experiences with the system.

Data Analysis

The qualitative data generated from the participants' narrative responses were analyzed using reflexive thematic analysis (Braun & Clarke, 2021). This method allows for the systematic identification, organization, interpretation and reporting of patterns of meaning across qualitative datasets. This analytical approach was chosen because of its adequate flexibility in exploring the different experiences of the participants and for allowing the themes to develop inductively from the data, instead of being confined by pre-existing categories. Reflexive thematic analysis is a form of thematic analysis that highlights the researcher's active role in interpreting qualitative data and developing themes in a systematic way to capture the experiences and perspectives of participants in a meaningful way (Braun & Clarke, 2021; Byrne, 2022). Therefore, thematic analysis was appropriate for the present study since the primary goal of this study was to understand the experiences of accounting personnel on the implementation and use of the Digitized Tuition Monitoring and Communication System and the organizational, technological, and human factors that influenced their experiences.

The qualitative data was analysed through an analytical process, which was informed by the practical application of reflexive thematic analysis, as outlined by Braun and Clarke (2021); Bryne (2022). The analysis began with several readings of the participants' answers to get a feel for the data set and a general sense of what their experiences were. Meaningful segments of text were then identified and assigned initial codes relating to tuition monitoring, financial communication, transparency, operational efficiency, usability, organizational support, implementation challenges, and recommendations for improvement. Subsequently, codes pertaining to similar concepts were clustered into larger categories and examined for patterns that informed overarching themes. These themes were reviewed over and over, revised and checked against the original data set to ensure that they accurately reflected the participants' stories and that they remained conceptually consistent and differentiated. The findings were presented, clearly defining the final themes, with appropriate names and illustration by excerpts from participants that were representative. Throughout the whole process of analysis, the consistency between the participants' narratives, the coding and the interpretation of the findings were attended to, to ensure that the themes that emerged were authentic to the participants experiences.

Ethical Considerations

The present study was conducted in accordance with the ethical principles for research involving human participants of the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (APA, 2017). Before the data collection, the researcher secured the necessary permissions from the concerned institutional authorities to conduct the study in the Accounting Office of a private higher education institution in Cebu City, Philippines. Participation in the study was voluntary and potential participants were provided sufficient information regarding the aim of the study, nature of participation, data usage and research participant rights. Participants were told that they had the right to refuse to participate or to withdraw from the study at any time without penalty or negative consequences. By completing and submitting the open-ended survey, participants were deemed to have given informed consent to participate in the study. All responses were treated with strict confidentiality, anonymised during data analysis and reporting and used for the purpose of this research only.

Participants' privacy and confidentiality were protected by not collecting or releasing personally identifiable information during the research process. Narrative responses were anonymized for analysis by deleting or omitting all information that could reasonably identify individual participants or their specific roles within the institution. All electronic data was stored securely in password protected digital storage to which only the researcher had access and was used for academic and research purposes only. Findings are presented in aggregate form and supported by anonymized participant excerpts, to preserve the authenticity of participant experience while protecting their identities. The researcher was committed throughout the study to accurately capturing the participants' views, minimizing personal bias in the interpretation of data, and ensuring the analysis reflected the participants' own meanings rather than the researcher's assumptions. The procedures were performed in compliance with the ethical principles of the American Psychological Association (APA, 2017) regarding participant welfare, confidentiality, integrity, and responsible conduct of research and supported the credibility, trustworthiness, and scholarly rigor of the study.

Results and Discussions

Emergent Themes from Participants' Experiences

Theme 1. Improved Communication. Another more pronounced theme that emerged from the stories of the participants was the improved communication between the Accounting Office and the students after the implementation of the Digitized Tuition Monitoring and Communication System. The system helped students get financial information and notifications faster and made it easier to deal with concerns about tuition balances, payment confirmation and other financial matters, participants said. The centralized platform also helped in reducing the requirement of manual follow-ups and the time taken in answering student's queries. The participants attributed these changes to improved operational coordination and increased trust and confidence between students and the institution. In practical terms, the responsiveness was felt – students were reminded more promptly, questions were easier to answer and financial updates could be communicated with less lag. The findings concur with prior research indicating the capacity of digital communication systems to enhance responsiveness, access to information and user engagement in the setting of higher education (Fernández et al., 2023).

Theme 2. Real-Time Access to Financial Information. Participants often cited the benefit of instant knowledge of accurate tuition balances, payment histories and financial records. Timely financial information is needed by both admin and students to reduce uncertainty in tuition tracking, allowing them to make timely decisions. On-demand, up-to-the-minute record access meant fewer unnecessary calls, faster confirmation of payments and a greater overall awareness of financial matters, respondents said. One teller explained how this access works in actual transactions: "As a Teller, we can get into their accounts right away and see their financial information. It is helpful because it has a central data which can be viewed by all the employees and the owner of the account. We can also audit their payment histories e.g date of payment, type of payment, amount and the teller who made the transaction. We can also check the breakdown of the students' financial information so we can easily give insights into the students' concerns in real-time." "Being able to access tuition information anytime and anywhere was a great improvement on the previous manual processes that were prone to delays in updating records and disseminating financial information. The most significant importance of real-time access was for the participants in their everyday work. They could check payments in real time, see current balances without having to do previous manual processes and answer student questions with the info already in the system. This is consistent with other studies that emphasize the significance of digital information systems in improving operational efficiency and providing support to users in higher education institutions (Fernández et al., 2023; Jiang & Wang, 2026).

Theme 3. Financial Transparency. Financial transparency was another theme that emerged from the participants' responses. The participants reported that the Digitized Tuition Monitoring and Communication System offered more transparency and availability of tuition information for verification purposes. If there were any questions, the accounting personnel could refer to current records and students could check what they owed. Both sides had the same financials to look at too. There were less misunderstandings with the same numbers. Also, the participants felt that this would make the Accounting Office more accountable and will increase students confidence in the financial services offered by the office. So transparency wasn't just about access to records. It was also about making financial information easier to check and understand. Comparable findings have been reported in research on the application of digital systems to transparency and governance in higher education (Fernández et al., 2023; Mergel et al., 2019).

Theme 4. Operational Efficiency. Participants also noted that the Digitized Tuition Monitoring and Communication System improved the efficiency of routine administrative procedures. They added that the digitization process had reduced manual work, sped up the transactions and helped organize their work. "We can quickly check payment statuses, generate reports and make sure student accounts are posted correctly," Accounting Clerk said. This has removed the need for manual checking and errors have been greatly reduced.Participants reported that they had more time to respond to needs of students and to attend to other administrative duties because they spent less time on repetitive tasks. Their idea of efficiency was mostly being able to do routine stuff quicker and with less manual checking. The findings are in line with prior research on digital transformation and process innovation in organizations (Nambisan et al., 2017; Yanney et al., 2026).

Theme 5. User-Friendliness. Another Another theme was the ease of learning and use of the Digitized Tuition Monitoring and Communication System. Participants had varying experience with technology but most indicated that they could navigate the system with relative ease. It's fairly easy to check balances, view payment history and get account information with little technical know-how. However, some participants said they still were not familiar with some of the features of the system, meaning that they were not always using it to its full potential. Their experiences show that a simple user interface helps to achieve acceptance of the system, but that continuous training and technical support are still needed to help users exploit all its capacities. This interpretation corresponds to the literature linking usability to continued use in digital environments (Xu, 2025).

Theme 6. Leadership Support. The participants often acknowledged the role of institutional leadership in the effective implementation of the Digitized Tuition Monitoring and Communication System. Organizational commitment, supervisory support and administrative support were facilitators of user acceptance and continued implementation. The respondents also cited the management's willingness to invest in digital innovation and to provide strategic direction and support for organizational change as a major factor in the successful integration of the system to daily administrative operations. Generally, participants viewed leadership support as a major organizational facilitator of successful implementation of the system. Leadership support was described by the participants in terms of encouragement to use the system, commitment to implementation and willingness to invest in the digital initiative from the management. These experiences show that organizational support helped users to adapt to the system and to continue using it in everyday work. This is consistent with the research that points out the value of leadership and organizational commitment for digital transformation (Nambisan et al., 2017).

Theme 7. Accessibility. Another positive experience mentioned by the participants was access. They liked being able to get the information on tuition without having to go through the normal office-based process. Students could view their account information in any way they wanted while accounting staff could obtain the information they need to answer student questions. This was convenient for participants as financial information was easier to obtain and it was easier to conduct routine account monitoring . For them, this was one of the ways that the system increased access to financial services. Comparable results have been found in research linking accessibility to user engagement and service provision in digital settings (Jiang & Wang, 2026).

Theme 8. Automation. A number of the participants spoke of the significance of automation in the enhancements of financial administration. Automated reminders, payment notices and system generated updates meant consistent financial communications and less manual oversight. It would speed up routine admin work and reduce the risk of missed transactions, they said. Automation was most felt in system-generated reminders, payment notices and other automatic updates. These functions resulted in less manual follow-up and more consistent routine financial communication. This is consistent with prior work on digital process automation and organization innovation (Nambisan et al. 2017; Yanney et al. 2026).

Theme 9. Training Needs. Most users were happy with the Digitized Tuition Monitoring and Communication System, but some felt they needed more training. They said the users, who were not yet familiar with certain features of the system, needed more orientation, refresher sessions and practical demonstrations. Participants also felt that the training was useful for newly appointed staff that needed to learn how the system functioned. This means that as users become more comfortable with the system and its many features, training should continue. Other similar studies have also emphasized the significance of training and user readiness for the adoption of technologies (Bond et al., 2024).

Theme 10. Technical Glitches and System Reliability. Technical limitations were another concern expressed by participants. They reported occasional system glitches, slow processing and software errors especially during busy periods. "We have system glitches and slow loading, which takes longer to review student accounts," explained one Student Accounts Analyst, "being a Student Accounts Analyst. I also notice as a backup teller that most of the systems we use now get very slow especially during peak times like enrollment and examinations. These technical issues impact on our work speed and the overall system efficiency." An Accounting Clerk said that staff intervention was still necessary when problems occur, "Sometimes systems go down sometimes hence human intervention is still needed to trace and correct certain glitches. These experiences indicate that the substitution of human involvement for digitalization has not been achieved. When technical problems arose, personnel still had to find and fix them, so work could continue. The system was only as good as the people who could respond when problems arose, not the technology itself.

Participants said that these technical problems were not constant, but they could delay transactions and interrupt daily work. They also pointed out the need for regular system maintenance and technical support when problems arose. This means that even after the system has been implemented it must be looked after to keep it reliable. Other studies have also identified the significance of system quality and technical support for users' continuance use of digital information systems (Jiang & Wang, 2026; Xu, 2025).

Theme 11. Resistance to Change. Some respondents pointed out that not everyone was suited to the digital system. Some people found it a little bit of a challenge to switch from manual processes. Others needed more time and training before they felt comfortable with the system. Similar results were reported by Narsico and Narsico (2023) in a different service setting where initial resistance was observed but greater acceptance was demonstrated after the individuals observed the utility of the technology. In the present study participants felt that training and support would aid adjustment. Resistance among employees during digital change has also been reported in this other studies (Cieslak & Valor, 2025; Jalo & Pirkkalainen, 2024).

Theme 12. Payment Delays. The overall sentiment was the system was helpful to keep track of tuition but late payments were still happening. They said sometimes delays were due to students' financial situation, their response to reminders or sometimes system issues. Follow-up payments were aided by automated reminders but some students paid late or did not respond promptly. This means the system could assist the institution in monitoring payments but could not forecast the actual timing of student payments. Payment technologies also can facilitate payment behavior but people's responses and compliance with payment requirements is also affected by other factors (Dahlberg et al., 2015; Slade et al., 2015).

Development of Emergent Themes from Participants' Responses

To increase the transparency of the thematic analysis, Table 1 provides a summary of the iterative process from recurring patterns of participant responses to the emergence of the themes. Participants' narrative responses were subjected to systematic thematic analysis to identify common patterns of meaning, using Braun and Clarke's (2021) principles of reflexive thematic analysis and the practical application of Byrne (2022). The responses were then categorized into similar groups that reflect the common experiences and perceptions of the Digitized Tuition Monitoring and Communication Management System. The table also illustrates the essence of each theme, some example statements from participants that illustrate the interpretation, and the analytical insights that helped to discuss the findings.

Table 1 illustrates the systematic progression of the thematic analysis from recurring patterns in participant responses to higher order conceptual interpretations. The first column presents the recurring ideas that are consistently expressed among participants' narrative responses and the second column presents the emergent themes from the recurring ideas. The third column describes the core meaning or essence of each theme with illustrative participant statements that demonstrate how the themes were grounded into the data. The last column shows the analytical insights generated from the interpretation of the experiences of the participants in the context of digital transformation in higher education. The table together shows the analytic journey through which individual participant narratives were synthesized into coherent themes providing the empirical basis for the subsequent discussion of the findings and conceptual development of the Integrated Digital Financial Administration Framework (IDFAF).

Conceptual Development of the Integrated Digital Financial Administration Framework (IDFAF)

After the thematic analysis the emerging themes were further analyzed to find their conceptual relations and to develop a higher order representation of the findings of the study. The themes were strongly conceptually linked rather than discrete observations, and together they represented broader aspects of digital transformation in the monitoring of tuition and financial communications. This process of conceptual synthesis is illustrated in Table 2 where the emergent themes were integrated into higher order conceptual constructs which make up the Integrated Digital Financial Administration Framework (IDFAF). This synthesis gives a conceptualization of the relationships between the findings, which gives an empirical foundation for the proposed framework and complements the thematic description.

As shown in Table 2, the conceptual development of the Integrated Digital Financial Administration Framework (IDFAF) was a systematic process of conceptual abstraction whereby related emergent themes were synthesized into broader higher-order conceptual constructs. Each construct is a distinct, but related, dimension of digital financial administration that arose from the lived experiences of the participants and the interpretative analysis of the findings in the study. The second column contains emergent themes that together contribute to each construct. The third column provides the conceptual rationale for integrating them based on shared characteristics, underlying relationships, and common patterns of meaning. The last column presents the expected contribution of each construct to the institutional transformation. The results show how the development of digital technology, administrative processes, organizational practices, and continuous improvement together increase financial transparency, operational efficiency, service quality, and institutional sustainability. Together these higher order conceptual constructs provide the empirical base and conceptual underpinning of the Integrated Digital Financial Administration Framework (IDFAF) as shown in the next figure.

Table 2 shows a conceptual synthesis demonstrating that institutional digital transformation is not driven by a single technological intervention, but rather by the dynamic interplay of multiple organizational dimensions. The higher-order conceptual constructs of this study collectively illustrate how technological capabilities, administrative processes, organizational experiences and continuous improvement interact to facilitate effective digital financial administration and broader institutional transformation. These interrelationships are captured and depicted in the Integrated Digital Financial Administration Framework (IDFAF), which provides an empirically grounded conceptual model for understanding, implementing, and continuously improving digital financial administration in higher education institutions.

Table 1. Development of Emergent Themes from Participants' Responses

Recurring Participant Response Patterns	Emergent Theme	Essence of the Theme	Illustrative Participant Statements	Analytical Insight
Faster communication; Timely reminders; Instant notifications; Easy requests; Unified messaging; Quick replies	Improved Communication	Participants said the digitized system always resulted in faster, clearer, and more responsive communication between the Accounting Office and students.	*“Communication was much faster.” Students receive instant reminders. "It is easier to reply to questions. “Updates are sent on time."*	The digitized system improved institutional responsiveness by making financial communication faster, more consistent and more effective.
Instant balance checks; updated payment activity; real-time verification; online monitoring; current financial information	Real-time access to financial information	Participants’ reactions to immediate information about tuition balances, payments and financial updates, which enabled timely monitoring and decision making, were positive.	*“We can see payments instantly. “Balances are refreshed instantly. "Students can always check their accounts,"*	Immediate access to accurate financial information improved financial monitoring, reduced uncertainty and improved decision-making.
Financial records are visible, correct balances, fewer misunderstandings, more accountability, openness of information	Financial Transparency	Participants felt more open, accountable and confident as financial information became available and updated regularly.	*“Everything’s out in the open. “There is less confusion.” “Students can see their balances themselves."*	Transparency increased accountability and promoted confidence in financial management, which in turn promoted institutional trust.
Less paperwork, faster processing, structured workflows, streamlined processes, efficient record-keeping	Operational Efficiency	The digital processes eliminated repetitive manual work and accelerated routine administrative operations, participants said.	*"Manual labor has been reduced.” “Speed processing increased.” “Workflows are better organized."*	Digitalization changed the administrative processes leading to increased efficiency and allowing the staff to focus on higher value services.

Recurring Participant Response Patterns	Emergent Theme	Essence of the Theme	Illustrative Participant Statements	Analytical Insight
Easy to navigate, easy to use, easy to operate, easy to learn and intuitive features	User-Friendliness	Overall, participants found the system easy to learn and use, regardless of whether they had different levels of experience with technology.	*"The system is user-friendly." "Easy to navigate." "It is user-friendly."*	The ease of use promoted user acceptance and encouraged sustained utilization of the digital platform.
Administrative support; management commitment; institutional support; leadership involvement; implementation assistance	Leadership Support	Participants recognized the importance of management commitment and encouragement to the successful implementation of the system.	*"The system is supported by management." "Leadership encouraged us to use it." "The administration threw money at this project."*	Organizational commitment provided the institutional environment for successful digital transformation.
Convenient access; anytime availability; online accessibility; flexible information retrieval; remote access	Accessibility	Participants appreciated convenient access to tuition information regardless of time or location.	*"Students can check anytime." "Information is easily accessible." "Access is much more convenient."*	Accessibility enhanced service quality by making financial information readily available whenever needed.
Automated reminders; automatic notifications; system-generated reports; reduced manual follow-up; standardized processes	Automation	Participants also discussed the benefits of automated system functions in reducing manual work and improving consistency.	*"Reminders are automatic." "System sends notifications." "It takes less manual follow-up."*	Automation brought administrative consistency and cut down on repetitive manual work.
Guidance for users; training; further education; refresher courses; need for orientation; capacity building	Training Needs	Participants agreed that ongoing training would optimize system use and enhance user proficiency.	*"Training has to be increased." "Orientation should be better." "New users need to be guided."*	Digital transformation is successful only when paired with continuous capability development and technological innovation.
Occasional glitches, system errors, software interruptions, technical issues, maintenance concerns	Technical Glitches and System Reliability	Participants noted occasional technical issues that temporarily impacted daily operations.	"Sometimes the system locks up." "Sometimes there are glitches." Due to system	It is important to have a stable technology system in place to ensure trust and smooth operations.

Recurring Participant Response Patterns	Emergent Theme	Essence of the Theme	Illustrative Participant Statements	Analytical Insight
			errors, transactions are delayed."	
Hesitant with technology; likes to do things by hand; has difficulty adapting; doesn't want to embrace change	Resistance to Change	Several participants noted that some users were initially resistant to the change to new digital processes because of unfamiliarity or a preference for prior practices.	*"Some workers still like to do manual work." "Others are reluctant to use the system."*	Organizational transformation is key and that means successful change management for both technology and behavior.
Late payments, late compliance, inconsistent response to reminders, external financial constraints	Payment Delays	Respondents acknowledged the system's capability to aid with payment tracking but stated that payment delays were partly due to user actions and external factors.	*"There are still some students who pay late." "Occasional delays do still occur." "And reminders do help, but not everyone will."*	Digital systems help financial compliance but do not alone solve payment delays without institutional policies and user engagement.

Table 2. Conceptual Development of the Integrated Digital Financial Administration Framework (IDFAF)

Core Framework Component	Connected Emergent Themes	Rationale for the Alignment	Expected Contribution to Institutional Transformation
Digitized Tuition Monitoring and Communication System	Improved Communication; Immediate Access to Financial Information; Accessibility	These themes explain the technological capabilities that allow efficient monitoring and communication between the institution and its stakeholders.	Provides timely, accessible and reliable financial communications.
Digital Administrative Processes	Operational Efficiency, Automation, Financial Transparency	These themes indicate improvements in administrative workflows, process standardization and organizational accountability through digital implementation.	Increases administrative efficiency, consistency and transparency.
User and Organizational Experience	User-Friendliness; Support from Leadership	These themes reflect the human and organizational conditions that influence successful technology adoption and continued use.	Supports organizational commitment and user acceptance of digital transformation.
Continuous Improvement	Training Needs; Technical Glitches and System Stability; Resistance to Change; Delays in Payments	These themes suggest challenges and opportunities that encourage continued improvement of the system, organizational practices, and user competencies.	Supports organizational learning and long-term sustainability of digital initiatives.
Institutional Transformation	Synthesis of all emergent themes.	Institutional transformation represents the cumulative outcome of the interaction among technological capabilities, administrative processes, organizational experiences, and continuous improvement.	Enhances institutional effectiveness, transparency, responsiveness, and service quality.

Integrated Digital Financial Administration Framework (IDFAF)

The results above suggest that the implementation of a Digitized Tuition Monitoring and Communication System is a process of organizational change. It is more than the adoption of new technologies. Digital transformation in higher education is an organizational process that includes technology, people, processes and institutional strategy and not just the adoption of digital technologies (Gkrimpizi et al., 2024; Tiwari, 2024).

Although the themes described in the above sections characterize different aspects of participants' experiences, they do not represent discrete phenomena. Instead, they construct a coherent sequence of events in which digital technologies transform administrative practices, shape user experiences, foster organizational learning, and trigger ongoing institutional enhancement. Such interrelations imply that successful digital transformation is maintained by an iterative process of organizational adaptation and not a one-time implementation event (Gkrimpizi et al., 2024).

To provide a cohesive conceptual view of these findings, the Integrated Digital Financial Administration Framework (IDFAF) proposed in this study is presented in Figure 1. It characterizes the digital financial management as a dynamic process, which develops in the constant interaction of technological systems, administrative processes, organizational experience, institutional learning and organizational transformation. This interaction causes a smooth cycle of innovation and a continuous process of development in higher educational institutions. This conceptualization is in line with recent digital transformation frameworks emphasizing the dynamic integration of the technological, organizational and strategic dimensions (Tiwari, 2024).

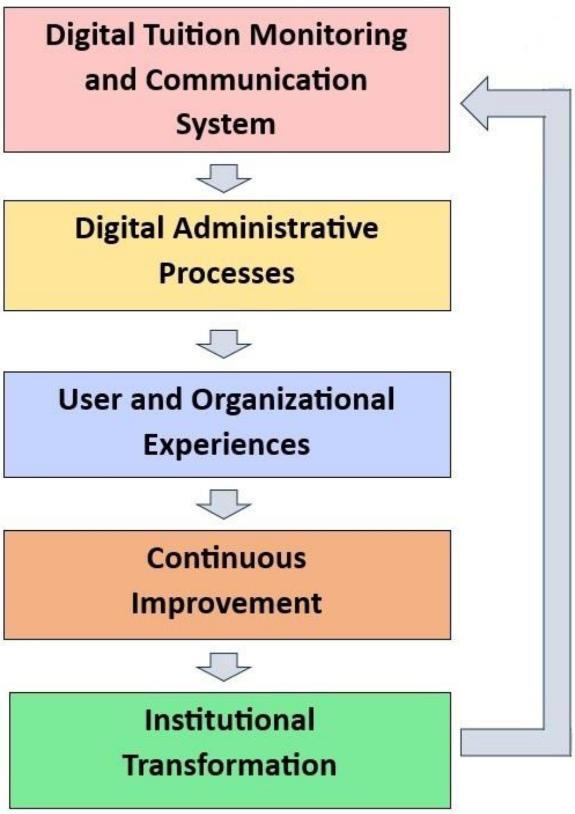

Figure 1. Integrated Digital Financial Administration Framework (IDFAF)

Digitized Tuition Monitoring and Communication System. The framework begins with the Digitized Tuition Monitoring and Communication System, a technology enabler for institutional digital transformation. The system is the core technology platform providing real time tuition monitoring, centralized financial records, automated communication and enhanced access to financial information for both administrative staff and students. However, rather than being an information system, it constructs the digital infrastructure on which the performance of modern financial administration is enacted; and therefore, it provides organizational capabilities that enable more responsive, transparent and efficient institutional operations (Vial, 2019). This is consistent with the prevailing view that digital technologies are the main drivers of institutional change, providing the technological basis on which administrative innovation and organizational change are built (Gkrimpizi et al., 2024).

Digital Administrative Processes. There were some administrative tasks that they thought could be improved on the digital platform. Everyday Tasks: Tuition Monitoring, Financial Communication, Transaction Processing, Information Access, etc. They thought that the system would reduce the manual work and enable to manage the records in these activities. Information can also be retrieved faster when needed. This could help staff respond to concerns and give the institution better information on which to base decisions. Similar benefits have been reported in digital systems in higher education (Coronel & Trigos, 2024; Bhardwaj & Kumar, 2025).

User and Organizational Experiences. The pros and cons of the system were part of the participants' daily work. They thought it would speed up some jobs, make information easier to access and make coordination easier." They had to learn how to use the system and how to handle the technical problems which occurred. They also needed help with the changes in their job. Experiences show that digital transformation is more than deploying a new system. It's about learning how to use it too, and how people make it work for their day-to-day work." This is consistent with research on effects of organizational culture, employee adaptation and human and technological aspects in digital transformation (Gkrimpizi et al., 2024; Verhoef et al., 2021).

Continuous Improvement. Continuous improvement. This of course creates opportunities for Continuous Improvement. Participants' feedback identified the need for technical improvements, more training for users, better policies, system reliability and more organizational support. These recommendations are not gaps but organizational learning and institutional responsiveness. In this regard, continuous improvement is how the institution improves the technology and administrative processes that form the backbone of financial management. This is in line with research that shows that continuous improvement is sustained through organizational learning, stakeholder engagement, leadership support and the constant development of digital processes (Kokkinou, 2024; Lucas et al., 2024).

Institutional Transformation. These interrelated processes together cumulatively result in Institutional Transformation. As digital technologies, administrative practices and organizational learning mature, the institution's financial services become transparent, tuition management efficient, communications responsive, governance improved and the approach to financial administration student-centered. From the current perspectives that understand digital transformation as a comprehensive institutional process that changes governance, organizational capabilities and strategic decision-making in higher education institutions (Gkrimpizi et al., 2024; Komljenovic et al., 2025), institutional transformation shows the broader organizational result of the combination of technological innovation and continuous organizational learning.

Integrated Digital Financial Administration Framework. The Integrated Digital Financial Administration Framework (IDFAF) is different from linear implementation models in that it recognizes that institutional change is not the end-point of the digital innovation journey.

Transformation also brings new organizational requirements, new user expectations, new technologies and new opportunities for further enhancement. These conditions result in better digital systems, and bring the organization back to the beginning of another innovation cycle. Thus, the Continuous Digital Innovation Loop shows that digital financial management is an evolving organizational capability that involves continuous learning, adaptation, refinement, and technological advancement, in line with recent viewpoints that digital innovation is a continuous capability development process rather than a finite implementation project (Ciasullo et al., 2024; Medeiros et al., 2024). This cycle allows institutions of higher education to continuously improve administrative effectiveness in response to changing organizational and stakeholder needs.

Integrative Discussion

The study found that the implementation of the Digitized Tuition Monitoring and Communication Management System is not only the adoption of a technological solution, but also a broader process of organizational change in higher education. This view is consistent with current academic thinking that views digital transformation as an integrated organisational process where technological capabilities, organisational practices, governance and human factors are all interacting on an ongoing basis and not as just the implementation of technology (Nadkarni & Prügl, 2021; Gkrimpizi et al., 2024). The emergent themes, while describing specific aspects of the participants' experiences, collectively interpreted an interconnected system where technological capabilities, administrative practices, organizational support, and continuous improvement work in synergy to improve institutional effectiveness . This transition, from the individual experiences to the higher-order conceptual constructs, created the empirical basis for the development of the Integrated Digital Financial Administration Framework (IDFAF), which represents a holistic view of digital financial administration as a developing organizational capability within higher education institutions (Gkrimpizi et al., 2024).

The Integrated Digital Financial Administration Framework (IDFAF) describes digital financial administration as a dynamic and iterative process, not a linear technology implementation. The framework begins with the Digitized Tuition Monitoring and Communication System which offers the technological infrastructure to support financial monitoring and institutional communication. The infrastructure allows institutions to improve Digital Administrative Processes by enhancing operational efficiency, financial transparency, automation and standardized workflows. However, user experience, leadership commitment, and organizational readiness do influence these process improvements. This shows that digital transformation success is as much about human and organizational factors as it is about technology capabilities. This is in line with studies that have shown that sustainable digital transformation is not a result of the implementation of technology but the result of the combination of digital technologies, organizational capabilities, leadership and employee adaptation (Warner & Wäger, 2019; Verina & Titko, 2019).

The framework also identifies Continuous Improvement as a key part of sustainable digital transformation. The participants' experiences related to training needs, technical system reliability, resistance to change and payment delays show that digital systems need to be continuously refined to respond effectively to changing institutional needs and user expectations. Instead of considering such challenges as implementation failures, the framework sees them as opportunities for organizational learning and continuous improvement. This perspective reinforces the principle that successful digital transformation is sustained through continuous evaluation, organizational learning, adaptive capability development, and institutional commitment, in line with contemporary research emphasizing that digital transformation is an evolving organizational journey characterized by continuous learning, experimentation, and strategic adaptation (Correani et al., 2020).

The framework demonstrates how the interaction between all previous constructions can give rise to institutional transformation. Better communication, transparency, accessibility, operational efficiency and organizational support lead to improved administrative effectiveness, better service quality, higher accountability and increased stakeholder confidence More important, the cyclical nature of the Integrated Digital Financial Administration Framework (IDFAF) suggests that institutional transformation is not a destination but a process where organizational experiences always inform further technological and administrative upgrades. This view is consistent with recent literature that frames digital transformation as a dynamic organisational capability sustained through continuous adaptation, governance improvement, organisational learning and strategic renewal, rather than a one-off technological implementation (Hanelt et al., 2021; Komljenovic et al., 2025).

The research suggests a paradigm on the organizational, technological and human aspects of digital financial administration. It contributes theoretically to the burgeoning literature on digital transformation in higher education. This view is in line with the recent literature that sees digital transformation as the convergence of organizational structures, technological capabilities and strategic processes rather than the mere implementation of technology (see Matt et al., 2015; Bond et al., 2024). The Integrated Digital Financial Administration Framework (IDFAF) provides an alternative to the largely technology-centred approaches to implementation and demonstrates how institutional change occurs through interaction between various organizational elements in the context of participants' lived experiences. The framework serves as a conceptual guide for higher education institutions for the design, implementation, evaluation and iterative improvement of systems for digital tuition monitoring and communication in practice. The framework was developed within an institution but may be of use to other higher education institutions wishing to harness digital innovation to improve financial management, transparency and administrative efficiency. Further research may also validate, refine and extend the framework to other institutional settings and educational contexts.

Limitations of the Study

Electronic open-ended survey approach also has the limitations. It did allow the participants to respond at a time of their convenience and to give a written account of their experiences. It did not allow the opportunity for real-time probing or follow-up questions that may have clarified or developed some responses further. So the results reflect how much depth and detail the participants chose to write about. Future research could combine open-ended surveys with in-depth interviews (face-to-face or virtual) to further investigate specific experiences and emergent themes.

Conclusion

This qualitative case study investigated the participants' experiences of the implementation of the Digitized Tuition Monitoring and Communication Management System in a higher education institution. Reflexive thematic analysis revealed twelve emergent themes of improvement in communication, accessibility, transparency, operational efficiency, user experience, leadership support, automation, and organizational learning, as well as remaining challenges related to training, technical reliability, resistance to change, and payment delays. These findings together show that digital financial management is not only about technological innovation but also about organizational adaptation and ongoing institutional development.

Based on these empirical findings, the study developed the Integrated Digital Financial Administration Framework (IDFAF) that joins the relationships between digitized tuition monitoring and communication systems, digital administrative processes, user and organizational experiences, continuous improvement, and institutional transformation. The framework offers a conceptual depiction of the collective contribution of these interrelated dimensions towards efficient digital financial administration in higher education.

This study makes an empirical and conceptual contribution by documenting participants' experiences and providing a data-driven framework for future research and institutional practice. The results suggest that successful digital transformation depends on continuous leadership support, continuous capability development, reliable technological infrastructure and continuous organizational learning. We suggest future research to investigate the applicability of the IDFAF in different institutional contexts and to further validate and refine the framework using additional qualitative, quantitative, or mixed-methods approaches.

Acknowledgement

The author wishes to express sincere gratitude to the administrators, the accounting staff and all respondents who readily shared their experiences and opinions during the course of this study. This research would not have been successfully completed without their invaluable contributions. The author would like to express his deepest gratitude to his colleagues, mentors, family and the Cebu Institute of Technology – University for their encouragement, guidance and unfailing support during the conduct of this research. Finally the author is grateful to Almighty God for his guidance and blessings. His providence and grace have always been a source of strength and inspiration in this pursuit of academic endeavor.

References

AlDreabi, H., Al Twahya, F. K. A., Alzboun, N., Anabtawi, M., Abu Ghaboush, R., Alhur, M., & Alshurideh, M. (2024). The role of digital communication in developing administrative work in higher education institutions. *International Journal of Data and Network Science, 8*(2), 1261–1274. https://doi.org/10.5267/j.ijdns.2023.11.008

American Psychological Association. (2017). *Ethical principles of psychologists and code of conduct*. https://www.apa.org/ethics/code

Andres, J. L., Narsico, L. O., & Narsico, P. G. (2024). Digitization of microfinancing operational procedures. *International Journal of Multidisciplinary: Applied Business and Education Research, 5*(2), 563–574. https://doi.org/10.11594/ijmaber.05.02.17

Bhardwaj, V., & Kumar, M. (2025). Transforming higher education with robotic process automation: Enhancing efficiency, innovation, and student-centered learning. *Discover Sustainability, 6*, Article 356. https://doi.org/10.1007/s43621-025-01198-6

Bond, M., Khosravi, H., De Laat, M., Bergdahl, N., Negrea, V., Oxley, E., Pham, P., Chong, S. W., & Siemens, G. (2024). A meta systematic review of artificial intelligence in higher education: A call for increased ethics, collaboration, and rigour. *International Journal of Educational Technology in Higher Education, 21*(1), Article 4. https://doi.org/10.1186/s41239-023-00436-z

Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a qualitative research tool. *International Journal of Social Research Methodology, 24*(6), 641–654. https://doi.org/10.1080/13645579.2020.1805550

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & Quantity, 56*(3), 1391–1412. https://doi.org/10.1007/s11135-021-01182-y

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. *Journal of Research in Nursing, 25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Ciasullo, M. V., Lim, W. M., Troisi, O., Douglas, A., & Palumbo, R. (2024). Organizational capabilities for digital innovation: A systematic literature review. *European Journal of Innovation Management, 28*(7), 3024–3048. https://doi.org/10.1108/EJIM-02-2024-0227

Cieslak, V., & Valor, C. (2025). Moving beyond conventional resistance and resistors: An integrative review of employee resistance to digital transformation. *Cogent Business & Management, 12*(1), Article 2442550. https://doi.org/10.1080/23311975.2024.2442550

Coronel, R., & Trigos, F. (2024). Reframing higher education management: A transdisciplinary digital framework for university administration. In A. Cooper et al. (Eds.), *Engineering for Social Change: Proceedings of the 31st ISTE International Conference on Transdisciplinary Engineering* (Advances in Transdisciplinary Engineering, Vol. 60, pp. 947–956). IOS Press. https://doi.org/10.3233/ATDE240950

Correani, A., De Massis, A., Frattini, F., Petruzzelli, A. M., & Natalicchio, A. (2020). Implementing a digital strategy: Learning from the experience of three digital transformation projects. *California Management Review, 62*(4), 37–56. https://doi.org/10.1177/0008125620934864

Dahlberg, T., Guo, J., & Ondrus, J. (2015). A critical review of mobile payment research. *Electronic Commerce Research and Applications, 14*(5), 265–284. https://doi.org/10.1016/j.elerap.2015.07.006

Fernández, A., Gómez, B., Binjaku, K., & Meçe, E. K. (2023). Digital transformation initiatives in higher education institutions: A multivocal literature review. *Education and Information Technologies, 28*, 12351–12382. https://doi.org/10.1007/s10639-022-11544-0

Gkrimpizi, T., Peristeras, V., & Magnisalis, I. (2024). Defining the meaning and scope of digital transformation in higher education institutions. *Administrative Sciences, 14*(3), 48. https://doi.org/10.3390/admsci14030048

Guo, L., Fang, M., Liu, L., Chong, H., Zeng, W., & Hu, X. (2025). The development of disaster preparedness education for public: A scoping review. *BMC Public Health, 25*, 645. https://doi.org/10.1186/s12889-025-21664-0

Hanelt, A., Bohnsack, R., Marz, D., & Marante, C. A. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. *Journal of Management Studies, 58*(5), 1159–1197. https://doi.org/10.1111/joms.12639

Hyett, N., Kenny, A., & Dickson-Swift, V. (2014). Methodology or method? A critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-being, 9*(1), Article 23606. https://doi.org/10.3402/qhw.v9.23606

Jalo, H., & Pirkkalainen, H. (2024). Effect of user resistance on the organizational adoption of extended reality technologies: A mixed methods study. *International Journal of Information Management, 75*, 102731. https://doi.org/10.1016/j.ijinfomgt.2023.102731

Jiang, Q., & Wang, Y. (2026). Strategic digital transformation in higher education financial shared services: Insights from big data analytics. *Complexity, 2026*, Article 5577880. https://doi.org/10.1155/cplx/5577880

Kokkinou, A. (2024). Enablers and inhibitors of digitalization as part of continuous improvement. *International Journal of Lean Six Sigma, 15*(7), 1415–1434. https://doi.org/10.1108/IJLSS-08-2023-0146

Komljenovic, J., Sellar, S., & Birch, K. (2025). Turning universities into data-driven organisations: Seven dimensions of change. *Higher Education, 89*(5), 1369–1386. https://doi.org/10.1007/s10734-024-01277-z

Lucas, R. C., Matheis, T. K., Vieira, K. M., & Klein, L. L. (2024). Determinants of continuous improvement in higher education institutions: A multidimensional analysis. *Revista Gestão Universitária na América Latina (GUAL), 17*(1).

https://doi.org/10.5007/1983-4535.2024.e95425

Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering, 57*(5), 339–343. https://doi.org/10.1007/s12599-015-0401-5

Medeiros, R. M., Petrillo, A., De Felice, F., & Cioffi, R. (2024). Using dynamic capabilities to cope with digital transformation and boost innovation in traditional banks. *Business Horizons, 67*(4), 317–330. https://doi.org/10.1016/j.bushor.2024.03.006

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly, 36*(4), Article 101385. https://doi.org/10.1016/j.giq.2019.06.002

Nadkarni, S., & Prügl, R. (2021). Digital transformation: A review, synthesis and opportunities for future research. *Management Review Quarterly, 71*(2), 233–341. https://doi.org/10.1007/s11301-020-00185-7

Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly, 41*(1), 223–238. https://doi.org/10.25300/MISQ/2017/41:1.03

Narsico, L. O., & Narsico, P. G. (2023). Customer preference shift: A laundry shop experience. *International Journal of Multidisciplinary: Applied Business and Education Research, 4*(12), 4160–4167. https://doi.org/10.11594/ijmaber.04.12.01

Slade, E. L., Williams, M. D., Dwivedi, Y. K., & Piercy, N. C. (2015). Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing, 23*(3), 209–223. https://doi.org/10.1080/0965254X.2014.914075

Tiwari, S. P. (2024). *Digital transformation framework for higher education: Principles, guidelines, and actionable recommendations*. *International Journal of Social Science Research and Review, 7*(9), 132–139. https://doi.org/10.47814/ijssrr.v7i9.2299

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research, 122*, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Verina, N., & Titko, J. (2019). Digital transformation: Conceptual framework. In *Contemporary Issues in Business, Management and Economics Engineering 2019* (pp. 9–16). Vilnius Gediminas Technical University. https://doi.org/10.3846/cibmee.2019.073

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems, 28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning, 52*(3), 326–349. https://doi.org/10.1016/j.lrp.2018.12.001

Xu, R.-H. (2025). Making higher education market through open data platform: Digital educational governance and struggling universities. *Higher Education Policy*. https://doi.org/10.1057/s41307-025-00405-3

Yanney, E., Yarkoh, J., Fiave, J. B. K., & Mensah, D. K. (2026). Digital transformation and revenue collection efficiency in public universities: The mediating roles of operational efficiency and user satisfaction in Ghana. *Future Business Journal, 12*, Article 157. https://doi.org/10.1186/s43093-026-00856-z

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). SAGE Publications.