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Implementation of the Technology Acceptance Model (TAM) in the Student Registration System (SIRAMA)

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ABSTRACT

In order to assess the variables impacting Telkom University users' acceptability and desire to continue using the system, this research looks at how the Technology acceptability Model (TAM) was implemented in the Student Registration System (SIRAMA). The findings, which were obtained using a Structural Equation Modeling (SEM) technique, show that students' opinions of the system's utility and usability are greatly influenced by the quality of the information, innovation, and services provided. These opinions, in turn, have an impact on the students' desire to continue using the system. In particular, perceived utility and usability are how innovation and service quality affect continuing intention. However, there is no discernible relationship between system and information quality and continuing intention, either directly or indirectly through perceived utility or usability. The denial of system and information quality-related assumptions suggests a lack of knowledge of conventional quality measurements in technology adoption. These results demonstrate how crucial innovation and service elements are to boosting the educational sector's systems' sustained usage.

Keywords: Technology Acceptance Model (TAM), continuance intention, information quality, innovation quality, system quality, service quality, perceived usefulness, perceived ease of use, Structural Equation Modeling (SEM).

1. Introduction

Originally created by Davis in 1989, the Technology Acceptance Model (TAM) provides a fundamental framework for comprehending how consumers adopt and use new technologies. According to this paradigm, users' attitudes about technology are greatly influenced by their perceptions of its utility and usability, which in turn have an impact on their behavioral intentions to use it (Riantini & Vional, 2018; Arif, 2023). The use of TAM in higher education may be very instructive when analyzing the acceptance of registration applications by instructors and students, since these tools are becoming more and more essential for effectively managing academic procedures. Understanding user acceptance, therefore, becomes crucial for their successful deployment.

In response to the growing digital transformation in education, institutions like Universitas Telkom have adopted robust digital tools for academic management. One such tool is SIRAMA, the university’s student registration system. SIRAMA was

introduced to address challenges with registration previously managed by the iGracias platform, which struggled to support the rising student numbers. Despite improvements, SIRAMA still faces usability issues that hinder its effectiveness. This research aims to assess the acceptance of SIRAMA and identify the key factors affecting user satisfaction and intention to continue using the platform through the TAM framework.

Recent studies highlight the applicability of TAM across educational settings, underscoring its relevance in assessing technology acceptance among university students and faculty (Cao, 2023; Mambu et al., 2019). For instance, research on the integration of artificial intelligence in educational tools shows that students' acceptance is heavily influenced by their perceptions of the technology's usefulness and ease of use (Cao, 2023). Similarly, the adoption of mobile technologies in universities has been analyzed using TAM, revealing that these factors are crucial in determining how students and lecturers engage with new systems (Prieto et al., 2016).

Moreover, TAM has proven valuable in evaluating user acceptance of various information systems, including academic information systems, which demonstrates its versatility across domains (Arif, 2023; Susanto et al., 2021). The model's emphasis on user perceptions aligns well with the needs of educational institutions, where the successful implementation of systems like SIRAMA relies on the willingness of students and lecturers to adopt these technologies. By examining the constructs of TAM, stakeholders can identify barriers to acceptance and develop strategies to enhance user engagement, ultimately facilitating smoother transitions to new technological solutions in academic environments (Hutomo, 2023; Purnama & Ginardi, 2019).

2. Literature Review and Hypothesis Development

Information Systems and Academic Information Systems

Information systems (IS) are integral to modern organizations, facilitating the management and dissemination of information across various sectors, including education. Academic Information Systems (AIS) specifically cater to the educational sector, providing software solutions that streamline administrative tasks related to academic activities. These systems manage critical functions such as student data, course schedules, grades, and reporting (Yudini et al., 2022). The implementation of AIS has been shown to enhance the effectiveness of academic management, enabling institutions to improve their service delivery and operational efficiency (Octaviany, 2023; H et al., 2021).

The role of AIS extends beyond mere data management; it serves as a communication bridge among students, faculty, and administrative staff, thereby fostering a collaborative educational environment (Octaviany, 2023; Sarmadi et al., 2017). The integration of information and communication technologies within AIS has been highlighted as a crucial factor in addressing challenges related to knowledge sharing and accessibility in higher education (Sarmadi et al., 2017; Utomo et al., 2017). Furthermore, the adaptability of AIS to evolving educational needs underscores its importance in maintaining academic quality and relevance in a rapidly changing technological landscape (Utomo et al., 2017; Legistia et al., 2022).

Importance of Academic Information Systems

The significance of AIS in higher education cannot be overstated. These systems play a pivotal role in enhancing the quality of academic services, which is essential for student satisfaction and institutional reputation (H et al., 2021; Manuari, 2023). By providing timely and accurate information, AIS supports decision-making processes at various levels, from administrative functions to academic planning (Umaroh & Barmawi, 2021). Moreover, the effective management of academic information contributes to the overall strategic performance of educational institutions, enabling them to achieve their educational goals (Umaroh & Barmawi, 2021).

The quality of AIS directly impacts user satisfaction and the perceived value of the services provided. Institutions that invest in high-quality AIS are likely to experience improved operational outcomes and enhanced educational experiences for students and faculty alike (Manuari, 2023; Suryanto et al., 2016). The alignment of AIS with institutional objectives and user needs is crucial for maximizing its benefits and ensuring its sustainability (Sa'diah et al., 2021; Ramadhan, 2018).

System Quality, Information Quality, Service Quality and Innovation Quality

As stated in the DeLone and McLean IS effectiveness Model, the system, information, and service quality lenses are frequently used to assess the effectiveness of AIS (Muslimin et al., 2017). The AIS's technical performance, including its dependability, usability, and accessibility, is referred to as system quality. To guarantee that users can interact with the system efficiently and without facing major obstacles, high system quality is necessary (Suryanto et al., 2016; Yindrizal, 2023).

The timeliness, accuracy, and relevancy of the data that the AIS provides are all components of information quality. Users' happiness and continuous usage of the system are strongly impacted by their expectations that the information they receive is accurate and relevant to their requirements (Manuari, 2023; Ramadhan, 2018). On the other side, service quality refers to the help and support that users receive, which has a big impact on how they feel about the AIS overall (Manuari, 2023; Suryanto et al., 2016).

Quality of innovation in course registration systems refers to the effectiveness and relevance of technological advancements that facilitate the registration process. The work of Feng et al. emphasizes that the quality of e-learning materials and student evaluations are crucial for the success of web-based courses, suggesting that high-quality innovations in course registration can significantly enhance student engagement and satisfaction Feng et al. (2017). Similarly, Kavadella et al. highlight the importance of learning management systems (LMS) in providing a comprehensive educational platform that supports various functionalities, including course registration, which directly impacts the quality of the educational experience (Kavadella et al., 2011).

Moreover, the integration of innovative features in course registration systems can improve user satisfaction and streamline the registration process. For instance, Faraj and Ali present a system designed to assist students in making informed course selections based on personal and social constraints, thereby enhancing the quality of the registration experience (Faraj & Ali, 2021). This aligns with the findings of

Tchouakeu et al., who assert that usability is a critical factor in the success of online course registration systems, as it directly influences user satisfaction and the perceived quality of the system (Tchouakeu et al., 2012).

Technology Acceptance Model (TAM)

One well-known paradigm for comprehending user adoption of technology, especially in educational settings, is the Technology adoption Model (TAM). According to TAM, the main factors influencing users' attitudes toward technology are perceived utility and perceived ease of use, which in turn affects their behavioral intentions to utilize it (Napitupulu et al., 2018). These notions are essential for evaluating how instructors and students see the usefulness and practicality of the systems put in place at their schools in the context of AIS.

Research has shown that when users perceive an AIS as useful and easy to navigate, their likelihood of continued engagement with the system increases significantly (Napitupulu et al., 2018). This acceptance is essential for the successful integration of technology in academic settings, as it determines the extent to which these systems can enhance educational processes and outcomes (Napitupulu et al., 2018). Moreover, understanding the factors that influence perceived usefulness and ease of use can help institutions tailor their AIS to better meet user needs, thereby fostering a more conducive learning environment (Napitupulu et al., 2018).

Perception of Usefulness and Ease of Use

The sense of utility and user-friendliness are critical factors influencing user adoption of course registration systems. The Technology Acceptance Model (TAM) posits that these impressions substantially affect students' willingness to participate with a system. Aguilar et al. assert that perceived utility and ease of use are pivotal elements influencing the degree to which students engage with educational technology, such as course registration systems (Aguilar et al., 2014). The research conducted by Ahmad et al. underscores that the perceived use of academic information systems can augment student involvement and boost academic achievement (Ahmad et al., 2020).

The perception of ease of use is particularly important in the context of course registration. Wu et al. emphasize that systems designed with user-friendly interfaces and intuitive navigation can significantly enhance the user experience, making it easier for students to register for courses. Although the specific reference for this claim was not provided, it is widely supported in usability literature. Additionally, Laghari discusses the development of an Automated Course Advising System that simplifies the course selection process, thereby improving the perceived ease of use

Continuance Intention

Continuance intention refers to the users' intention to continue using a particular system after its initial adoption. It is influenced by various factors, including user satisfaction, perceived usefulness, and the quality of the system and information provided (Muslimin et al., 2017; Suryanto et al., 2016). In the context of AIS, fostering a positive user experience is crucial for ensuring that students and faculty remain engaged with the system over time. Institutions can enhance continuance intention by addressing user feedback, improving system functionality, and ensuring that the

information provided is relevant and timely (Manuari, 2023; Umaroh & Barmawi, 2021).

The four primary quality factors—System Quality, Information Quality, Service Quality, and Innovation Quality—that affect the adoption and sustained usage of Academic Information Systems (AIS) are the subject of this study. System quality makes ensuring that AIS is responsive, easy to use, and works properly, which makes it easier for users to interact with the system. In order to give consumers accurate, pertinent, and current data to assist well-informed decision-making, information quality is essential. Support given to users is a component of service quality and has a big influence on how comfortable and easy it is to use the system.

Based on the Technology Acceptance Model (TAM), this study also emphasizes perceived usefulness and perceived ease of use as key factors that influence users' attitudes and intentions to continue using the Academic Information System (AIS).

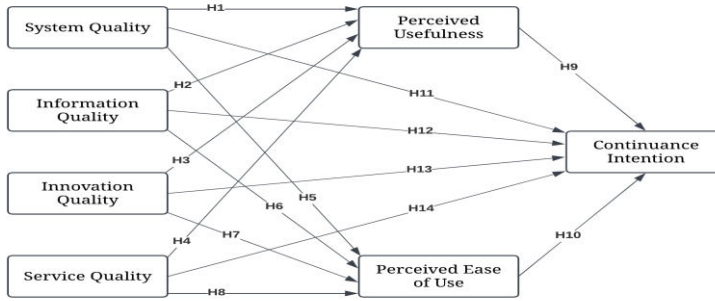

Fig. 1 Conceptual Framework

This study presents 22 hypotheses that investigate the direct and indirect impacts of system quality, information quality, innovation quality, and service quality on perceived usefulness, perceived ease of use, and continuance intention. The hypotheses encompass the direct effects of each quality dimension on perceived usefulness (H1–H4) and perceived ease of use (H5–H8), along with the effects of perceived usefulness and perceived ease of use on continuance intention (H9–H10). The study examines the direct effects of quality dimensions on continuance intention (H11–H14) as well as their indirect effects mediated by perceived usefulness (H15, H17, H19, H21) and perceived ease of use (H16, H18, H20, H22). This model seeks to analyze how different elements of academic system quality improve user experiences, influence perceptions of the system, and promote ongoing usage.

Studies demonstrate that system quality, information quality, innovation quality, and service quality have a significant impact on perceived usefulness, perceived ease of use, and continuance intention in the context of technology adoption. Chang (2013) highlighted that an effectively designed system improves user satisfaction and perceived value, consistent with the Technology Acceptance Model (TAM), which identifies perceived usefulness as a primary predictor of technology acceptance. Khambari et al. (2018) and Lee (2023) support the notion that perceived usefulness directly influences continuance intention, with expectation confirmation significantly shaping satisfaction and perceptions of usefulness.

Perceived ease of use is a significant factor in determining user intention. Yuan et al. (2014) and Oduor and Oinas-Kukkonen (2017) indicate that perceived usefulness is affected by ease of use, which subsequently influences continuation intention. Olivia and Marchyta (2022) demonstrated that the relationship between quality characteristics and continuation intention is mediated by ease of use, while also exerting a direct influence. Research conducted by Aigbogun et al. (2023) and Fong and Ho (2014) highlights the direct impact of perceived utility and service quality on continuation intention. Additionally, findings from Daud et al. (2018) and Zheng (2019) indicate that perceived usefulness and ease of use serve as mediators in the relationship between quality dimensions and continuance intention, thereby underscoring the interrelated nature of these variables within the model. The research hypotheses are formulated based on the theoretical foundation and empirical findings as follows:

H1 : System quality has a positive and significant effect on perceived usefulness

System quality significantly influences the perception of usefulness in academic registration systems in higher education, with dimensions such as reliability, usability, and performance contributing to user satisfaction. Research shows that good system quality enhances the perception of usefulness and satisfaction, as highlighted by Hizkia (2023), who emphasizes the impact of system quality on individual outcomes through ease of use and usefulness, and Mursidi et al. (2020), who link the quality of management systems to educational quality. Jo (2022) found that system quality positively affects satisfaction, while Al-Fraihat et al. (2020) show the relationship between system features and perceived usefulness in e-learning. Additionally, quality assurance systems, as discussed by Szymenderski et al. (2015) and Bwalya (2023), play a crucial role in improving teaching quality and educational outcomes, underscoring the importance of investing in high-quality educational systems.

H2 : Information quality has a positive and significant impact on perceived usefulness.

Information quality is a key factor influencing perceived usefulness in higher education academic registration systems, encompassing accuracy, relevance, and timeliness of the information provided. Research shows that high information quality enhances perceived usefulness. For example, Wickramaarachchi et al. (2021) found that perceived usefulness is positively correlated with dimensions of information quality, such as accuracy and relevance, in e-learning environments. Awuor and Wamae (2020) also emphasize that high-quality data entry improves service delivery and user experience, which is relevant for academic registration systems. Additionally, Sudana (2023) shows that effective information systems improve service quality and user satisfaction in higher education. The research by Ahmed et al. (2022) supports the importance of information technology in enhancing the quality of available information, thereby increasing perceived usefulness. Overall, high-quality information improves user satisfaction, builds trust, and contributes to better educational outcomes.

H3 : Innovation quality has a positive and significant effect on perceived usefulness

Innovation quality plays an important role in enhancing perceived usefulness in higher education academic registration systems. Research shows that higher innovation quality improves perceived usefulness. Naz et al. (2023) found that higher innovation quality is associated with improved perceptions of usefulness. Andreev (2023) emphasizes that innovative development in higher education can improve performance, aligning with the adoption of innovative registration systems in educational institutions. Schaeffer et al. (2018) explain that research universities driving innovation can enhance the quality of educational services, including academic registration systems. Eshbayev (2023) shows that educational technology supports innovation in registration systems, enhancing user engagement and satisfaction. Additionally, Chahal and Rani (2022) found that students' personal innovativeness is positively correlated with their acceptance of e-learning systems, which is also relevant for academic registration systems. Overall, innovation quality contributes to improved user satisfaction, engagement, and better educational outcomes.

H4 : Service quality has a positive and significant effect on perceived usefulness

Service quality significantly impacts perceived usefulness in academic registration systems in higher education, enhancing user satisfaction and engagement. Hizkia (2023), Akbar and Nurmahdi (2019), and Ghobehei et al. (2019) affirm that high quality services build trust and improve perceived usefulness. Studies by Sultan and Wong (2012), Tindage et al. (2023), and Al-Fraihat et al. (2020) support the importance of service quality in creating value and user satisfaction. in brief, service quality is a key factor for the success of academic systems.

H5 : System quality has a positive and significant effect on perceived ease of use

The quality of the system has a substantial impact on the perceived ease of use in academic registration systems within higher education. Hizkia (2023) emphasizes that system quality influences individual impact via perceived ease of use and usefulness. In addition, Almarashdeh et al. (2011) assert that high-quality systems promote user interaction, thereby improving ease of use in accordance with the TAM framework. Cidral et al. (2018) identified system quality as a significant determinant of perceived ease of use, subsequently affecting user satisfaction and engagement. Huang and Liaw (2018) demonstrated that the quality of interaction offered by a system enhances perceived ease of use. The literature indicates that system quality has a positive effect on perceived ease of use, which is crucial for enhancing user satisfaction and the effectiveness of academic services.

H6: Information quality positively and significantly influences perceived ease of use.

The quality of information has a significant impact on the perceived ease of use of academic registration systems in universities. Studies conducted by Peng and Fu (2018) and Fariha and DS (2021) indicate that the quality of information positively influences user satisfaction. Tam and Oliveira (2017) establish a direct relationship between information quality and ease of use, whereas Joo and Choi (2015) highlight the significance of information quality within academic library systems. Research by Chen (2011) and Chang (2013) indicates that information quality enhances user

satisfaction and perceived ease of use across different systems. Nurbani and Meiyanti (2019) found that both system quality and information quality influence user satisfaction.

H7: Innovation quality positively and significantly influences perceived ease of use.

The quality of innovation affects the perceived ease of use in academic registration systems. Buana and Linarti (2021) demonstrate that system quality improves the user experience. Park (2023) highlights the significance of usability in the adoption of technology. Kumar and Dami (2021) assert that innovation influences behavioral intention, yet it does not have a direct effect on ease of use. Taplak and Şener (2022) emphasize the significance of an innovative culture in mitigating resistance to change. Giri et al. (2019), Aisyah and Eszi (2020), and Wang et al. (2021) emphasize the significance of innovation in enhancing usability and user engagement. High-quality innovation facilitates technology adoption and enhances educational outcomes.

H8: Service quality positively and significantly influences perceived ease of use.

The quality of service has a positive impact on the perceived ease of use in academic registration systems. Studies conducted by Farhadi and Maroosi (2022) and Chen et al. (2016) indicate that service quality improves ease of use and user experience. Choi et al. (2013) assert that high service and system quality enhance satisfaction and usability. Hizkia (2023) identified that service quality influences individual outcomes via ease of use and usefulness, whereas Li et al. (2011) highlight the significance of service quality in e-learning systems. High service quality facilitates improved system adoption and enhances educational outcomes.

H9: The perceived usefulness positively and significantly influences continuance intention.

In university academic registration systems, perceived usefulness has a positive and significant effect on continuing intention. Liu's (2023) findings highlight the mediating role of perceived usefulness in the relationship between instructor influence and learners' continuation intention. Similarly, Khambari et al. (2018) provide evidence that perceived usefulness affects students' intention to persist in using MOOCs. Li et al. (2022) demonstrate that a higher perceived utility in online learning enhances both pleasure and the intention to continue. Islam (2011) highlights that perceived usefulness is the primary predictor of continued usage intention in e-learning systems, whereas Xu et al. (2022) identify the same trend for mobile health applications. Wu and Zhang (2014) and Huang et al. (2014) demonstrate that perceived usefulness interacts with perceived ease of use and information quality, thereby enhancing continuance intention. The literature indicates that perceived usefulness is crucial for maintaining engagement in academic registration systems.

H10: The perceived ease of use positively and significantly influences continuance intention.

The perceived ease of use (PEOU) significantly influences the intention to persist in utilizing academic registration systems within universities. Numerous studies indicate that user perception of a system's ease of use correlates positively with continued

usage. Tella and Olasina (2014) demonstrated that perceived ease of use (PEOU) significantly predicts users' intention to persist in utilizing electronic payment systems, a finding that is also relevant to academic systems. Zheng et al. (2023) and Jatimoyo et al. (2021) demonstrated that perceived ease of use influences continuance intention via its association with perceived usefulness. Furthermore, research by Alfani et al. (2023) highlights that user-friendliness improves students' overall experience, resulting in increased satisfaction and sustained engagement in academic systems. PEOU interacts with factors like perceived usefulness, as highlighted by Nguyen et al. (2020) and Kim & Kim (2020), emphasizing the significance of user-friendly system design in promoting sustained engagement.

H11: System quality positively and significantly influences continuance intention.

The intention to continue using student academic registration systems is positively and significantly influenced by the quality of the system. Research indicates that a high-quality system enhances user satisfaction, subsequently influencing the intention to continue usage. Misra et al. (2023) establish a significant correlation between user satisfaction and the intention to persist in product usage. Tella and Olasina (2014) emphasized the importance of ease of use in enhancing user satisfaction. Chang (2013) demonstrated that perceived value and user satisfaction are influenced by web quality, which encompasses system quality. The quality of information and the system significantly influence user happiness, as indicated by the DeLone and McLean Information Systems Success Model (Kim et al., 2012; Alzahrani et al., 2017). Research by Yang et al. (2022) and Joo & Choi (2016) indicates that user satisfaction and expectations concerning system performance affect continuance intention. High system quality is essential for promoting sustained engagement with digital platforms.

H12: Information quality positively and significantly influences Continuance Intention.

The quality of information significantly and positively affects the intention to continue using student academic registration systems. Studies indicate that high-quality information improves user satisfaction, subsequently influencing their intention to persist in using the system. Lwoga and Sife (2018) and Nabavi et al. (2016) demonstrate that information quality significantly influences the intention to continue usage. Chang (2013) demonstrated that information quality affects user satisfaction, a critical determinant of continuance intention. Joo and Choi (2016) demonstrate that information quality influences user satisfaction and the intention to continue utilizing the service. Misra et al. (2023) demonstrate a direct relationship between information quality and user satisfaction, as well as continued usage intention among students. This research demonstrates that high-quality information is crucial for enhancing user satisfaction and fostering ongoing engagement with academic registration systems.

H13: Innovation quality positively and significantly influences Continuance Intention.

The quality of innovation significantly impacts continuance intention in student academic registration systems, influencing user satisfaction and engagement. Research demonstrates that the quality of innovation, encompassing the relevance, effectiveness, and novelty of system features, is a significant predictor of continued

usage. Research conducted by Aldholay et al. (2018) and Zhang (2022) indicates that the quality of innovation improves user satisfaction and engagement, which subsequently increases the intention to continue usage. Alves et al. (2023) and Khan et al. (2019) highlight that innovative features addressing user needs enhance satisfaction and promote ongoing usage. Ramos et al. (2022) and Nawarathne (2015) emphasize that user satisfaction, influenced by the quality of innovation, promotes sustained engagement with the system. Quality innovation is crucial for educational institutions to maintain ongoing user engagement and satisfaction with academic registration systems.

H14: Service quality positively and significantly influences Continuance Intention.

The quality of service significantly influences the intention to continue using student academic registration systems. Studies indicate that elevated service quality improves student satisfaction, subsequently raising their likelihood of continued engagement with academic services. Prentice et al. (2018) demonstrate that service quality indirectly influences satisfaction via service value. Ahmed and Masud (2014) highlight the significance of administrative services and the responsiveness of academic staff in influencing students' experiences. Binnawas et al. (2019) demonstrated that the quality of higher education services impacts student happiness, subsequently influencing their behavioral intentions. Tan et al. (2021) assert that service quality is a critical determinant of student satisfaction, influencing continuance intention. Twaissi and Al-Kilani (2015) argue that higher education institutions need to deliver high-quality services to sustain their competitive advantage, a perspective endorsed by Ng et al. (2022). Mwiya et al. (2017) demonstrate that aspects of service quality, including reliability and empathy, are associated with student satisfaction and their behavioral intentions. High service quality is essential for promoting long-term engagement and retention in higher education environments.

H15: System quality exerts an indirect positive and significant influence on continuance intention via perceived usefulness.

The interplay among system quality, perceived usefulness, and continuance intention in student academic registration systems is essential for improving user satisfaction and promoting sustained usage. High-quality systems, defined by reliability, usability, and functionality, enhance user satisfaction, subsequently elevating perceived usefulness and the probability of ongoing engagement. Research conducted by Nurbani and Meiyanti (2019) and Sultono and Erizal (2016) indicates that system quality influences user satisfaction and perceived usefulness. Ejiofor and Okon (2018) highlight the necessity of integrating various departments to enhance system usefulness, a point corroborated by Bashir (2023) and Estevez et al. (2014), who underscore the significance of user feedback in augmenting system value. Technological advancements, including web-based platforms, enhance system quality and perceived usefulness, as demonstrated by Ahmed et al. (2022) and Tuhuteru and Siwalette (2022). The relationship among system quality, perceived usefulness, and continuance intention highlights the necessity of investing in effective academic registration systems to promote ongoing user engagement.

H16: System quality exerts an indirect positive and significant influence on continuance intention via perceived ease of use.

The relationship among system quality, perceived ease of use, and continuance intention in student academic registration systems underscores the significance of user experience. System quality, encompassing reliability, functionality, and user interface design, affects perceived ease of use, thereby impacting students' ongoing utilization of the system. Research demonstrates that perceived ease of use significantly impacts behavioral intentions regarding technology adoption, as illustrated in the Technology Acceptance Model (TAM). In this model, ease of use affects perceived usefulness, subsequently influencing continuance intention (Alassaf et al., 2015). Napitupulu et al. (2018) demonstrate that ease of use has a positive effect on behavioral intention. Ahmed et al. (2022) indicate that web-based registration systems improve efficiency, resulting in enhanced usability and a favorable user experience. Darmawan et al. (2022) highlight the significance of user interface design in enhancing user satisfaction and usability. The incorporation of academic advising systems can streamline the process, as noted by Faraj & Ali (2021), highlighting the relationship between system quality, usability, and intention to continue usage. Effective systems that emphasize user-friendliness are essential for promoting sustained participation in academic registration platforms.

H17: Information quality exerts an indirect positive and significant influence on continuance intention via perceived usefulness.

The quality of information significantly influences the intention to continue using student academic registration systems via perceived usefulness. Research indicates that high-quality information improves perceived usefulness, subsequently motivating users to persist in utilizing the system. Lwoga and Sife (2018) demonstrated that information quality affects the ongoing utilization of electronic resources. Li et al. (2011) found that information quality in e-learning systems enhances perceived usefulness and usage intention. Ariffin et al. (2021) and Eom & Ashill (2016) emphasize the significance of precise and pertinent information in improving users' intention to persist in utilizing the system. Chang (2013) demonstrates that information quality influences user satisfaction, which is essential for sustained engagement. High-quality information enhances perceptions of usefulness and the intention to persist in utilizing student academic registration systems.

H18: Information quality has an indirect positive and significant effect on continuance intention via perceived ease of use.

The correlation between information quality and continuance intention in student academic registration systems is significant, particularly as educational institutions progressively depend on digital platforms. Timely and accurate information during the registration process improves students' perceived ease of use, subsequently positively influencing their intention to continue utilizing the system. Bohler et al. (2023) demonstrated a correlation between early registration and improved academic outcomes among students. Moreover, effective academic advising and clear information enhance decision-making and academic performance, as indicated by Al-Ansari et al. (2015) and Ahmed et al. (2022). The incorporation of technology in academic advising enhances decision-making, as evidenced by Faraj and Ali (2021).

High-quality information influences user experience, academic performance, and enhances the likelihood of continued use of the registration system.

H19: Innovation quality exerts an indirect positive and significant influence on continuance intention via perceived usefulness.

The relationship between innovation quality and continuance intention in student academic registration systems is significant, as innovation quality indirectly affects students' intention to continue using the system via perceived usefulness. Research indicates that innovative features enhance user experience and functionality, thereby increasing perceived usefulness. Naz et al. (2023) demonstrated that increased perceived quality amplifies the effect of innovation on user satisfaction. Djauhari et al. (2020) highlighted that the incorporation of quality features into technology acceptance models enhances perceived usefulness, resulting in increased user engagement. Boone et al. (2012) emphasized the significance of perceived usefulness in the acceptance of new technologies, such as academic registration systems. Hsu and Chen (2015) observed that a favorable perception of innovation within the system enhances user engagement, thereby increasing the intention to continue usage. Kim et al. (2014) concluded that perceived quality is essential in technology adoption, indicating that students are more inclined to persist in using a system they deem innovative and useful.

H20: Innovation quality has an indirect positive and significant impact on continuance intention via perceived ease of use.

The association between innovation quality and continuance intention in student academic registration systems demonstrates that innovation quality has a positive effect on continuance intention via perceived ease of use. Research indicates that perceived ease of use serves as a significant mediator in this relationship. Franque et al. (2020) demonstrated that ease of use influences both satisfaction and continuance intention. Lin and Filieri (2015) established that perceived ease of use and perceived usefulness enhance the intention to continue utilizing the system. Saavedra (2023) noted that the quality of interaction and responsiveness in innovative technologies enhance the user experience. Cheng (2020) demonstrated that interactivity in academic registration systems enhances satisfaction and intention to continue using the system. Enhanced innovation quality positively influences perceived ease of use and the intention to continue using academic registration systems.

H21: Service quality has an indirect positive and significant effect on continuance intention via perceived usefulness.

The interrelationship among service quality, perceived usefulness, and continuance intention within student academic registration systems is significant. Studies indicate that elevated service quality can improve perceived usefulness, subsequently affecting the intention to persist in using the system. Gupta and Maurya (2020) demonstrated that elevated service quality in e-government services enhances continuance intention, paralleling findings in the academic context. Atmaji and Tjhin (2022) further assert that perceived usefulness serves as a mediator in the relationship between service quality and continuance intention. Furthermore, technology continuance theory (TCT) posits that perceived usefulness significantly influences continuance intention (Rahi

et al., 2020), a finding corroborated by Lee's (2023) research on MOOCs. Service quality improves user commitment, potentially leading to increased continuance intention (Seok & Park, 2019). Masa'deh et al. (2017) demonstrate that service quality influences students' behavioral intentions in the context of academic registration systems. Focusing on service quality allows educational institutions to improve perceived usefulness, which in turn enhances students' commitment and intention to persist in using these systems.

H22: Service quality exerts an indirect positive and significant influence on continuance intention via perceived ease of use.

The relationship among service quality, perceived ease of use, and continuance intention within student academic registration systems is significant. Service quality (SQ) has a significant impact on perceived ease of use (PEOU), which subsequently influences users' intention to continue utilizing the system. Djauhari et al. demonstrate that service quality affects perceived ease of use within technology acceptance models (Djauhari et al., 2020), a conclusion further corroborated by Farhadi & Maroosi (2022).

The Technology Acceptance Model (TAM) indicates that perceived ease of use serves as a mediator in the relationship between service quality and continuance intention (Zhou, 2011). Rahi et al. (2020) highlight the significance of usability in enhancing user satisfaction and commitment. Gupta and Maurya (2020) illustrate that enhancing service quality leads to increased user satisfaction, which in turn positively influences perceived ease of use and, subsequently, continuance intention.

3. Research Methodology

A questionnaire is used as a data gathering tool in this quantitative investigation. Assuming they have adequate decision-making skills and can offer lucid insights into the usability and advantages of the Sirama application for continuation intention, the questionnaire was sent to academic advisors and students from seven faculties at Telkom University. 400 respondents in all took part in the questionnaire distribution; however, 383 respondents were deemed eligible for analysis after 17 respondents were disqualified for failing to satisfy the requirements.

The probability sampling method—more especially, proportional stratified random sampling—is used in this investigation. This method is applied when the population is separated into proportionate strata and contains heterogeneous elements. The Cochran method was used to determine the sample size, and it showed that 381 respondents is the bare minimum needed. Consequently, the 381 responders that were gathered are thought to be adequate for data analysis.

The Technology Acceptance Model, or TAM, was created by Davis (1989) and expanded upon by Venkatesh et al. (2003). This paradigm is seen to be pertinent for analyzing how people react and behave when using technology, particularly when it comes to the adoption and use of IT systems. In this study, the TAM model is used to analyze the effect of perceived ease of use and perceived usefulness on continuance intention in the use of a digital academic registration system by students.

4. Results and Findings

The characteristics of the respondents in this study can be seen from several aspects, such as gender, faculty, and role. Based on gender, the respondents are almost evenly distributed between male (52%) and female (48%), with 200 male respondents and 183 female respondents, indicating a nearly equal proportion between the two genders. In terms of faculty, respondents are spread across various faculties, with the Faculty of Communication and Social Sciences and the Faculty of Economics and Business each having the highest number of respondents, at 18%. The Faculty of Applied Sciences and the Faculty of Creative Industries have 15% and 14% of respondents, respectively. This balanced distribution of faculties is important to ensure a diversity of perspectives in the analysis. Regarding roles, the majority of respondents are students (85%), while academic advisors (dosen wali) make up 15%. Although the number of academic advisors is smaller, their role remains important as they provide valuable insights related to academic guidance.

Table 1. Demographic profile of respondents

Profile	*Number of respondents*	*Percentages (%)*
Gender		
Male	200	52%
Female	183	48%
Faculty		
Communication and Social Sciences	70	18%
Economics and Business	68	18%
Applied Sciences	57	15%
Creative Industries	53	14%
Computer Science	51	13%
Industrial Engineering	43	11%
Electrical Engineering	41	11%
Role		
Guardian lecturer	59	15%
Student	324	85%

This research uses Partial Least Squares (PLS), processed with the SmartPLS4 software in Structural Equation Modeling (SEM), to examine the complex relationships between latent variables. PLS is chosen for its ability to handle data with multicollinearity and predict outcomes accurately. This study also aims to validate the theoretical model through PLS-SEM, which has proven effective in knowledge management studies (Cepeda‐Carrión et al., 2019; Hair et al., 2019).

PLS allows me to obtain latent variable scores, which are used for further analysis, such as regression modeling. This approach is relevant for research with complex data and follows the reporting guidelines set by Hair et al. (2019).

Outer model measurement results

The objective of the measurement model assessment at the outer model stage is to evaluate the validity and reliability of constructs representing attributes such as System Quality, Information Quality, Innovation Quality, Service Quality, Perceived Usefulness, Perceived Ease of Use, and Continuance Intention. Sarstedt et al. (2019) assert that this technique ensures the validity and reliability of each item within these parameters. The testing process employs three distinct measurement types: reliability, assessed through composite reliability; discriminant validity, evaluated via cross-loading, the Fornell-Larcker criterion, and the heterotrait-monotrait ratio (HTMT); and convergent validity, which encompasses factor loadings and average variance extracted (AVE) (Ghozali, 2016; Hair et al., 2017).

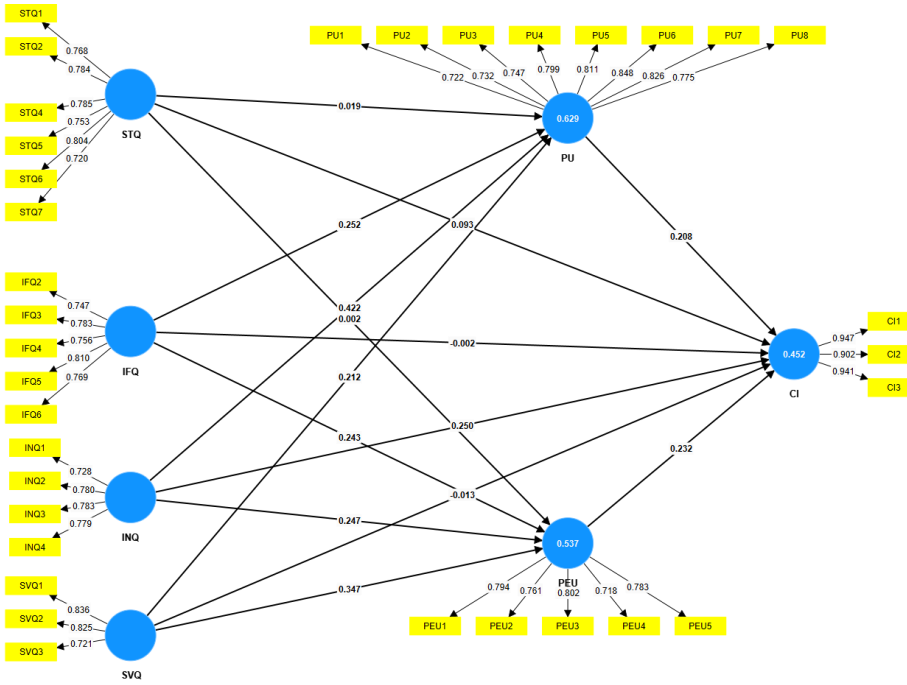

Figure 2. Outer Model Result

Source: Author's Processed Data (2024)

At this juncture, the evaluation of indicators is performed by analyzing the values of factor loadings and average variance extracted (AVE). Chin (1998), as referenced in Ghozali (2021), posits that an item is deemed valid if its factor loading falls between 0.5 and 0.6, which is typically regarded as sufficient, while a value exceeding 0.7 is classified as high. Furthermore, the average variance extracted (AVE) is regarded as possessing adequate convergent validity when its value surpasses 0.5 (Hair et al., 2019).

Table 2. Covergent Validity Results

Variabel	*Item Code*	*Factor Loadings*	AVE	Composite Reliabilty
Continuance Intention	CI1	0.947	0.865	0.951
	CI2	0.902		
	CI3	0.941		
Information Quality	IFQ2	0.747	0.598	0.881
	IFQ3	0.783		
	IFQ4	0.756		
	IFQ5	0.81		
	IFQ6	0.769		
Innovation Quality	INQ1	0.728	0.59	0.852
	INQ2	0.78		
	INQ3	0.783		
	INQ4	0.779		
Perceived Ease of Use	PEU1	0.794	0.596	0.881
	PEU2	0.761		
	PEU3	0.802		
	PEU4	0.718		
	PEU5	0.783		
Perceived Usefulness	PU1	0.722	0.614	0.927
	PU2	0.732		
	PU3	0.747		
	PU4	0.799		
	PU5	0.811		
	PU6	0.848		
	PU7	0.826		
	PU8	0.775		
System Quality	STQ1	0.768	0.592	0.897
	STQ2	0.784		
	STQ4	0.785		
	STQ5	0.753		
	STQ6	0.804		
	STQ7	0.72		
Service Quality	SVQ1	0.836	0.633	0.838

SVQ2	0.825
SVQ3	0.721

Table 3. Heterotrait–Monotrait Ratio

Variabel	CI	IFQ	INQ	PEU	PU	STQ
Information Quality	0.575					
Innovation Quality	0.707	0.809				
Perceived Ease of Use	0.65	0.773	0.754			
Perceived Usefulness	0.654	0.785	0.862	0.81		
System Quality	0.585	0.865	0.874	0.678	0.717	
Service Quality	0.589	0.884	0.784	0.859	0.798	0.8

Table 4. Fornell–Lacker

Variabel	CI	IFQ	INQ	PEU	PU	STQ	SVQ
Continuance Intention	**0.93**						
Information Quality	0.514	**0.773**					
Innovation Quality	0.601	0.653	**0.768**				
Perceived Ease of Use	0.576	0.643	0.612	**0.772**			
Perceived Usefulness	0.604	0.687	0.726	0.706	**0.784**		
System Quality	0.535	0.747	0.725	0.584	0.649	**0.77**	
Service Quality	0.48	0.683	0.591	0.66	0.646	0.64	**0.796**

Every variable in this study satisfies the requirements for discriminant validity, according to the analysis of the square root of Average Variance Extracted (AVE). The bolded figures, which reflect the Fornell-Larcker values, indicate much higher values than the AVE of other structures, supporting this conclusion. Furthermore, to successfully detect differences between two components, the Heterotrait-Monotrait Ratio (HTMT) values need to stay below 0.9 (Henseler et al., 2016). All associated variables in this investigation provide HTMT values below 0.9, indicating the existence of discriminant validity.

inner model measurement results

The analysis of the inner model utilizing Partial Least Squares is predicated on certain assumptions or conditions, notably the absence of multicollinearity issues (Hair et al., 2021). Specifically, inner Variance Inflation Factor (VIF) values are deemed to reflect a lack of multicollinearity among variables when they are below 5. The data presented in the preceding table demonstrates that the estimated inner VIF is less than 5, which

signifies a minimal degree of multicollinearity among the variables. Consequently, these findings suggest that the parameter estimation is reliable and unbiased.

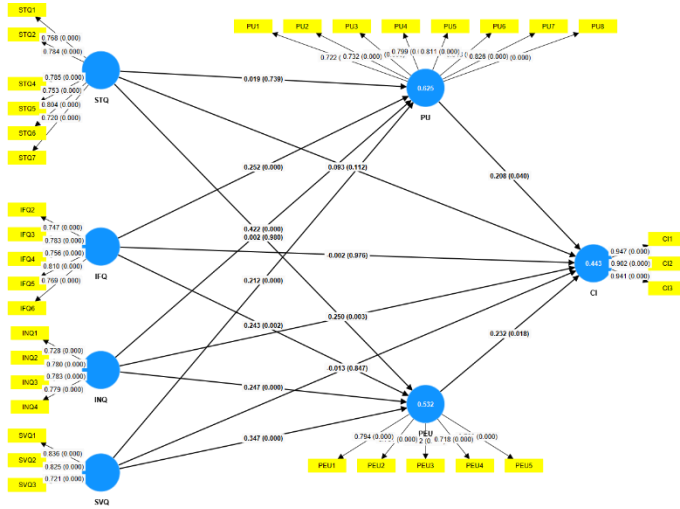

Figure 3. Inner Model Result

Source: Author's Processed Data (2024)

Before proceeding with further testing, the measurement model evaluation must be conducted, including the assessment of multicollinearity through the calculation of the Variance Inflation Factor (VIF). According to Hair et al. (2021), the inner model analysis in Partial Least Squares should not show multicollinearity issues. A VIF value of less than 5 indicates the absence of multicollinearity among variables. The table below presents the inner VIF values in this study.

Table 5. Results of Inner VIF Multicollinearity Test

Variable	Inner Variance Inflation Factor (VIF) Value
IFQ -> CI	3
IFQ -> PEU	2.773
IFQ -> PU	2.773
INQ -> CI	2.802
INQ -> PEU	2.3
INQ -> PU	2.3
PEU -> CI	2.415
PU -> CI	3.018
STQ -> CI	2.992
STQ -> PEU	2.991
STQ -> PU	2.991

SVQ -> CI	2.371
SVQ -> PEU	2.074
SVQ -> PU	2.074

Source: Processed Data (2024)

Based on Table 5, all Inner Variance Inflation Factor (VIF) values for each variable are below 5, indicating no multicollinearity issues among the independent variables in this model. In other words, the independent variables do not have strong relationships with each other that would interfere with the analysis results. This finding supports the robustness (non-bias) of the parameter estimation in SEM PLS.

Table 6: Results of R Square Test

Variabel Endogen	R Square
Continuance Intention	0.452
Perceived Ease of Use	0.537
Perceived Usefulness	0.629

Source: Processed Data (2024)

According to Table 6, the Continuance Intention variable's R Square value is 0.452, falling within the moderate range. This indicates that the independent variables in the model account for around 45.2% of the variability in Continuance Intention, with the remaining portion being impacted by extraneous factors. Next, with a R Square value of 0.537, the Perceived Ease of Use variable likewise belongs to the moderate range. This shows a rather excellent explanatory power, with the independent factors accounting for 53.7% of the variability in Perceived Ease of Use. Lastly, the R Square value of 0.629 for the Perceived Usefulness variable is around the high level. This means the independent variables have a strong influence in explaining 62.9% of the variability in Perceived Usefulness.

Table 7: Results of Q Square Test

Model fit	Value	Review
SRMR	0.069	Model Fit
NFI	0.782	Model Fit

Source: Processed Data (2024)

Based on the Q Square values above, all endogenous variables have positive values: Continuance Intention with a value of 0.377, Perceived Ease of Use with 0.52, and Perceived Usefulness with 0.614. Since all Q Square values are greater than 0, these three variables have predictive relevance. This indicates that the model has good predictive ability for the endogenous variables, meaning the independent variables can relevantly predict the variability of the endogenous variables in this model.

Table 8: Results of Model Fit Test

Endogenous Variable	Q square	Review
Continuance Intention	0.377	Assumably Fit
Perceived Ease of Use	0.52	Assumably Fit
Perceived Usefulness	0.614	Assumably Fit

The data presented in Table 8 shows that the SRMR value of 0.069 indicates the model is considered a good fit, as it is below the threshold of 0.10. Additionally, the NFI value of 0.782 categorizes the model as good, as it falls within the range of 0.00 to 1, with values closer to 1 reflecting higher quality. Based on the SRMR and NFI results, it can be concluded that the research model is viable and suitable for use.

Results of the structural model

The subsequent step involves hypothesis testing between variables through the analysis of the t-statistic or p-value. A t-statistic exceeding 1.96 (from the t-table) or a p-value less than 0.05 signifies a significant relationship between the variables. The results must also present the 95% confidence interval for the estimated path coefficient parameter. The f-square value, indicating the direct effect of a variable at the structural level, should be reported according to the following criteria: f-square 0.02 (low), 0.15 (moderate), and 0.35 (high) (Hair et al., 2021). The f-square statistic, known as the upsilon v statistic, is derived by squaring the mediation coefficient to assess mediation effects. Lachowicz et al. (2018), as interpreted by Ogbeibu et al. (2022), indicate that the mediation effect can be categorized as low (0.02), moderate (0.075), and high (0.175). The results of the hypothesis testing are presented below.

Table 9: Hypothesis Testing Results for Direct Effect

Hypothesis	Path Coefficient	p-value	95% Confidence Interval		f Square	Explanation
			Lower Bound	Upper Bound		
H1-*System Quality -> Perceived Usefulness*	0.019	0.739	-0.089	0.13	0.000	Rejected
H2-*Information Quality -> Perceived Usefulness*	0.252	0.000	0.132	0.372	0.062	Accepted
H3-*Innovation Quality -> Perceived Usefulness*	0.422	0.000	0.308	0.529	0.209	Accepted
H4-*Service Quality -> Perceived Usefulness*	0.212	0.000	0.113	0.316	0.059	Accepted
H5-*System Quality -> Perceived Ease of Use*	0.002	0.980	-0.116	0.132	0.000	Rejected
H6-*Information Quality -> Perceived Ease of Use*	0.243	0.002	0.092	0.398	0.046	Accepted
H7-*Innovation Quality -> Perceived Ease of Use*	0.247	0.000	0.131	0.356	0.057	Accepted
H8-*Service Quality -> Perceived Ease of Use*	0.347	0.000	0.215	0.468	0.125	Accepted
H9-*Perceived Usefulness -> Continuance Intention*	0.208	0.04	0.014	0.417	0.026	Accepted
H10-*Perceived Ease of Use -> Continuance Intention*	0.232	0.018	0.043	0.429	0.041	Accepted
H11-*System Quality -> Continuance Intention*	0.093	0.112	-0.022	0.21	0.005	Rejected
H12-*Information Quality -> Continuance Intention*	-0.002	0.976	-0.16	0.145	0.000	Rejected
H13-*Innovation Quality -> Continuance Intention*	0.25	0.003	0.08	0.411	0.041	Accepted
H14-*Service Quality -> Continuance Intention*	-0.013	0.847	-0.142	0.121	0.000	Rejected

Based on the hypothesis testing results presented, it can be concluded that the majority of The relationships among the variables in the model demonstrate significant results. The hypotheses H2 (Information Quality to Perceived Usefulness), H3 (Innovation Quality to Perceived Usefulness), H4 (Service Quality to Perceived Usefulness), H6 (Information Quality to Perceived Ease of Use), H7 (Innovation Quality to Perceived

Ease of Use), H8 (Service Quality to Perceived Ease of Use), H9 (Perceived Usefulness to Continuance Intention), H10 (Perceived Ease of Use to Continuance Intention), and H13 (Innovation Quality to Continuance Intention) are accepted due to p-values below 0.05 and significant path coefficients. Hypotheses H1 (System Quality to Perceived Usefulness), H5 (System Quality to Perceived Ease of Use), H11 (System Quality to Continuance Intention), H12 (Information Quality to Continuance Intention), and H14 (Service Quality to Continuance Intention) are rejected due to p-values exceeding 0.05, signifying that the relationships among these variables lack statistical significance.

Additionally, the calculated f-square values provide insight into the strength of the influence of each variable in the relationships. Based on the f-square criteria (0.02 for low effect, 0.15 for moderate, and 0.35 for high), several hypotheses show significant influence. For example, hypothesis H3 (Innovation Quality to Perceived Usefulness) has an f-square of 0.209, indicating a moderate effect, and hypothesis H8 (Service Quality to Perceived Ease of Use) has an f-square of 0.125, which is also considered moderate. On the other hand, some hypotheses have lower f-square values, such as H1 (System Quality to Perceived Usefulness), which has an f-square of 0.000, indicating a very low effect. Overall, the results of hypothesis testing show that most relationships in the research model are significant and have varying effects from low to moderate, while some relationships are not supported by the data.

Table 10. Hypothesis Testing Results for Indirect Effect

Hypothesis	Path Coefficient	p-value	95% Confidence Interval		Upsilon v	Explanation
			Lower Bound	Upper Bound		
H15-System Quality -> Perceived Usefulness -> Continuance Intention	0.004	0.768	-0.02	0.034	0.000	Rejected
H16-System Quality -> Perceived Ease of Use -> Continuance Intention	0.000	0.981	-0.032	0.036	0.000	Rejected
H17-Information Quality -> Perceived Usefulness -> Continuance Intention	0.053	0.082	0.003	0.12	0.003	Rejected
H18-Information Quality -> Perceived Ease of Use -> Continuance Intention	0.056	0.082	0.007	0.13	0.003	Rejected
H19-Innovation Quality -> Perceived Usefulness -> Continuance Intention	0.088	0.050	0.006	0.184	0.008	Accepted
H20-Innovation Quality -> Perceived Ease of Use -> Continuance Intention	0.057	0.030	0.01	0.112	0.003	Accepted
H21-Service Quality -> Perceived Usefulness -> Continuance Intention	0.044	0.065	0.003	0.098	0.002	Rejected
H22-Service Quality -> Perceived Ease of Use -> Continuance Intention	0.08	0.036	0.014	0.164	0.006	Accepted

The results of the mediation hypotheses indicate that only certain indirect effects demonstrate significant mediation, whereas others lack support. Hypotheses H19 (Innovation Quality through Perceived Usefulness to Continuance Intention) and H20 (Innovation Quality through Perceived Ease of Use to Continuance Intention) are accepted, as evidenced by significant path coefficients and p-values below 0.05, demonstrating a notable mediation effect. The Upsilon v values for these hypotheses

indicate that Innovation Quality significantly mediates the relationship between Continuance Intention and both Perceived Usefulness and Perceived Ease of Use. Furthermore, hypothesis H22 (Service Quality through Perceived Ease of Use to Continuance Intention) is accepted, indicating a positive and significant mediation effect with a p-value of 0.036. This suggests that Service Quality significantly influences Continuance Intention via Perceived Ease of Use.

The mediation effects for H19 and H20 are moderate, with path coefficients of 0.088 and 0.057, respectively. The effect for H22 is regarded as moderate, indicated by a path coefficient of 0.08. The mediation effects criteria indicate that an effect size of 0.02 is small, 0.075 is moderate, and 0.175 is large. Therefore, the effects observed for these hypotheses are classified as moderate. Conversely, hypotheses H15, H16, H17, and H18 are rejected due to their low path coefficients and p-values exceeding 0.05, signifying the absence of a significant mediation effect. The mediation analysis indicates that Innovation Quality and Service Quality significantly mediate Continuance Intention, whereas other potential mediation paths exhibit negligible effects.

5. Discussion

The implementation of the Technology Acceptance Model (TAM) in student academic registration systems has yielded significant insights into students' attitudes and behaviors toward the utilization of these systems. The findings indicate that perceived utility and perceived ease of use are greatly affected by the quality of information, innovation, and services, which subsequently influence students' intentions to persist in using the system.

Hypotheses H6, H7, and H8 suggest that perceived usefulness is positively affected by information quality, innovation quality, and service quality. This aligns with the findings of Zogheib et al., who assert that a favorable user experience is predominantly contingent upon the usability of technology in educational contexts (Zogheib et al., 2015). Efficient support services can alleviate user frustrations and enhance overall satisfaction with the registration system, as indicated by the correlation between service quality and perceived ease of use ("Evaluating the Intended Use of Decision Support System (DSS) via Academic Staff: An Applying Technology Acceptance Model (TAM)", 2019). The research conducted by Al-Rahmi et al. substantiates that perceived simplicity of use is a crucial determinant of technology adoption in educational settings (Al-Rahmi et al., 2019).

Furthermore, the validation of hypotheses H9, H10, and H13 signifies that both perceived utility and considered simplicity of use are essential for promoting continuance intention among students. The results indicate that students are more inclined to persist in using a system when they regard it as beneficial and user-friendly. The research conducted by Zogheib and Daniela underscores the significance of perceived utility in shaping students' behavioral intentions about technology utilization (Zogheib & Daniela, 2021). Studies examining user engagement and satisfaction in educational technology underscore the significance of perceived ease of use in augmenting continuance intention (Alamri et al., 2020).

theories pertaining to the quality of systems, information, and services. In particular, there is a substantial knowledge gap regarding the interactions between these constructs within the academic registration framework, as evidenced by the rejection of hypotheses H1 (System Quality to Perceived Usefulness), H5 (System Quality to Perceived Ease of Use), H11 (System Quality to Continuance Intention), H12 (Information Quality to Continuance Intention), and H14 (Service Quality to Continuance Intention).

The fact that H1 and H5 were rejected raises the possibility that students may not view system quality as a factor in determining perceived utility or usability. This result is consistent with the findings of Saroia and Gao, who observed in their study of mobile learning management systems that perceived usefulness was not substantially influenced by perceived ease of use (Saroia & Gao, 2018). Similarly, Zogheib et al. found that while technology acceptance is crucial, the perceived quality of the system does not always translate into perceived usefulness, particularly in educational settings (Zogheib et al., 2015). These insights highlight a potential disconnect between the expected benefits of system quality and the actual user experience in academic registration systems.

Moreover, the rejection of H11, H12, and H14 indicates that neither information quality nor service quality significantly influences students' continuance intention to use the registration system. This finding resonates with the work of Kgasi and Kalema, who emphasized the importance of user attitudes and external pressures over system quality in predicting actual usage of e-registration systems (Kgasi & Kalema, 2016). Their research suggests that factors such as awareness and social influence may play a more critical role than the intrinsic qualities of the system itself. This perspective is further supported by Zazili, who highlighted that user intention to utilize technology is often driven by external factors rather than the inherent qualities of the technology (Zazili, 2023).

The implications of these findings are profound, as they suggest that simply enhancing system quality, information quality, or service quality may not suffice to improve user acceptance and continuance intention. Instead, a more holistic approach that considers user attitudes, external pressures, and contextual factors is necessary. For instance, Brdesee and Alsaggaf's research on digital transformation in university e-services underscores the need for adaptive strategies that address user feedback and system usability (Brdesee & Alsaggaf, 2022). This aligns with the recommendations from Ahmed et al., who advocate for a comprehensive understanding of user needs and expectations in the design of educational technologies (Ahmed et al., 2022).

The acceptance of the Indirect Effect hypotheses H19 and H20 shows that innovation quality plays a significant role in shaping students' perceptions of usefulness and ease of use, which ultimately influences their intention to continue using the registration system. This finding is consistent with the research of Chang (2013), which emphasized that innovative features in e-learning systems significantly enhance perceived value and user satisfaction, thereby supporting continuance intention. Similarly, Abramson et al. (2015) found that prior exposure to innovative e-learning tools positively influenced users' behavioral intentions, reinforcing the importance of

innovation in technology acceptance. This underscores the necessity for academic institutions to prioritize innovative functionalities in their registration systems to enhance user engagement.

Moreover, the acceptance of hypothesis H22 indicates that service quality significantly impacts perceived ease of use, which aligns with the findings of Zogheib and Daniela (2021). They noted that service quality is a key factor in improving user satisfaction and the continued use of technology in educational contexts. This suggests that institutions need to pay more attention to improving service aspects, such as responsiveness and user support, to create a better user experience.

However, the rejection of hypothesis H21 (Service Quality -> Perceived Usefulness -> Continuance Intention) raises questions about the direct impact of service quality on perceived usefulness. While service quality may enhance ease of use, it does not necessarily translate into perceived usefulness in the context of academic registration systems. One explanation for this discrepancy could be the lack of involvement or integration of faculty services within the registration system, which causes students to face difficulties or lack adequate administrative support for more complex academic needs. This creates a gap between students' expectations of faculty services and the actual integration of those services into the system, which may affect their continuance intention.

The rejection of hypotheses H15, H16, H17, and H18 highlights a significant gap in the understanding of traditional quality metrics, namely system quality and information quality. These findings suggest that students may not prioritize these aspects as much as previously assumed. For instance, Saroia and Gao (2018) showed that students' perceptions of system quality did not significantly influence their perceived usefulness, indicating that factors other than system quality, such as user attitude or familiarity with the previous system, may be more influential in determining technology acceptance. In other words, students may compare the new registration system to the one they previously used. If the old system was more familiar or better met their needs, advanced features in the new system might not be perceived as useful or easy to use.

Additionally, Kgasi and Kalema (2016) found that external pressures and user attitudes often dominate traditional quality metrics in predicting actual usage of e-registration systems. In this context, students may compare the new registration system to the system they previously used; if the old system was more familiar or better met their needs, the advanced features of the new system may not be considered useful. Furthermore, in the case of H17 and H18, limited involvement of academic advisors—who play a crucial role in guiding students—could hinder students from fully utilizing the system. Even though the registration system might have high quality, the lack of involvement from academic advisors in supporting students during the registration process could hinder their continuance intention. This highlights that the involvement of academic advisors is a critical factor in promoting continuance intention, as academic advisors play a role in providing guidance and necessary support during the process.

6. Theoretical contribution and managerial implications

Practical contribution

This study indicates that application administrators ought to prioritize enhancing system quality. While system quality does not directly influence perceived usefulness and ease of use, enhancing system performance is crucial for improving the user experience. Moreover, the precision, promptness, and pertinence of information must be upheld to enhance the efficacy of the application's use. This study underscores the significance of innovation in application development, as novel features can improve users' views of utility, usability, and ongoing desire to utilize the application. While service quality does not exhibit a substantial direct impact on continued intention, enhancements in technical services and administrative support can bolster favorable opinions of the application. Consequently, it is essential to prioritize user experience, guaranteeing that the application remains intuitive and offers distinct advantages to users, thereby promoting sustainable adoption.

Theoretical contribution

This research further advances the Technology Acceptance Model (TAM), which has demonstrated efficacy in examining the determinants affecting the utilization of apps such as SIRAMA. Future studies may investigate supplementary factors, like social, cultural, or emotional dimensions, that could affect users' sustained intention. This study highlights the significance of the mediating role in the interaction among system quality, information quality, service quality, and sustained intention. Consequently, next research should utilize more intricate mediation models to enhance comprehension of the factors affecting users' decisions to persist in using the program. Moreover, incorporating additional variables in forthcoming study, such as trust, user satisfaction, or prior experience with analogous technologies, may yield more profound insights into the determinants affecting the uptake and utilization of applications in a more holistic manner.

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