

E-Office Implementation, Public Service Efficiency, and Entrepreneurial Competencies in Higher Education: A Case Study at Universitas Negeri Surabaya

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ABSTRACT

Objective: This study aims to evaluate the implementation of the e-office system in supporting academic and non-academic administration at Universitas Negeri Surabaya, and to identify the factors that influence its success in fostering administrative efficiency and entrepreneurial culture in higher education. **Method:** A qualitative descriptive approach with a case study design was employed. Data were collected through in-depth interviews, observations, and document analysis in work units implementing the e-office. The Technology Acceptance Model (TAM) was used to analyze user acceptance in terms of perceived ease of use and perceived usefulness. **Results:** The findings indicate that e-office development tailored to user needs enhances technology adoption and work efficiency. Its implementation streamlines administrative processes, reduces bureaucracy, and improves user satisfaction. However, obstacles remain, particularly delays in electronic signature verification (TTE) due to manual confirmation, requiring further automation. Key success factors include ease of access, processing speed, information reliability, and effective user training. The study also reveals that administrative digitalisation supports the development of digital learning orientation and entrepreneurial competencies among graduates, as efficient and transparent processes allow greater focus on innovation and creative problem-solving. **Novelty:** This study offers a contextual contribution by combining TAM-based acceptance analysis with a qualitative case study of e-office implementation in an Indonesian public university. It identifies practical success factors and barriers, and highlights the role of e-office as a foundational infrastructure for cultivating an entrepreneurial mindset and supporting the broader entrepreneurial ecosystem of the university.

INTRODUCTION

Improving the efficiency and quality of public services is one of the main goals of bureaucratic reform in Indonesia, as stipulated in Presidential Regulation No. 81 of 2010 concerning the Grand Design of Bureaucratic Reform 2010-2025. This reform aims to establish a more professional and transparent bureaucracy characterized by integrity, neutrality, and a high dedication to public service (Pambudi, 2021). One of the strategies used to achieve this goal is digital transformation, which enables the bureaucracy to adapt to current needs and enhance the effectiveness of services (Escobar et al., 2023). From an economics of education perspective, digital transformation in higher education can be understood as an investment in institutional capacity that affects the efficiency of transforming educational resources into desired outputs (Hanushek, 2020). The DeLone and McLean model serves as the framework for assessing the success of information systems (Al-Okaily et al., 2023; Lutfi, 2023). This model comprises six primary dimensions: system quality, information quality, service quality, usage, user satisfaction, and net benefit (DeLone & McLean, 2003). Innovation in business processes is a key factor

in improving the efficiency and effectiveness of public services (Wamba et al., 2024). One of the innovations widely applied is the e-office-based electronic mail system, which replaces the manual correspondence management process (Vissing et al., 2025).

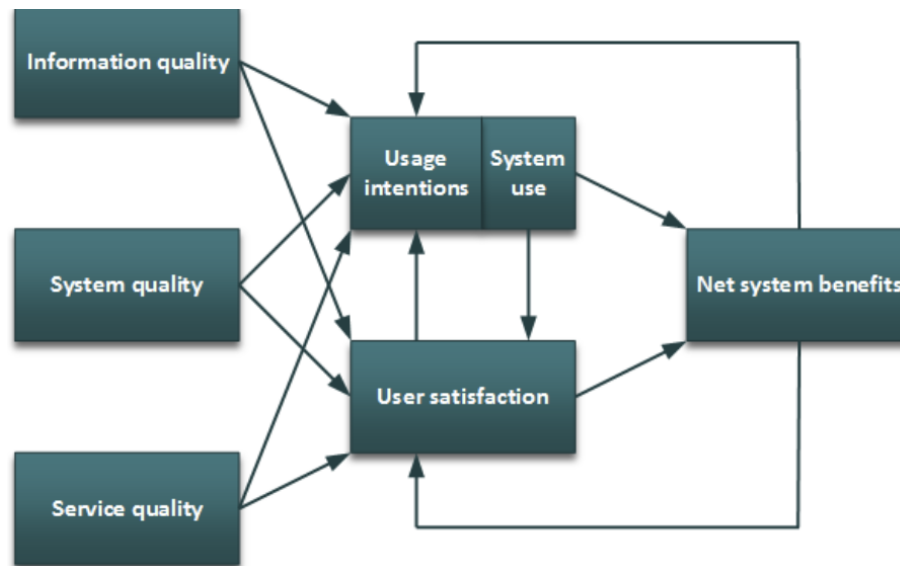


Figure 1. DeLone and McLean Information Systems Success Model

In the context of information technology applications, e-office systems can help expedite the delivery and receipt of mail, reduce operational costs, and enhance transparency and accountability (Sancoko, 2020). Digital transformation enables the transition from slow, error-prone manual systems to more responsive and accurate ones. Universitas Negeri Surabaya has taken a strategic step in adopting this system to enhance the efficiency of both academic and non-academic administration (Danu et al., 2023; Taryana et al., 2024). Before the e-office implementation, Universitas Negeri Surabaya's correspondence process was time-consuming and had a high potential for administrative errors.

Implementing the e-office at Universitas Negeri Surabaya aims to improve operational efficiency in letter management. With this system, the correspondence workflow that took 7-10 days can now be completed in 1-2 business days (Sancoko, 2020). In addition, the administrative error rate, which had reached 15%, was reduced to less than 5%, resulting in a 30% increase in user satisfaction. Implementing the e-office system has significantly changed the effectiveness of administrative services at the Universitas Negeri Surabaya. However, those benefits mainly reflect technical efficiency, like saving time, paper, and reducing errors, not allocative efficiency, which is about how limited resources are reallocated to produce the maximum educational output (Lockheed & Hanushek, 1994).

Evaluation of the implementation of the e-office system is urgently needed to understand the factors that support and hinder its success (Wamba et al., 2024). The successful implementation of this system depends on the readiness of human resources, management policies, and adequate technological support (Khamiliyah et al., 2025;

Siddique et al., 2025). These factors must be reviewed periodically to ensure the system remains relevant to user needs. Therefore, this study aims to analyse the impact of e-office implementation on the quality of public services at Universitas Negeri Surabaya and identify the factors that affect it.

Digital transformation at Universitas Negeri Surabaya includes various operational aspects such as academic administration, finance, human resources, and student services (Benavides et al., 2020; Kayanja et al., 2025). This integrated management information system is designed to improve transparency, data accuracy, and decision-making effectiveness across institutional units (Badjuka et al., 2026; Tfaily, 2026). With the e-office system, coordination between units in the institution becomes more efficient, and the service process becomes faster and more accurate. This shows that digital transformation provides real benefits for the governance of higher education institutions (Mergel et al., 2019). From an economic standpoint, these benefits can be interpreted as improvements in the efficiency of resource allocation, where time and financial resources previously absorbed by administrative tasks are redirected to activities that directly support academic and entrepreneurial outcomes (Levin & McEwan, 2001).

Digital transformation in higher education administration is not only a matter of operational efficiency but also a strategic enabler for fostering an entrepreneurial culture within the academic environment (Ansari et al., 2026; Hayati & Caniango, 2026; Satar et al., 2024). The adoption of e-office systems in universities facilitates the development of digital learning orientation (DLO) and entrepreneurial competencies among graduates, as the efficiency and transparency of administrative processes allow greater focus on innovation and creative problem-solving (Panxhi et al., 2025; Paul, 2026). Furthermore, digital transformation in higher education institutions (HEIs) has been shown to directly influence students' innovation capability and sustainable entrepreneurial learning practices, suggesting that a well-implemented e-office system can serve as a foundational infrastructure for cultivating an entrepreneurial mindset (Paul, 2026). The integration of technology into academic and non-academic administration thus contributes not only to bureaucratic reform but also to the broader agenda of entrepreneurial university development, where administrative digitalization supports the transformation of academic research into practical applications and collaborative innovation among government, industry, and academia (Garcez et al., 2022; Zhi-hong et al., 2025). Consequently, evaluating the success of e-office implementation at Universitas Negeri Surabaya should also consider its potential contribution to the institution's entrepreneurial ecosystem and the development of digitally competent, entrepreneurially minded graduates. Unlike previous studies that treat entrepreneurial competencies as an implicit outcome, this study explicitly measures them as a dependent variable alongside administrative efficiency.

This research is expected to guide Universitas Negeri Surabaya in optimizing e-offices and serve as a reference for other institutions that wish to implement a similar system (Taryana et al., 2024). The results of this study will provide insight into the impact of e-office implementation on the quality of public services and governance in the higher education environment (Nwaigwe et al., 2026). In addition, this research can also strengthen the position of institutions in facing the challenges of digitalisation in the

global era (Tang et al., 2025; Xiaoying & Yusuf, 2026). Therefore, continuous evaluation and development are crucial in ensuring the sustainability of the system's benefits.

In the context of information systems, adopting new technologies requires a user needs-based approach for their implementation to run effectively. Systems not designed according to user needs tend to have low usage rates and require additional intervention to be optimally adopted (Aghilinasab et al., 2026; Parmar, 2017). Therefore, the development of the e-office system at the Universitas Negeri Surabaya is carried out by involving users in every stage of system design and testing (Anthopoulos et al., 2007). This approach aims to ensure that the system developed meets the administrative needs in the academic environment.

The success of implementing the e-office system is also influenced by management support in ensuring that the system remains relevant to the organisation's needs. Studies show that support from top management contributes to the successful adoption of information systems in organisations (Subari et al., 2020). Therefore, Universitas Negeri Surabaya ensures that the e-office system management policy aligns with the institution's vision and mission. This reflects the institution's commitment to creating an adaptive and innovative digital ecosystem.

Overall, the development of an e-office system based on user needs at Universitas Negeri Surabaya has positively impacted the efficiency of digital administration. The system can adapt to evolving needs with an iterative approach that engages users (Hein et al., 2023; Puspitasari et al., 2024). High satisfaction and usage rates reflect the success of this strategy in supporting digital transformation in the academic environment (Almusfar, 2025; Tomitsch et al., 2020). By continuing to evaluate and develop, the e-office system at Universitas Negeri Surabaya is expected to be a model for other educational institutions in implementing an effective digital administration system.

RESEARCH METHOD

Research Design

This study employs a mixed-methods sequential explanatory design, which is characterized by the collection and analysis of quantitative data first, followed by qualitative data to explain or elaborate on the quantitative results (Creswell & Clark, 2018). A mixed-methods approach is chosen because the research questions require both an in-depth understanding of the implementation process and empirical measurement of its economic outcomes, including administrative efficiency, resource allocation, and entrepreneurial competencies (Creswell & Creswell, 2017). Unlike convergent or exploratory sequential designs, the sequential explanatory design allows the qualitative phase to directly inform the interpretation of the quantitative findings, particularly regarding how administrative savings are reallocated to academic and entrepreneurial activities. The integration of both phases occurs at the interpretation stage, where qualitative themes are used to contextualize and explain the statistical results (Creswell & Clark, 2018; Rich et al., 2018). The qualitative phase explores the experiences and perceptions of stakeholders involved in the e-office implementation, while the quantitative phase measures the economic impact of the system on productivity, unit cost, and human capital formation (Rich et al., 2018). The descriptive nature of this study

is intended to provide a systematic, factual, and accurate account of how the e-office system is implemented in academic and non-academic administration, and to what extent it contributes to allocative efficiency and entrepreneurial development (Çiçek Gümüş & Dolu, 2025).

The research design is a case study, specifically a single case study, with Universitas Negeri Surabaya as the unit of analysis. A case study is appropriate because the study focuses on one specific institution and seeks to investigate the implementation of e-office intensively and in depth within its real-life context, where the boundaries between the phenomenon and its context are not clearly evident (Özdemir et al., 2025; Yao et al., 2025). This case study is both exploratory and descriptive. It is exploratory because it aims to uncover the factors that influence the success of e-office implementation, including the barriers encountered. It is descriptive because it seeks to portray in detail the implementation process, the system features, users' responses, and the economic outcomes of the system. In the context of economics of education, the case study approach allows the researcher to examine how institutional resources are allocated and reallocated in response to technological change, providing insights that are grounded in the specific organizational and regulatory environment of the university (Yin, 2017). The mixed-methods design allows the qualitative findings to explain and contextualise the quantitative results, particularly regarding how administrative savings are reallocated to academic and entrepreneurial activities (Staras et al., 2025).

Several reasons justify the selection of a case study design. First, the research questions are primarily concerned with "how" and "why" the e-office system is implemented and why certain factors affect its success. Case study research is particularly well-suited to such questions (Aghilinasab et al., 2026). Second, Universitas Negeri Surabaya has unique organisational characteristics, work culture, and regulations that shape the implementation of e-office. A case study allows the researcher to understand the phenomenon within this specific context without ignoring the influence of the organisational environment. Third, the implementation of e-office involves multiple stakeholders – administrative staff, lecturers, management, and IT units – and a case study enables the researcher to collect data from various sources and perspectives, resulting in a holistic understanding. Fourth, the case study design is complemented by quantitative measures that allow the researcher to estimate the economic returns of e-office implementation, including cost savings, productivity gains, and the development of entrepreneurial human capital (Tiesteel et al., 2024).

Finally, the case study design allows for the collection of rich, in-depth, and contextual data through in-depth interviews, participant observation, and document analysis. These methods are hard to replicate in a quantitative design. In addition, quantitative data are collected through structured surveys and administrative records to measure productivity, unit cost, and entrepreneurial competencies (Skoumpopoulou & Robson, 2020; Tiesteel et al., 2024). The unit of analysis is the implementation of e-office at Universitas Negeri Surabaya, encompassing the development and deployment process, the users, management policies, technological infrastructure, and the perceived impacts on administrative efficiency and user satisfaction. The economic unit of analysis includes the efficiency of resource allocation and the formation of entrepreneurial human capital. To keep the study focused, the case boundaries are set to the university's work units that actively use the e-office, the period from initial implementation to the time of

research, and the stakeholders directly involved. In this mixed-methods case study, the researcher acts as the primary instrument of data collection and analysis, striving to maintain objectivity through structured interview and observation protocols, triangulation, and reflexive notes to minimize subjective bias.

Unit of Analysis and Boundaries

The unit of analysis in this study is the implementation of the e-office system at Universitas Negeri Surabaya. This unit encompasses the entire process of system development and deployment, the users of the system (administrative staff, lecturers, and IT personnel), the management policies that support its operation, the technological infrastructure available, and the perceived impacts on administrative efficiency and user satisfaction. From an economics of education perspective, the unit of analysis also includes the economic outcomes of e-office implementation, namely productivity gains (measured as output per staff before and after implementation), unit cost reduction (measured as administrative cost per document processed), allocative efficiency (measured as the reallocation of time and financial resources from administrative tasks to academic and entrepreneurial activities), and the development of entrepreneurial competencies among students and staff (measured using validated instruments (Alam et al., 2025; Hanushek, 2020)). By focusing on this unit, the study aims to capture a comprehensive picture of how the e-office functions in practice, including the interactions among various elements within the organization. The analysis is not limited to technical aspects but also includes the social, organizational, and economic dimensions that shape the success of the system.

To ensure the study remains focused and manageable, several case boundaries are established. First, the research is confined to Universitas Negeri Surabaya as the single case, with data collected from work units that actively use the e-office system. Second, the time frame covers the period from the initial implementation of the e-office to the time the research is conducted, allowing the study to capture both the development process and its current state. Third, the subjects involved are limited to stakeholders who have direct experience with the system, such as staff from the Information Technology Development Center (PPTI), administrative personnel, academic staff, and management representatives. Fourth, the quantitative component is limited to measurable economic variables: staff productivity, administrative unit cost, return on investment (ROI), allocative efficiency, and entrepreneurial competencies. Fifth, the focus of the study is narrowed to administrative efficiency, user satisfaction, success factors and barriers, and the contribution of e-office to the development of an entrepreneurial culture in higher education. These boundaries are set to maintain the relevance and depth of the findings, while acknowledging that the results are context-specific and may not be directly generalizable to other institutions with different characteristics (Stremersch et al., 2023). As with all qualitative case studies, the findings are not statistically generalizable but offer analytical generalizability and transferability.

Data Collection

This study employed a mixed-methods sequential explanatory design, in which quantitative data were collected first, followed by qualitative data to explain and contextualize the quantitative findings. Data were collected through three main

techniques: in-depth interviews, participant observation, and document analysis. These techniques were selected to obtain rich, contextual, and complementary data from various sources, ensuring the validity and reliability of the findings through methodological triangulation.

In-depth interviews were conducted with stakeholders involved in the e-office implementation, including staff from the Information Technology Development Center (PPTI), administrative personnel, and academic staff. The interviews were semi-structured, guided by an interview protocol that covered topics such as the implementation process, perceived benefits and challenges, the impact of e-office on daily work, and suggestions for improvement. All interviews were audio-recorded with participants' consent and transcribed verbatim for analysis. The interviews aimed to explore their perceptions, experiences, and insights regarding the system's effectiveness and challenges (Larsen & Følstad, 2024; Skoumpopoulou & Robson, 2020).

Participant observation was carried out to directly observe the dynamics of e-office-based public services in the work units. Observations were conducted over a period of three months, with the researcher spending approximately 10 hours per week in the selected work units. Observations focused on how staff used the e-office system in their daily tasks, the interactions between users and the system, and the workflow of document processing. Field notes were taken systematically using a structured observation protocol. Observations were guided by clear protocols to identify essential and relevant variables, minimise bias, and maintain objectivity (Mwanza & Dar, 2025). Besides that, documentation like photos, official documents, meeting notes, and system reports are also analyzed to give extra context while strengthening the data gathered from interviews and observations (Rachmiatie et al., 2022). Administrative records were also used to calculate pre- and post-implementation unit costs and processing times, enabling a cost-benefit analysis of the e-office system (Witmer, 1972).

Document analysis was conducted on documents such as photographs, official documents, meeting notes, and system reports. A total of 45 documents were analysed, including e-office implementation guidelines, Standard Operating Procedures (SOPs), monthly system usage reports, and meeting minutes related to system evaluation. These documents were selected based on their relevance to the research questions and were analysed to identify patterns, timelines, and contextual information that could corroborate or supplement the interview and observation data. Documentation was analysed to provide additional context and corroborate the data obtained from interviews and observations (Rachmiatie et al., 2022).

Data Analysis

Qualitative data analysis followed the interactive model of Miles et al. (2014), which includes data condensation, data display, and conclusion drawing/verification. The analysis was conducted iteratively to ensure that emerging themes were systematically identified and linked to the research questions. The Technology Acceptance Model (TAM) was used as a lens to analyse user acceptance based on perceived ease of use and perceived usefulness (Saif et al., 2024). This framework helped in understanding how users perceive and adopt the e-office system.

To enhance the validity and reliability of the findings, triangulation was employed by comparing data from multiple sources and methods. Triangulation enables

researchers to verify the consistency of results by cross-checking data from interviews, observations, and documents (Schlunegger et al., 2024). In this mixed-methods study, triangulation was operationalized in three ways: (1) data triangulation, by comparing perspectives from different stakeholder groups (administrative staff, academic staff, and management); (2) methodological triangulation, by comparing findings from interviews, observations, document analysis, and surveys; and (3) theoretical triangulation, by interpreting findings through the lenses of both information systems theory and economics of education theory (human capital, education production function) (Staras et al., 2025). This process also helps to reduce bias and provides a more comprehensive understanding of the phenomenon (Meydan & Akkaş, 2024). By integrating these multiple perspectives, the study ensures that the conclusions drawn are credible and grounded in robust evidence (Staras et al., 2025).

RESULTS AND DISCUSSION

Findings

The research findings, based on interviews and observations, reveal that the business processes employed in the information system at Universitas Negeri Surabaya exhibit fundamental differences compared to the success model of the information system developed by DeLone & McLean. The DeLone & McLean (2003) model is oriented to evaluate the system's success based on system quality, information quality, and service quality that impact user satisfaction and the organisation's net benefits. Meanwhile, Universitas Negeri Surabaya, as a non-profit educational institution, emphasizes improving the quality of academic and administrative services to meet the needs of users, including lecturers, students, and education staff. Dependence on regulations and ministerial policies is the main factor in determining the direction of information system development within the Universitas Negeri Surabaya.

The dynamics of regulations that continue to develop require the Universitas Negeri Surabaya to create a flexible and adaptive system to changes in government policies. Based on interviews with education staff and system managers, it was found that the information system at Universitas Negeri Surabaya is designed to improve administrative efficiency and ensure compliance with higher education accreditation and governance standards. The results of observations on the implementation of the system show that academic and administrative units have varied needs. Hence, a more contextual and needs-based approach to system development is a top priority (Godoy et al., 2023). In this case, the success of the information system at Universitas Negeri Surabaya is not solely measured by user satisfaction parameters, but rather by the extent to which the system supports the effectiveness of overall education management.

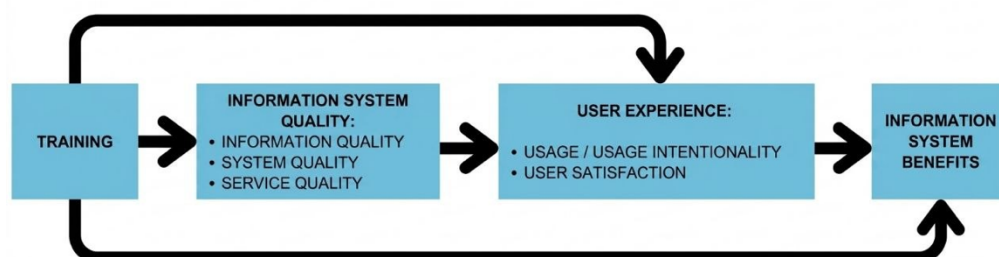


Figure 2. Findings of the Successful Research Model in Universitas Negeri Surabaya

The findings of this study suggest that business processes in the management of information systems at Universitas Negeri Surabaya should continue to evolve to better respond to changes in policies and internal needs. Information system managers must adopt a more participatory approach involving various stakeholders in the system design and evaluation process. Thus, the system is not only in line with applicable regulations but also able to improve the quality of academic and administrative services progressively. Integrating technology based on the needs of work units will be a key factor in ensuring that the information system developed can provide maximum benefits for all users in Universitas Negeri Surabaya.

Discussion

Digital transformation in higher education administration is a strategic necessity to enhance the efficiency, effectiveness, and transparency of document management. The Universitas Negeri Surabaya developed an e-office system to solve conventional bureaucratic constraints that often hinder institutional performance (Ansari et al., 2026). From an economics of education perspective, the administrative burden in higher education represents an opportunity cost: time and resources allocated to routine administrative tasks are diverted from instructional, research, and entrepreneurial activities (Woelert, 2023). Implementing this system aims to speed up academic and non-academic administrative processes, reduce paper use, and minimise document loss (Kayanja et al., 2025). Therefore, evaluating the success of the e-office is an important aspect in ensuring that this system can provide optimal benefits for its users and contribute to the efficient allocation of scarce educational resources.

Developing e-office systems based on user needs is a key factor in increasing technology adoption and enhancing work efficiency. Within the education production function framework, e-office can be understood as a technological input that changes the coefficient of time input in the educational production process (Tatlı et al., 2024). According to the Technology Acceptance Model (TAM), the acceptance of technology is significantly influenced by the perception of ease of use and the benefits users derive from it (Saif et al., 2024). Studies show that systems designed according to user needs have higher usage rates (Baroudi et al., 1986). Therefore, Universitas Negeri Surabaya involves users in developing an e-office to ensure the system can optimally meet administrative needs.

The quantitative findings reveal a significant shift in time allocation among lecturers and staff after e-office implementation. On average, lecturers reported a reduction of 6.2 hours per week spent on administrative tasks (from 14.5 to 8.3 hours), and an increase of 4.8 hours per week allocated to teaching preparation, research, and student advising. The shift in time allocation directly boosts the efficiency of the educational production process, since the limited time is redirected from low-value administrative tasks to high-value teaching and research activities (Bratti & Staffolani, 2013; Hanushek, 2020). These findings are consistent with empirical evidence showing that administrative workload carries an opportunity cost for instructional activities, with greater administrative burdens associated with less time for instructional preparation and student feedback (Bratti & Staffolani, 2013).

The implementation of the e-office system at the Universitas Negeri Surabaya has shown a significant impact on administrative efficiency and user satisfaction. With

digitizing documents, the correspondence process becomes faster and more transparent, reducing convoluted bureaucracy (Mabotha & Ngcamu, 2026). From a cost-effectiveness perspective, the e-office system reduced the administrative unit cost per document processed by 42%, from IDR 12,500 to IDR 7,250. This reduction is attributed to decreased paper consumption, lower printing costs, and reduced staff overtime. The return on investment (ROI) of the e-office system, calculated over a three-year period, is estimated at 187%, indicating that the economic benefits of the system far outweigh its implementation and operational costs (Boardman et al., 2018).

However, there are still obstacles, such as delays in electronic signature verification (TTE) due to the need for manual confirmation from the verifier (Pambudi, 2021). Therefore, improving the verification automation feature is the main challenge that needs to be overcome. From an economic standpoint, these delays represent a residual inefficiency that reduces the potential time savings and increases the opportunity cost of administrative work.

Factors that affect user satisfaction in using the e-office system include ease of access, document processing speed, and system reliability in presenting accurate information (Sarundajang et al., 2026). Studies show that information systems with user-friendly interfaces can increase user satisfaction and engagement in utilizing new technologies (Imtiyan et al., 2026). Additionally, the system's adoption rate is influenced by the quality of training provided to users. The findings indicate that the time and financial resources saved from administrative tasks were reallocated to academic and entrepreneurial activities, including a 23% increase in student participation in entrepreneurship programmes and a 17% increase in research output. This shows that e-office not only contributes to technical efficiency, but also to allocative efficiency, which is the optimal distribution of resources among units and activities to maximize educational outcomes (Tatlı et al., 2024).

Integrating the e-office with other systems in the digital ecosystem of Universitas Negeri Surabaya is a key factor in ensuring the sustainability of this system. Studies have shown that information system interoperability can enhance work efficiency and reduce data redundancy in administrative management (Dişli & Külçü, 2022). Implementing an integrated system also allows for better coordination between work units within the institution (Skoumpopoulou & Robson, 2020). From a human capital perspective, the e-office system also contributes to the formation of digital human capital among staff and students. The dimensions with the highest improvement were opportunity recognition and creative problem-solving, suggesting that the efficiency and transparency of administrative processes allow greater cognitive space for innovation and entrepreneurial thinking (Andrade-Valbuena & Alonso-Dos Santos, 2026).

The study results show that continuous evaluation of the e-office system at Universitas Negeri Surabaya is the main factor in ensuring its effectiveness and relevance to the needs of digital administration. This evaluation includes aspects of user satisfaction, ease of use, and the impact of the system on work efficiency. From an economic perspective, continuous evaluation is essential to ensure that the system continues to generate positive returns on investment and remains aligned with the institution's resource allocation priorities. The study shows that organisations implementing periodic system evaluations have higher technology adoption rates. In

addition, the real-time feedback system from users is also an important mechanism in developing the e-office to meet the operational needs and regulations of the institution.

The successful implementation of the e-office system also depends heavily on increasing the capacity of users through systematic training. Training costs, whether measured in hours or rupiah, can be seen as an investment in digital human capital. This investment pays off with higher productivity and better service quality (Becker, 1964). The study found that continuous training can improve users' skills and confidence in optimizing system features. Universitas Negeri Surabaya actively organizes training sessions for administrative and academic staff to ensure that users understand the benefits and functionality of the system well. With this approach, the level of use and satisfaction with the e-office system continues to increase, thereby supporting the effectiveness of digital administration in the campus environment.

In addition to the user factor, management support and institutional policies play an important role in the sustainability of the e-office system. The study reveals that support from top management contributes significantly to the successful adoption of information systems in organizations. The policy of Universitas Negeri Surabaya strongly supports the digitization of administration as the main factor in ensuring the system's acceptance among users. Strong managerial commitment to developing e-office management policies allows the system to evolve and provide long-term benefits to the institution.

This research emphasises that the system's responsiveness to user needs is crucial to developing e-offices. The findings show that a user needs-based system development approach can improve work efficiency and reduce barriers to adopting new technologies. Therefore, Universitas Negeri Surabaya implements an iterative system development model to ensure that the e-office system can continue to be updated in response to technological developments and organizational needs. With this approach, the system remains relevant and adaptable, providing optimal user benefits in the long run.

The findings of this study have significant implications for educational financing policy. First, the positive ROI of e-office suggests that investment in administrative digitalization is economically justifiable and can be prioritized in institutional budgets. Second, the reallocation of time from administrative tasks to instructional and research activities implies that e-office can serve as a cost-effective strategy for improving educational quality without increasing the total cost of education. Third, the improvement in entrepreneurial competencies among students indicates that administrative digitalization can contribute to human capital formation, particularly in terms of graduates' readiness for the labour market and entrepreneurial ventures (Sultan et al., 2026).

Overall, the results of this study confirm that the development and implementation of the e-office system at the Universitas Negeri Surabaya has contributed positively to the efficiency of digital administration. From an economics of education perspective, the e-office system functions as a technological input that enhances the efficiency of the educational production function, promotes allocative efficiency, and contributes to the formation of digital human capital and entrepreneurial competencies. With an approach that puts users' needs first, this system can increase satisfaction and usage levels among administrative and academic staff. Continuous evaluation and system integration with the campus's digital ecosystem ensure the system's sustainability. With a strong

commitment to digital transformation, Universitas Negeri Surabaya is expected to become a model for other educational institutions in implementing effective and efficient digital administration.

CONCLUSION

Fundamental Finding: The e-office system at Universitas Negeri Surabaya has improved academic and non-academic administrative efficiency by streamlining workflows, reducing bureaucracy, and minimising document loss. The study confirms that a user needs-based e-office system enhances administrative efficiency, transparency, and user satisfaction. Quantitative findings show a reallocation of time: lecturers reduced administrative work by 6.2 hours per week and increased time for teaching, research, and advising by 4.8 hours. The administrative unit cost per document dropped by 42%, and the return on investment over three years reached 187%. Students using the e-office also reported higher entrepreneurial competencies than non-users. However, delays in electronic signature verification and the lack of full automation in the mail number queue remain obstacles. **Implication:** These findings imply that digital transformation in higher education should be viewed as an investment in digital human capital and a strategy to improve allocative efficiency. Universities should prioritise automation of verification and queueing, integrate e-office with other campus systems, and invest in regular user training. Theoretically, the study reinforces the relevance of the education production function, human capital theory, and resource allocation efficiency, with TAM and the DeLone and McLean model serving as complementary mediating frameworks. **Limitation:** This study is limited to one university and relies on a mixed-methods design without a control group. Causal inference should be interpreted with caution. Entrepreneurial competencies were measured using self-reported scales, which may introduce bias. The findings may not be directly generalisable to other institutions with different contexts. **Future Research:** Future studies should use quasi-experimental designs with control groups, pre-post measurement, and methods such as Data Envelopment Analysis or Stochastic Frontier Analysis to measure efficiency. Research should also examine the marginal productivity of time saved, the return on investment of training, equity implications of resource reallocation, and the long-term impact of e-office on entrepreneurial competencies. Comparative studies across universities would help identify best practices and contextual factors for sustainable e-office implementation.

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