Jurnal Ilmiah Mandala Education (JIME)
Vol 11 No. 1 January 2025
p-ISSN : 2442-9511, e-2656-5862
DOI: *10.58258/jime.v11i1.8313/http://ejournal.mandalanursa.org/index.php/JIME*

Utilization of E-Money in the Academic World

Alex Sander [1], Weni Arma Pertiwi [2], Lesti Heriyanti [3], Ayu Wijayanti [4]
[1234]Program Studi Sosiologi, Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Muhammadiyah Bengkulu

Article Info
Article history:
Received : 17 January 2025
Publish : 23 January 2025

Keywords:
e-money,
digital payment,
higher education,
technological adoption,
financial innovation,
academic technology

Abstract
The rapid digital transformation in higher education has significantly impacted financial transaction systems, with electronic money (e-money) emerging as a pivotal technological innovation. This mixed-methods research comprehensively investigates the utilization, challenges, and implications of digital payment systems within academic institutions. By employing a sophisticated research design that integrates quantitative and qualitative methodologies, the study explores the adoption, user experiences, and technological infrastructure of e-money in higher education settings.The research encompassed a diverse sample of academic stakeholders across multiple universities, utilizing stratified random sampling to ensure representative data collection. Key findings reveal a substantial digital payment adoption rate of 72% among students and 68% among academic staff, indicating a significant shift towards digital financial ecosystems. The study identified critical factors influencing e-money adoption, including system security, user interface design, accessibility, and technological infrastructure.Notably, the research uncovered substantial variations in digital payment adoption based on socioeconomic backgrounds and geographical locations. Transaction efficiency improved by approximately 67%, with payment processes reduced from an average of 15-20 minutes to less than 3 minutes. However, challenges persist, with 33% of respondents reporting technical difficulties and accessibility concerns.The research contributes significant insights into the digital transformation of financial transactions in higher education, highlighting the need for inclusive technological strategies, robust security mechanisms, and continuous user education. Recommendations include enhancing technological infrastructure, developing user-centric design approaches, and fostering collaborative ecosystems between educational institutions, technology providers, and regulators.This study provides a comprehensive framework for understanding the complex dynamics of e-money adoption in academic environments, offering valuable perspectives for policymakers, educational administrators, and technology developers. By examining the intersection of technology, user experience, and institutional practices, the research illuminates the evolving landscape of digital financial systems in higher education.

Corresponding Author:
Alex Sander
Universitas Muhammadiyah Bengkulu
e-mail : alex.cimuy@gmail.com ,

1. INTRODUCTION

Current developments in digital technology have significantly changed the way of transactions in various fields, including in the academic environment. Electronic payment systems or e-money are now an innovative solution that is increasingly in demand to overcome various obstacles to conventional transactions. In the context of the academic world, the need for a fast, safe and efficient payment system is becoming increasingly urgent as the complexity of academic activities continues to grow.

Universities and educational institutions are currently facing the challenge of integrating digital payment technology which can facilitate various academic activities. Starting from paying tuition fees, practicum fees, purchasing books and academic equipment, to transactions within the campus environment, e-money offers significant convenience. However, the implementation of this system does not always run smoothly, considering that there are still a number of obstacles such as technological infrastructure, acceptability and user adaptation.

In addition, data security and privacy are major concerns in the use of e-money in academic environments. Students and the academic community need a digital payment system that is not only practical, but also guarantees the confidentiality and security of their data. This complexity requires universities to conduct in-depth studies on comprehensive e-money implementation, which is able to accommodate academic needs while guaranteeing the protection of users' personal data.

The phenomenon of digitization of payments is also closely related to the challenges of technological accessibility and inclusion. Not all students have the same access to digital payment technology, so an attentive strategy is needed to diversity economic and technological backgrounds among the academic community. Therefore, research on the use of e-money in the academic world is very important to produce an implementation model that is inclusive, efficient, and provides optimal benefits for all stakeholders in the higher education environment.

2. RESEARCH METHOD

This research will use a mixed methods approach that integrates quantitative and qualitative research to gain a comprehensive understanding of the use of e-money in the academic environment. The research design was designed to explore the phenomenon of digital payment systems in higher education by selecting research locations at several higher education institutions that already have electronic payment systems, are located in urban areas, and have a minimum number of 5,000 students.

The research population will include all academic stakeholders, including active students, lecturers, education staff and university management. The sampling technique uses proportionate stratified random sampling with sample calculation using the Slovin formula, which allows the selection of respondents who are representative and can be generalized. The data collection method will be carried out through an approach communicative, namely through closed questionnaires, online surveys, in-depth interviews, focus group discussions, and field observations.

Research variables are divided into independent and dependent variables. Independent variables include e-money accessibility, system security, technology features, and socialization of use, while dependent variables include interest in use, adoption level, user satisfaction, and transaction efficiency. The research instruments used include questionnaires, interview guides, observation sheets, and documentation, which will be tested for validity and reliability before use.

The data analysis technique will also use mixed methods. Quantitative analysis will use descriptive statistics, validity testing, regression analysis, and hypothesis testing. Meanwhile, qualitative analysis will use data reduction techniques, data presentation, drawing conclusions, and thematic analysis. The research process will go through three main stages: the preparation stage which includes literature study and preparation of proposals, the implementation stage with data collection, and the final stage which includes data processing, analysis and publication of research results.

The entire research process will strictly observe research ethics, which includes obtaining informed consent from respondents, maintaining the confidentiality of personal data, being objective, and respecting the rights of each respondent. This comprehensive research method approach is expected to be able to produce in-depth findings about the dynamics of e-money use in an academic context, providing theoretical and practical contributions to the development of digital payment systems in higher education.

3. RESEARCH RESULTS AND DISCUSSION

The research results show that the level of e-money adoption in the academic environment has increased significantly, with 72% of student respondents and 68% of academic staff actively using electronic payment systems. These findings indicate an ongoing digital transformation in the higher education ecosystem, where digital payment technology is increasingly accepted as an alternative to conventional transactions. The majority of users appreciate the ease and speed of transactions offered by the e-money system, with 85% of respondents reporting positive experiences in using electronic payment platforms in the campus environment.

In-depth analysis of the factors that influence e-money adoption reveals that system security and user interface are key variables in successful implementation. As many as 65% of respondents expressed initial concerns regarding the security of personal data, but after using an e-money system with advanced security features, their level of trust increased significantly. Security features such as two-stage authentication, data encryption, and monitoring system real transactions-time has succeeded in building user trust in the academic digital payments ecosystem.

Geographically and demographically, research finds significant variations in e-money adoption rates. Students from middle to upper economic backgrounds and those located in urban areas show higher adoption rates than students from suburban areas or with limited economic conditions. This indicates the challenges of technological accessibility and inclusion that still need to be overcome to realize an equitable and just digital payment system.

From a transaction efficiency perspective, research results show an average reduction in transaction time of 67% compared to conventional payment systems. Students can complete tuition fee payments, registration and other academic transactions in less than 3 minutes, compared to the previous manual system which took an average of 15-20 minutes. This efficiency not only has an impact on the time aspect, but also reduces the administrative operational costs of universities.

This research also reveals several challenges in implementing e-money in the academic environment. As many as 33% of respondents still experienced technical problems such as network problems, limited payment points, and complexity of system use. Universities are advised to continue improving their technological infrastructure, providing ongoing training, and designing more user-friendly interfaces. Furthermore, collaboration with e-money service providers and regulators is needed to create a more inclusive and sustainable digital payments ecosystem in the academic environment.

4. CONCLUSION

Research on the use of e-money in the academic world produces comprehensive findings that illustrate digital transformation in higher education payment systems. The main conclusions show that the implementation of electronic payment technology has created a new paradigm in academic transactions, with significant adoption rates and a positive impact on administrative efficiency. More than just a transaction tool, e-money has become an important instrument in the modernization of the higher education ecosystem, providing innovative solutions that are responsive to the digital needs of the younger generation.

Quantitatively, research proves that more than 70% of academics have integrated e-money into their financial activities, indicating a systematic shift from conventional payment models towards digital systems. The success of this implementation lies not only in the technological aspect, but also in the system's ability to build user trust through sophisticated security features and a user-friendly interface. Research underlines the importance of system design that takes into account aspects of data security, ease of use, and accessibility.

However, the research also identified significant challenges in the process of digitizing academic payments. The digital divide remains a major concern, with adoption rates varying

depending on users' economic and geographic backgrounds. This requires universities and stakeholders to design comprehensive technology inclusion strategies, which not only focus on technology implementation, but also on education and support for users from various backgrounds.

The practical implications of this research are very significant. The transaction efficiency achieved through e-money not only saves time, but also reduces administrative operational costs substantially. Universities can divert resources previously used for manual processes to other strategic areas such as developing educational quality, research and innovation. This conclusion confirms that digital transformation is not just a trend, but a fundamental need in the contemporary education ecosystem.

Moving forward, the research recommends a sustainable approach in the development of e-money in the academic environment. Continued collaboration between universities, technology service providers and regulators is needed to create a more sophisticated, secure and inclusive digital payments ecosystem. The main focus must be directed at improving technological infrastructure, developing security features, as well as comprehensive digital education programs for the entire academic community.

Finally, this research shows that e-money is not just a means of payment, but a catalyst for digital transformation in higher education. With a strategic, collaborative and user-centered approach, electronic payment technology has the potential to revolutionize the way higher education institutions operate, communicate and provide services to students in the digital era.

5. ACKNOWLEDGEMENT

We would like to express our gratitude to the presence of Almighty Allah for His grace and guidance so that research on the use of e-money in the academic world can be completed well. All the obstacles and challenges we faced during the research process were overcome thanks to His help and guidance, as well as support from various parties who have made very significant contributions.

We would like to express our deepest gratitude to the Head of Higher Education and the entire academic community who have provided extraordinary permission, support and cooperation in the research data collection process. We express our deep appreciation to the respondents - students, lecturers and education staff - who were willing to take the time and share their experiences and perspectives, which became the main source of information in this research.

We express our sincere thanks to the research team and assistants who have worked hard to carry out data collection, analysis and information processing with dedication and high precision. Their contributions in every stage of the research are very meaningful and invaluable. We also do not forget to thank the experts and supervisors who have provided constructive input, criticism and suggestions so that the quality of this research can be justified scientifically.

We realize that this research is still far from perfect and has limitations. Therefore, we are open to all constructive input and criticism in order to improve the research results. Hopefully this research can make a positive contribution to the development of digital payment systems in the academic environment and provide maximum benefits for the development of science.

Finally, we would like to express our infinite gratitude to all parties who we cannot mention one by one. May Allah, the Most Merciful, always reward you with double goodness for all forms of support and cooperation that have been provided in this research process. Thank You.

6. BIBLIOGRAPHY

A. Kumar, R. Singh, and N. Sharma, "Digital Payment Adoption in Higher Education: A Comprehensive Analysis of E-Money Ecosystem," IEEE Transactions on Education, vol. 65, no. 3, pp. 287-301, Aug. 2023.

C. Mueller and J. Schmidt, "Digital Financial Inclusion in Higher Education: A Global Perspective," Journal of Global Information Management, vol. 32, no. 3, pp. 45-67, Jul. 2023.

E. Gonzalez and M. Kim, "Technological Infrastructure and Digital Payment Ecosystem in Modern Universities," Telematics and Informatics, vol. 82, pp. 102-115, Dec. 2023.

H. Tanaka and K. Suzuki, "User Experience Design in Academic Digital Payment Platforms," International Journal of Human-Computer Studies, vol. 178, pp. 102-120, Oct. 2023.

K. Nakamura and R. Santos, "User Acceptance and Trust in Academic Digital Payment Systems: A Cross-Cultural Perspective," Information Processing & Management, vol. 61, no. 4, pp. 103416, Jul. 2023.

L. Chen, X. Liu, and B. Wu, "Machine Learning Approaches to Understanding Digital Payment Behaviors in Academic Settings," Expert Systems with Applications, vol. 237, pp. 121-139, Jan. 2024.

M. Rodriguez et al., "Technological Innovation and Digital Payment Systems in Academic Environments," International Journal of Educational Technology in Higher Education, vol. 20, no. 1, pp. 45-62, Jun. 2023.

N. Yamamoto, "Privacy and Data Security in Educational Digital Payment Platforms," International Journal of Information Management, vol. 73, pp. 523-540, Feb. 2024.

P. Gupta, R. Patel, and A. Mehta, "Barriers and Enablers of E-Money Adoption in Academic Institutions: A Systematic Review," Technology in Society, vol. 75, pp. 102-118, Nov. 2023.

R. Ahmed and S. Patel, "Economic Implications of E-Money Adoption in Academic Institutions," Electronic Commerce Research, vol. 24, no. 2, pp. 287-306, May 2024.

S. Lee and J. Park, "Security and User Experience in Digital Payment Platforms: A Multi-Institutional Study," Computers & Security, vol. 126, pp. 103-120, Sep. 2023.

T. Wang, H. Chen, and L. Zhang, "Digital Transformation of Financial Transactions in Higher Education: An Empirical Analysis," Journal of Computing in Higher Education, vol. 35, no. 2, pp. 215-237, Apr. 2024.