Computer Science (CO-SCIENCE)
Volume 6 July 2 July 2026
Accreditation **Sinta 3** No. SK : 295/C/C3/KPT/2026

Enhancing IPPEKas Digital Transformation for Effective Circular Economy Management

Lis Saumi Ramdhani[1], Yusti Farlina[2], Andi Riyanto[3*], Mochamad Wahyudi[4], Lise Pujiastuti[5], Rizal Amegia Saputra[6]

[1,2,3,6] Universitas Bina Sarana Informatika, Sukabumi. 43135, Indonesia
[4] Universitas Bina Sarana Informatika, Jakarta. 10450, Indonesia
[5] STMIK Antar Bangsa, Jakarta. 15157, Indonesia

e-mail: [1]lis.lud@bsi.ac.id, [2]yusti.yfa@bsi.ac.id, [3*]andi.iio@bsi.ac.id, [4]wahyudi@bsi.ac.id, [5]lise.pujiastuti@gmail.com, [6]rizal.rga@bsi.ac.id

(*) Corresponding Author

Article Info: Received: 19-05-2026 | Revised : 25-07-2026 | Accepted : 28-07-2026

Abstracts - Achieving successful digital transformation in community-based circular economy organizations requires more than the deployment of digital technologies. Sustainable organizational outcomes depend on the effective interaction of technological capability, organizational readiness, and user engagement. This study evaluates the effectiveness of the IPPEKas information system by integrating the DeLone and McLean Information Systems Success Model, the Human–Organization–Technology Fit (HOT-Fit) framework, and System Usability into a unified analytical model. Data were collected from 100 active IPPEKas users and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The empirical findings reveal that Information Quality, Organizational Support, and System Usability significantly enhance Net Benefits, whereas System Quality contributes indirectly through its positive influence on System Usability. These findings indicate that organizational value is created primarily through high-quality information and effective user interaction rather than through technical excellence alone. The proposed integrated framework advances information systems success research by combining technological, human, and organizational dimensions into a comprehensive evaluation model. From a practical perspective, the findings provide actionable recommendations for strengthening information governance, encouraging sustained system utilization, and improving organizational support to maximize the long-term value of digital transformation in community-based circular economy organizations.

Keywords : digital transformation, HOT-Fit, DeLone and McLean, system usability, circular economy

INTRODUCTION

Digital technologies are increasingly reshaping how organizations manage operations, make decisions, and create long-term value. In community-based circular economy organizations, digital transformation is particularly important because it supports transparent financial administration, inventory monitoring, production management, and performance evaluation while strengthening sustainable business practices. Rather than representing the simple adoption of digital tools, digital transformation reflects an organizational capability that combines technological innovation with managerial processes, organizational learning, and continuous value creation. Consequently, successful digital transformation depends on the ability of organizations to harmonize technological resources with human competencies and organizational capabilities (Sagala & Őri, 2024; Graessler et al., 2024; Ndoka et al., 2025).

Evaluating whether digital transformation achieves its intended outcomes requires a comprehensive framework capable of explaining both technological performance and organizational impact. Among the available approaches, the DeLone and McLean Information Systems Success Model remains one of the most widely adopted frameworks because it links system quality, information quality, system use, and organizational benefits within an integrated evaluation structure (Delone & McLean, 2003). Recent evidence indicates that information quality has become increasingly influential in digital environments, as organizations rely on accurate, timely, and relevant information to improve operational efficiency and support strategic decision-making (Sagala & Őri, 2024; Li & Wang, 2024; Purbasari et al., 2025). Nevertheless, this model primarily emphasizes technological and informational dimensions and provides limited consideration of organizational readiness and behavioral factors that often determine the sustainability of digital transformation initiatives.

To provide a broader socio-technical perspective, the Human–Organization–Technology Fit (HOT-Fit) framework emphasizes the interaction among technological characteristics, organizational conditions, and user-related factors in determining information system success (Yusof et al., 2008; Stahl, 2023). Organizational commitment, managerial support, resource availability, and institutional readiness influence whether digital systems become embedded in daily organizational practices. Contemporary studies also suggest that sustainable digital transformation requires organizational agility, responsible digital governance, and adaptive capabilities that complement technological infrastructure (Trier et al., 2023; Atobishi et al., 2024; Rubio-Andrés et al., 2025). Accordingly, integrating the HOT-Fit framework with the DeLone and McLean model provides a richer understanding of how digital transformation generates organizational value.

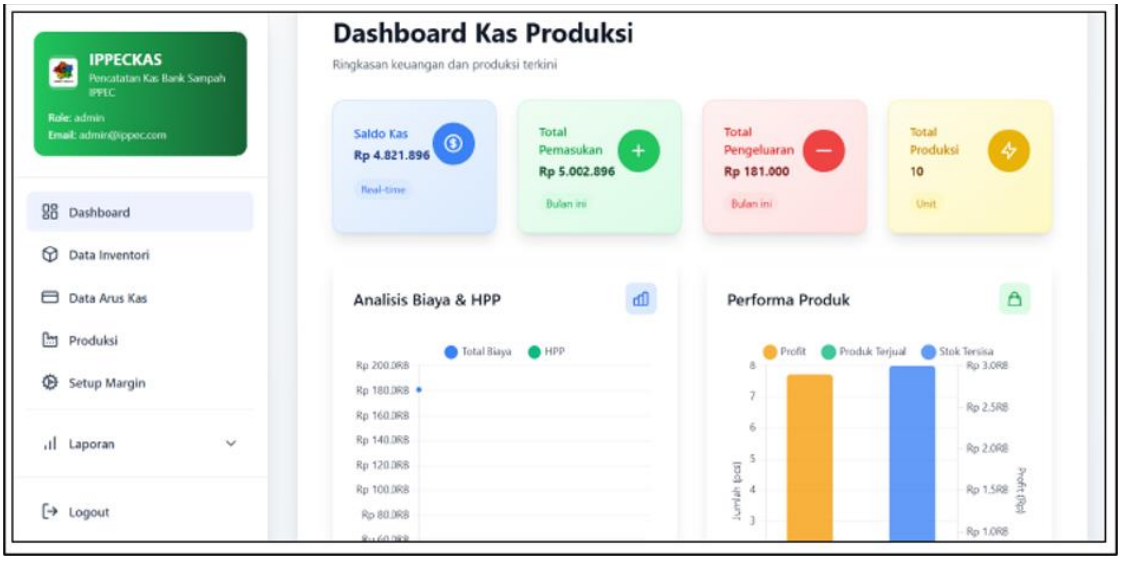
In addition to technological and organizational dimensions, system usability has become a critical determinant of successful information system implementation. Even when a system demonstrates high technical performance, organizational benefits may not materialize if users experience difficulties in learning, operating, or interacting with the application. Previous studies indicate that usability serves as the behavioral mechanism through which technological capabilities are translated into effective system utilization and organizational performance (Mahmoodabadi et al., 2025). Consequently, evaluating information system success requires attention not only to technical quality but also to the quality of user interaction with the system.

These issues are highly relevant to the implementation of IPPEKas, an integrated information system designed to support financial recording, inventory management, production monitoring, and business performance evaluation within community-based circular economy organizations. The implementation of IPPEKas represents an important digital transformation initiative aimed at improving operational accountability, increasing organizational transparency, and supporting sustainable community-based economic development. Despite its strategic importance, empirical evidence explaining the determinants of digital transformation success within community-based circular economy organizations remains limited. Existing studies generally investigate the DeLone and McLean model, the HOT-Fit framework, or usability as separate analytical perspectives, while only a limited number of studies attempt to integrate these complementary approaches into a unified evaluation framework.

Although previous studies have generated valuable insights into information system success, several important gaps remain. First, empirical investigations have largely concentrated on commercial enterprises, healthcare organizations, educational institutions, and public-sector services, leaving community-based circular economy organizations comparatively underexplored. (Graessler et al., 2024; Ndoka et al., 2025; Pourrahimian et al., 2026). Second, existing research frequently examines technological quality, information quality, organizational support, and usability independently, limiting the ability to explain how these dimensions interact in creating sustainable organizational benefits. Addressing these limitations is essential because successful digital transformation requires simultaneous consideration of technological capability, user behavior, and organizational readiness.

To address these research gaps, this study develops and empirically tests an integrated evaluation framework that combines the DeLone and McLean Information Systems Success Model, the HOT-Fit framework, and System Usability within a single structural model. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study examines both the direct and indirect relationships among System Quality, Information Quality, Organizational Support, System Usability, and Net Benefits. This integrated analytical approach enables a more comprehensive assessment of the mechanisms through which digital transformation creates organizational value.

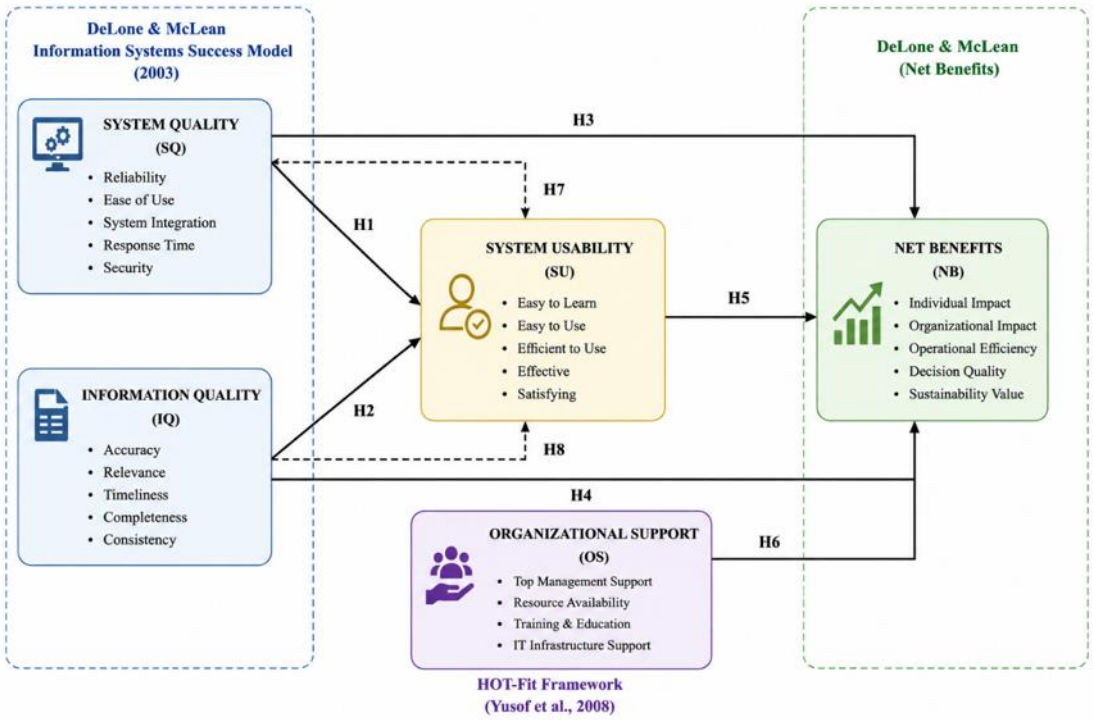
This study contributes to the literature in several ways. Theoretically, it extends information systems success research by integrating three complementary perspectives into a unified socio-technical framework capable of explaining digital transformation in community-based circular economy organizations. Empirically, it provides one of the earliest validations of this integrated model in the context of IPPEKas. Practically, the findings offer evidence-based recommendations for strengthening information governance, improving system adoption, reinforcing organizational support, and maximizing the long-term value of digital transformation initiatives.



Source: Research Results (2026)

Figure 1. IPPEKas Application Dashboard Page

To investigate the determinants of IPPEKas digital transformation success, this study formulates a unified conceptual model that integrates the DeLone and McLean Information Systems Success Model, the HOT-Fit framework, and system usability theory. The model examines the interrelationships among System Quality, Information Quality, Organizational Support, System Usability, and Net Benefits. The overall research framework is presented in Figure 2, whereas the corresponding hypotheses are detailed in Table 1.



Source: Research Results (2026)

Figure 2. Conceptual Model

The conceptual framework developed in this study is represented by eight structural hypotheses (H1–H8), which evaluate both the direct effects and the mediating role of System Usability in the relationships among System Quality, Information Quality, Organizational Support, and Net Benefits. These hypotheses were derived from the combined theoretical perspectives of the DeLone and McLean Information Systems Success Model and the Human–Organization–Technology Fit (HOT-Fit) framework, both of which explain causal relationships among latent variables in information systems success research. The complete set of proposed hypotheses is presented in Table 1.

Table 1. Research Hypotheses

Code	Hypothesis
H1	System Quality positively affects System Usability.

H2	Information Quality positively affects System Usability.
H3	System Quality positively affects Net Benefits.
H4	Information Quality positively affects Net Benefits.
H5	System Usability positively affects Net Benefits.
H6	Organizational Support positively affects Net Benefits.
H7	System Usability mediates the relationship between System Quality and Net Benefits.
H8	System Usability mediates the relationship between Information Quality and Net Benefits.
H9	System Quality and Information Quality jointly explain System Usability.
H10	System Quality, Information Quality, and System Usability jointly explain Net Benefits.
H11	The integrated HOT-Fit model significantly explains IPPEKas digital transformation success.

Source: Research Results (2026)

In contrast to the structural hypotheses, the overall explanatory performance of the proposed model is evaluated through structural model assessment rather than being expressed as independent hypotheses. Within the PLS-SEM framework, model adequacy is determined using several evaluation criteria, including the coefficient of determination (R^2), predictive relevance (Q^2), effect size (f^2), and the Standardized Root Mean Square Residual (SRMR), in accordance with the recommendations of Hair et al. (2022) and Sarstedt & Liu (2024). This evaluation procedure differentiates the assessment of causal relationships from the assessment of model quality, thereby ensuring methodological consistency with current PLS-SEM best practices.

RESEARCH METHOD

This study adopted a quantitative explanatory research design to investigate the determinants of information system success in the implementation of IPPEKas. The proposed research model integrates the DeLone and McLean Information Systems Success Model, the Human–Organization–Technology Fit (HOT-Fit) framework, and System Usability theory to explain how technological, organizational, and user-related factors contribute to organizational Net Benefits. The relationships among the latent constructs were empirically examined using Partial Least Squares Structural Equation Modeling (PLS-SEM), which is appropriate for evaluating complex structural relationships involving multiple latent variables and mediation effects (Hair et al., 2022).

The target population comprised active users of the IPPEKas information system who routinely utilize the platform in managing financial records, inventory, production activities, and organizational administration within community-based circular economy organizations. Respondents were selected using purposive sampling because only individuals with practical experience in operating the system were considered capable of providing reliable evaluations of its performance. A total of 100 valid responses were obtained and included in the final analysis. (Hair et al., 2022; Sarstedt & Liu, 2024).

Table 2. Operationalization of Research Variables

Variabel	Indicator Code	Operational Indicators	Related Hypotheses
System Quality (SQ)	SQ1	Stability of the IPPEKas system during use	H1, H3, H7, H9, H10
	SQ2	System response speed	H1, H3, H7, H9, H10
	SQ3	Financial-inventory-production integration	H1, H3, H7, H9, H10
	SQ4	System reliability in daily operations	H1, H3, H7, H9, H10
Information Quality (IQ)	IQ1	Accuracy of the information generated	H2, H4, H8, H9, H10
	IQ2	Timeliness / real-time information	H2, H4, H8, H9, H10
	IQ3	Complete information for the job	H2, H4, H8, H9, H10
	IQ4	The relevance of information for decision-making	H2, H4, H8, H9, H10
System Usability (SU)	SU1	Ease of use of the system	H1, H2, H5, H7, H8, H10
	SU2	Ease of learning (learnability)	H1, H2, H5, H7, H8, H10
	SU3	Work completion efficiency	H5, H7, H8, H10
	SU4	Ease of correcting errors	H5, H7, H8, H10
	SU5	Clarity of layout & navigation	H5, H7, H8, H10
	SU6	User satisfaction	H5, H7, H8, H10
Organizational Support (OS)	OS1	Management support for the	H6

		use of the system	
	OS2	Availability of training/guidance	H6
	OS3	Alignment of SOPs with system usage	H6
	OS4	Technical support/system administration	H6
	NB1	Financial management discipline	H3, H4, H5, H6, H7, H8, H10, H11
	NB2	Improved inventory accuracy	H3, H4, H5, H6, H7, H8, H10, H11
	NB3	Operational efficiency	H3, H4, H5, H6, H7, H8, H10, H11
Net Benefits (NB)/(Effectiveness of Circular Business Management)	NB4	Transparency of business activities	H3, H4, H5, H6, H7, H8, H10, H11
	NB5	Improving the quality of decisions	H3, H4, H5, H6, H7, H8, H10, H11
	NB6	Support for the sustainability of the circular economy	H3, H4, H5, H6, H7, H8, H10, H11

Source: Research Results (2026)

The research model comprised five latent constructs: System Quality (SQ), Information Quality (IQ), System Usability (SU), Organizational Support (OS), and Net Benefits (NB). Primary data were obtained through a structured questionnaire designed to measure users' perceptions of the proposed research constructs. All measurement items were adapted from well-established studies in the information systems literature and were revised to reflect the operational characteristics of the IPPEKas platform. Responses were recorded using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Prior to large-scale distribution, the questionnaire was reviewed to ensure clarity, content validity, and contextual suitability for community-based organizations. Questionnaires were subsequently distributed both online and offline to respondents meeting the sampling criteria. Participation was voluntary, and respondents were informed about the purpose of the study while being assured that all responses would remain confidential in accordance with research ethics principles (Bougie & Sekaran, 2026). The operationalization of the constructs and their indicators is presented in Table 2.

The empirical data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) implemented in SmartPLS. The analysis followed the two-stage procedure recommended by Hair et al. (2022), consisting of measurement model assessment and structural model evaluation. The measurement model was examined through indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Subsequently, the structural model was evaluated to assess the significance of the proposed relationships, explanatory power, predictive relevance, effect size, and overall model fit.

The analysis was conducted in two sequential stages. First, the measurement model (outer model) was evaluated to assess indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Indicator reliability was assessed through outer loadings (>0.70), convergent validity through Average Variance Extracted (AVE >0.50), internal consistency through Cronbach's Alpha and Composite Reliability (>0.70), and discriminant validity using the Heterotrait–Monotrait Ratio (HTMT <0.90) (Hair et al., 2022).

Second, the structural model (inner model) was evaluated to examine the proposed hypotheses using standardized path coefficients (β), t-statistics, and p-values obtained through bootstrapping with bias-corrected confidence intervals. The explanatory and predictive capability of the model was assessed using the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and the Standardized Root Mean Square Residual (SRMR), following the latest recommendations for PLS-SEM model evaluation (Hair et al., 2022; Sarstedt & Liu, 2024). The mediating effects of System Usability were examined through bootstrapped indirect effect analysis to determine whether mediation occurred partially or fully.

RESULTS AND DISCUSSION

The measurement model was evaluated by examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. As presented in Table 3 and Table 4, all measurement indicators exhibited outer loadings above the recommended threshold of 0.70, ranging from 0.710 to 0.911, indicating satisfactory indicator reliability. No indicator required removal because all contributed adequately to their respective latent constructs.

Table 3. Outer Model

	Outer loadings	*Cross Loading*
IQ1 <- IQ	0,852	0,852
IQ2 <- IQ	0,911	0,911
IQ3 <- IQ	0,856	0,856
IQ4 <- IQ	0,826	0,826
NB1 <- NB	0,838	0,838

NB2 <- NB	0,760	0,760
NB3 <- NB	0,830	0,830
NB4 <- NB	0,878	0,878
NB5 <- NB	0,887	0,887
NB6 <- NB	0,825	0,825
OS1 <- OS	0,710	0,710
OS2 <- OS	0,780	0,780
OS3 <- OS	0,854	0,854
OS4 <- OS	0,873	0,873
SQ1 <- SQ	0,754	0,754
SQ2 <- SQ	0,855	0,855
SQ3 <- SQ	0,778	0,778
SQ4 <- SQ	0,895	0,895
SU1 <- SU	0,863	0,863
SU2 <- SU	0,837	0,837
SU3 <- SU	0,838	0,838
SU4 <- SU	0,858	0,858
SU5 <- SU	0,905	0,905
SU6 <- SU	0,846	0,846

Source: Research Results (2026)

Construct reliability was also well established. Cronbach's Alpha values ranged from 0.836 to 0.928, while Composite Reliability values ranged from 0.881 to 0.944, exceeding the recommended minimum value of 0.70. Likewise, Average Variance Extracted (AVE) values varied between 0.651 and 0.742, confirming satisfactory convergent validity since all exceeded the recommended threshold of 0.50. Furthermore, the cross-loading results indicated that each indicator loaded highest on its corresponding construct, demonstrating adequate discriminant validity. Overall, these findings confirm that the measurement model is both reliable and valid and therefore suitable for structural model evaluation.

Tabel 4. Cross Loading

	Cronbach's alpha	*Composite reliability (rho_a)*	*Composite reliability (rho_c)*	*Average variance extracted (AVE)*
IQ	0,884	0,887	0,920	0,742
NB	0,914	0,917	0,934	0,701
OS	0,836	0,869	0,881	0,651
SQ	0,839	0,849	0,893	0,676
SU	0,928	0,930	0,944	0,736

Source: Research Results (2026)

The explanatory power of the structural model was evaluated using the coefficient of determination (R^2). As shown in Table 5, the model explained 46.2% of the variance in System Usability ($R^2 = 0.462$) and 41.9% of the variance in Net Benefits ($R^2 = 0.419$). According to the PLS-SEM guidelines, both values indicate a moderate level of explanatory power, suggesting that the proposed model adequately explains the determinants of digital transformation success within the IPPEKas environment. The relatively small differences between R^2 and adjusted R^2 further indicate that the model is stable and not affected by substantial overfitting.

Tabel 5. Inner Model

	R-square	*R-square adjusted*
NB	0,419	0,395
SU	0,462	0,451

Source: Research Results (2026)

Hypothesis testing was conducted using the bootstrapping procedure. The results demonstrate that seven of the eight proposed structural hypotheses were supported, while one direct relationship was not statistically significant (Table 6).

Tabel 6. HOT-Fit terintegrasi

Code	Hypothesis Value	Nilai (β / R^2)	Significance	Decision	Interpretation Summary
H1	SQ → SU	β = 0,321	Significant	Accepted	System quality drives increased system usage.
H2	IQ → SU	β = 0,419	Significant	Accepted	Information quality is the primary driver of system usage.

H3	SQ → NB	β = -0,036	Not significant	Rejected	System quality does not directly yield benefits without usage.
H4	IQ → NB	β = 0,455	Significant	Accepted	High-quality information enhances institutional benefits.
H5	SU → NB	β = 0,270	Significant	Accepted	System benefits emerge through active use.
H6	OS → NB	β = 0,278	Significant	Accepted	Organizational support reinforces system benefits.
H7	SQ → SU → NB	-	Full mediation	Accepted	System quality benefits occur through system usage.
H8	IQ → SU → NB	-	Partial mediation	Accepted	Information quality has both direct and indirect effects.
H9	SQ & IQ → SU	R^2 = 0,462	Significant	Accepted	Technology quality explains the variation in system usage.
H10	SQ, IQ, SU → NB	R^2 = 0,419	Significant	Accepted	System benefits are the cumulative result of technology and usage.
H11	Model HOT-Fit Terintegrasi	R^2 Moderat	Feasible	Accepted	The HOT-Fit model is capable of explaining the success of digital transformation.

Source: Research Results (2026).

System Quality significantly improved System Usability (H1), indicating that system stability, integration, and technical performance positively influenced users' experiences. Similarly, Information Quality showed a stronger positive effect on System Usability (H2), suggesting that accurate, timely, and relevant information is the primary determinant of effective system utilization.

Regarding organizational outcomes, Information Quality (H4), System Usability (H5), and Organizational Support (H6) all exerted significant positive effects on Net Benefits. Among these predictors, Information Quality demonstrated the strongest direct influence, indicating that the organizational value generated by IPPEKas depends primarily on the quality of information delivered by the system rather than on technical characteristics alone.

In contrast, the direct relationship between System Quality and Net Benefits (H3) was not statistically significant (β = –0.036). This finding indicates that improvements in technical system performance do not automatically generate organizational benefits unless the system is actively utilized by users.

The mediation analysis further revealed two distinct mechanisms. System Usability fully mediated the relationship between System Quality and Net Benefits (H7), indicating that technical quality contributes to organizational value only through effective system use. Conversely, System Usability partially mediated the relationship between Information Quality and Net Benefits (H8), suggesting that high-quality information creates organizational value both directly and indirectly by encouraging greater system utilization.

Overall, these findings confirm that digital transformation success within IPPEKas is primarily driven by information quality, meaningful system utilization, and organizational support, while the contribution of technical system quality is largely indirect through users' interaction with the system.

Table 7. Comparison of Research Findings with Previous Studies

Aspect	Evidence from Previous Studies in SINTA-Accredited Journals	Findings of This Study	New Contribution
System quality	Studies applying the DeLone–McLean model indicate that system reliability, response speed, integration, and ease of operation can influence system use and user satisfaction. However, their effects on benefits may differ depending on the system and user context (Wulansari et al., 2024; Berikang et al., 2025).	System Quality positively affects System Usability but has no significant direct effect on Net Benefits. Its contribution to benefits occurs fully through System Usability.	Demonstrates that technical quality is a necessary enabling condition but does not independently create organizational value in a community-based circular economy system.

Aspect	Evidence from Previous Studies in SINTA-Accredited Journals	Findings of This Study	New Contribution
Information quality	Information accuracy, relevance, completeness, and timeliness are consistently associated with satisfaction, continued use, decision support, and information-system success (Wulansari et al., 2024; Kandami et al., 2025).	Information Quality has the strongest positive effect on both System Usability and Net Benefits. Its influence on Net Benefits occurs directly and indirectly through System Usability.	Strengthens the information-centric perspective by showing that meaningful information is more influential than technical performance in creating digital value.
System usability and user experience	Usability studies emphasize learnability, efficiency, memorability, error handling, interface clarity, and satisfaction as important determinants of technology acceptance and effective use (Sibarani, 2021; Nauli et al., 2023; Wijaya et al., 2024).	System Usability significantly improves Net Benefits and mediates the effects of System Quality and Information Quality.	Positions usability not merely as an interface-quality indicator but as a value-creation mechanism linking technological resources to organizational outcomes.
Organizational support	Research using HOT-Fit and digital-transformation perspectives shows that leadership, resources, communication, organizational culture, training, and structural readiness are necessary for successful system implementation (Yuhana et al., 2024; Elfrida et al., 2024).	Organizational Support has a significant positive effect on Net Benefits, confirming the importance of management commitment, training, SOP alignment, and technical assistance.	Extends HOT-Fit evidence to community-based circular economy organizations and identifies organizational support as a direct determinant of sustainable digital benefits.
System use and net benefits	Prior information-system studies show that use and user satisfaction are important pathways through which system and information quality generate individual and organizational benefits (Wijaya et al., 2022; Wulansari et al., 2024; Berikang et al., 2025).	System Usability significantly affects Net Benefits, while the direct System Quality–Net Benefits relationship is unsupported.	Provides empirical evidence that organizational benefits depend on meaningful operational use rather than technology availability alone.
Digital transformation and organizational value	Studies in business and management journals show that digital transformation can improve innovation, process integration, organizational performance, and resilience when supported by strategy, leadership, organizational culture, and resource readiness (Elfrida et al., 2024; Gunawan & Gunawan, 2026).	IPPEKas digital-transformation benefits are primarily generated by Information Quality, System Usability, and Organizational Support.	Connects information-system success with sustainable value creation in a community-based circular economy setting.
Integrated evaluation model	Previous national studies commonly apply DeLone–McLean, HOT-Fit, usability, TAM, or related acceptance frameworks either separately or in selected combinations (Yuhana et al., 2024; Berikang et al., 2025; Kandami et al., 2025).	The integration of DeLone–McLean, HOT-Fit, and System Usability explains 46.2% of the variance in System Usability and 41.9% of the variance in Net Benefits.	Offers a multidimensional explanatory model that simultaneously captures technological quality, information value, user experience, and organizational readiness.

Source: Research Results (2026).

The comparison presented in Table 7 demonstrates that the findings of this study are generally consistent with previous research identifying Information Quality, System Usability, and Organizational Support as critical determinants of information systems success and digital transformation (Delone & McLean, 2003; Stahl, 2023; Sagala & Őri, 2024). Consistent with prior studies, high-quality information enhances system utilization and organizational performance by providing accurate, relevant, and timely information for operational and strategic

decision-making. Likewise, organizational support through leadership commitment, user training, and resource availability reinforces effective system implementation and contributes to sustainable organizational outcomes. However, unlike several previous studies that reported a significant direct effect of System Quality on organizational performance, this study found that its influence on Net Benefits is fully mediated by System Usability. This finding indicates that technical excellence alone is insufficient to generate organizational value unless users are able to effectively utilize the system in their daily activities. Therefore, the organizational benefits of digital transformation depend not only on technological capability but also on meaningful system interaction and organizational readiness. By integrating the HOT-Fit framework, the DeLone and McLean Information Systems Success Model, and System Usability within the context of IPPEKas, this study extends previous research by offering a more comprehensive socio-technical explanation of digital transformation success in community-based circular economy organizations. This integrated perspective demonstrates that sustainable digital value is created through the combined effects of technology quality, information quality, user experience, and organizational support rather than through technological improvements alone.

CONCLUSION

This study examined the determinants of information system success in the implementation of IPPEKas by integrating the DeLone and McLean Information Systems Success Model, the Human–Organization–Technology Fit (HOT-Fit) framework, and System Usability into a unified structural model. The findings demonstrate that Information Quality, Organizational Support, and System Usability significantly contribute to organizational Net Benefits, while System Quality influences organizational outcomes indirectly through its positive effect on System Usability. These results confirm that successful digital transformation in community-based circular economy organizations depends not only on technological performance but also on the interaction between organizational support, high-quality information, and effective user engagement.

From a theoretical perspective, this study extends information systems success research by integrating three complementary perspectives into a single socio-technical framework. The proposed model provides a more comprehensive explanation of how technological, organizational, and human factors jointly create organizational value than approaches relying on a single theoretical framework. Practically, the findings highlight the importance of improving information quality, strengthening organizational commitment, and enhancing system usability to maximize the long-term benefits of digital transformation initiatives implemented through IPPEKas.

This study is subject to several limitations. The analysis was conducted using cross-sectional data collected from a single community-based digital platform, which may limit the generalizability of the findings across different organizational contexts. Future research is encouraged to validate the proposed model using longitudinal designs, larger and more diverse samples, and additional constructs, such as digital capability, user trust, organizational culture, or artificial intelligence readiness, to further explain information system success in sustainable digital transformation.

ACKNOWLEDGEMENTS

AI-assisted writing tools were used solely to improve language and readability. The authors independently conducted the research, analyzed and interpreted the data, prepared the manuscript, and take full responsibility for its accuracy, originality, and integrity.

REFERENCES

Atobishi, T., Moh'd Abu Bakir, S., & Nosratabadi, S. (2024). How Do Digital Capabilities Affect Organizational Performance in the Public Sector? The Mediating Role of the Organizational Agility. In *Administrative Sciences* (Vol. 14, Issue 2, p. 37). https://doi.org/10.3390/admsci14020037

Berikang, R., Pusung, C. V, Mamangkey, M., & Wenno, M. L. (2025). Pengukuran Kesuksesan Penerapan Sistem Informasi Akademik pada Perguruan Tinggi Menggunakan Model Delone and Mclean. *Remik*, *9*(1), 10–22. https://doi.org/10.33395/remik.v9i1.14229

Bougie, R., & Sekaran, U. (2026). *Research methods for business: A skill-building approach* (9th ed.). John Wiley & Sons.

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Elfrida, E., Nurhayati, P., & Saptono, I. T. (2024). Faktor-Faktor Yang Memengaruhi Implementasi Transformasi Digital Pada Bank XYZ. *Jurnal Aplikasi Bisnis Dan Manajemen*, *10*(1), 312–327. https://doi.org/10.17358/jabm.10.1.312

Graessler, S., Guenter, H., de Jong, S. B., & Henning, K. (2024). Organizational change towards the circular economy: A systematic review of the literature. *International Journal of Management Reviews*, *26*(4), 556–579. https://doi.org/https://doi.org/10.1111/ijmr.12367

Gunawan, D., & Gunawan. (2026). Evaluasi Kesuksesan Sistem Informasi Akses Kampus Dengan Model Delon McLean Pada Gerbang Manual Dan Otomatis. *ZONAsi: Jurnal Sistem Informasi*, *8*(1), 124–131. https://doi.org/10.31849/84pbp375

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage.

Kandami, C. L., Inan, D. I., Juita, R., & Indra, M. (2025). Combating Malaria Through E-SISMAL: How Perceived Quality, Perceived Ease of Use, and Perceived Usefulness Impact Performance? A Case of West Papua Province. *Jurnal Sistem Informasi*, *21*(2), 47–61. https://doi.org/10.21609/jsi.v21i2.1516

Li, L., & Wang, Z. (2024). Does Investment in Digital Technologies Foster Exploitative and Exploratory Innovation? The Moderating Role of Strategic Flexibility. *IEEE Transactions on Engineering Management*, *71*, 9402–9413. https://doi.org/10.1109/TEM.2023.3327072

Mahmoodabadi, D. A., Dehghan, H. R., Kimiafar, K., Karami, M., Mousavi Baigi, S. F., & Farsi Mehrabadi, M. (2025). Usability evaluation methods for hospital information systems: a systematic review. *BMC Health Services Research*, *25*(1), 1540. https://doi.org/10.1186/s12913-025-13745-y

Nauli, I. M., Nathasia, N. D., & Lantana, D. A. (2023). Analisis Kepuasan Pada Website Pemesanan Makeup Menggunakan Metode System Usability Scale dan PIECES Framework. *JUSTIN (Jurnal Sistem Dan Teknologi Informasi)*, *11*(2), 358–365. https://doi.org/10.26418/justin.v11i2.57404

Ndoka, E., Alimehmeti, G., Shulla, K., & Voigt, B.-F. (2025). Transitioning to circular business models in developing countries: a systematic literature review of barriers, enablers, and future directions. *Discover Sustainability*, *6*(1), 605. https://doi.org/10.1007/s43621-025-01339-x

Pourrahimian, P., Seyedzadeh, S., Arabi, B., Kahani, D., & Lotfian, S. (2026). Digital Enablers of the Circular Economy: A Systematic Review of Applications, Barriers, and Future Directions. In *Journal of Manufacturing and Materials Processing* (Vol. 10, Issue 4, p. 112). https://doi.org/10.3390/jmmp10040112

Purbasari, R., Munajat, E., Fauzan, F., & Hakim, M. A. (2025). Model of Digital Collaboration Network in Digital Innovation Context : Social Network Analysis Approach. *Review of Integrative Business and Economics Research*, *14*(1), 614–633. https://buscompress.com/uploads/3/4/9/8/34980536/riber_14-1_40_k24-127_614-633.pdf

Rubio-Andrés, M., Linuesa-Langreo, J., Gutiérrez-Broncano, S., & Sastre-Castillo, M. Á. (2025). Tackling digital transformation strategy: how it affects firm innovation and organizational effectiveness. *The Journal of Technology Transfer*, *50*(5), 1893–1918. https://doi.org/10.1007/s10961-024-10164-9

Sagala, G. H., & Őri, D. (2024). Toward SMEs digital transformation success: a systematic literature review. *Information Systems and E-Business Management*, *22*(4), 667–719. https://doi.org/10.1007/s10257-024-00682-2

Sarstedt, M., & Liu, Y. (2024). Advanced marketing analytics using partial least squares structural equation modeling (PLS - SEM). *Journal of Marketing Analytics*, *12*(1), 1–5. https://doi.org/10.1057/s41270-023-00279-7

Sibarani, A. J. (2021). Usability and user satisfaction rate evaluation on e-learning application from student's perspective using Nielsen usability method. *Jurnal Infotel*, *13*(3), 120–127. https://doi.org/10.20895/infotel.v13i3.673

Stahl, B. (2023). *Digital Transformation in the Manufacturing Sector–Tackling Business and Technology Challenges* [University of Bayreuth]. https://epub.uni-bayreuth.de/id/eprint/6909/1/Dissertation_Bastian_Stahl_Druckversion.pdf

Trier, M., Kundisch, D., Beverungen, D., Müller, O., Schryen, G., Mirbabaie, M., & Trang, S. (2023). Digital Responsibility. *Business & Information Systems Engineering*, *65*(4), 463–474. https://doi.org/10.1007/s12599-023-00822-x

Wijaya, A., Fauzan Al, M. F., Syakti, F., & Putra, M. S. (2024). Implementasi Metode Lean Ux User Interface Dan User Experience Pada Aplikasi Forum Group Discussion Charum. *Jurnal Teknologi Dan Sistem Informasi Bisnis*, *6*(4), 732–745. https://doi.org/10.47233/jteksis.v6i4.1034

Wijaya, I. S., Sandra, D., Khairuldi, K., Winanto, E. A., & Sharipuddin, S. (2022). Evaluasi dan Pengukuran Tingkat Kesuksesan Learning Management System Edmodo Di UNAMA Dinamika Bangsa Jambi Menggunakan DeLone&Mclean. *Jurnal Sisfokom (Sistem Informasi Dan Komputer)*, *11*(3), 297–303. https://doi.org/10.32736/sisfokom.v11i3.1333

Wulansari, A., Kartika, D. S. Y., Najaf, A. R. E., Suryanto, T. L. M., & Faroqi, A. (2024). Analisis Kesuksesan Layanan Digital Perguruan Tinggi Menggunakan Model Delone & McLean untuk Meningkatkan Kepuasan Pengguna. *Jurnal Sistem Informasi Bisnis*, *14*(2), 153–161. https://doi.org/10.21456/vol14iss2pp153-161

Yuhana, Y., Setiawan, D., & Utomo, P. E. P. (2024). Analisis Sistem E-Dimas Universitas Jambi Dengan Pendekatan HOT-FIT Model. *Jurnal Sistem Informasi Bisnis*, *14*(1), 77–87. https://doi.org/10.21456/vol14iss1pp77-87

Yusof, M. M., Kuljis, J., Papazafeiropoulou, A., & Stergioulas, L. K. (2008). An evaluation framework for Health Information Systems: human, organization and technology-fit factors (HOT-fit). *International Journal of Medical Informatics*, *77*(6), 386–398. https://doi.org/https://doi.org/10.1016/j.ijmedinf.2007.08.011