

Evaluating the Success Factors of a Tourism Management Information System Using the DeLone and McLean Model: A User Perspective

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Abstract. This study evaluates the success factors of a tourism management information system implemented by startup XYZ using the DeLone and McLean Information Systems Success Model. Startups in the tourism industry are becoming more dependent on digital platforms, which prompted this research because there has been little user-centered evaluation of tourism information systems. Involving 75 active users of the system, a quantitative explanatory method was used. A systematic questionnaire with 44 questions was used to gather data. The questions covered topics such as system quality, information quality, service quality, use, user satisfaction, and net benefits. Research methods encompassed creating instruments, collecting data, analyzing it statistically, checking reliability using Cronbach's Alpha, and expert validation with Aiken's V. The instrument demonstrated strong validity and reliability with an overall Aiken's V value of 0.8247. Additionally, all constructs attained Cronbach's Alpha values above 0.70, further supporting these findings. Descriptive statistics, construct correlation, multiple regression, coefficient of determination (R^2), and F-test analyses were used to examine the data. All descriptive factors had high mean values, suggesting that users had a good impression of the system. System quality and service quality had a substantial impact on user happiness, according to regression analysis, but information quality and system quality had a substantial impact on system usage. Perceived net benefits were also heavily impacted by system utilization and user satisfaction. The results show that the DeLone and McLean model may be used to evaluate TISs. Making the system more responsive, making the information more accurate, and improving the user support services should be the goals of future enhancements.

Keywords: DeLone and McLean model, digital tourism, information system success, tourism management system, user satisfaction

1 Introduction

The tourism industry is only one of several that has had its organizational processes revolutionized by the fast growth of information technology [1]. Organizations increasingly rely on digital systems to support operational activities, improve service quality, and maintain competitiveness in the digital era. The

increasing need for services that are user-oriented, accessible, and efficient has made the integration of digital technology into the tourism sector a particularly crucial factor. Various digital platforms such as online reservation systems, tourism information systems, digital ticketing services, and event management platforms are now widely utilized to facilitate tourism activities and enhance user experiences. The increasing adoption of digital tourism services indicates that information systems have become essential components in modern tourism management. Recent studies also reported that the tourism sector experienced significant digital transformation following the COVID-19 pandemic, where users increasingly depended on online platforms and digital services for tourism-related activities. [2], [3], [4].

The benefits of digital systems are undeniable, but technical performance alone is insufficient to determine if an information system has been successfully implemented. In practice, some systems may function properly from a technical perspective but still fail to satisfy users or provide meaningful benefits [5], indicating a gap between system capability and user expectations [6]. Users may encounter difficulties related to system usability, information quality, accessibility, or service support, which can negatively affect overall system effectiveness and adoption [7]. Therefore, evaluating the success of information systems from the user perspective becomes important to ensure that implemented systems are capable of meeting user expectations and supporting organizational objectives effectively [8]. Users may be less satisfied and less likely to intend to consistently use digital tourism platforms if the systems are not user-friendly, the information is incorrect, or the assistance is inadequate, according to a number of recent studies [9], [10]. If these issues are not properly addressed, tourism organizations may experience reduced customer trust, lower system utilization, and decreased effectiveness of digital tourism services.

The DeLone and McLean Information Systems Success Model is a cornerstone theory in the field of information systems research for determining how effective a system is. It is one of the most well-known frameworks for this purpose. The model describes how the technical and behavioral components of system performance “system quality, information quality, service quality, use, user satisfaction, and net benefits” are interconnected and can be used to measure the success of an information system [9]. Previous studies have widely applied this model in various contexts, including e-learning systems, e-commerce platforms, healthcare systems, and digital public services, as it provides a comprehensive framework for evaluating both system capabilities and user perceptions in diverse digital environments [8], [10], [11]. Users express higher levels of favorable views, satisfaction, and perceived net advantages in organizational contexts when system, information, and service quality are good, according to previous study [7].

However, studies examining the implementation of the DeLone and McLean model in digital tourism startup environments remain relatively limited, particularly in the context of post-pandemic tourism services [12]. Previous research has predominantly focused on large-scale digital platforms, educational systems, or general organizational environments, while evaluations involving startup-based tourism management information systems are still underexplored [8], [10], [11], [13], [14]. In addition, the COVID-19 pandemic significantly changed tourism service patterns and user behavior. During the pandemic period, tourism organizations rapidly adopted digital technologies such as virtual tourism, online reservations, and digital service platforms to maintain operational activities under mobility restrictions. Following the post-pandemic recovery period, tourism activities gradually returned to direct interaction and physical mobility, resulting in changes in how users interact

with and evaluate digital tourism services. These changes create new challenges for tourism organizations because systems that were previously considered effective may require reevaluation to ensure their continued relevance, usability, and effectiveness in meeting current user expectations [15], [16]. This condition indicates the existence of a research gap regarding how tourism startup users evaluate the effectiveness and benefits of digital tourism systems after the pandemic period, particularly in terms of the quality of the system, the information, and the services.

This condition is also experienced by startup XYZ, a company operating in the tourism and digital agency sector. The company utilizes a system to support tourism-related services, including ticketing services, event management, and digital tourism activities. During the pandemic, the company introduced several digital tourism initiatives to maintain service continuity and support operations. Although the implemented system contributed positively during that period, changes in tourism behavior and service expectations after the pandemic indicate the need for further evaluation regarding the effectiveness of the implemented system from the user perspective. Understanding how “users perceive system quality, information quality, service quality, system use, user satisfaction, and the benefits” generated by the system is important for supporting the sustainability of digital tourism services and improving future system development (DeLone & McLean, 2003; Gössling et al., 2021). Without proper evaluation, the organization may face difficulties in identifying weaknesses within the implemented system, which may affect user satisfaction, system utilization, and the long-term sustainability of digital tourism services. Therefore, conducting a comprehensive evaluation becomes important to identify which aspects of the system require improvement based on user perceptions and experiences.

This research aims to thoroughly evaluate the factors that contributed to the success of startup XYZ's tourism management information system. The DeLone and McLean Information Systems Success Model will be used as an analytical framework. In the context of digital tourism service delivery during a pandemic, this study uses a quantitative explanatory technique to thoroughly examine the causal links among “system quality, information quality, service quality, system usage, user satisfaction, and perceived net benefits”. It hope that this study's findings will provide more proof that the DeLone and McLean approach is useful for entrepreneurs in the tourism startup, while simultaneously providing actionable and evidence-based recommendations for the development of user-centered, efficient, and sustainable digital tourism information systems.

2 Method

The study approach used to analyze the system's success aspects based on the DeLone and McLean Model is described in this section. The research methodology, subjects, research framework, tools, data gathering processes, validation of tools, and methods for analyzing data are all included in the study. The methodology is designed to provide an empirical and descriptive evaluation of user perceptions toward the implemented system in a small-scale startup environment.

The research procedure in this study was conducted through several stages. First, the study identified problems related to the effectiveness of the tourism management information system implemented by startup XYZ based on post-pandemic digital tourism conditions. In addition, the DeLone and McLean Information Systems Success Model served as the foundation for the study hypotheses and conceptual framework. The third step was to use Aiken's V analysis to

validate the questionnaire instrument once it had been constructed. Fourth, an online questionnaire was used to gather data from active users of the system. Fifth, prior to statistical analysis, the reliability and validity of the instruments were tested. Lastly, the correlations among the variables were evaluated and the elements impacting the system's effectiveness were identified using descriptive statistics, correlation analysis, and multiple linear regression analysis.

2.1 Research Design

In order to thoroughly examine the factors impacting the performance of startup XYZ's information system, this research utilized a quantitative explanatory approach [17]. Methodically exploring the linkages between “system quality, information quality, service quality, system usage, user satisfaction, and net benefits” is the approach's theoretical foundation, which is provided by the DeLone and McLean Information Systems Success Model. [9].

When it comes to assessing the efficacy of IT systems, the DeLone and McLean model is among the most influential and extensively utilized frameworks in the several digital sectors that include e-commerce, e-learning, healthcare applications, and various digital service ecosystems. Despite its initial formulation in 1992 and subsequent refinement in 2003, contemporary research consistently validates its continued applicability, particularly due to its integrative structure that simultaneously accommodates technological performance, user perceptions, system utilization behavior, and organizational outcomes within a unified evaluative model.

When contrasting the DeLone and McLean framework with other models like TAM and UTAUT, it becomes clear that the former provides a more comprehensive view of the evaluation process. This is because it extends beyond technology acceptance and behavioral intention, incorporating multidimensional constructs such as “information quality, service quality, user satisfaction, and net benefits”, thereby enabling a more comprehensive evaluation of information system effectiveness, particularly in organizational contexts where both technical and service dimensions are critical.

It was determined that this study would benefit ideal from a quantitative methodology, as it facilitates the systematic collection of numerical data from system users and enables rigorous statistical testing of hypothesized relationships among variables. The explanatory research design was specifically employed to identify and examine causal relationships among the constructs defined within the DeLone and McLean model.

In order to gather data, it used a structured questionnaire that gave to those who were actively using the system. Data analysis followed data collection and made use of descriptive statistics and multiple linear regression. The significance and strength of relationships among constructs were determined using regression analysis, while descriptive analysis was used to summarize views across all research variables and profile respondent characteristics. Through this methodological approach, the study seeks to generate empirical evidence concerning the determinants of system success from the user perspective [17].

2.2 Research Model and Variables

This study utilizes the DeLone and McLean Information Systems Success Model as its analytical foundation to evaluate the determinants of success of the system developed and implemented by startup XYZ [9]. The framework is structured around six core constructs, namely “system quality, information quality, service quality, system usage, user satisfaction, and net benefits”.

Because of their all-encompassing ability to capture behavioral and technological components of information system performance, these six characteristics were included. Digital tourism services also rely significantly on accurate information, high-quality service support, and user satisfaction to enable operational tourism activities, so indicators like system usage or technology acceptance alone aren't enough in the context of tourism-based startup environments. Because of this, it think the DeLone and McLean approach is great for evaluating the tourism management information system as a whole from the perspective of the users.

When people use a system, they are evaluating its technical qualities, which include things like how easy it is to navigate, how responsive it is, and how reliable it is. This is called system quality. How well a system generates and promptly delivers information that is accurate, relevant, and comprehensive is known as information quality. Service quality, on the other hand, represents users' assessment of the support services accompanying the system, including responsiveness, accessibility, and the effectiveness of technical assistance.

The construct of system use reflects the degree and frequency of user interaction with the system during routine operational processes. The level of user satisfaction is a reflection of the users' emotional and intellectual appraisal of the system as a whole. Meanwhile, net benefits describe the perceived positive outcomes derived from system implementation, including improvements in efficiency, operational effectiveness, and service performance enhancement.

System, information, and service quality are considered exogenous factors within this study's conceptual framework, and they are predicted to impact system use and user satisfaction. After then, it is believed that the perceived net benefits of the system's deployment are significantly impacted by user satisfaction and system implementation.

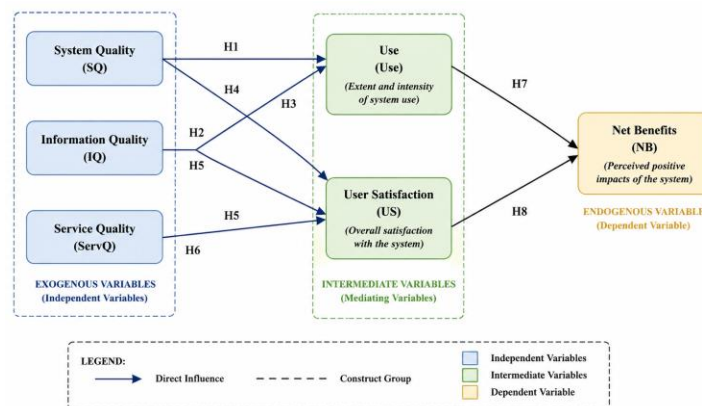


Figure 1. Conceptual Framework for Descriptive Evaluation

Within the DeLone and McLean framework, multiple linear regression analysis was used to thoroughly explore the statistical significance and the level of effect between variables, as well as the interrelationships among the research topics. Figure 1 shows the conceptual model that this work is based on.

2.3 Research Hypothesis

The study's hypotheses are based on the DeLone and McLean Information

Systems Success Model, which states that as “antecedents of system use and user satisfaction which determines perceived net benefits system quality, information quality, and service quality are crucial”.

User satisfaction and the value they place on digital systems are influenced by system, information, and service quality, all of which impact how users perceive and use these systems, according to empirical evidence gathered from studies that used the DeLone and McLean framework [11-13]. These results reinforce the theoretical proposition that the quality dimensions of an information system are critical determinants of overall system success. Accordingly, the hypotheses developed in this study are intended to test whether these established relationships are also observable within the tourism management information system implemented by startup XYZ.

Active user engagement and happiness are anticipated outcomes of a system that possesses strong technological performance, top-notch information, and efficient support services. In addition, it is anticipated that increased system utilization and user satisfaction will lead to a bigger perception of advantages from the system's adoption. This study's hypotheses are based on the following conceptual framework:

- H1: System quality is expected to have a positive effect on system usage.
- H2: Information quality is expected to positively affect system usage.
- H3: Service quality is expected to positively influence system usage.
- H4: System quality is expected to positively affect user satisfaction.
- H5: Information quality is expected to positively influence user satisfaction.
- H6: Service quality is expected to have a positive impact on user satisfaction.
- H7: System usage is expected to positively contribute to net benefits.
- H8: User satisfaction is expected to positively contribute to net benefits.

These hypotheses were formulated to empirically examine the relationships among variables within the DeLone and McLean framework in the context of the system implemented by startup XYZ. Through hypothesis testing, this study aims to identify the factors that significantly contribute to “system use, user satisfaction, and the perceived net benefits” obtained from the implementation of the system.

2.4 Research Participants

The participants in this study were users of the system implemented by startup XYZ, a company operating in the tourism and digital agency sector. The system is used to support tourism-related services such as online ticketing, event management, and digital tourism services.

This research had 75 participants in total. A purposive sample strategy was used to pick the respondents, in which only users who had direct experience in using the system were included as research participants. This selection strategy was deemed suitable because the research necessitated participants who could furnish pertinent assessments of the system's efficacy and performance.

All respondents had actively interacted with the system in operational activities, ensuring that the collected data reflected actual user experiences and perceptions regarding “system quality, information quality, service quality, system use, user satisfaction, and perceived net benefits”.

2.5 Research Instrument

The researcher in this study conducted a survey based on the DeLone and McLean Model for the Success of Information Systems to find out what makes a system work. The development of the questionnaire was carried out through the

adaptation of established measurement indicators derived from the core dimensions of the model, namely “system quality, information quality, service quality, system usage, user satisfaction, and net benefits”.

The questionnaire employs a five-point Likert scale to gauge the degree to which respondents agree or disagree with each assertion. Scale values range from 1 to 5, where 1 indicates “strongly disagree,” 2 represents “disagree,” 3 corresponds to “neutral,” 4 denotes “agree,” and 5 signifies “strongly agree.” The implementation of this Likert scale approach is intended to facilitate the transformation of subjective user perceptions into measurable quantitative data, thereby enabling more systematic statistical analysis [18]. In total, the questionnaire consists of 44 items, with each construct being operationalized through multiple indicators that reflect different facets of the respective variable. The detailed distribution of variables, indicators, and questionnaire items is presented in Table 1.

Table 1. Research Variables and Questionnaire Indicators

Variable	Indicators	Number of Items
SQ	Ease of use, system reliability, response time, navigation	8
IQ	Accuracy, relevance, completeness, timeliness	8
ServQ	Responsiveness, support availability, service reliability, accessibility	8
Use	Frequency of use, intensity of use, dependency	6
US	Overall satisfaction, convenience, expectation conformity	6
NB	Work efficiency, service accessibility, service improvement, user benefits	8
Total		44 Items

As illustrated in Table 1, the measurement items are systematically allocated across six constructs representing the full dimensions of the DeLone and McLean model. The instrument is explicitly designed to capture user assessments covering both technical performance aspects and experiential dimensions of system usage. Prior to dissemination, the questionnaire underwent expert validation (expert judgment) to ensure that each item possessed adequate relevance, clarity, and suitability in accurately measuring the intended constructs [19].

2.6 Instrument Validation

Expert opinion was used to verify the study instrument before the questionnaire was sent out to participants. This was to make sure that each item accurately represented the constructs in the DeLone and McLean Information Systems Success Model. The validation process involved four expert validators consisting of lecturers with expertise in information systems and research methodology. The experts evaluated each questionnaire item based on its relevance to the measured variables and the objectives of the study [19].

Each item's content validity was evaluated as part of the instrument validation procedure using Aiken's V coefficient. On a scale from 1 (not relevant) to 5 (highly relevant), the validators determined how relevant each statement item was. The Aiken's V method was selected because it is widely used to evaluate research instruments based on expert assessments and provides a quantitative measure of item

relevance [20].

The Aiken's V coefficient was calculated using the following formula 1:

$$V = \frac{\sum s}{n(c-1)} \quad (1)$$

Where $s = r - l_o$, r represents the score assigned by the validator, l_o represents the lowest score in the rating scale, c represents the highest score in the rating scale, n represents the number of validators.

The validation results indicated that all questionnaire items achieved acceptable content validity values. The assessment of item validity was based on a minimum Aiken's V threshold of 0.75, where values above this threshold are considered acceptable. The overall average Aiken's V value obtained in this study was 0.8247, indicating that the instrument demonstrated good content validity. Since all questionnaire items exceeded the minimum threshold, all items were retained and considered appropriate for measuring "system quality, information quality, service quality, use, user satisfaction, and net benefits" in the context of the implemented system

2.7 Instrument Reliability

Instrument validity and reliability tests were carried out prior to the main study to guarantee that the measuring instrument was of high quality. Use of Pearson Product-Moment correlation analysis to determine item validity was defined as a correlation coefficient higher than 0.30. All questions on the questionnaire were tested for reliability within each construct using Cronbach's Alpha coefficient. A Cronbach's Alpha value of 0.70 or above was deemed satisfactory, indicating adequate internal consistency among measurement items (Hair et al., 2021). The Cronbach's Alpha coefficient was calculated using Formula 2.

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right) \quad (2)$$

Where α represents Cronbach's Alpha coefficient, k represents the number of items, σ_i^2 represents item variance, and σ_t^2 represents total score variance.

2.8 Data Collection Procedure

In May 2026, a structured online questionnaire was circulated using Google Forms to gather data for this study. An information systems success model created by DeLone and McLean served as the basis for the questionnaire's development, namely "system quality, information quality, service quality, use, user satisfaction, and net benefits". Primary data was gathered from people who had first-hand experience with startup XYZ's system for tourism operations tasks.

The questionnaire link was distributed through relevant communication media, such as personal messaging applications and internal communication groups. Before completing the questionnaire, respondents were provided with information regarding the objectives of the study, questionnaire instructions, and data confidentiality. After all responses were collected, prior to being processed for descriptive statistics and multiple linear regression analysis, the data were examined for completeness and

consistency.

2.9 Data Analysis Technique

Quantitative descriptive and inferential statistics were used to examine the gathered questionnaire data. To make sure the data was comprehensive and that respondent replies were consistent, it was verified before analysis. The responses were then coded according to the measurement scale and organized into a structured dataset for further processing.

Descriptive statistical analysis was conducted to summarize respondent perceptions toward each research variable. Score averages and standard deviations were part of the data set. The construct score for each variable was calculated by averaging all questionnaire items representing the corresponding construct. Mean analysis was used to identify the overall tendency of respondent perceptions, while standard deviation analysis was used to measure the consistency and spread of responses. Table 2 displays the types of interpretation utilized in this investigation.

Table 1. Mean Score Interpretation

Mean Range	Interpretation
1.00 – 1.80	Very Low
1.81 – 2.60	Low
2.61 – 3.40	Moderate
3.41 – 4.20	High
4.21 – 5.00	Very High

The mean score was calculated using Formula 3.

$$\bar{X} = \frac{\sum x_i}{n} \quad (3)$$

Where $\bar{X}$ represents the mean score, x_i represents respondent scores, n represents the total number of respondents.

With the use of the DeLone and McLean Model for the Success of Information Systems, it performed descriptive analysis as well as construct correlation analysis with Pearson correlation coefficients to look at how the research variables were related to one another.

In order to evaluate hypotheses, researcher looked at the interplay between variables using multiple linear regression analysis. The impacts of “system quality, information quality, and service quality on system usage and user satisfaction” were examined using regression analysis. Additionally, the effects of system use and user satisfaction on perceived net benefits were also examined.

The multiple linear regression used in this study is presented in Formula 4.

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + e \quad (4)$$

where the variables Y , a , β , X , and e stand for the dependent variable, constant, independent variables, and error term, respectively. To assess the model's significance and the effect of independent variables, regression significance testing was employed, with a significance level of 0.05. To further evaluate the regression model, it used the modified R^2 and coefficient of determination (R^2) to see how well it explained the variance of the dependent variable. In order to determine which factors were crucial to

startup XYZ system's success, the regression findings were further analyzed.

3 Results and Discussion

This section details the findings and analysis of the research that startup XYZ carried out to determine what elements contributed to the system's success. The study includes the use of descriptive statistics, validity and reliability assessment of instruments, and hypothesis testing by multiple linear regression analysis based on the DeLone and McLean Model. Research also looks at the relationships between in order to find out what factors affect the system's effectiveness “system quality, information quality, service quality, use, user satisfaction, and net benefits”. A thorough comprehension of the system's efficacy is then achieved by interpreting the results.

3.1 Instrument Validation Result

The instrument validation process was conducted through expert judgment involving four validators with expertise in information systems and research methodology. The purpose of the validation was to determine whether or not each survey item adequately represented the study's constructs. In order to determine the instrument's content validity, Aiken's V coefficient was used to the evaluation data. Table 3 displays the average Aiken's V value for all variables.

Table 3 shows that all variables demonstrated satisfactory content validity of the questionnaire items, with Aiken's V values exceeding the minimum acceptable criterion of 0.75. The System Quality and User Satisfaction variables obtained the highest average validity scores, while the remaining variables also demonstrated consistently high validity values. The overall average Aiken's V value of 0.8247 indicates that the instrument was appropriate for measuring the dimensions of “system quality, information quality, service quality, use, user satisfaction, and net benefits in the context of the system”.

Table 3. Average Aiken's V Results for Each Variable

Variable	Average Aiken's V	Status
System Quality (SQ)	0.84	Valid
Information Quality (IQ)	0.82	Valid
Service Quality (ServQ)	0.81	Valid
Use (Use)	0.83	Valid
User Satisfaction (US)	0.84	Valid
Net Benefits (NB)	0.81	Valid
Average	0.8247	Valid

Following the collection of questionnaire responses, it used Pearson Product-Moment correlation analysis to verify the questionnaire's empirical validity in addition to expert validation. All of the survey questions had statistically significant correlation coefficients (p-values > 0.31), according to the data, indicating that all items were empirically valid and suitable for further analysis.

3.2 Instrument Reliability Result

As part of the reliability study, Cronbach's Alpha was utilized to ascertain the internal consistency of the questionnaire with respect to each construct in the DeLone and McLean Information Systems Success Model. With Cronbach's Alpha values for all variables above the necessary requirement of 0.70, the results show remarkable

reliability and consistent evaluation across questions. The detailed reliability outcomes for each construct are summarized in Table 4.

The Cronbach's Alpha values for the various constructs ranged from 0.788 to 0.867, indicating good reliability (Table 4). The highest reliability score was observed in the Use construct, reflecting a strong consistency among its indicators. In contrast, the User Satisfaction construct showed the lowest value; however, it still surpassed the minimum acceptable limit of 0.70, confirming that it remains suitable for further statistical analysis.

Taken together, these results show that the questionnaire tool employed in this research was valid and appropriate for further statistical evaluation. The satisfactory reliability coefficients demonstrate that the measurement items consistently represented the constructs evaluated in this study and were capable of producing stable and consistent responses across respondents.

Table 4. Cronbach's Alpha Reliability Results

Variable	Average Aiken's V	Status
System Quality (SQ)	0.858	Reliable
Information Quality (IQ)	0.805	Reliable
Service Quality (ServQ)	0.825	Reliable
Use (Use)	0.867	Reliable
User Satisfaction (US)	0.788	Reliable
Net Benefits (NB)	0.862	Reliable

3.3 Descriptive Analysis Result

Across the board in the DeLone and McLean Information Systems Success Model, respondents had a favorable impression of the system that startup XYZ had put into place, according to the descriptive analysis. The summary of descriptive statistical results is presented in Table 5.

Table 5. Descriptive Statistical Results

Variable	Mean Score	Interpretation	Standard Deviation
System Quality (SQ)	4.175	High	0.339
Information Quality (IQ)	4.180	High	0.295
Service Quality (ServQ)	4.087	High	0.274
Use (USE)	4.138	High	0.370
User Satisfaction (US)	4.140	High	0.299
Net Benefits (NB)	4.152	High	0.332

Based on Table 5, all variables achieved mean scores above 4.00, indicating that respondents had favorable perceptions toward the implemented system. Among the evaluated variables, Information Quality obtained the highest mean score (4.180), followed closely by System Quality (4.175) and Net Benefits (4.152). These findings suggest that users perceived the system as capable of providing relevant and useful information while also delivering positive benefits in supporting tourism-related activities and operational processes.

The system was assessed as generally easy to use, stable, and responsive during operation, according to respondents, as indicated by the high mean score of the System Quality variable. Similarly, Information Quality achieved a high evaluation, suggesting that the information provided by the system was perceived as accurate,

relevant, complete, and timely. In addition, Service Quality also obtained a favorable mean score, indicating that users positively evaluated the responsiveness, accessibility, and reliability of the support services associated with the system.

The Use variable achieved a high mean score, indicating that respondents actively utilized the system in supporting tourism-related activities and service access. Furthermore, User Satisfaction also demonstrated a positive evaluation, suggesting that users were generally satisfied with their overall experience while interacting with the system. The relatively low standard deviation values across all variables indicate that respondent perceptions tended to be consistent and homogeneous.

The descriptive analysis results indicate that the system implemented by startup XYZ was positively accepted by users across all evaluated dimensions. The consistently high mean scores suggest that the system successfully fulfilled both technical and user-oriented aspects represented in the DeLone and McLean Model.

3.4 Construct Correlation Analysis

Before doing regression analysis, construct correlation analysis was used to examine the interrelationships among the variables. This approach was designed to ascertain the nature and strength of the relationships between “system quality, information quality, service quality, system use, user satisfaction, and net benefits” as outlined in the DeLone and McLean Information Systems Success Model. The degree of association between each concept was evaluated using Pearson correlation. You can see all the results of the correlation analysis in Table 6.

Table 6. Construct Correlation Matrix

Variable	SQ	IQ	ServQ	Use	US	NB
SQ	1.000	0.580	0.462	0.692	0.683	0.682
IQ	0.580	1.000	0.423	0.633	0.543	0.575
ServQ	0.462	0.423	1.000	0.586	0.613	0.549
Use	0.692	0.633	0.586	1.000	0.668	0.760
US	0.683	0.543	0.613	0.668	1.000	0.713
NB	0.682	0.575	0.549	0.760	0.713	1.000

Based on Table 6, all variables demonstrated positive correlations with one another, indicating that improvements in one construct tended to be associated with improvements in other constructs. There appeared to be moderate to significant correlations among the study's variables, with correlation values ranging from 0.423 to 0.760.

Among the quality dimensions, System Quality demonstrated relatively strong correlations with both Use ($r = 0.692$) and User Satisfaction ($r = 0.683$). These findings indicate that users who perceived the system as easy to use, stable, and responsive also tended to use the system more actively and experience higher levels of satisfaction. Similarly, Information Quality showed positive correlations with Use ($r = 0.633$) and User Satisfaction ($r = 0.543$), suggesting that the availability of accurate, relevant, and timely information contributed to system utilization and positive user experiences.

Service Quality also demonstrated positive relationships with both Use ($r = 0.586$) and User Satisfaction ($r = 0.613$). This result indicates that responsive and accessible support services contributed positively to user interaction and satisfaction toward the system. The findings suggest that technical support and service responsiveness remain important aspects in maintaining positive user perceptions

within digital tourism platforms.

The strongest correlation observed in this study was between Use and Net Benefits ($r = 0.760$), followed by the relationship between User Satisfaction and Net Benefits ($r = 0.713$). These findings indicate that users who actively utilized the system and experienced higher satisfaction levels also perceived greater benefits from the implementation of the system. The perceived benefits included improved operational efficiency, easier access to tourism services, and enhanced support for tourism-related activities.

The DeLone and McLean Information Systems Success Model's concept correlation analysis found a positive association between all of the model's variables. The findings show that the inter-construct correlations are strong enough to warrant additional hypothesis testing and regression analysis, and they offer preliminary empirical support for the suggested conceptual framework.

3.5 Regression Analysis and Hypothesis Testing

A detailed regression analysis was used to evaluate the supposed interrelationships between the components of the DeLone and McLean Information Systems Success Model. The analysis was structured using three distinct regression models. In the first model, effect of system quality, information quality, and service quality on system utilization were all taken into account. In the second model, it looked at how user satisfaction affected by system quality, information quality, and service quality. The third model looked at how user happiness and system utilization affected net benefits. Furthermore, researcher verified assumptions by checking for statistical significance at the 0.05 level of significance for each regression coefficient. Tabulated in Table 7 are the comprehensive findings of the regression analysis.

The first regression model found that system, information, and service quality all significantly affect system usage. Users are more inclined to engage with the system more frequently when it is superior in performance, user-friendliness, and reliability, indicating that system quality is the most relevant aspect among these variables ($\beta = 0.433$, $p < 0.05$). The system's utilization was positively and significantly impacted by information quality as well ($\beta = 0.356$, $p < 0.05$, implying that the provision of accurate, relevant, and up-to-date information strengthens users' motivation to interact with the platform. Likewise, service quality contributed significantly to system usage ($\beta = 0.381$, $p < 0.05$), highlighting that prompt, responsive, and accessible support services play a crucial role in increasing system utilization.

Table 7. Regression and Hypothesis Testing Results

Hypothesis	Relationship	Coefficient	p-value	Result
H1	System Quality → Use	0.433	0.00007	Supported
H2	Information Quality → Use	0.356	0.00290	Supported
H3	Service Quality → Use	0.381	0.00133	Supported
H4	System Quality → User Satisfaction	0.388	0.00002	Supported
H5	Information Quality → User Satisfaction	0.142	0.14693	Not Supported
H6	Service Quality → User Satisfaction	0.382	0.00016	Supported
H7	Use → Net Benefits	0.460	0.00000	Supported
H8	User Satisfaction → Net Benefits	0.412	0.00016	Supported

The model yielded an R^2 value of 0.620 and an adjusted R^2 of 0.604, indicating that 62.0% of the variation in system usage can be explained by the three quality dimensions collectively. In addition, the F-statistic confirmed the overall model significance ($F = 38.567$, $p < 0.05$), reinforcing the robustness of the results.

System and service quality significantly affect user satisfaction in Regression Model 2, whereas information quality does not have a statistically significant influence. This pattern of effects is seen in the other model. According to the significant positive correlation between system quality and user happiness ($\beta = 0.388$, $p < 0.05$), a higher degree of system reliability and operational efficiency is linked to lower levels of user contentment. Service quality is also important ($\beta = 0.382$, $p < 0.05$), highlighting the fact that user experience quality is greatly influenced by prompt help and easily available support systems. On the other hand, according to the study's tourist management system, customer satisfaction is not directly affected by information quality ($\beta = 0.142$, $p > 0.05$). The model explains 59.1% of the variation in user satisfaction ($R^2 = 0.591$; adjusted $R^2 = 0.574$), and the F-test verifies its overall statistical validity ($F = 34.214$, $p < 0.05$), showing that the model is still jointly significant even with the non-significant predictor.

Regression Model 3 further illustrates that system usage and user satisfaction both significantly determine perceived net benefits. System usage emerges as the most influential predictor ($\beta = 0.460$, $p < 0.05$), indicating that more frequent and consistent interaction with the system leads to stronger perceived advantages, including improved efficiency, accessibility, and operational effectiveness. User satisfaction also contributes significantly ($\beta = 0.412$, $p < 0.05$), suggesting that positive user experiences are closely associated with higher perceived benefits derived from system implementation. The model accounts for 65.4% of the variance in net benefits ($R^2 = 0.654$; adjusted $R^2 = 0.644$), while the F-statistic confirms strong overall model significance ($F = 67.952$, $p < 0.05$), highlighting its explanatory power.

Overall, the regression outcomes provide strong empirical support for the majority of the proposed hypotheses. Based on the findings, it is clear that high-quality systems, information, and services are necessary conditions for system use, and that user satisfaction is heavily influenced by system and service quality. Perceived net benefits are also strongly correlated with system utilization and user satisfaction. The DeLone and McLean Information Systems Success Model, which these empirical data mostly support, states that system quality characteristics are the primary drivers of usage behavior, satisfaction levels, and the overall advantages of information system deployment.

3.6 Hypothesis Testing Summary

The hypothesis evaluation was derived from the outcomes of the three regression models, serving as the basis for determining the acceptance or rejection of each proposed relationship. Each hypothesis was assessed through the statistical significance of its corresponding regression coefficient, with decision-making anchored on a 0.05 alpha threshold. A hypothesis was deemed empirically supported when its p-value fell below 0.05, reflecting a statistically meaningful association between the examined constructs. The consolidated results of the hypothesis testing procedure are summarized in Table 8.

Table 8. Hypothesis Testing Summary

H	Proposed Relationship	Result	Interpretation
H1	System quality is expected to have a positive effect on system usage.	Supported	Significant positive influence
H2	Information quality is expected to positively affect system usage.	Supported	Significant positive influence
H3	Service quality is expected to positively influence system usage.	Supported	Significant positive influence
H4	System quality is expected to positively contribute to user satisfaction.	Supported	Significant positive influence
H5	Information quality is expected to positively contribute to user satisfaction.	Not Supported	No significant influence
H6	Service quality is expected to positively impact user satisfaction.	Supported	Significant positive influence
H7	System usage is expected to positively influence net benefits.	Supported	Significant positive influence
H8	User satisfaction is expected to positively influence net benefits.	Supported	Significant positive influence

Referring to Table 8, the empirical testing results reveal that seven out of the eight hypotheses formulated in this study received statistical support. According to the results, system quality, information quality, and service quality all have a major bearing on how often a system is used, and both system and service quality have a major bearing on how satisfied users are with the system overall. Perceived net benefits are positively impacted by system influence and user satisfaction, which are both positively validated. On the flip side, there is no statistical evidence to support the hypothesis link between information quality and user satisfaction. This would imply that, in the context under study, user pleasure is not directly related to the informative component of the system.

Taken together, these results lend strong empirical support to the DeLone and McLean Information Systems Success Model, which startup XYZ used to explain the system's efficacy. Positive user experiences and enhanced perceived organizational value are fostered by prolonged user engagement, excellent service support, and high-quality system performance in the digital tourism ecosystem, according to the results.

3.7 Discussion

According to the DeLone and McLean Information Systems Success Model, which states that “system quality, information quality, and service quality are key determinants that shape system use, user satisfaction, and perceived net benefits”, this study's results generally support this model's theoretical claims [9]. The consistently high scores across all evaluated constructs indicate that the system implemented by startup XYZ was positively assessed not only from a technical standpoint, but also in terms of user experience and practical usefulness. These results strengthen the notion that information system success should be conceptualized as a multidimensional construct that integrates both technological performance and human-centered perceptions within a unified analytical framework [21].

The majority of the hypotheses were found to have empirical validity, as shown by the regression analysis findings. User satisfaction was strongly correlated

with system quality, and system utilization was strongly correlated with information quality and service quality. In contrast, users may be more concerned with the system's usability, accessibility, and responsiveness to support inquiries than with informational qualities when making satisfaction assessments, since no statistically significant correlation was found between the two. The significance of active user involvement and good experience outcomes in converting system deployment into organizational value is underscored by the fact that both system use and user satisfaction significantly impact perceived net benefits.

Among the most noteworthy results of this research is the high degree of user satisfaction that participants expressed. Users believed the system could adequately support tourism-related activities and satisfy their operational demands, according to this outcome. For digital tourist platforms, user satisfaction is closely linked to how well the system is designed to be accessible, easy to use, responsive, and generally for interacting with users. Consistent with previous research in digital service contexts, this study's positive assessment of user satisfaction shows that users are more likely to be satisfied when they view digital systems as helpful, easy to use, and dependable for daily activities [1], [22]. Previous studies in tourism and digital platform contexts have also reported that user-centered system design significantly contributes to positive user experiences and continuous system acceptance [12], [15], [16].

The findings also indicate that service quality obtained one of the highest evaluation scores among all variables. This result highlights the importance of responsive and accessible support services in tourism management systems. In digital tourism environments, users often expect not only functional systems but also immediate assistance when encountering technical difficulties or accessing tourism services. Recent studies conducted in online service technology contexts similarly found that service quality significantly affects user trust, satisfaction, and long-term engagement with digital platforms [23], [24]. The relatively high perception of service quality in this study may indicate that startup XYZ successfully provided support mechanisms that enhanced user confidence and reduced barriers during system interaction.

Another important finding is the very high score obtained by the Net Benefits variable. This result indicates that users perceived the implemented system as generating meaningful practical benefits, particularly in improving efficiency, simplifying access, and supporting tourism-related activities more effectively. This finding aligns with recent research in information systems which emphasizes that perceived usefulness and practical value are essential indicators of successful system implementation [25], [26]. When people utilize digital platforms in tourism-related systems and immediately see improvements in accessibility, service ease, and time efficiency, they are more inclined to keep using them. This study's results imply that the installed system improved both operational procedures and the user experience as a whole.

One possible explanation for the respondents' favorable impression of the system is the high ratings given to the system's and the information's quality. According to the findings, consumers thought the platform was reliable, simple to use, and could provide them with current and relevant information. This confirms the results of earlier research on digital information systems, which have shown that trustworthy technological performance and precise information quality are major factors in user satisfaction and contentment with the system [27], [28], [29]. Particularly in digital tourism environments, information quality becomes highly critical because users rely on tourism information for planning, decision-making, and accessing services in real time.

The Use variable also achieved a high mean score, indicating that respondents actively utilized the system and perceived it as beneficial for supporting tourism-related activities. This finding indicates that respondents actively utilized the system and perceived it as highly beneficial for supporting tourism-related activities. The high level of system usage suggests that the implemented platform was successfully integrated into user activities and capable of fulfilling operational and informational needs effectively. This finding supports previous studies suggesting that systems perceived as useful, accessible, and reliable tend to encourage stronger user engagement and continuous utilization behavior. This finding is relevant to several recent studies which argue that high system quality does not automatically guarantee intensive usage behavior, especially in systems whose utilization depends on external activity patterns and service demand [30], [31]. In the context of post-pandemic tourism, user interaction with tourism systems may fluctuate depending on travel behavior, mobility patterns, and changes in tourism preferences [16].

Startup XYZ and other digital tourism businesses may take a number of practical cues from the results. The results indicate that maintaining high service quality, system reliability, and information accuracy is essential for sustaining positive user experiences and maximizing perceived benefits. Tourism startups should therefore prioritize not only technological development but also continuous service improvement and user-oriented system design. In rapidly evolving digital tourism ecosystems, user expectations continue to increase, particularly regarding system responsiveness, accessibility, and personalized experiences. Consequently, organizations that fail to maintain these aspects may experience declining user satisfaction and reduced perceived value over time [32], [33], [34].

The results also show that the DeLone and McLean methodology is still useful for assessing modern tourism digital systems. Despite the model's widespread application in e-commerce and e-learning sectors, this study confirms that its dimensions remain applicable in tourism management systems characterized by dynamic user interactions and digital service dependency. Furthermore, the study contributes contextual evidence from the Indonesian digital tourism sector, which remains relatively underexplored compared to other technology adoption domains.

Nevertheless, the findings of this study should be interpreted within the context of its focus on a single startup environment operating in the digital tourism sector. Although the study provides important empirical insights regarding the implementation of the DeLone and McLean Information Systems Success Model, the results may not fully represent other tourism platforms or organizational contexts with different operational characteristics and user populations. Therefore, broader generalization of the findings should be conducted cautiously. Future studies are encouraged to involve multiple organizations, more diverse tourism platforms, and broader respondent groups to obtain more comprehensive and generalizable findings regarding the success factors of systems.

There was an interaction between technical quality, service quality, information quality, and user perceptions of usefulness that determined the success of the system that startup XYZ constructed, as shown by the findings. The results show that in today's highly competitive digital tourism markets, technological prowess is not the only determinant of a system's success, the capacity to provide users with relevant, accessible, and enjoyable experiences is also crucial.

4 Conclusion

This study concludes that the system implemented by startup XYZ

demonstrated positive performance across all evaluated dimensions based on the DeLone and McLean Information Systems Success Model. The descriptive analysis results showed that system quality, information quality, service quality, use, user satisfaction, and net benefits achieved high mean scores, indicating positive user perceptions toward the implemented system. These findings suggest that the system was considered reliable, useful, and capable of supporting tourism-related operational activities effectively.

Moreover, the regression analysis's additional results validated most of the relationships proposed by the DeLone and McLean model. The system's use was significantly affected by the information and service quality, and user satisfaction was significantly affected by the system and service quality. In contrast, users were less concerned with the information's quality and more concerned with the system's and service's accessibility, functionality, and responsiveness when evaluating their degree of satisfaction. In addition, the perceived net advantages were greatly affected by user happiness and system use, showing that higher perceived value and operational benefits were the result of active system use and favorable user experiences.

Particularly in startup settings defined by ever-changing service encounters and tech-based operations, the results show that the DeLone and McLean approach is still relevant for assessing digital tourism information systems. Maintaining system dependability, quick service support, and user-oriented system development are crucial for maximizing perceived organizational advantages and sustaining pleasant user experiences, according to the study's practical perspective. Tourism startups should therefore focus not only on technological performance but also on improving service accessibility and overall user interaction quality.

The digital tourism industry in Indonesia has been mostly unexplored in prior research; this study fills that gap by providing empirical evidence on the subject. Although the study was conducted in a specific organizational setting, the results may not be applicable to other situations. Future studies are recommended to involve multiple tourism platforms and broader respondent groups, as well as to incorporate additional variables such as trust, user engagement, and behavioral intention to extend the explanatory capability of the model in digital tourism environments.

This study's findings provide a number of actionable suggestions for startup XYZ. To start, in order to make the system more user-friendly and responsive, the system should work on making the user interface easier to use. Secondly, although though information quality did not have a major impact on user satisfaction, it is still important to continuously enhance the accuracy, timeliness, and relevance of information in order to preserve the confidence and credibility of the system over the long run. Third, service quality should be strengthened through faster technical support response, improved helpdesk accessibility, and proactive user assistance to increase overall user satisfaction. Finally, management is advised to continuously monitor user feedback and system performance indicators to ensure that the tourism management information system remains aligned with user needs and supports sustainable digital tourism operations.

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