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Analyzing User Acceptance of the ITEMKU Website for Online Game Top-Up Services Using the Technology Acceptance Model

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Abstract

This study aims to analyze user acceptance of the ITEMKU website as an online game top-up platform using the Technology Acceptance Model (TAM), focusing on perceived ease of use and perceived usefulness. A quantitative approach with a descriptive-verificative design was employed. Data were collected through questionnaires administered to 69 respondents and analyzed using SPSS. The analytical procedures included validity and reliability testing, classical assumption testing, multiple linear regression, and hypothesis testing. The results indicated that the questionnaire items met the study's reported validity criteria. However, the reliability coefficient for perceived usefulness (Cronbach's alpha = 0.593) fell slightly below the study's specified threshold of 0.60. The regression model yielded an R^2 value of 0.044, indicating that perceived ease of use and perceived usefulness jointly accounted for 4.4% of the variance in user acceptance. The manuscript reported significant individual and simultaneous relationships between the predictors and user acceptance; however, inconsistencies between the reported regression coefficients, test statistics, and significance values require verification before these conclusions can be confirmed. These findings highlight the relevance of TAM as a framework for evaluating digital service acceptance while emphasizing the need for reliable measurement instruments and consistent statistical reporting. Future research should investigate additional factors, including perceived security, trust, service quality, and transaction reliability, to provide a more comprehensive explanation of user acceptance in online game top-up services.

Keywords: Technology Acceptance Model, perceived ease of use, perceived usefulness, user acceptance, ITEMKU, online game top-up

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Introduction

The rapid development of information technology has transformed business activities, including those conducted by micro, small, and medium-sized enterprises (MSMEs). The adoption of digital technologies enables businesses to expand their market reach, improve operational efficiency, and develop internet-based services (Maulana et al., 2015; Sudianto et al., 2025). One manifestation of this transformation is the use of websites as transaction platforms for digital products, including vouchers, virtual currencies, and in-game items. In this context, information systems

play a crucial role in integrating order management, payment processing, and digital product delivery. Well-integrated systems are expected to improve transaction efficiency, minimize processing errors, and enhance the overall quality of digital services (Habibullah et al., 2023).

The growth of the online gaming industry has further increased demand for virtual product transactions. Online game users purchase digital items to enhance their gaming experiences, making top-up services an integral component of the digital gaming ecosystem. Increased engagement with online games may also influence the frequency of virtual item purchases and contribute to the expansion of the game top-up market (Surya et al., 2024). This development encourages service providers to establish transaction systems that are not only fast and efficient but also user-friendly, reliable, and capable of delivering satisfactory user experiences. Consequently, evaluating user acceptance is essential for understanding the successful adoption of information systems in online game top-up services.

This study focuses on ITEMKU, a digital marketplace that provides access to online game-related products and virtual items, as the research setting for evaluating user acceptance. In digital transaction environments, the success of a platform depends not only on product availability and transaction reliability but also on users' perceptions of the usefulness and ease of use of the system. Maulana et al. (2015) emphasized that perceived ease of use and perceived benefits are important considerations in the acceptance of digital services. Similarly, Sudianto et al. (2025) highlighted the importance of transaction speed and system security in shaping users' evaluations of top-up websites. These findings underscore the need for a systematic evaluation of user perceptions to identify technological and service-related aspects that should be maintained or improved.

To investigate user acceptance, this study employs the Technology Acceptance Model (TAM), a theoretical framework that explains technology acceptance through users' perceptions of perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which individuals believe that using a particular system will enhance their performance, whereas perceived ease of use refers to the extent to which they believe that using the system will require minimal effort. These constructs are particularly relevant to website-based game top-up services because users must be able to navigate transaction procedures while obtaining practical benefits, such as convenience and purchasing efficiency. Accordingly, TAM provides a theoretical basis for examining the relationships among technology acceptance variables and evaluating users' perceptions of digital transaction systems (Davis, 1989).

Although TAM has been widely applied in information technology acceptance research (King & He, 2006; Marangunić & Granić, 2015), its application to website-based game top-up services in the context of MSMEs warrants further empirical investigation. Findings from general e-commerce and digital payment studies may not fully capture the distinctive characteristics of virtual product transactions, which require accessible interfaces, efficient processing, and accurate product delivery (Gefen et al., 2003; Pavlou, 2003). Therefore, the research gap addressed by this study concerns the need for

empirical evidence on user acceptance in the specific context of website-based game top-up services. The novelty of this study lies in applying TAM to evaluate user acceptance of ITEMKU using empirical user data and a simple linear regression approach, subject to the relationships specified in the research model. The study is expected to extend the application of TAM to digital product transaction services and provide empirical insights that can inform improvements in system quality and user experience.

Based on this rationale, this study aims to analyze user acceptance of the information system supporting game top-up sales on the ITEMKU website using TAM. Specifically, the study examines the relationships between perceived ease of use, perceived usefulness, and user acceptance in accordance with the operational definitions of the research variables. The findings are expected to contribute theoretically to the literature on technology acceptance in digital transaction services and practically to the development of strategies for improving system usability, perceived benefits, and continued system use. By examining user perceptions in a specific digital marketplace context, this study seeks to provide a more contextualized understanding of the factors associated with the acceptance of website-based game top-up services.

Method

This study employed a quantitative approach with a descriptive-verificative research design to examine user acceptance of the ITEMKU website as a platform for online game top-up transactions. The quantitative approach was selected because the study aimed to measure relationships between research variables using numerical data and statistical analysis (Creswell & Creswell, 2018). The descriptive component was used to characterize respondents and describe their perceptions of the website, whereas the verificative component was intended to test the proposed relationships between perceived ease of use, perceived usefulness, and user acceptance (Sugiyono, 2019).

The research framework was based on the Technology Acceptance Model (TAM), which explains technology acceptance through users' perceptions of a system's usefulness and ease of use (Davis, 1989). The independent variables consisted of perceived ease of use (X1) and perceived usefulness (X2), while user acceptance (Y) served as the dependent variable. These variables were operationalized into measurable indicators and assessed using a structured questionnaire with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) (Joshi et al., 2015; Likert, 1932).

The respondents consisted of users of the ITEMKU website who had experience using the platform for online game top-up transactions. Respondents were selected based on their relevance to the research objectives and familiarity with the system being evaluated. The sampling technique, sample size, and data collection period should be specified according to the actual research procedures. The questionnaire was designed to collect information regarding respondents' perceptions of the website's ease of use, usefulness, and acceptance.

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS; Field, 2018). The analytical procedures included descriptive statistics, instrument validity testing, reliability testing, and classical assumption tests,

where applicable. Validity testing was conducted to evaluate whether the questionnaire items adequately measured the intended constructs, while reliability testing was used to assess the internal consistency of the measurement instruments (Cronbach, 1951; Hair et al., 2019). Classical assumption tests were performed to assess the suitability of the data for multiple linear regression, including normality, multicollinearity, and heteroscedasticity assessments, as appropriate to the analytical model (Ghozali, 2018; Hair et al., 2019).

Multiple linear regression was employed to examine the relationships between perceived ease of use, perceived usefulness, and user acceptance. The regression model was expressed as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

where Y represents user acceptance, X_1 represents perceived ease of use, X_2 represents perceived usefulness, α denotes the intercept, β_1 and β_1 represent the regression coefficients, and ε represents the error term. Partial significance tests (t-tests) were used to examine the individual relationships between each independent variable and user acceptance, while the simultaneous significance test (F-test) was used to evaluate the joint contribution of the independent variables. The coefficient of determination (R^2) was used to assess the proportion of variation in user acceptance explained by the regression model (Field, 2018; Hair et al., 2019).

The findings were interpreted in relation to the research hypotheses and the theoretical framework of TAM. This analytical approach was intended to provide empirical evidence regarding the relationships between users' perceptions of ease of use and usefulness and their acceptance of the ITEMKU website. The results were expected to provide insights into factors associated with user acceptance and inform potential improvements in the usability and perceived benefits of website-based game top-up services.

a. Research Variables and Operational Definitions

Research variables are characteristics or constructs that can be observed or measured to address research questions and test hypotheses (Sugiyono, 2019). In this study, the variables were defined based on the Technology Acceptance Model (TAM), which identifies perceived ease of use and perceived usefulness as central constructs in explaining technology acceptance (Davis, 1989).

The study consisted of two independent variables and one dependent variable:

a. Perceived Ease of Use (X1): The extent to which users believe that the ITEMKU website can be used with minimal effort.
b. Perceived Usefulness (X2): The extent to which users believe that using the ITEMKU website provides practical benefits and improves the efficiency of online game top-up transactions.
c. User Acceptance (Y): The extent to which users demonstrate acceptance of the ITEMKU website, reflected in their willingness and intention to use the platform.

The operational definitions and measurement indicators are presented in Table 1.

Table 1. Operational Definitions of Research Variables

Variable	Indicator	Operational Definition	Measurement Scale
Perceived Ease of Use (X1)	Ease of learning	The extent to which users find the ITEMKU website easy to learn and understand.	Five-point Likert scale (1–5)
Perceived Ease of Use (X1)	Ease of interaction	The extent to which users can interact with website features without excessive effort.	
Perceived Ease of Use (X1)	Clarity of navigation	The extent to which website menus, instructions, and transaction procedures are clear and understandable.	
Perceived Ease of Use (X1)	Ease of completing transactions	The extent to which users can complete top-up transactions without unnecessary complexity.	
Perceived Ease of Use (X1)	Overall ease of use	The extent to which users perceive the website as easy to operate.	
Perceived Usefulness (X2)	Transaction efficiency	The extent to which the website helps users complete top-up transactions efficiently.	
Perceived Usefulness (X2)	Time efficiency	The extent to which the website helps users save time when purchasing digital products.	
Perceived Usefulness (X2)	Transaction convenience	The extent to which the website facilitates convenient access to top-up services.	
Perceived Usefulness (X2)	Task performance	The extent to which the website supports users in completing their intended purchases effectively.	
Perceived Usefulness (X2)	Overall usefulness	The extent to which users perceive the website as beneficial for online game top-up transactions.	
User Acceptance (Y)	Intention to use	The extent to which users intend to use the ITEMKU website for future top-up transactions.	
User Acceptance (Y)	Willingness to use	The extent to which users are willing to use the website when purchasing game-related digital products.	
User Acceptance (Y)	Continued use intention	The extent to which users intend to continue using the website in the future.	
User Acceptance (Y)	Preference for use	The extent to which users prefer the website as an option for conducting top-up transactions.	
User Acceptance (Y)	Recommendation intention	The extent to which users intend to recommend the website to other potential users.	

The questionnaire items were developed from the operational indicators to ensure that each construct could be measured consistently. The five-point Likert scale was used to quantify respondents' levels of agreement with each statement, with higher scores indicating more favorable perceptions. The final questionnaire should be reviewed and, where necessary, pilot-tested to establish the adequacy of its validity and reliability before the main data collection (Taber, 2018).

Results and Discussion

The results and discussion of this study focus on examining the factors associated with user acceptance of the ITEMKU website as an online

game top-up platform through the Technology Acceptance Model (TAM). The analysis considers the empirical findings obtained from questionnaire responses and statistical testing, while interpreting their relevance in relation to the theoretical framework and previous studies. To provide a systematic understanding of technology acceptance in this context, the discussion is organized into three main aspects: (1) the effect of perceived ease of use on user acceptance, (2) the effect of perceived usefulness on user acceptance, and (3) the joint effect of perceived ease of use and perceived usefulness on user acceptance. These three aspects provide the basis for examining the individual and combined contributions of the two principal TAM constructs to users' acceptance of the ITEMKU website.

a. The Effect of Perceived Ease of Use on User Acceptance of the ITEMKU Website

Perceived ease of use is an important construct in the Technology Acceptance Model (TAM) because it reflects the extent to which users believe that a technological system can be operated with minimal effort. In the context of the ITEMKU website, this construct relates to users' perceptions of website navigation, clarity of transaction procedures, accessibility of features, and the ease of completing online game top-up transactions. These aspects are relevant because users interact with the platform to purchase digital products and expect the transaction process to be straightforward and efficient. Taber (2018) established perceived ease of use as a central construct in explaining technology acceptance, while Venkatesh and Davis (2000) further examined its role in users' acceptance of information systems.

Before interpreting the relationship between perceived ease of use and user acceptance, the quality of the measurement instrument must be considered. The source article reports five questionnaire items for the perceived ease of use variable (X1). The results of the validity test are presented in Table 1.

Table 1. Validity Test Results for Perceived Ease of Use (X1)

Item	Significance (p)	Decision criterion	Reported status
X1_1	0.000	< 0.05	Valid
X1_2	0.012	< 0.05	Valid
X1_3	0.000	< 0.05	Valid
X1_4	0.000	< 0.05	Valid
X1_5	0.000	< 0.05	Valid

Table 1 indicates that all five questionnaire items for perceived ease of use have reported significance values below 0.05. According to the criterion used in the source article, all items were classified as valid. This finding supports the use of the items in measuring respondents' perceptions of the website's usability (Ruiz-Herrera et al., 2023). However, statistical significance alone does not fully establish construct validity (Hair et al., 2019). The item–total correlation coefficients and the specific validity-testing procedure should also be examined to confirm that each item adequately represents the intended construct.

In addition to validity, instrument reliability is important because inconsistent measurements can weaken the interpretation of relationships between variables (Al-Adwan et al., 2023). The source article reports Cronbach's alpha values for perceived ease of use, perceived usefulness, and user acceptance, as summarized in Table 2.

Table 2. Reliability Test Results

Variable	Cronbach's alpha	Criterion	Assessment against criterion
Perceived Ease of Use (X1)	0.632	≥ 0.60	Meets the stated threshold
Perceived Usefulness (X2)	0.593	≥ 0.60	Below the stated threshold
User Acceptance (Y)	0.614	≥ 0.60	Meets the stated threshold

As shown in Table 2, perceived ease of use has a Cronbach's alpha value of 0.632, exceeding the study's stated threshold of 0.60. The user acceptance variable also meets this threshold, with a value of 0.614. These results indicate that both scales satisfy the minimum reliability criterion adopted in the original study, although their internal consistency remains relatively modest (Tavakol & Dennick, 2011). In contrast, perceived usefulness has an alpha value of 0.593, which is below the stated threshold and therefore warrants further examination. Although this result does not directly invalidate the perceived ease of use scale, the reliability of the overall measurement model should be considered when interpreting the regression findings.

The relationship between perceived ease of use and user acceptance was subsequently examined through regression analysis. The source article reports the regression coefficient and associated statistics in Table 9. The values relevant to X1 are reproduced in Table 3.

Table 3. Reported Regression Statistics for Perceived Ease of Use

Predictor	Unstandardized coefficient B	Standard error	t statistic	Reported significance
Perceived Ease of Use (X1)	−0.218	0.150	1.452	0.001

Table 3 requires careful interpretation because the reported statistics are internally inconsistent. The coefficient $(B = -0.218)$ indicates a negative estimated relationship, whereas the narrative in the source article states that perceived ease of use has a significant positive effect on user acceptance. Furthermore, the reported coefficient, standard error, t statistic, and significance value do not appear mutually consistent. For example, dividing the absolute coefficient by its standard error gives approximately 1.45, but a t statistic of this magnitude would not ordinarily correspond to a two-sided significance value of 0.001 under a conventional regression test with this sample size (Field, 2018). Therefore, the original SPSS output must be checked before concluding whether the effect is statistically significant and whether its direction is positive or negative.

From a theoretical perspective, perceived ease of use remains relevant to understanding acceptance of the ITEMKU website. Davis (1989) explains that users' beliefs about the effort required to operate a system are important in

technology acceptance. Venkatesh & Davis (2000) likewise examine perceived ease of use within a broader explanation of information technology acceptance. In the ITEMKU context, users may evaluate usability through the clarity of navigation, comprehensibility of transaction instructions, and effort required to complete purchases (Toraman & Geçit, 2023). Nevertheless, theoretical expectations cannot substitute for the empirical evidence required to support the hypothesis.

The distinction between theoretical expectations and the statistical findings is important for an academically defensible discussion. Table 4 summarizes the relationship between the theoretical construct, the practical context of ITEMKU, and the evidence available in the source article.

Table 4. Synthesis of Theoretical and Empirical Evidence

Evidence source	Main point	Relevance to ITEMKU	Interpretive implication
Davis (1989)	Perceived ease of use is a central TAM construct.	Ease of navigation and transaction procedures are relevant usability aspects.	Theoretical basis; not direct evidence of the estimated effect.
Venkatesh and Davis (2000)	Examines perceived ease of use within technology acceptance.	Usability may contribute to users' evaluations of a digital platform.	Supports the conceptual rationale; does not verify the ITEMKU coefficient.
Source article, Table 3	Five X1 items are reported as valid.	All reported p-values are below 0.05.	Supports item-level validity under the criterion used.
Source article, Table 9	Regression coefficient B = −0.218; reported t = 1.452 and p = 0.001.	The estimated direction is negative, while the reported significance is inconsistent with the other statistics.	Reanalysis of the original SPSS output is required.

Table 4 demonstrates that the theoretical literature provides a clear rationale for examining perceived ease of use as a determinant of technology acceptance. However, the theoretical relevance of this construct and the validity of its measurement items do not independently establish a significant effect on user acceptance in the ITEMKU sample (Zou & Huang, 2023). The empirical conclusion must be based on internally consistent regression statistics. Consequently, the original output should be verified before the manuscript asserts that H1 is accepted or that improved usability necessarily increases acceptance among ITEMKU users.

Overall, perceived ease of use is a theoretically relevant dimension for evaluating the ITEMKU website, particularly because users must navigate the platform and complete digital transactions efficiently. The source article reports that all five X1 items passed its stated validity criterion and that the X1 reliability coefficient exceeded the adopted minimum threshold (Guner & Acarturk, 2020). However, the regression statistics reported for this variable require correction or verification before a definitive conclusion can be drawn about the direction and significance of its relationship with user acceptance. This distinction strengthens the scientific credibility of the discussion by ensuring that the interpretation follows the evidence rather than the expected theoretical relationship.

b. The Effect of Perceived Usefulness on User Acceptance of the ITEMKU Website

Perceived usefulness is a fundamental construct in the Technology Acceptance Model (TAM), referring to the extent to which users believe that using a particular information system will improve their performance or effectiveness (Davis, 1989). In the context of the ITEMKU website, perceived usefulness relates to the benefits users experience when purchasing digital products, particularly the efficiency of top-up transactions, time savings, convenience in obtaining in-game items, and support for completing purchases effectively (Han & Sa, 2022). These benefits are important in digital marketplaces because users evaluate a platform not only in terms of its functionality but also in terms of the practical value it provides during transactions.

The empirical assessment of perceived usefulness begins with evaluating the validity of the questionnaire items used to measure this construct. The source article reports five items for perceived usefulness (X2), with their validity-test results presented in Table 5.

Table 5. Validity Test Results for Perceived Usefulness (X2)

Item	Significance (p)	Decision criterion	Reported status
X2_1	0.004	< 0.05	Valid
X2_2	0.001	< 0.05	Valid
X2_3	0.000	< 0.05	Valid
X2_4	0.000	< 0.05	Valid
X2_5	0.000	< 0.05	Valid

As shown in Table 5, all five perceived usefulness items have reported significance values below 0.05. Based on the criterion applied in the source article, these items were classified as valid and considered suitable for subsequent analysis. This result provides preliminary support for using the questionnaire to examine respondents' perceptions of the benefits offered by ITEMKU (Natasia et al., 2022). However, a more comprehensive assessment should also consider the item–total correlation coefficients and the theoretical alignment between each questionnaire statement and the perceived usefulness construct (Kamal et al., 2020). Validity at the item level does not, by itself, establish that the entire construct has adequate measurement quality.

Instrument reliability provides an additional basis for evaluating the consistency of the measurements. The source article reports a Cronbach's alpha of 0.593 for perceived usefulness, compared with 0.632 for perceived ease of use and 0.614 for user acceptance. These values are summarized in Table 6.

Table 6. Reliability Test Results for the Research Variablesa

Variable	Cronbach's alpha	Minimum threshold	Assessment
Perceived Ease of Use (X1)	0.632	0.60	Meets the study's threshold
Perceived Usefulness (X2)	0.593	0.60	Below the study's threshold
User Acceptance (Y)	0.614	0.60	Meets the study's threshold

Table 6 reveals that the Cronbach's alpha value for perceived usefulness is 0.593, slightly below the minimum threshold of 0.60 adopted by the original study. Consequently, the source article's description of this variable as meeting the stated reliability criterion requires reconsideration (Tavakol & Dennick, 2011; Negara et al., 2025). Although the difference is small, the result should be reported transparently because internal consistency affects confidence in the measurement of the construct. The authors should examine the questionnaire items, corrected item–total correlations, and the effect of removing individual items on Cronbach's alpha (Field, 2018). Until this issue is resolved, conclusions involving perceived usefulness should be interpreted cautiously rather than treated as unequivocal evidence.

The relationship between perceived usefulness and user acceptance was subsequently examined using regression analysis. The reported coefficient for perceived usefulness is positive, suggesting a positive estimated association with user acceptance (Rafique et al., 2020). Nevertheless, the accompanying statistical values require verification before the significance of this relationship can be established. The relevant figures from the source article are presented in Table 7.

Table 7. Reported Regression Statistics for Perceived Usefulness

Predictor	Unstandardized coefficient B	Standard error	t statistic	Reported significance
Perceived Usefulness (X2)	0.039	0.162	0.241	0.003

Table 7 shows that the reported unstandardized regression coefficient for perceived usefulness is positive $(B = 0.039)$. If this coefficient is confirmed, it would indicate a small positive estimated relationship between perceived usefulness and user acceptance, holding the other predictor constant in the multiple regression model (Pavlou, 2003). However, the reported coefficient, standard error, t statistic, and significance value are not internally consistent (WD et al., 2025). In particular, the coefficient divided by its standard error is approximately 0.24, which agrees with the reported t statistic but would not ordinarily yield a two-sided significance value of 0.003. The original SPSS output must therefore be checked before the authors conclude that perceived usefulness has a statistically significant effect or accept hypothesis H2.

From a theoretical perspective, Davis (1989) argues that users are more likely to accept a technology when they believe that it provides meaningful benefits. Venkatesh et al. (2003) likewise identify performance-related expectations as an important component of technology adoption. Applied to ITEMKU, perceived usefulness may be reflected in whether the platform helps users complete purchases efficiently, reduces the effort associated with acquiring digital items, and provides a practical means of accessing game-related products (Mogaji et al., 2024). These considerations establish a rationale for examining the construct, but they do not independently demonstrate a

statistically significant effect in the present sample.

The overall explanatory capacity of the regression model also provides important context for interpreting the relationship. The source article reports an R^2 value of 0.044, indicating that the two independent variables collectively account for 4.4% of the observed variation in user acceptance. This relatively low value suggests that other factors not included in the model may also be relevant (Kusumaningtyas et al., 2025). Potential factors for future investigation include perceived security, trust, transaction reliability, service quality, and user satisfaction (Al-Qaysi et al., 2020). These factors should be treated as directions for further research rather than as established explanations of the current results (DeLone & McLean, 2003; Gefen et al., 2003).

The following two figures are proposed to strengthen the presentation of the findings. Their captions are provided first, as requested; the figures themselves can be generated after the statistical results have been verified.

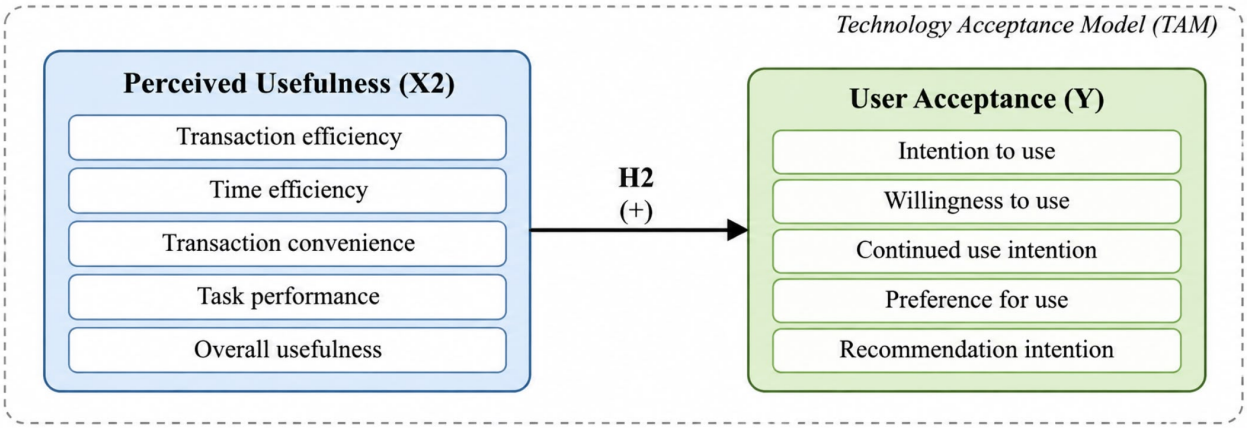

Figure 1. Conceptual Relationship Between Perceived Usefulness and User Acceptance of the ITEMKU Website

Proposed illustration: A conceptual diagram showing perceived usefulness (X2) as the predictor and user acceptance (Y) as the outcome, grounded in the TAM framework. The diagram should represent the hypothesized relationship rather than imply a confirmed statistically significant effect.

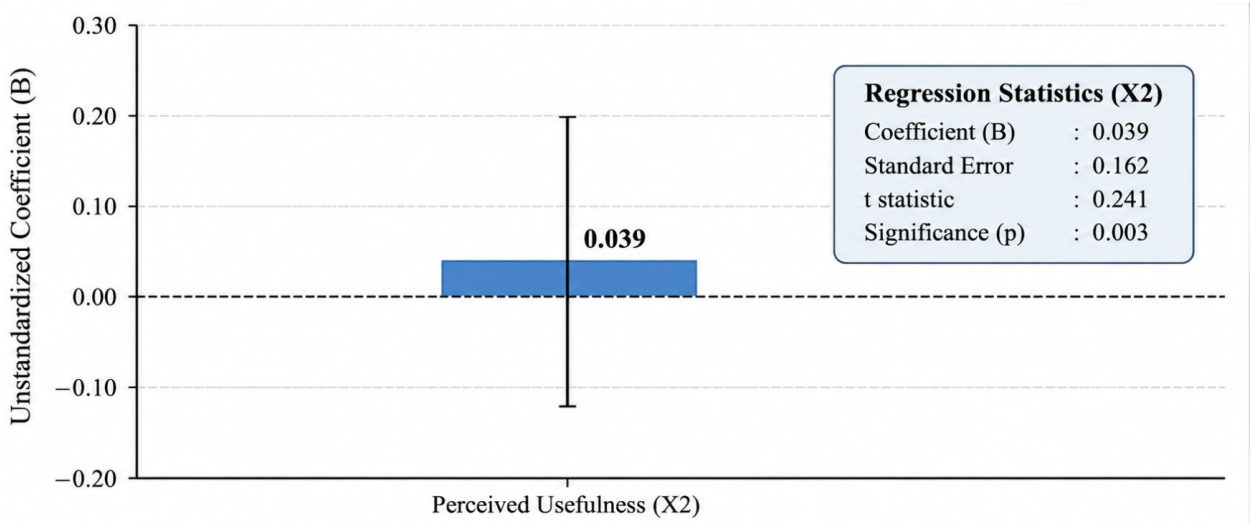

Figure 2. Reported Regression Coefficient for Perceived Usefulness and User Acceptance of the ITEMKU Website

Proposed illustration: A coefficient plot presenting the reported unstandardized coefficient for perceived usefulness $(B = 0.039)$, accompanied by its standard error and statistical significance information. The figure should only be finalized after the original SPSS output has been checked, because the reported statistics are inconsistent.

Overall, perceived usefulness provides an important theoretical perspective for understanding user acceptance of the ITEMKU website. The questionnaire validity results support the preliminary use of the five measurement items, although the reliability coefficient of 0.593 requires further assessment. The positive regression coefficient reported in the manuscript is consistent with the expected direction of the relationship, but the statistical inconsistency prevents a definitive conclusion regarding significance (Ma et al., 2025). Accordingly, the final interpretation of hypothesis H2 should be based on verified regression output. This approach ensures that the discussion remains theoretically grounded, empirically transparent, and methodologically defensible.

c. The Joint Effect of Perceived Ease of Use and Perceived Usefulness on User Acceptance

The Technology Acceptance Model (TAM) provides a theoretical foundation for examining how perceived ease of use and perceived usefulness jointly relate to user acceptance of information systems. Na et al. (2022) identifies these two constructs as central components in explaining technology acceptance. In the context of the ITEMKU website, perceived ease of use concerns the effort required to navigate the platform and complete top-up transactions, whereas perceived usefulness concerns the practical benefits users obtain from the service (Li, 2023). Examining these constructs simultaneously provides a broader perspective on the factors associated with users' acceptance of a website-based digital marketplace.

The empirical analysis in the source article uses multiple linear regression to examine the

joint relationship between the two independent variables and user acceptance. The model summary is presented in Table 8.

Table 8. Regression Model Summary for User Acceptance

Statistic	Reported value	Interpretation
Multiple correlation (R)	0.211	Strength of the overall sample relationship
Coefficient of determination (R^2)	0.044	4.4% of the variance explained
Adjusted R^2	0.004	0.4% adjusted explanatory proportion

Table 8 indicates that the regression model has a reported R value of 0.211 and an R^2 value of 0.044. This means that perceived ease of use and perceived usefulness jointly account for 4.4% of the observed variance in user acceptance in the fitted model. The adjusted R^2 value of 0.004 indicates that the model's explanatory contribution becomes considerably smaller after adjustment for the number of predictors and sample size (Hair et al., 2019). These findings suggest that other variables not included in the model may also be relevant to user acceptance. However, the low R^2 value does not, by itself, establish whether the regression model is statistically significant; that question must be assessed using the appropriate inferential tests (Aburbeian et al., 2022).

The source article further reports an F-test to assess the joint statistical significance of the two predictors. The reported results are reproduced in Table 9.

Table 9. Reported Simultaneous F-Test Results

Test or model	F statistic	Significance (p)	Reported decision
Regression model	1.091	0.000	H_3 accepted in source article
Decision threshold	0.05	—	Reported criterion

As shown in Table 9, the manuscript reports an F statistic of 1.091 and a significance value of 0.000, leading the original authors to accept H3. However, these values appear statistically inconsistent. With 69 respondents and two predictors in a conventional multiple regression model, an F statistic of 1.091 would not ordinarily correspond to a p-value below 0.001 (Field, 2018). The original SPSS ANOVA output, including the regression and residual degrees of freedom, must therefore be checked before the hypothesis decision is retained. Until this discrepancy is resolved, the simultaneous effect should be described as the conclusion reported in the source article rather than as a verified finding (Malatji et al., 2020).

To understand the individual contributions of the predictors within the joint model, the regression coefficients reported in the manuscript are summarized in Table 10. These coefficients provide information about the estimated direction and magnitude of each predictor while holding the other predictor constant.

Table 10. Reported Regression Coefficients for the Joint Model

Predictor	Coefficient B	Standard error	t statistic	Reported significance (p)
Perceived Ease of Use (X1)	−0.218	0.150	1.452	0.001
Perceived Usefulness (X2)	0.039	0.162	0.241	0.003

Table 10 shows that the reported coefficient for perceived ease of use is negative $(B = -0.218)$, whereas the coefficient for perceived usefulness is positive $(B = 0.039)$. If these coefficients are confirmed, they would indicate different estimated directions of association with user acceptance when both predictors are included in the same regression model. However, the reported t statistics and significance values require verification (Vorm & Combs, 2022). The coefficients and standard errors imply t statistics of approximately −1.45 and 0.24, respectively, which do not support the reported significance values of 0.001 and 0.003 under conventional two-sided tests. Therefore, neither the individual significance of the predictors nor the overall hypothesis decision should be interpreted as confirmed until the original statistical output has been checked.

From a theoretical standpoint, TAM suggests that ease of use and usefulness are complementary dimensions of technology acceptance (Davis, 1989). A platform may be straightforward to navigate yet provide limited perceived value, or it may offer useful services while presenting transaction procedures that require substantial effort. In the ITEMKU context, users may evaluate both the effort involved in purchasing digital products and the benefits derived from transaction efficiency and convenience (Musa et al., 2024). These dimensions provide a sound rationale for examining the two predictors together. Nevertheless, the theoretical framework does not guarantee that both predictors will have statistically significant effects in every empirical setting.

The model's limited explanatory power also has practical implications. The reported R^2 of 0.044 suggests that most of the variation in user acceptance remains unexplained by the two predictors included in the model. Future studies could examine additional constructs, such as trust, perceived security, transaction reliability, service quality, or user satisfaction, provided that these variables are theoretically justified and measured appropriately (DeLone & McLean, 2003; Gefen et al., 2003). These are potential directions for further investigation, not factors demonstrated by the current data.

The following captions are provided for the two supporting figures. As requested, the images themselves have not yet been generated.

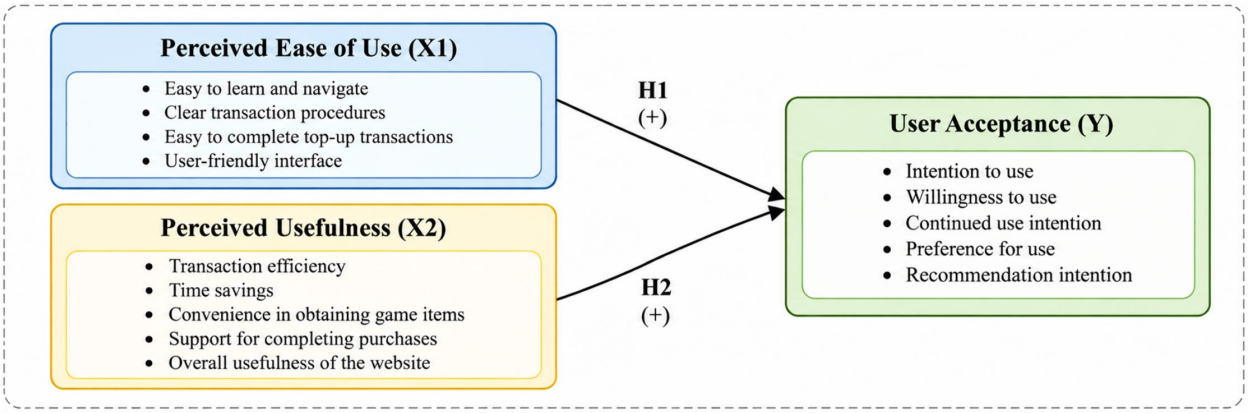

Figure 3. Conceptual Framework of the Joint Relationship Between Perceived Ease of Use, Perceived Usefulness, and User Acceptance of the ITEMKU Website

Proposed illustration: A conceptual diagram presenting perceived ease of use (X1) and perceived usefulness (X2) as two predictors connected to user acceptance (Y), with the joint relationship represented within the multiple regression framework. The diagram should distinguish the hypothesized relationships from statistically verified findings.

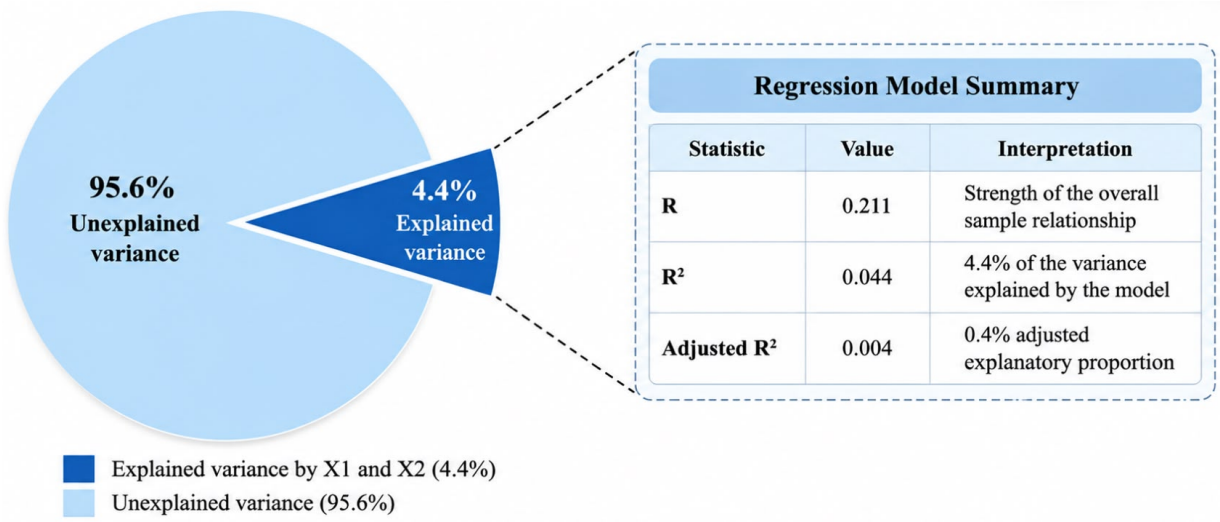

Figure 4. Explanatory Power of the Regression Model for User Acceptance of the ITEMKU Website

Proposed illustration: A bar chart showing the reported coefficient of determination ($R^2 = 0.044$), representing 4.4% of the variance explained by the model, and the remaining 95.6% not explained by the model. The latter should be labeled as unexplained variance rather than attributed to any specific external factor.

Overall, the joint analysis of perceived ease of use and perceived usefulness provides a relevant framework for examining user acceptance of the ITEMKU website. The reported model explains 4.4% of the variance in user acceptance, indicating limited explanatory power. Although the original article concludes that both predictors jointly influence user acceptance, the

reported F statistic and significance value are inconsistent, as are the individual regression statistics (Marikyan & Papagiannidis, 2024). Consequently, the statistical output must be verified before H3 is accepted as an empirically supported conclusion. This verification is essential to ensure that the discussion accurately reflects the evidence and provides a defensible basis for the study's theoretical and practical implications.

Conclusion

This study examined user acceptance of the ITEMKU website as an online game top-up platform using the Technology Acceptance Model (TAM), focusing on perceived ease of use and perceived usefulness as predictors of user acceptance. The findings highlight the relevance of these two constructs in understanding users' perceptions of digital transaction services. However, the reported regression results require further verification because inconsistencies were identified between the regression coefficients, test statistics, and significance values. The model's coefficient of determination $(R^2 = 0.044)$ indicates that perceived ease of use and perceived usefulness jointly explain 4.4% of the variation in user acceptance, while the remaining 95.6% is attributable to factors not captured by the model. Therefore, although TAM provides a relevant theoretical framework for evaluating the ITEMKU website, definitive conclusions regarding the individual and simultaneous effects of the two predictors should be drawn only after the statistical results have been validated. Future research should examine additional factors, such as perceived security, trust, service quality, and transaction reliability, to develop a more comprehensive understanding of user acceptance in digital game top-up services.

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