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Instructors' Acceptance of Roblox Studio for Informatics Education: An Extended TAM with Perceived Risk

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ABSTRACT

The integration of game-development platforms into educational environments creates new opportunities for programming instruction. However, instructors' acceptance of platforms like Roblox Studio remains insufficiently explored. This study investigates informatics instructors' acceptance of Roblox Studio by applying an Extended Technology Acceptance Model (TAM) incorporating perceived risk. A quantitative survey of 125 informatics instructors in Indonesia was analyzed using Covariance-Based Structural Equation Modeling (CB-SEM). The results confirm that Perceived Ease of Use significantly influences Perceived Usefulness. However, deviating from classic TAM, neither Perceived Ease of Use nor Perceived Usefulness significantly impacts Attitude Toward Using. Instead, Attitude Toward Using emerges as the strongest predictor of Behavioral Intention. Furthermore, Perceived Risk does not significantly affect intention, indicating instructors prioritize pedagogical value over technological concerns. This study yields explicit implications: theoretically, it extends TAM literature by demonstrating that in immersive learning, pedagogical relevance outweighs basic usability; practically, it implies that educational institutions should prioritize fostering positive instructional attitudes rather than just technical training to ensure the successful integration of game-based platforms.

Keywords: Roblox Studio, Technology Acceptance Model, Perceived Risk, Game-Based Learning, Instructor Acceptance.

1. INTRODUCTION

Digital transformation has become a strategic agenda in the global education system, particularly in preparing learners to face technology-driven economic challenges in the twenty-first century. Various international organizations emphasize the importance of integrating digital technologies into learning processes to develop computational thinking skills, digital creativity, and adaptive problem-solving abilities among younger generations (Monisha & Valanteena, 2022; Shafiq & Jan, 2025). Along with these developments, innovative learning approaches such as game-based learning, immersive learning environments, and simulation-based learning platforms are increasingly adopted to enhance student engagement and provide more interactive learning experiences ((Al-Adwan et al., 2025). In the Indonesian context, game-based learning has been recognized as an important innovation to support learning adaptation, particularly in responding to evolving educational environments (Cinta et al., 2021). These approaches create more exploratory and participatory learning environments that support the contextual development of digital competencies.

One platform that has experienced significant growth within the digital learning ecosystem is Roblox Studio, a digital game-development environment that allows users to design, program, and publish games independently using the Lua programming language. The platform is integrated with the broader Roblox ecosystem, enabling users to interact, collaborate, and share digital content online. In recent years, Roblox Studio has begun to be utilized in educational contexts as a medium for developing basic programming skills, game design abilities, and computational thinking among students and adolescents (Alhasan et al., 2023; Timinskas & Džiugaitė-Tumėnienė, 2025). Several studies indicate that the use of game-development platforms in learning environments can enhance learning motivation, digital creativity, and the understanding of programming concepts through constructive and project-based learning activities (Liu et al., 2023). Furthermore, game-based learning environments such as Roblox can support

collaborative and exploratory learning processes that encourage students to actively construct knowledge through immersive digital learning experiences (Timinskas & Džiugaitė-Tumėnienė, 2025).

Despite these potentials, most existing studies primarily focus on the impact of such technologies on students as the main users. The perspectives of informatics instructors, who play a direct role in implementing technology within the learning process, remain relatively underexplored in empirical research (Dele-Ajayi et al., 2019). In this study, the term informatics instructors refers to educators who teach programming or digital technology subjects in formal or non-formal learning environments, including coding course instructors and assistant instructors who facilitate technology-supported learning activities. In practice, the successful integration of educational technology is not solely determined by the quality of the platform but also by instructors' levels of acceptance, attitudes, and readiness to adopt the technology in pedagogical practice. Without sufficient acceptance from instructors, the implementation of digital learning platforms may encounter resistance during classroom practice.

Moreover, the use of game-based platforms in education raises several concerns related to digital security, potential learning distractions, and the risks of uncontrolled online interactions (Bach et al., 2025). Previous studies suggest that users' perceptions of technological risk may influence their attitudes and decisions when adopting a digital system (Bach et al., 2025). Although numerous studies have examined technology acceptance in educational contexts, most focus on students or general e-learning platforms. Limited research has explored educators' acceptance of immersive game-development environments such as Roblox Studio, which combine programming, user-generated content, and social interaction within a single digital ecosystem. Based on this background, examining instructors' acceptance of Roblox Studio becomes relevant for understanding the factors that influence the adoption of game-based development platforms in educational practice.

One theoretical framework widely used to analyze technology acceptance is the Technology Acceptance Model (TAM), which explains that an individual's intention to use a technology is influenced by perceived ease of use and perceived usefulness (Davis, 1989). This model has been extensively applied in studies of educational technology adoption, including research on e-learning systems, digital learning platforms, and virtual learning environments (Dele-Ajayi et al., 2019; Park et al., 2025). However, in the context of game-based platforms that involve complex social ecosystems and online interactions, users' perceived risks may also play an important role in shaping their attitudes toward technology. Therefore, this study adopts an Extended Technology Acceptance Model by integrating the perceived risk variable to analyze informatics instructors' acceptance of Roblox Studio as a game-based learning platform.

Despite the growing interest in game-based learning environments, existing studies predominantly focus on student engagement and learning outcomes. Limited attention has been given to informatics instructors as key decision-makers in the integration of such platforms into formal learning environments. Instructors play a critical role in determining whether innovative technologies are adopted, adapted, or rejected in classroom practice. Furthermore, although the Technological Acceptance Model has been widely applied in educational technology research, the integration of perceived risk into TAM within immersive game-development platforms such as Roblox Studio remains underexplored (Songkram & Osuwan, 2022). This gap is particularly relevant in educational contexts where online interaction, digital security, and classroom management concerns may influence instructors' technology adoption decisions (Bøe, 2014).

Therefore, a critical literature gap explicitly exists regarding how educators weigh the technical usability against the perceived risks when adopting immersive, metaverse-like platforms for formal education. Based on this background, this study aims to analyze the factors influencing informatics instructors' acceptance of Roblox Studio in informatics learning. Specifically, this research explores the relationships among perceived ease of use, perceived usefulness, perceived risk, attitude toward using, and behavioral intention to use in explaining instructors' intention to adopt the platform as a learning medium. The findings of this study are expected to provide empirical contributions to strategies for integrating game-development platforms into educational practices and to offer considerations for instructors in utilizing digital technologies more effectively.

This study contributes to the existing literature in three main aspects. First, it extends the Technology Acceptance Model by integrating perceived risk to better explain instructor acceptance of immersive game-development platforms. Second, it provides empirical evidence from informatics instructors, a group that has received relatively limited attention in previous technology acceptance studies. Third, the study employs Covariance-Based Structural Equation Modeling to validate the structural relationships among acceptance constructs within the context of game-based learning platforms.

Based on these objectives, the researchs questions in this study are formulated as follows:

1. How do informatics instructors perceive the ease of use and usefulness of Roblox Studio as a game-based learning platform?

2. How does perceived risk influence informatics instructors' behavioral intention to use Roblox Studio in learning contexts?
3. To what extent can the Extended Technology Acceptance Model explain informatics instructors' intention to use Roblox Studio as a learning medium?

2. RESEARCH METHOD

2.1. RESEARCH DESIGN

This study employed a quantitative approach using a survey design to evaluate informatics instructors' acceptance of Roblox Studio in informatics learning (Torp et al., 2022). A cross-sectional design was selected because the study focuses on analyzing instructors' perceptions at a single point in time, thereby providing a cross-sectional assessment of technology acceptance (Nalugoti et al., 2021). This design enables the testing of the conceptual framework of the Extended Technology Acceptance Model (TAM) by examining the relationships among latent variables (Singh & Sinha, 2025). Although cross-sectional designs have limitations in capturing changes in perceptions over time, the snapshot approach is considered sufficiently representative for understanding the initial acceptance of Roblox Studio among informatics instructors (Nalugoti et al., 2021; Torp et al., 2022).

2.2. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The research model adopts an Extended Technology Acceptance Model (TAM) integrating the constructs of Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Perceived Risk (PR), Attitude Towards Using (ATU), and Behavioral Intention to Use (BI) (Nalugoti et al., 2021; Singh & Sinha, 2025).

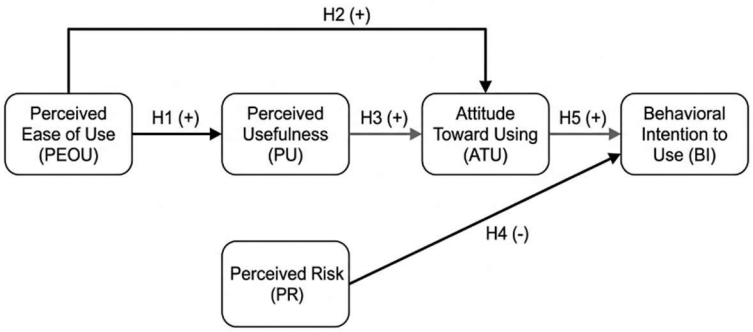

Figure 1. Extended TAM Model for Instructor Acceptance of Roblox Studio

The research hypotheses were formulated based on the characteristics of Roblox Studio, where instructors may encounter challenges related to digital distractions and complex online interactions. Therefore, perceived risk is considered a critical factor in technology adoption (Featherman & Pavlou, 2003). The hypotheses are formulated as follows:

- **H1:** Perceived Ease of Use positively influences Perceived Usefulness.
- **H2:** Perceived Ease of Use positively influences Attitude Toward Using.
- **H3:** Perceived Usefulness positively influences Attitude Toward Using.
- **H4:** Perceived Risk negatively influences Behavioral Intention to Use.
- **H5:** Attitude Toward Using positively influences Behavioral Intention to Use.

2.3. POPULATION AND SAMPLING

The population of this study consisted of informatics instructors who actively use or potentially use Roblox Studio in the learning process (Marian et al., 2025). A purposive sampling technique was employed with the criteria that instructors must have experience teaching informatics-related subjects or prior exposure to digital learning platforms (Gyau et al., 2023).

A total of 150 respondents were invited to participate, and 125 valid responses were obtained. The respondents were distributed across Indonesia, aged between 20 and 45 years. The sample size of 125 respondents is considered adequate for Covariance-Based Structural Equation Modeling (CB-SEM) analysis because it meets the minimum sample size requirements recommended for producing stable parameter estimates and reliable Goodness-of-Fit indices (Wang et al., 2025).

2.4. RESPONDENT DEMOGRAPHIC

The demographic characteristics of respondents are presented in Table 1. A total of 125 respondents participated in this study, consisting primarily of informatics instructors involved in teaching Roblox Studio–based learning. The majority of respondents were instructors (83.2%), while 16.8% served as assistant instructors supporting instructional activities.

In terms of teaching experience with Roblox Studio, the respondents exhibited a relatively balanced distribution across experience levels. Approximately 27.2% had 6 months to 1 year of experience, 26.4% had 1–2 years, and 25.6% reported more than two years of experience, while 20.8% had less than six months of experience. The inclusion of respondents with less than six months of experience reflects the participation of novice instructors who recently began integrating Roblox Studio into their teaching activities.

Regarding the student age groups, Roblox Studio was predominantly used to teach children under the age of 12 (36.0%), followed by mixed groups of children and early teenagers (27.2%) and early teenagers aged 12–15 years (23.2%). These findings suggest that Roblox Studio is widely utilized as a game-based learning platform for younger learners.

From the perspective of learning context, most respondents conducted instruction in course or training institutions (44.0%), followed by online learning platforms (33.6%), and a combination of both contexts (22.4%). Finally, the majority of instructors reported delivering Roblox Studio instruction online (70.4%), while 16.0% adopted a hybrid approach and 13.6% conducted face-to-face instruction. This pattern reflects the strong compatibility between Roblox Studio–based learning and digital learning environments.

Table 1. Respondent Characteristics

Variable	Category	N	%
Role	Instructor	104	**83.2**
	Assistant Instructor	21	**16.8**
Teaching Experience with Roblox Studio	< 6 months	26	**20.8**
	6 months – 1 year	34	**27.2**
	1 – 2 years	33	**26.4**
	>2 years	32	**25.6**
Student Age Group Taught	Children (<12 years)	45	**36.0**
	Early Teenagers (12-15 years)	29	**23.2**
	Children and Early Teenagers	34	**27.2**
	Mixed Age Groups	17	**13.6**
Learning Context	Course/Training Institution	55	**44.0**
	Online Learning Platform	42	**33.6**
	Combination of Both	28	**22.4**
Instruction Delivery Mode	Online	88	**70.4**
	Hybrid	20	**16.0**
	Face-to-face	17	**13.6**

Note: *N = 125 Respondents*

2.5. ETHICAL CONSIDERATION

Ethical approval was obtained prior to data collection. All respondents participated voluntarily and were informed about the purpose of the study, confidentiality of responses, and their right to withdraw at any stage. No personal identifying information was collected during the survey process.

2.6. INSTRUMENTATION

The research instrument consisted of an online questionnaire developed based on the indicators of the Extended TAM variables (Featherman & Pavlou, 2003; Nalugoti et al., 2021; Singh & Sinha, 2025). Each construct was measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Nalugoti et al., 2021).

The questionnaire was developed in Indonesian and subjected to a pilot test to evaluate the clarity of the items and reduce potential ambiguity (Nalugoti et al., 2021). The pilot test results showed satisfactory reliability levels based on Cronbach's Alpha for each construct: PEOU = 0.82; PU = 0.85; PR = 0.78; ATU = 0.81; and BI = 0.84. These results indicate that the instrument is reliable for structural equation modeling analysis.

2.7. DATA COLLECTION PROCEDURE

Data collection was conducted through an online survey using Google Forms, which was distributed to informatics instructors communities via email and professional social media platforms (Torp et al., 2022). Respondents were provided with information regarding the research objectives, confidentiality assurance, and informed consent before participating in the study.

The data collection process lasted six weeks (January–February 2026), during which three reminder notifications were sent to increase the response rate. The collected data were subsequently verified for completeness and consistency. Each respondent was verified through a unique email address and cross-checked with community usernames to prevent duplicate submissions.

2.8. DATA ANALYSIS

The data were analyzed using Covariance-Based Structural Equation Modeling (CB-SEM) with the assistance of RStudio software (lavaan package). The estimation method applied was Robust Maximum Likelihood (MLM) to address potential multivariate non-normality and ensure more stable parameter estimation. The analysis was conducted in two main stages:

1. *Measurement Model Evaluation This stage assessed the convergent validity and reliability of the indicators using the criteria of Standardized Factor Loading (> 0.50), Average Variance Extracted (AVE > 0.50), and Composite Reliability (CR > 0.70).*
2. *Structural Model Evaluation: This stage tested the research hypotheses and evaluated the model's Goodness of Fit (GoF) using several indices: Robust Comparative Fit Index (CFI ≥ 0.90), Tucker–Lewis Index (TLI ≥ 0.90), Root Mean Square Error of Approximation (RMSEA < 0.08), and Standardized Root Mean Square Residual (SRMR < 0.08).*

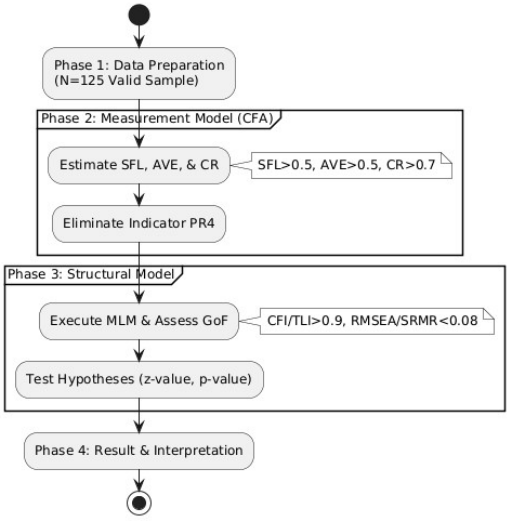

Figure 2. Workflow CB-SEM Analysis Using RStudio

Table 2. Summary of Variables and Indicator

Variable	Indicators	Example Item	Source
PEOU	PEOU1, PEOU2, PEOU3, PEOU4	*"Roblox Studio mudah dipelajari sebagai platform pengajaran."*	Adapted From Davis (1989)
PU	PU1,PU2,PU3, PU4	*"Penggunaan Roblox Studio membantu saya mengajar dengan lebih efektif."*	Adapted From Davis (1989)
PR	PR1,PR2,PR3, PR5	*"Terdapat risiko siswa mengakses konten yang tidak sesuai melalui Roblox"*	Adapted From Featherman & Pavlou (2003)
ATU	ATU1,ATU2,ATU3,ATU4	*"Penggunaan Roblox Studio sesuai dengan tujuan pembelajaran yang ingin saya capai."*	Adapted From Venkatesh & Davis (2000)
BI	BI1,BI2,BI3	*"Saya bersedia merekomendasikan Roblox Studio kepada tutor atau pengajar lain"*	Adapted From Venkatesh & Davis (2000)

Indicator PR4, which measured instructors' concerns regarding uncontrolled user interactions and potential exposure to inappropriate user-generated content within the Roblox platform, was removed from the initial

measurement model because its standardized factor loading did not meet the minimum threshold of 0.50 during the convergent validity assessment. This result indicates that concerns related to uncontrolled online interaction were not strongly perceived by respondents as a critical component of technological risk when evaluating the adoption of Roblox Studio for learning purposes. Therefore, excluding PR4 improved the construct validity of the perceived risk variable while maintaining the conceptual consistency of the measurement model.

3. RESULT AND ANALYSIS

The empirical model testing in this study was conducted using Covariance-Based Structural Equation Modeling (CB-SEM) through RStudio software (lavaan package). In accordance with multivariate analysis guidelines, the testing procedure was executed sequentially in two main stages: measurement model evaluation to ensure the validity and reliability of the instrument, and structural model evaluation to assess the overall Goodness of Fit of the proposed model (Songkram & Osuwan, 2022).

3.1. RESULT

3.1.1. MEASUREMENT MODEL EVALUATION

The first stage focused on examining the convergent validity and reliability of each measurement instrument for the latent constructs. Convergent validity was evaluated based on the values of Standardized Factor Loading (SFL) and Average Variance Extracted (AVE).

Based on the estimation results (Table 3), all indicators exhibited SFL values above the recommended threshold of 0.50, while the indicator that did not meet this criterion (PR4) was excluded from the model. Indicator PR4 was removed from the measurement model because its standardized factor loading did not meet the minimum threshold of 0.50 during the initial convergent validity assessment. The indicator originally represented concerns regarding uncontrolled user interaction within the Roblox platform. However, the empirical data indicate that this aspect was not strongly perceived by respondents as a significant component of technological risk. Therefore, removing PR4 improved the construct validity of the perceived risk variable while maintaining the conceptual integrity of the measurement model. The AVE values for all constructs Perceived Ease of Use, Perceived Usefulness, Perceived Risk, Attitude Toward Using, and Behavioral Intention also exceeded the minimum threshold of 0.50.

Table 3. Convergent Validity and Reliability

Variable	Indicators	Factor Loading	AVE	CR
Perceived Ease of Use (PEOU)	PEOU1	0.944	0.696	0.899
	PEOU2	0.589		
	PEOU3	0.807		
	PEOU4	0.945		
Perceived Usefulness (PU)	PU1	0.809	0.578	0.845
	PU2	0.802		
	PU3	0.674		
	PU4	0.749		
Perceived Risk (PR)	PR1	0.845	0.561	0.834
	PR2	0.591		
	PR3	0.725		
	PR5	0.809		
Attitude Toward Using (ATU)	ATU1	0.941	0.629	0.901
	ATU2	0.845		
	ATU3	0.794		
	ATU4	0.898		
Behavioral Intention (BI)	BI1	0.848	0.763	0.906
	BI2	0.938		
	BI3	0.831		

3.1.2. STRUCTURAL MODEL EVALUATION

The second stage of analysis involved evaluating the structural models to examine the relationships among the latent variables and to test the proposed research hypotheses. The structural model was assessed using several

Goodness-of-Fit (GoF) indices, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Squares Error of Approximations(RMSEA), and Standardized Root Mean Squares Residual (SRMR).

This section presents the hypothesis testing analysis to address the research questions. The data were analyzed using the Covariance-Based Structural Equation Modeling (CB-SEM) approach with the Robust Maximum Likelihood (MLM) estimation method to ensure robustness against potential violations of multivariate normality assumptions(Savalei & Rosseel, 2021).

Hypothesis testing was evaluated based on the standardized path coefficient (Estimate), critical ratio (z-value > 1.96), and significance level (p-value < 0.05). A summary of the structural testing results is presented in Table 4.

The structural models were evaluated using several goodness-of-fit indices to ensure the proposed model adequately represents the observed data. As presented in Table 5, the robust CFI value (0.970) and TLI value (0.965) exceed the recommended threshold of 0.90. Additionally, the RMSEA value (0.061) and SRMR value (0.041) are below the maximum acceptable limit of 0.08. These results confirm that the proposed structural model achieves a satisfactory fit. The visualization of the structural model estimation results is presented in Figure 3.

Table 4. Hypothesis Testing Results

Hypothesis	Path	Estimate	z-value	p-value	Result
H1	PEOU -> PU	0.988	11.170	<0.001	Accepted
H2	PEOU -> ATU	-0.399	-0.251	0.802	Rejected
H3	PU -> ATU	1.408	0.887	0.375	Rejected
H4	PR-> BI	0.063	0.629	0.529	Rejected
H5	ATU -> BI	0.972	8.373	<0.001	Accepted

Table 5. Goodness of Fit Index

Fit Index	Recommended Criteria	Model Result	Decision
Robust Comparative Fit Index (CFI)	>= 0.90	0.970	Fit
Robust Tucker-Lewis Index (TLI)	>= 0.90	0.965	Fit
Robust Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.061	Fit
Standardized Root Mean Square Residual (SRMR)	< 0.08	0.041	Fit

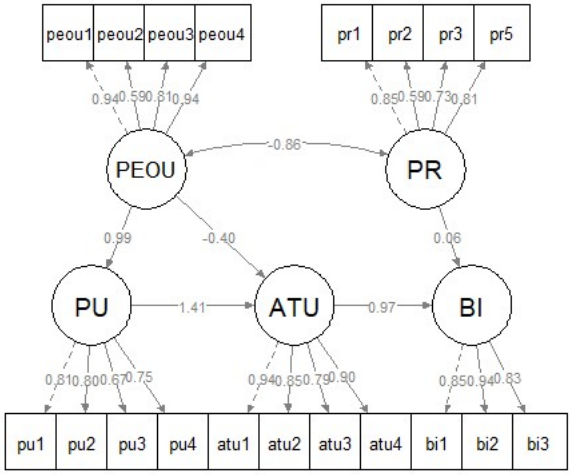

Figure 3. Structural Model Result

3.2. ANALYSIS AND DISCUSSION

The structural model results provide several important insights into informatics instructors' acceptance of Roblox Studio as a game-based learning platform. First, the findings confirm that Perceived Ease of Use significantly influences Perceived Usefulness, supporting the fundamental assumption of the Technology Acceptance Model proposed by Davis (1989). This relationship suggests that when instructors perceive a platform as easy to operate, they are more likely to recognize its potential usefulness for teaching activities. In the context of Roblox Studio, intuitive development tools, visual scripting support, and the accessibility of the Lua programming environment may contribute to instructors' perceptions that the platform can effectively support programming instruction and digital creativity.

However, the results indicate that Perceived Ease of Use and Perceived Usefulness do not significantly influence Attitude Toward Using. This finding deviates from the traditional assumptions of the Technology Acceptance Model, where both constructs are typically considered strong predictors of user attitudes toward technology. One possible explanation is that instructors may evaluate educational technologies not solely from a technological usability perspective but also from broader pedagogical considerations, including curriculum alignment, classroom management feasibility, and instructional relevance. Similar findings have been reported in previous studies examining teachers' acceptance of digital game-based learning environments, where pedagogical compatibility was found to be more influential than technological usability factors (Dele-Ajayi et al., 2019; Kuang et al., 2022).

Theoretically, in the context of immersive and metaverse-like learning environments, basic usability (PEOU) and functional utility (PU) are often considered baseline expectations rather than attitude drivers. Instructors recognize that game-development platforms inherently possess a steep learning curve and cognitive load. Consequently, their attitude is not formed by how 'easy' the tool is, but rather by the deep pedagogical engagement and immersive experiences it offers to students. This highlights a theoretical shift where traditional TAM constructs become insufficient to predict educator attitudes in complex, interactive digital environments.

Another notable finding is the rejection of the hypothesis proposing that Perceived Risk significantly influences Behavioral Intention to use Roblox Studio. The results indicate that Perceived Risk does not significantly influence instructors' Behavioral Intention to adopt the platform. This suggests that informatics instructors do not consider technological risks as a primary barrier when evaluating the adoption of the platform. In educational technology contexts, instructors often prioritize the instructional value and learning outcomes of a platform over potential technical uncertainties. Therefore, when a platform provides meaningful opportunities for developing computational thinking, programming skills, and creative problem-solving activities, perceived technological risks may become secondary considerations. Although digital learning environments may raise concerns related to online safety, potential distractions, and uncontrolled interactions among users, these risks appear to be secondary considerations for instructors. It is also important to note that a portion of the respondents had relatively limited experience using Roblox Studio in teaching contexts. The inclusion of novice instructors provides insight into early perceptions of platform adoption and reflects the initial stage of technology integration in educational environments. Therefore, instructors' evaluations of potential technological risks may not yet be fully developed, as their primary focus may be on exploring the pedagogical potential of the platform.

This findings is consistent with several previous studies on educational technology adoption, which report that perceived risk does not always play a significant role in shaping users' behavioral intention when the perceived instructional benefits of a technology are high (Kuang et al., 2022; Sebastian, 2022). In such contexts, educators tend to focus more on the learning value provided by a technology rather than the potential technological uncertainties associated with its use.

Finally, the results indicate that Attitude Toward Using is the strongest predictor of instructors' Behavioral Intentions to adopt Roblox Studio. This finding highlights the critical role of instructors' affective and evaluative perceptions in technology adoption decisions. When instructors develop a positive attitude toward the platform, they are more likely to integrate it into their teaching practices. Therefore, initiatives aimed at increasing instructors' acceptance of game-based learning platforms should focus not only on improving technical usability but also on demonstrating the pedagogical relevance and instructional benefits of the platform in real classroom contexts.

4. CONCLUSION

This study examined informatics instructors' acceptance of Roblox Studio as a game-based learning platform using an Extended Technology Acceptance Model integrated with perceived risk. The findings indicate that the proposed models provide a meaningful explanation of instructors' behavioral intention to adopt the platform in informatics education. These results show that Perceived Ease of Use significantly influences Perceived Usefulness, supporting the fundamental assumption of the Technology Acceptance Model. However, both Perceived Ease of Use and Perceived Usefulness do not significantly influence Attitude Toward Using, suggesting that instructors' attitudes toward Roblox Studio may be shaped more strongly by pedagogical considerations than by technical usability factors.

Furthermore, Perceived Risks does not significantly influence Behavioral Intention, indicating that instructors do not perceive technological risks as a primary barrier when considering the adoption of the platform. Among all constructs examined in the model, Attitude Toward Using emerges as the strongest predictor of Behavioral Intention, highlighting the central role of instructors' evaluative perceptions in determining their willingness to adopt game-based development platforms in teaching practices.

From a theoretical perspective, this study contributes to the literature by extending the application of the Technology Acceptance Model to the context of game-development platforms in education, particularly Roblox Studio. While previous TAM studies have primarily focused on general e-learning systems or digital learning tools,

this study provides empirical evidence on how instructors perceive and evaluate a game-creation platform designed to support programming, computational thinking, and creative digital learning activities. The findings therefore enrich current discussions on technology acceptance in immersive and game-based learning environments.

From a practical perspective, the results suggest that successful adoption of platforms such as Roblox Studio depends not only on technical usability but also on instructors' pedagogical readiness. Educational institutions may therefore consider providing professional development programs, training workshops, and instructional guidelines that help instructors integrate game-development platforms into informatics teaching practices. Such initiatives may support the use of Roblox Studio for learning activities related to programming concepts, computational thinking, and project-based digital creativity.

Despite its contributions, this study has several limitations. First, the sample consists solely of informatics instructors in Indonesia, which may limit the generalizability of the findings to other disciplines or educational contexts. Second, the study employs a cross-sectional design that does not allow the observation of changes in instructors' perceptions over time. Future research may therefore adopt longitudinal approaches and involve broader samples to further examine how instructors' acceptance of game-development platforms evolves as their experience with such technologies increases.

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DECLARATION OF GENERATIVE AI USE

The authors used Grammarly to assist in structuring the literature review and refining the grammatical flow. However, the conceptual framework, data analysis, and conclusions were independently developed and verified by the authors.

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