

Personal Innovativeness and Perceived Usefulness: Key Drivers of Satisfaction and Continuance Intention in the Roblox Metaverse

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Abstract. This study analyzed factors influencing user satisfaction and continuance intention of the Roblox metaverse game in Indonesia. A questionnaire was distributed to Roblox players, and 123 responses were analyzed using structural equation modelling. The results showed that personal innovativeness, perceived usefulness, and perceived ease of use significantly influenced user satisfaction. Additionally, personal innovativeness and perceived usefulness significantly affected continuance intention. However, perceived enjoyment did not significantly impact user satisfaction or continuance intention. The findings provide valuable insights for game developers and technologists on drivers of user engagement with metaverse games. Focusing efforts on enabling innovative gameplay, increasing usefulness, and improving ease of use can enhance user satisfaction and sustained gameplay intention.

Keywords: Metaverse, Roblox, User Satisfaction, Continuance Intention

1. Introduction

One new thing that has helped the video game business grow is how quickly technology improves in the digital world. The Metaverse game is the newest way to play video games. It lets players play games usually while immersing themselves in the game's virtual reality world. We Are Social did a study on the 10 countries with the most video games (*10 Negara Dengan Pemain Video Game Terbanyak, RI Peringkat Berapa?*, n.d.), and it found that up to 94.9% of internet users in Indonesia play video games on phones, tablets, or computers. This number shows Indonesia is the world's second most video game-playing country. A study by Statista (*Survei: Banyak Orang Ingin Masuk Ke Metaverse Untuk "Ngantor" Virtual*, n.d.) that asked 1,000 people about their plans to go into the Metaverse found some interesting things, only 29% of those who answered liked playing video games.

A study by DataIndonesia.id (*Survei: Ini Alasan Mengapa Ingin Bergabung Ke Metaverse*, n.d.) found that only 29% of Indonesians know the Metaverse, while 23% don't. 48% of people don't feel strongly about this tool. Only 9% said they weren't interested, while 42% said they would like to learn more about the Metaverse. 49% of those who answered said they were still not sure. Notably, 45% said they were excited to join the Metaverse, while only 7% said they weren't interested. 48% of the people who answered gave answers that were not clear or definitive.

People who have reviewed the Roblox Metaverse Game on the Microsoft Store (*Get Roblox - Microsoft Store En-ID*, n.d.) often say the game has bugs. These issues include getting "Stuck" when an app is "Launching," games "Lags," not being able to play in full-screen mode, long "Loading" times, connection drops often, "Disconnect" problems, and many "Bugs." According to reports on the DOWNDetector website, the Roblox Metaverse Game's most common problems are with the website, the game itself, and the link to the server. Users of the Roblox Metaverse Game can report problems with the game in the comments area of the DOWNDetector website. These problems include "Crashes," "Low FPS," long loading times, "Lag," "Disconnects," "Missing Servers," and "Server Outages" (*Roblox Turun? Masalah Dan Pemadaman Saat Ini | DOWNDetector*, n.d.).

As a result of the problem, people still don't know much about the Metaverse, and problems have also been found in the Roblox Metaverse Game. The researcher will try to determine what caused these problems and get feedback from Roblox Metaverse Game users in Indonesia. Roblox Metaverse Game users were chosen as the study subjects because it is one of the Metaverse Games with the most new users in Indonesia and worldwide. The research question and factors that will be used will match up with this study. This study tries to look into and learn more about user satisfaction and the continuance intention of the Roblox Metaverse Game. This is related to the theoretical model viewpoint of the technology acceptance model (TAM).

2. Literature Review

2.1 Technology Acceptance Model (TAM)

The technology acceptance model (TAM), one of the system/technology acceptance models, was first introduced by Fred Davis in 1986 (Davis, 1989a). The technology acceptance model (TAM) examines the elements influencing how well a technology or system is received (Davis, 1989b; Venkatesh & Davis, 1996). The technology acceptance model (TAM) model can also be used to analyze the factors influencing the acceptance of a technology (Zaineldeen et al., 2020).

The technology acceptance model (TAM) is a literature review developed to understand technology acceptance by users, focusing on variables such as personal innovativeness, perceived enjoyment, perceived usefulness, and perceived ease of use. Previous research in the technology acceptance model (TAM) (Alhasan et al., 2023), context has provided insights into how these factors influence technology acceptance. Furthermore, the literature has explored the concept of metaverse gaming, which refers to a virtual environment that integrates various virtual and real-world elements, including social interaction and gaming elements. To enhance the understanding of the interconnection between the

technology acceptance model (TAM) and the metaverse gaming concept, this research outlines how the aspects of the technology acceptance model (TAM) can be applied and modified for the context of the Roblox Metaverse Game. This understanding is expected to provide deeper insights into user satisfaction and continuance intention in using the Roblox Metaverse Game.

2.2.1 Personal Innovativeness

A type of personal innovation in information technology is referred to as Personal Innovativeness, which is associated with a person's willingness to adopt new technology (Lim et al., 2023). Users who perceive their innovativeness as higher are predicted to have more positive attitudes about adopting new technology than those who perceive their own innovativeness as lower (Shanmugavel & Micheal, 2022). Personal Innovativeness measures how proactive a person is in embracing new technologies and developing a positive attitude toward new technology.

2.2.2 Perceived Enjoyment

When someone uses technology to make their activities more enjoyable and forms a pleasurable bond with the technology, this is known as Perceived Enjoyment (Basuki et al., 2022). As the user becomes more at ease with information technology, their attitude toward the system also improves. Users are more likely to perform their duties effectively and on schedule if they feel comfortable using information technology systems. (Su & Chiu, 2021) perceived enjoyment is defined as the feelings consumers get while utilizing a specific technology.

2.2.3 Perceived Usefulness

Perceived usefulness is the belief that a person will profit from utilizing new technologies. (Shanmugavel & Micheal, 2022) It also helps to explain a person's attitude toward accepting new technology and their conviction that it can help them develop their careers. The main factor affecting how people use information technology is Perceived Usefulness (Alismaiel et al., 2022).

2.2.4 Perceived Ease of Use

Perceived ease of use refers to the belief that current technology users have that using technology does not require significant effort (Warsono et al., 2023). A person's capacity to comprehend how to use technology is another definition of Perceived Ease of Use (Natasia et al., 2021).

2.2.5 User Satisfaction

The degree of enjoyment a user feels with their system is called user satisfaction (Han & Sa, 2022). Technology frequently gauges a person's pleasure (Jiang et al., 2022).

2.2.6 Continuance Intention

The term continuance intention refers to a user's propensity to keep using a system, which is influenced by attitudes, perceived benefits, and other elements (Song & Jo, 2023). A user's intention to continue using new or more sophisticated technology is known as a continuation intention (Gupta et al., 2020).

2.2 Previous Studies

This study uses earlier studies to illustrate how the factors studied interact. For instance, the outcome of (Ashfaq et al., 2020) found the variable perceived enjoyment significantly influences user satisfaction, perceived enjoyment pertains to the degree of gratification or subjective contentment that individuals experience while utilizing a particular product or service. Perceived usefulness significantly affects user satisfaction (Ashfaq et al., 2020), perceived usefulness indicates how much they think it will help them meet their requirements and advance their goals. Personal innovativeness significantly influences user satisfaction (Khan et al., 2019), when dealing with inventions, Personal innovativeness might produce more powerful cognitive and emotional experiences.

Perceived ease of use significantly influences User Satisfaction (Amin et al., 2014), comfort in

using a product or service is a result of usability. People frequently experience a sense of satisfaction when they discover something cosy, simple to use, and free of unneeded barriers. Perceived enjoyment significantly influences continuance intention (Ashfaq et al., 2020), individuals are intrinsically motivated to keep utilizing a good or service when they perceive enjoyment from using it. Perceived usefulness significantly influences continuance intention (Ashfaq et al., 2020), an individual's assessment of the advantages of using a good or service is reflected in its perceived usefulness, people are more likely to intend to use a product or service in the future if they believe that utilizing it will benefit them in real, concrete ways. User satisfaction significantly influences continuance intention (Ashfaq et al., 2020), individuals are intrinsically motivated to continue using a product when the user is satisfied. Personal innovativeness significantly influences continuance intention (J. Chen, 2022), people are more likely to want to utilize innovation in the future if they are happy with the user experience. And perceived ease of use significantly influences continuance intention (Li, 2021), when people have used a product or service successfully, they are more likely to feel satisfied and confident about their experiences in the future.

2.3 Metaverse

The post-reality world that accommodates several users is known as the metaverse. Various technologies in this metaverse enable the interaction of many sensors and digital objects in virtual environments. Examples include augmented reality (AR) and virtual reality (VR). The permanent multi-user platform known as Metaverse links a network of immersive social spaces. Users can interact dynamically and in real time with digital artefacts on this platform. The first is a networked version of a virtual world that enables teleportation between users and avatars. An immersive and sociable virtual reality (VR) platform that is easily integrated into open game worlds, multiplayer online video games, and augmented reality (AR) workspaces is a part of the current Metaverse (Mystakidis, 2022).

2.4 Roblox Metaverse Game

The Roblox Metaverse Game platform allows users to create their own games and play those others have previously created. Roblox Metaverse Game, which provides a vast range of games that are all entirely free, can be a great platform for online networking (Kochan & Ed.D. Magid, 2018).

Cook Burgers, Self-Driving Simulator, Project SCP, VR Hands, Ragdoll Simulator, Sound Space, Paranormica, VR Islands, Cleaning Simulator, and Paranormal VR are some of the most well-liked Roblox Metaverse Games. Each game has received more than 50,000 fans (*The Best Roblox VR Games in 2023 | Roblox Den*, n.d.). As of January 2023, there were 230 million users of the Roblox Metaverse Game worldwide. In Indonesia, there were 16.7 thousand users (based on the number of accounts in the Roblox Indonesia Facebook Group).

2.5 Virtual Reality (VR)

A computer-generated, realistic scene or situation that immerses the user by giving him the sense that he is actually experiencing the simulated reality, especially through stimulation of his eye and hearing, is called virtual reality (VR). Virtual reality (VR) is a more specific term for man-made simulation or recreation. The ability to physically move around and interact with objects as if they were real is provided by a good virtual reality system, commonly called a "virtual environment". When one or more of the user's five senses are fully engaged in reality, they are in a virtual environment, which they can travel through and perhaps interact with to create in-depth simulations (Rebbani et al., 2021).

2.6 Augmented Reality (AR)

Augmented reality (AR) is the direct or indirect display of a real environment that has been enhanced by adding virtual information. Augmented reality (AR) is using digital information alongside the actual environment (Carmigniani & Furht, 2011). Technology that supports augmented reality includes multimedia, 3D modelling, real-time tracking, and registration, to name a few. The goal is to replicate

the genuine world before adding digitally produced information, such as text, images, 3D models, music, and movies. To obtain practical benefits, the two types of information combine better in this way (Y. Chen et al., 2019).

3. Methodology

3.1 Research Method

In this research, a non-probability sampling method was employed, specifically using purposive sampling. The researcher will examine the sample in depth as follows: the sample must live in Indonesia and have experience using the Roblox Metaverse Game. For the development of the questionnaire, the researcher utilised several indicators based on previous research, namely variables: personal innovativeness (curiosity, exploration, experimentation) (Al-Adwan et al., 2023);(Shanmugavel & Micheal, 2022), perceived enjoyment (experience, pleasure, comfort) (Al-Adwan et al., 2023);(Joe et al., 2022);(Basuki et al., 2022), perceived ease of use (easy to learn, skilled, user-friendly) (Al-Adwan et al., 2023);(Basuki et al., 2022), perceived usefulness (effective, productive, useful, performance) (Al-Adwan et al., 2023);(Basuki et al., 2022), user satisfaction (decision, belief, satisfaction) (Cruz-Jesus et al., 2023);(Isaac et al., 2018), and continuance intention (usage, plans, recommendations) (Song & Jo, 2023); (Ashfaq et al., 2020).

Furthermore, in line with the criteria of structural equation modelling (SEM) for data analysis, the ideal sample size is a minimum of 100 people (based on calculating sample size using the Slovin method, with a 10% margin of error). Therefore, to collect raw data, the researcher distributed the questionnaire through Google Forms shared online by posting it in the Roblox Metaverse Game Facebook Group. Considering the total number of Roblox Metaverse Game users in the Indonesian Facebook Group, which reaches 16.700 individuals, the questionnaire for this study aims to reach a minimum of 100 respondents who are users of the Roblox Metaverse Game and are willing to participate willingly.

3.2 Research Model

The type of research used in this study is quantitative research by adopting several research model variables from the technology acceptance model (TAM) 1 (Venkatesh & Davis, 1996), the technology acceptance model (TAM) 2 (Venkatesh & Davis, 2000) and the technology acceptance model (TAM) 3 (Venkatesh & Bala, 2008), namely perceived usefulness, perceived ease of use and perceived enjoyment. In this research model, several other variables (outside the technology acceptance model) are added: personal innovativeness, user satisfaction, and continuance intention. Perceived usefulness, perceived ease of use and user satisfaction as intervening variables (Ashfaq et al., 2020), personal innovativeness and perceived enjoyment as independent variables (Alawadhi et al., 2022) and continuance intention variables as the dependent variable (Ashfaq et al., 2020). The research model that is used in this study can be drawn as follows:

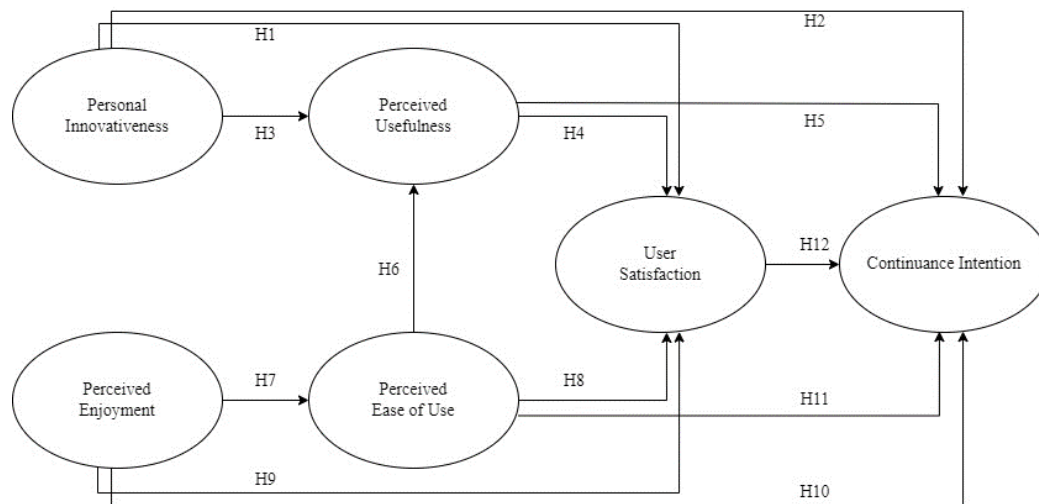


Fig. 1: Research Model

3.2.1 The relationship between Personal Innovativeness toward User Satisfaction

Personal innovativeness is a trait that makes people more open to embracing new technology, such as financial services that are available on mobile devices. They will likely be more satisfied with their abilities to use such services if they feel confident and competent using modern technology. Users with a high level of personal innovation may be more likely to experiment with and use new features available in mobile financial services. As a result of this inquiry, users may be better satisfied due to richer and more varied experiences (Khan et al., 2019). From the previous research findings, it has been proven that personal innovativeness significantly influences user satisfaction in the utilization of mobile financial services. Therefore, the following hypothesis is proposed:

H1: Personal innovativeness has a significant effect on user satisfaction in using the Roblox Metaverse Game

3.2.2 The relationship between Personal Innovativeness toward Continuance Intention

Personal innovativeness can affect how interesting and difficult individuals perceive learning events. People who believe that an app makes learning more engaging and inventive may be more likely to use it to reap more benefits. Personal innovativeness may inspire people to look for opportunities to acquire new abilities through application-based learning. People will likely keep using the app to advance their personal growth if it enables them to learn more broadly and deeply (J. Chen, 2022). From the previous research findings, it has been proven that personal innovativeness significantly influences continuance intention in the usage of mobile learning apps. Therefore, the following hypothesis is proposed:

H2: Personal innovativeness has a significant effect on continuance intention in using the Roblox Metaverse Game

3.2.3 The relationship between Personal Innovativeness toward Perceived Usefulness

People with high levels of personal innovativeness are more likely to find novel and previously unrecognized advantages when using the metaverse system. They may picture possible uses for the technology in various medical teaching settings, which may help them see its value more clearly. Individuals may use innovative methods to use the Metaverse System if they have a creative mindset. They might try to take advantage of the system in novel and creative ways, altering their understanding of how it might be helpful in medical education (Alawadhi et al., 2022). From the previous research findings, it has been proven that personal innovativeness significantly influences perceived usefulness in the utilization of the Metaverse System in Medical Training. Therefore, the following hypothesis is proposed:

H3: Personal innovativeness has a significant effect on perceived usefulness in using the Roblox Metaverse Game

3.2.4 The relationship between Perceived Usefulness toward User Satisfaction

Users believe that chatbots help them accomplish jobs or find solutions to issues faster and more effectively than they could in more conventional ways. They are more likely to be satisfied with its use when they see high utility in effectiveness and productivity. This high perceived usefulness results from increased productivity and efficiency and can increase happiness by reducing time and effort. Users are also satisfied with chatbots because they are simple and not unduly demanding. By fostering a seamless and delightful user experience, high perceived usefulness in terms of usability can increase satisfaction (Ashfaq et al., 2020). The previous research findings it has been proven that perceived usefulness significantly influences user satisfaction with the usage of a Chatbot. Therefore, the following hypothesis is proposed:

H4: Perceived usefulness has a significant effect on user satisfaction in using the Roblox Metaverse Game

3.2.5 The relationship between Perceived Usefulness toward Continuance Intention

Users believe that chatbots are very useful for helping them with tasks, giving them information, or offering solutions to their issues. They are, therefore more likely to plan to continue utilizing chatbots. Users consider chatbot interactions useful when they enable them to complete activities or receive information more quickly and effectively than alternative approaches. High perceived usefulness regarding productivity and efficiency can affect consumers' intentions to keep using a service since they believe they are saving time and effort (Ashfaq et al., 2020). From the previous research findings, it has been proven that perceived usefulness significantly influences the intention to continue using a chatbot. Therefore, the following hypothesis is proposed:

H5: Perceived usefulness has a significant effect on continuance intention in using the Roblox Metaverse Game

3.2.6 The relationship between Perceived Ease of Use toward Perceived Usefulness

Users are more likely to see the benefits of the Metaverse System if it is simple and enjoyable. Ease of use can produce a pleasant and uncomplicated experience, which might affect how valuable something is. Perceived ease of use can lower obstacles to implementing and utilizing the Metaverse System. Users are more likely to notice the benefits they can obtain if they believe using the system is not tough or complicated (Alawadhi et al., 2022). From the previous research findings, it has been proven that perceived ease of use influences perceived usefulness in the field of Metaverse Systems in Medical Training. Therefore, the following hypothesis is proposed:

H6: Perceived ease of use has a significant effect on perceived usefulness in using the Roblox Metaverse Game

3.2.7 The relationship between Perceived Enjoyment toward Perceived Ease of Use

Users who enjoy using the system are likelier to think it is simpler. Perceived enjoyment can make using a product enjoyable, affecting users' perceptions of usability. Users get more actively involved with the Metaverse System when they appreciate and feel engaged when utilizing it for medical instruction. This interactive interaction can help users become more accustomed to the system and lower their impressions of its complexity, improving how simple it appears to operate (Alawadhi et al., 2022). From the previous research findings, it has been proven that perceived enjoyment influences perceived ease of use in the field of Metaverse Systems in Medical Training. Therefore, the following hypothesis is proposed:

H7: Perceived enjoyment has a significant effect on perceived ease of use in using the Roblox Metaverse Game

3.2.8 The relationship between Perceived Ease of Use toward User Satisfaction

Users have a great experience using the SISMIOP application because they find it simple and intuitive. User happiness can be increased by making an application easier to use by removing any hassles or problems that may occur when using it. Users can execute jobs more quickly and effectively thanks to the convenience of usage. The SISMIOP program makes it simple and straightforward to handle tax objects, increasing their effectiveness and productivity in the process, and ultimately boosting user happiness (Amin et al., 2014). From the previous research findings, it has been proven that perceived ease of use significantly influences user satisfaction with the usage of the SISMIOP Application. Therefore, the following hypothesis is proposed:

H8: Perceived ease of use has a significant effect on user satisfaction in using the Roblox Metaverse Game

3.2.9 The relationship between Perceived Enjoyment toward User Satisfaction

Customers are more satisfied overall when they shop for used things on the e-commerce app since they are joyful and like the process. A positive and satisfying experience related to purchasing activities can be produced via perceived enjoyment. Users may experience a thrilling sense of pursuit or hunting as they browse and choose used goods using the e-commerce app. Users are likely to feel satisfied with the buying experience on the app if they find this component enjoyable. Customers are more satisfied overall because they love interacting with the e-commerce app's features and user experience. The degree of user happiness can be influenced by how much they like using the app (Ashfaq et al., 2019). From the previous research findings, it has been proven that perceived enjoyment significantly influences user satisfaction in the usage of an E-commerce Application for purchasing second-hand items. Therefore, the following hypothesis is proposed:

H9: Perceived enjoyment has a significant effect on user satisfaction in using the Roblox Metaverse Game

3.2.10 The relationship between Perceived Enjoyment toward Continuance Intention

Users love using the Facebook app and feel content, which tends to increase their motivation to do so. Users may become more motivated to participate in the application due to perceived enjoyment. The perceived enjoyment of using the Facebook app can help create a fulfilling and good experience. The user's level of engagement with the app may increase due to this experience, which may affect their intent to interact more. The Facebook app uses several ways to communicate with friends and family, including sharing information, chatting, and participating in groups or events. Users are more likely to keep using the app to maintain relationships and social interactions since they enjoy it (K & Sam, 2014). From the previous research findings, it has been proven that perceived enjoyment significantly influences continuance intention in the usage of the Facebook application. Therefore, the following hypothesis is proposed:

H10: Perceived enjoyment has a significant effect on continuance intention in using the Roblox Metaverse Game

3.2.11 The relationship between Perceived Ease of Use toward Continuance Intention

The AWE (Automated Writing Evaluation) tool aids users in swiftly and easily evaluating their writing, increasing the appearance of usability. Efficiency in the writing evaluation process may play a significant role in determining whether or not a user will decide to keep using the application. Because the AWE program is simple and intuitive, users are likelier to want to keep using it. Perceived ease of use can make engagement and usage easier, which affects the intention to keep using AWE. Users can rapidly understand how to use AWE because of its user-friendly interface and functionality. Rapid comprehension has a lasting impact on intention because it gives users the confidence to tackle problems that arise during the writing evaluation process (Li, 2021). From the previous research findings, it has been proven that perceived ease of use significantly influences continuance intention in the usage of the Automated Writing Evaluation (AWE) application. Therefore, the following hypothesis is proposed:

H11: Perceived ease of use has a significant effect on continuance intention in using the Roblox Metaverse Game

3.2.12 The relationship between User Satisfaction toward Continuance Intention

The E-Training application's users report having a positive experience with it, which may encourage them to use it to reap additional benefits. User satisfaction may naturally motivate users to keep interacting with and learning from the program. Users feel that the E-Training application meets their learning and growth demands, increasing their pleasure. The desire to continue studying with the app can be affected by the belief that it efficiently supplies the necessary knowledge and abilities (Garg & Sharma, 2020). From the previous research findings, it has been proven that user satisfaction significantly affects continuance intention in the usage of the e-training application. Therefore, the following hypothesis is proposed:

H12: User satisfaction has a significant effect on continuance intention in using the Roblox Metaverse Game.

4. Result and Discussion

4.1 Respondent Profile

123 users (95.3%) said they had played the Roblox Metaverse Game, while 6 people (4.7%) said they had never played it. Therefore, 123 out of the 129 samples were considered acceptable, consisting of 73.2% males and 26.8% females, with approximately 58.5% of respondents aged between 15 and 24 years. About 43.1% reported playing Roblox Metaverse Game for 4 to 8 months. Additionally, 26% acknowledged finding enjoyment in playing the Roblox Metaverse Game. Among the respondents, 52% chose VR Hands as their game, and 16.3% selected VR Hands as the game they played last month.

4.2 Measurement Model

To measure the model and validity and reliability tests on the variables used in this study: factor loadings, Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) were employed. These values indicate the correlation between indicators and their respective variables, with an expected threshold value of over 0.70 (Budiastuti & Bandur, 2018). Table. 1 presents the results, showing that all variables and indicators have fulfilled the validity criteria.

Table. 1: Result of Factor Loadings

Variables	Indicators	Factor Loadings
Personal Innovativeness	PI1	0.855
	PI2	0.888
	PI3	0.893
Perceived Usefulness	PU1	0.879
	PU2	0.844
	PU3	0.866
	PU4	0.881
Perceived Enjoyment	PE1	0.867
	PE2	0.893
	PE3	0.892
Perceived Ease of Use	PEOU1	0.899
	PEOU2	0.900
	PEOU3	0.916
User Satisfaction	US1	0.868
	US2	0.870
	US3	0.894

Variables	Indicators	Factor Loadings
Continuance Intention	CI1	0.868
	CI2	0.871
	CI3	0.892

Table. 2 presents the outcomes of Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE). For the Cronbach's Alpha test, the values are expected to be above 0.6 (Ghozali, 2016), and for Composite Reliability, values should exceed 0.7 (Ghozali, 2016). Moreover, the AVE values derived from the indicators are anticipated to be greater than 0.5 (Sekaran & Bougie, 2016).

Table. 2: Result of Cronbach's Alpha, Composite Reliability and AVE

Variables	Cronbach's Alpha	Composite Reliability	AVE
Continuance Intention	0.863	0.917	0.785
Perceived Ease of Use	0.890	0.931	0.819
Perceived Enjoyment	0.861	0.915	0.782
Perceived Usefulness	0.891	0.924	0.753
Personal Innovativeness	0.852	0.910	0.772
User Satisfaction	0.850	0.909	0.769

Table. 3 presents the results of direct hypothesis testing conducted using the bootstrapping method to determine the outcomes of all predetermined hypotheses in the research model. The values of interest in this testing are the t-statistics (Ghozali, 2016) and the p-values (Ghozali, 2016). If the p-values > 0.05 or t-statistics < 1.96 , then H_0 is accepted and H_a is rejected, indicating no influence between variables. Conversely, if the p-values < 0.05 or t-statistics > 1.96 , H_0 is rejected, and H_a is accepted, indicating an influence between variables. The hypothesis testing results encompass 12 hypotheses as follows:

Table. 3: Result of Hypothesis Test (Direct)

Hypothesis	Variables	T Statistics	P Values	Result
H1	Personal Innovativeness → User Satisfaction	2.858	0.004	Significant
H2	Personal Innovativeness → Continuance Intention	3.121	0.002	Significant
H3	Personal Innovativeness → Perceived Usefulness	5.816	0.000	Significant
H4	Perceived Usefulness → User Satisfaction	2.949	0.003	Significant
H5	Perceived Usefulness → Continuance Intention	4.103	0.000	Significant
H6	Perceived Ease of Use → Perceived Usefulness	5.141	0.000	Significant
H7	Perceived Enjoyment → Perceived Ease of Use	35.916	0.000	Significant
H8	Perceived Ease of Use → User Satisfaction	2.627	0.009	Significant
H9	Perceived Enjoyment → User Satisfaction	1.728	0.085	Not Significant
H10	Perceived Enjoyment → Continuance Intention	1.190	0.234	Not Significant

Hypothesis	Variables	T Statistics	P Values	Result
H11	Perceived Ease of Use → Continuance Intention	1.318	0.188	Not Significant
H12	User Satisfaction → Continuance Intention	0.307	0.759	Not Significant

4.2.1 Explanation of the hypothesis testing results (Direct)

H1: Personal innovativeness has a significant influence on user satisfaction. In the results of the first hypothesis testing regarding the influence of personal innovativeness on user satisfaction, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.004, and the t-statistics value obtained is greater than 1.96, namely 2.858. Thus, personal innovativeness significantly influences User Satisfaction (Khan et al., 2019). Users with high personal innovativeness are generally more receptive to new technologies and innovative game features. In the case of the Roblox Metaverse game, this could imply that users are more likely to embrace the latest features developed by the creators, such as gameplay updates or the integration of cutting-edge technologies, which can enhance their satisfaction with the game.

H2: Personal innovativeness has a significant influence on continuance intention. In the results of the second hypothesis testing, regarding the influence of personal innovativeness on continuance intention, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.002, and the t-statistics value obtained is greater than 1.96, namely 3.121. Thus, personal innovativeness significantly influences continuance intention (J. Chen, 2022). Users with a high level of personal innovativeness tend to adapt more easily to changes within a game and may feel motivated to learn about new features continuously. This adaptability and willingness to embrace new challenges could lead to a sustained engagement with the game.

H3: Personal innovativeness has a significant influence on perceived usefulness. In the results of the third hypothesis testing, regarding the influence of personal innovativeness on perceived usefulness, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.000, and the t-statistics value obtained is greater than 1.96, namely 5.816. Thus, personal innovativeness significantly influences perceived usefulness (Alawadhi et al., 2022). Users with high personal innovativeness are generally more receptive to new technologies and innovations. In the Roblox Metaverse game context, these users might be more open to accepting and trying out new features or more advanced gameplay experiences.

H4: Perceived usefulness has a significant influence on user satisfaction. In the results of the fourth hypothesis testing, regarding the influence of perceived usefulness on user Satisfaction, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.003, and the t-statistics value obtained is greater than 1.96, namely 2.949. Thus, perceived usefulness significantly influences user satisfaction (Ashfaq et al., 2020). Users tend to feel more satisfied with their gameplay experience if the Roblox Metaverse game offers benefits that assist them in achieving their gaming goals.

H5: Perceived usefulness has a significant influence on continuance intention. In the results of the fifth hypothesis testing, regarding the influence of perceived usefulness on continuance intention, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.000, and the t-statistics value obtained is greater than 1.96, namely 4.103. Thus, perceived usefulness significantly influences continuance intention (Ashfaq et al., 2020). If users believe that playing the Roblox Metaverse game brings significant benefits and usefulness, they will likely be more motivated to

continue playing it. If playing the Roblox Metaverse game helps them achieve their gaming goals or provides an enjoyable experience, they are more likely to have a strong incentive to keep playing it.

H6: Perceived ease of use has a significant influence on perceived usefulness. In the results of the sixth hypothesis testing, regarding the influence of perceived ease of use on perceived usefulness, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.000, and the t-statistics value obtained is greater than 1.96, namely 5.141. Thus, perceived ease of use significantly influences perceived usefulness (Alawadhi et al., 2022). If users perceive that the User Interface (UI) and features of the Roblox Metaverse game are user-friendly and easily accessible, they are more likely to utilize them effectively. Users who find the game and its features easy to access and use are likelier to perceive its benefits and usefulness.

H7: Perceived enjoyment has a significant influence on perceived ease of use. In the results of the seventh hypothesis testing, regarding the influence of perceived enjoyment on perceived ease of use, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.000, and the t-statistics value obtained is greater than 1.96, namely 35.916. Thus, perceived enjoyment significantly influences perceived ease of use (Alawadhi et al., 2022). If users have a high level of perceived enjoyment, they might be more motivated to learn and understand how to use the game's features. Users who enjoy and are entertained by playing the Roblox Metaverse game are likely to be more willing to invest time and effort into understanding the User Interface (UI) and game features.

H8: Perceived ease of use has a significant influence on user satisfaction. In the results of the eighth hypothesis testing, regarding the influence of perceived ease of use on user satisfaction, it is indicated that the obtained p-values are smaller than the value of $\alpha = 0.05$, specifically 0.009, and the t-statistics value obtained is greater than 1.96, namely 2.627. Thus, perceived ease of use significantly influences user satisfaction (Amin et al., 2014). If users can interact with the game easily, it results in a smooth and comfortable gameplay experience, ultimately enhancing satisfaction. Users who can effortlessly achieve their goals while playing the Roblox Metaverse game without facing difficulties or confusion will likely feel more satisfied with their overall experience.

H9: Perceived enjoyment does not significant influence on user satisfaction. In the results of the ninth hypothesis testing, regarding the influence of perceived enjoyment toward user satisfaction, it is indicated that the obtained p-values are greater than the value of $\alpha = 0.05$, specifically 0.085, and the t-statistics value obtained is smaller than 1.96, namely 1.728. Thus, perceived enjoyment does not significantly influence user satisfaction. The analysis of why perceived enjoyment might not significantly influence user satisfaction in using the Roblox Metaverse game could be attributed to other factors that can exert a more dominant influence on user satisfaction than perceived enjoyment. Specific aspects within the game might stand out more, such as graphic quality, creative freedom, social interactions, or challenges, which strongly impact user satisfaction.

H10: Perceived enjoyment does not significant influence on continuance intention. In the results of the tenth hypothesis testing, regarding the influence of perceived enjoyment toward continuance intention, it is indicated that the obtained p-values are greater than the value of $\alpha = 0.05$, specifically 0.234, and the t-statistics value obtained is smaller than 1.96, namely 1.190. Thus, Perceived Enjoyment does not significantly influence continuance intention. The analysis of why perceived enjoyment might not significantly influence continuance intention in using the Roblox Metaverse game could be due to other factors that can exert a more dominant influence on continuance intention than perceived enjoyment. Several aspects of the game can be influenced by multiple factors, including social interactions,

community, gameplay difficulty, achievements, and rewards, which could impact continuance intention. Some users might have gaming goals focusing on achievement or competition rather than enjoyment.

H11: Perceived ease of use does not significant influence on continuance intention. In the results of the eleventh hypothesis testing, regarding the influence of perceived ease of use toward continuance intention, it is indicated that the obtained p-values are greater than the value of $\alpha = 0.05$, specifically 0.118, and the t-statistics value obtained is smaller than 1.96, namely 1.318. Thus, perceived ease of use does not significantly influence continuance intention. Perceived ease of use might not significantly influence continuance intention in using the Roblox Metaverse game. This could be due to other factors that can exert a more dominant influence on continuance intention than perceived ease of use. Users might have various goals when playing, such as creative exploration, achievements, or social interactions, which might not be entirely related to perceived ease of use.

H12: User satisfaction does not significantly influence on continuance intention. In the results of the twelfth hypothesis testing, regarding the influence of user satisfaction toward continuance intention, it is indicated that the obtained p-values are greater than the value of $\alpha = 0.05$, specifically 0.759, and the t-statistics value obtained is smaller than 1.96, namely 0.307. Thus, user satisfaction does not significantly influence continuance intention. The analysis of why user satisfaction might not significantly influence continuance intention in using the Roblox Metaverse game could be due to other factors that can exert a more dominant influence on continuance intention than user satisfaction. Users might have gameplay goals focusing more on specific achievements, virtual world exploration, or social interactions, which might not entirely depend on user satisfaction.

4.2.2 Explanation of the hypothesis testing results (Indirect)

Table. 4 presents the indirect test results. The first hypothesis shows that perceived ease of use affects perceived enjoyment and user satisfaction. The p-values obtained are smaller than the value $\alpha = 0.05$, namely 0.010, and the t-statistics values obtained are greater than 1.96, namely 2.598 (Significant). In the indirect test results, the second hypothesis shows that perceived ease of use and perceived usefulness affect perceived enjoyment and user satisfaction. The P-Values obtained are smaller than the value $\alpha = 0.05$, namely 0.008, and the t-statistics values obtained are greater than 1.96, namely 2.672 (Significant).

Table. 4: Result of Hypothesis (Indirect)

Hypothesis	Variables	T Statistics	P Values	Result
1	Perceived Enjoyment → Perceived Ease of Use → User Satisfaction	2.598	0.010	Significant
2	Perceived Enjoyment → Perceived Ease of Use → Perceived Usefulness → User Satisfaction	2.672	0.008	Significant

If
the

user feels that the Roblox Metaverse Game is easy to play / the user feels smooth. Without obstacles in use, the user will feel comfortable exploring the features in the game so that there will be a feeling of satisfaction using the Roblox Metaverse Game. Suppose the user feels that the Roblox Metaverse Game is easy to play and can provide positive benefits and impacts. In that case, the user will feel comfortable playing/exploring the features in the game so that there will be a feeling of satisfaction in using the Roblox Metaverse Game.

The two results of the indirect hypothesis test show different results from those of the hypothesis test (direct) in Hypothesis 9. Perceived enjoyment can significantly affect user satisfaction when users in the Roblox Metaverse Game obtain perceived ease of use and perceived usefulness.

4.3 Discussion

According to the results of the hypothesis testing, personal innovativeness, perceived usefulness, and perceived ease of use are the variables that significantly impact user satisfaction. To optimize user contentment within the Roblox Metaverse Game, developers must craft inventive functionalities corresponding to users' inclinations with a propensity for innovation. A user's contentment may be enhanced by adding novel, captivating functionalities. The focus of Roblox Metaverse Game developers can be on the creation of functionalities that authentically augment the advantages and practicality for users. Users with a high degree of Personal Innovativeness are more receptive to novel attributes and capable of acclimating to the game. They have a predilection for investigating diverse tools and features within the game to augment user contentment by customising the experience to their specific tastes. Individuals with greater personal innovativeness may exhibit enhanced proficiency in surmounting obstacles within the game, achieving success, and increasing user satisfaction. For players to perceive a tangible positive impact on the benefits they obtain, these elements must be impeccably crafted and incorporated into the gameplay. To increase user satisfaction with the Roblox Metaverse Game, its developers must instil confidence in users that the game can fulfil their requirements and objectives by providing meaningful social opportunities, entertainment, or creative experiences. In addition to providing intuitive and well-structured navigation, developers ought to incorporate icons that promote user comfort and simplicity when utilizing the game. Furthermore, prioritizing the development of an intuitive and user-friendly user interface (UI) will enhance user satisfaction. Users will be more content when navigating the Roblox Metaverse Game effortlessly and efficiently locating the information they seek, thereby augmenting overall user satisfaction.

Personal innovativeness and perceived usefulness are particularly influential on continuance intention. Technology providers may further advance the development of novel features to promote continued engagement with the Roblox Metaverse Game. These features may include cutting-edge technology, previously unimaginable game genres, or novel game modes. Additionally, technology providers can create new features in response to tangible user benefits. These features should be designed to enhance the efficacy and advantages that users derive from their gaming experience.

The study (Azizah et al., 2023) found different results compared to this research. Namely, perceived enjoyment significantly affects user satisfaction. If users enjoy the experience of playing mobile games, they are more likely to choose to continue using or subscribing to the service. Enjoyment can be a primary motivation for repeatedly engaging in such activities, which, in turn, increases satisfaction. Additionally, in the study (Tony Wibowo & Ho, 2023), different results were found compared to this research: user satisfaction has a significant effect on continuance intention. Positive emotional experiences, such as joy, pride, or perceived achievement during play, can provide deep satisfaction. This can serve as an incentive to continue playing.

5. Conclusion

Key factors driving user satisfaction with Roblox are personal innovativeness, perceived usefulness, and perceived ease of use. Sustained intention to continue playing Roblox is most influenced by personal innovativeness and perceived usefulness. Surprisingly, perceived enjoyment did not emerge as a significant driver, indicating other motivations are more central to Roblox players. These results suggest useful strategies for developers seeking to improve the user experience. Efforts should focus on incorporating innovative features, clearly demonstrating utility and benefits, and facilitating intuitive, frictionless gameplay. The research makes a useful theoretical and practical contribution by uncovering specific levers impacting the user relationship with a widely used metaverse game. Further research could compare results across multiple metaverse platforms and user segments. A deeper investigation into the relative importance of enjoyment versus other drivers could also provide additional nuanced insights. Overall, this study enhances understanding of what engages users in virtual worlds.

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