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Acceptance of virtual reality-based hadith learning model with technology acceptance model (TAM) approach

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ABSTRACT

The use of Virtual Reality (VR) technology in education is growing rapidly, including in the context of Islamic learning. This study aims to examine the acceptance of the VR-based Hadith learning model among students of the Islamic Religious Education Study Program of the Riau Islamic University. This study involved a population of 128 students who were active in the 2023/2024 academic year and took Hadith courses. The census method was used for sampling, so that the entire population became the research sample. Data were gathered using a questionnaire designed to assess the study's variables, employing a 5-point Likert scale. The analysis was performed using the Structural Equation Modeling (SEM) technique with the Partial a Squares (PLS) approach. This method was chosen due to its capability to manage intricate models with numerous latent variables and indicators, and its flexibility regarding data distribution assumptions. The results showed that perceived usefulness has a significant positive effect on the intention to use VR for Hadith learning. Meanwhile, Perceived Ease of Use does not have a significant effect on intention to use. These findings indicate the importance of considering the perceived benefits of VR technology in increasing its adoption in the Islamic religious education environment. This research also contributes to the educational literature by emphasizing the importance of technology acceptance and adoption in the context of Islamic religious education.



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Introduction

The use of Virtual Reality (VR) technology in education has shown a significant increase in recent years. VR offers immersive, interactive learning experiences and can improve student performance and engagement (Allcoat & von Mühlenen, 2018). The technology allows students to engage in immersive and realistic learning environments, which can improve understanding and retention of information. In educational settings, VR has been used to enhance students' cognitive and linguistic development (Chen, 2016) as well as to study anatomy through virtual and augmented reality technologies (Duarte et al., 2020). This shows that VR has great potential to be used in various disciplines.

In the context of Islamic education, especially in Islamic Education study programs in higher education, the use of VR technology is still not common. Traditional teaching methods still dominate, although there are some

initiatives that try to implement more interactive learning strategies such as cooperative learning models (Malikah et al., 2016) and project-based learning (Saharuddin et al., 2024). Hadith learning, as an integral part of the Islamic religious education curriculum, is often faced with challenges in terms of effectiveness and student engagement. Therefore, it is important to explore new methods that can improve the quality of Hadith learning. Although VR has been proven effective in improving learning outcomes in various fields (Lee et al., 2010), the adoption of VR in Hadith learning in higher education is still very limited. Most Islamic education institutions still rely on traditional teaching methods that are less interactive. In addition, research on the use of VR in Islamic religious education is still very minimal, so further studies are needed to fill this void.

The Technology Acceptance Model (TAM) is often used to understand the acceptance of new technologies in educational contexts (Marangunić & Granić, 2015). Some studies have extended TAM to cover the use of VR in learning (Fussell & Truong, 2022; Jang et al., 2021), but there are still few studies that specifically examine the acceptance of VR-based Hadith learning models using the TAM approach. This suggests a research gap that needs to be filled to understand how VR technology can be accepted and adopted in Islamic religious education. Integrating VR in Hadith learning is essential to improve student engagement and learning outcomes. By using VR, students can experience more immersive and interactive learning, which in turn can improve their understanding and absorption of Hadith materials. Given the importance of Islamic religious education, it is urgent to explore and test new learning models that can meet the needs of modern education.

This research will use the Technology Acceptance paradigm (TAM) technique to examine the acceptability of a VR-based Hadith learning paradigm. This method, which is relatively new in the context of Islamic education, will shed light on the variables affecting instructors' and students' use of this technology. This study uses Technology Acceptance Models (TAM) to determine perceived utility and ease of use, two important variables in technology adoption. This study's research questions are: How well-liked is the VR-based Hadith learning model among instructors and students in programmes for Islamic education? The goals of this research are to determine the variables affecting the adoption of the virtual reality (VR)-based Hadith learning model, assess how well the model improves student learning outcomes, and offer suggestions for integrating VR into Hadith learning in higher education.

Previous studies have shown that the use of VR in education can enhance learning outcomes and student engagement (Allcoat & von Mühlenen, 2018; Asad et al., 2021). However, in the context of Islamic religious education, particularly in Hadith learning, further research is needed to test this model. This research is expected to make a significant contribution to the literature on Islamic religious education and educational technology by exploring how VR can be accepted and adopted. Furthermore, by concentrating on the adoption of VR in the context of Hadith learning in Islamic higher education, this study will close a vacuum in the literature. This study will offer fresh perspectives on the ways in which VR technology might improve Hadith learning through the application of the TAM methodology. It is anticipated that the study's conclusions would provide Islamic educational institutions with useful advice on implementing VR technology for more efficient instruction. Thus, this study focuses not only on the effectiveness of VR technology in improving learning outcomes, but also on the acceptance and adoption of this technology in the context of Islamic religious education. This is important to ensure that VR technology is not only implemented, but also accepted and used effectively by students and lecturers. With this approach, this research is expected to contribute significantly to the development of more innovative and effective learning models in Islamic religious education

Virtual Reality in Education

Virtual reality (VR) has been widely used in education as a tool to enhance students' learning experiences. VR provides an immersive and interactive learning environment, which can improve student engagement, emotions, and performance (Allcoat & von Mühlenen, 2018). This technology allows students to interact with subject matter in a more realistic and engaging way, improving understanding and retention of information. VR creates immersive learning environments where students can explore and interact with three-dimensional models and simulations. This immersion can lead to increased engagement and motivation as students are not just passive recipients of information but active participants in their learning process. The immersive nature of VR has been shown to stimulate emotional responses, which are crucial for memory retention and understanding (Allcoat & von Mühlenen, 2018).

One of the key benefits of VR in education is the heightened level of engagement it provides. Traditional learning methods can sometimes be abstract and disengaging, but VR offers a more interactive approach. For example, in subjects like biology, students can explore the human body in 3D, observing organs and systems in ways that are not possible with textbooks or 2D images. This kind of interaction can make learning more enjoyable and impactful, leading to better academic performance. VR is particularly effective for experiential learning, where students learn by doing. Asad et al. (2021) highlight that VR can transform abstract concepts into concrete experiences. For instance, students studying physics can experiment with virtual simulations of

physical phenomena, observing real-time changes and consequences without the constraints and risks of a physical laboratory. This hands-on experience can enhance understanding and retention of complex concepts.

Virtual Reality in Islamic Learning

In the context of Islamic religious education, the use of VR is still in its infancy. Islamic religious education, particularly in Hadith learning, often relies on traditional teaching methods that are less interactive. However, some studies show that more interactive learning strategies, such as cooperative learning and project-based learning models, can improve student learning outcomes in Qur'an-Hadith subjects (Karman et al., 2023; Saharuddin et al., 2024). The integration of VR in Hadith learning has the potential to make learning more interesting and effective, but empirical research on this subject is still limited.

Hadith learning has long been characterized by traditional pedagogical approaches, including lectures, rote memorization, and textual analysis. While these methods are foundational, they often lack the interactivity and engagement needed to deeply involve students in the learning process. The static nature of these methods can sometimes result in reduced student motivation and engagement. Recent studies indicate that interactive learning strategies can significantly improve educational outcomes. For instance, cooperative learning, where students work together in small groups to achieve learning goals, has been shown to foster better understanding and retention of Qur'an-Hadith content. Similarly, project-based learning, which involves students actively exploring real-world problems and challenges, can lead to deeper engagement and learning (Karman et al., 2023).

Technology Acceptance Model (TAM)

A theoretical framework called the Technology Acceptance Model (TAM) was created to comprehend and forecast users' acceptance and use of new technologies. Since its introduction by Fred Davis in 1989, the model has been refined by a multitude of scholars, offering a solid basis for researching the adoption of technology in diverse settings (Marangunić & Granić, 2015). TAM emphasizes two primary constructs: perceived usefulness (PU) and perceived ease of use (PEOU).

Perceived Usefulness (PU)

This is defined as the degree to which an individual believes that employing a specific technology will enhance their performance. If users perceive that a technology will improve their efficiency, productivity, or job performance, they are more likely to adopt it. PU is a critical determinant of technology acceptance because it directly impacts users' motivation to engage with the technology.

Perceived Ease of Use (PEOU)

This pertains to the degree to which an individual believes that using the technology will be effortless. PEOU influences users' willingness to adopt a new technology by addressing potential barriers to use. Technologies that are perceived as easy to use are more likely to be embraced by users, as lower effort is required to learn and operate them. Over the years, TAM has been extended and modified to better capture the complexities of technology adoption. Researchers have integrated additional constructs such as social influence, facilitating conditions, and user satisfaction to enhance the explanatory power of the model (Venkatesh & Davis, 2000; Venkatesh et al., 2003). These extensions have allowed TAM to remain relevant in diverse contexts and for various technologies, from workplace software systems to consumer electronics and educational technologies.

Use of TAM in Virtual Reality

Recent research has leveraged the Technology Acceptance Model (TAM) to investigate the acceptance of virtual reality (VR) in educational settings. Fussell and Truong (2022) utilized an extended TAM model to study VR acceptance in dynamic learning environments, while Jang et al. (2021) examined the acceptance of both augmented reality (AR) and VR within educational contexts using a similar extended TAM framework. The findings from these studies consistently indicate that Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are critical factors that significantly influence both the intention to use and the actual use of VR technology in education. Adding further detail, these studies highlight that PU and PEOU are not only important for initial acceptance but also for sustained use of VR technology. Fussell and Truong's research suggests that as students perceive VR to be beneficial and easy to use, their willingness to integrate it into their learning processes increases. Similarly, Jang et al. found that both AR and VR technologies, when perceived as useful and user-friendly, enhance students' engagement and learning outcomes. These insights emphasize the importance of designing VR educational tools that are both effective and user-friendly to maximize their acceptance and utilization in academic settings.

Conceptual Model and Hypothesis

Based on the above literature review, this study adopts the TAM model to explore the acceptance of VR-based Hadith learning model among students of Islamic Education study program. This model includes four main hypotheses:

H1: Perceived Usefulness (PU) Has a Positive Effect on Intention to Use

Perceived Usefulness (PU) is the extent to which a person thinks that utilising a specific technology will improve their performance.. Research indicates that the greater the perceived usefulness of a technology, the stronger the user's intention to adopt it (Cheung & Vogel, 2013). Numerous studies have demonstrated a positive relationship between PU and the intention to use technology. For instance, Fussell and Truong (2022) found that in dynamic learning environments, PU is the primary factor influencing users' intention to use virtual reality (VR). Similarly, research by Jang et al. (2021) revealed that perceived usefulness significantly contributes to the adoption of VR technology in educational settings. Adding to this, the influence of PU on user intention can be attributed to its impact on perceived benefits and efficiency. When users perceive a technology as useful, they are more likely to invest time and effort in learning and using it, anticipating improvements in their tasks and overall performance. This perception reduces resistance to adoption and increases motivation to engage with new technologies. Therefore, enhancing the perceived usefulness of a technology is crucial for its widespread acceptance and utilization.

H2: Perceived Ease of Use (PEOU) Has a Positive Effect on Intention to Use

Perceived Ease of Use (PEOU) refers to an individual's perception of how effortless it will be to utilize a specific technology. PEOU plays a crucial role in shaping user intentions towards adopting new technologies. Research indicates that the simpler a technology is perceived to be, the stronger the inclination of users to embrace it (Park, 2009). This aligns with findings from Chen (2016), who demonstrated that the ease of use of VR technology directly enhances students' willingness to incorporate it into their learning practices. Moreover, studies by Marangunić and Granić (2015) have consistently affirmed that PEOU serves as a robust predictor of users' intention to adopt technology across various domains, including educational contexts. Expanding on this, the concept of PEOU underscores the significance of user-friendly interfaces and intuitive interactions in promoting technology acceptance. When technology is perceived as easy to use, users are more likely to overcome initial resistance and engage more actively with its functionalities. This underscores the importance of designing VR educational tools that prioritize simplicity and accessibility to maximize their adoption and integration into educational environments.

H3: Perceived Ease of Use (PEOU) Has a Positive Effect on Perceived Usefulness (PU)

Research indicates that Perceived Ease of Use (PEOU) directly influences Perceived Usefulness (PU). When a technology is perceived as easy to use, users are more likely to view it as valuable and beneficial (Marangunić & Granić, 2015). In educational contexts utilizing virtual reality (VR), Lee, Wong, and Fung (2010) observed that students who find VR technology straightforward to operate are inclined to perceive it as more advantageous for their learning experiences. Similarly, Duarte et al. (2020) demonstrated that the ease of use of VR technology contributes significantly to enhancing its perceived usefulness, thereby fostering greater adoption of such technology in educational settings. Further elaboration reveals that the relationship between PEOU and PU underscores the importance of user-friendly design in technology acceptance. When VR tools are intuitive and require minimal effort to operate, users are more likely to recognize their practical benefits and integrate them into their learning routines. This highlights the strategic role of usability considerations in enhancing the educational efficacy and adoption rates of VR innovations.

H4: Intention to Use Has a Positive Effect on Actual Use

Intention to use refers to a user's readiness to utilize a technology, often serving as a robust predictor of its eventual adoption and regular use (Sagnier et al., 2020). It represents the final step before users actively engage with the technology in practice. Shen et al. (2017) corroborated that the intention to use virtual reality (VR) for learning strongly correlates with its actual usage among students. Additionally, Sprenger and Schwaninger (2021) demonstrated that intention to use consistently forecasts the adoption of digital learning technologies, including VR, especially as users evaluate and decide to incorporate the technology into their educational routines. Expanding on this concept highlights that intention to use serves as a pivotal psychological precursor to actual technology adoption. It reflects users' deliberate decisions and motivations to integrate new technologies based on perceived benefits and usability. Understanding and fostering intention to use are critical for educators and developers aiming to promote the effective implementation and sustained engagement of VR and other digital learning tools in educational settings.

Research Conceptual Model

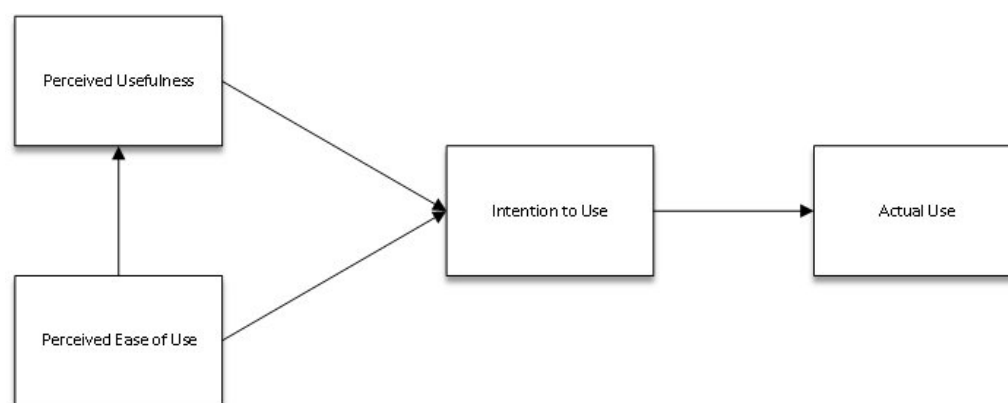


Figure 1. Conceptual Model

Method

Population and Sample

The population in this study were students of the Islamic Education Study Program at Riau Islamic University who were active in the 2023/2024 academic year and took hadith courses. The total population in this study was 128 students. This study used the census method, in which the entire population was taken as a sample, so the total sample was 128 students.

Research Variable Indicators

The following are indicators of each variable: (1) Perceived Usefulness (PU): PU1: Using VR increases the effectiveness of learning hadith, PU2: Using VR increases productivity in understanding hadith, PU3: Using VR makes learning hadith easier, PU4: Using VR improves academic performance in hadith courses. References: Cheung & Vogel (2013), Jang et al. (2021). (2) Perceived Ease of Use (PEOU): PEOU1: VR technology is easy to learn, PEOU2: Interaction with VR is clear and easy to understand, PEOU3: The use of VR does not require great effort, PEOU4: Easy to become proficient in using VR. References: Park (2009), Marangunić & Granić (2015). (3) Intention to Use (ITU): ITU1: I plan to use VR in hadith learning, ITU2: I would recommend using VR to friends, ITU3: I intend to use VR as often as possible in hadith learning, ITU4: I will use VR to learn hadith in the future. Reference: Shen et al. (2017), Sagnier et al. (2020). (4) Actual Use (AU): AU1: I have used VR in hadith learning, AU2: I use VR regularly in hadith courses, AU3: I use various VR features in hadith learning, AU4: I feel comfortable using VR in hadith learning. Reference: Sprenger & Schwaninger (2021).

Data Collection Methods

In this study, data were collected through the distribution of a questionnaire to a sample of 128 students. The questionnaire was meticulously crafted to assess each indicator of the variables under investigation. To capture a nuanced understanding of students' perceptions and attitudes, each item in the questionnaire was measured using a 5-point Likert scale. This scale ranged from 1 to 5, with 1 representing "strongly disagree" and 5 representing "strongly agree." The questionnaire included a series of statements related to the key constructs of the study, such as perceived usefulness, perceived ease of use, and overall acceptance of the VR-based Hadith learning model. Participants were asked to indicate their level of agreement with each statement, allowing for the collection of quantitative data that reflect their attitudes and experiences.

The use of a 5-point Likert scale provided a balanced range of response options, facilitating a more detailed and granular analysis of the data. This method ensured that variations in students' responses could be accurately captured and analyzed, contributing to a robust understanding of the factors influencing the acceptance of the VR-based learning model. The design and implementation of the questionnaire followed best practices in survey research, ensuring that the questions were clear, relevant, and free from bias. The distribution process was carefully managed to achieve a high response rate, and the collected data were systematically analyzed to derive meaningful insights.

Data Analysis

The analysis of the data employed Structural Equation Modeling (SEM) utilizing the Partial Least Squares (PLS) method. The SEM PLS method was chosen due to its multiple advantages. Firstly, it is adept at managing complex models that involve numerous latent variables and indicators, allowing for a more comprehensive

analysis of the relationships within the data. Secondly, SEM PLS does not necessitate stringent assumptions about data distribution, making it suitable for datasets that do not meet the normality criteria. This flexibility and robustness make SEM PLS an ideal choice for analyzing intricate models in various research contexts. Detailing further, the use of SEM PLS allows researchers to simultaneously examine multiple dependent and independent variables, providing a holistic view of the model. It can handle multicollinearity among variables and is effective with small to medium sample sizes, which is often a limitation in traditional SEM techniques. Additionally, SEM PLS employs a component-based estimation approach, which focuses on maximizing the explained variance of the dependent constructs, thus enhancing the predictive relevance of the model. These characteristics make SEM PLS a powerful tool for exploring complex theoretical frameworks and deriving meaningful insights from empirical data.

Results and Discussions

Respondent Characteristics

This study involved 128 students of the Islamic Education Study Program at Riau Islamic University who were active in the 2023/2024 academic year and took hadith courses. Based on gender, respondents consisted of 58 male students (45.31%) and 70 female students (54.69%). Meanwhile, based on age, the distribution of respondents was as follows: 34 respondents aged 18-20 years (26.56%), 72 respondents aged 21-23 years (56.25%), and 22 respondents aged over 23 years (17.19%). Thus, the majority of respondents were within the age range of 21-23 years, which reflects the general age group of mid-level students in higher education. This data provides an overview of the respondents' demographics which will be further analyzed to understand their acceptance of the virtual reality-based hadith learning model.

Results of Descriptive Data Analysis of Respondents' Responses

Perceived Usefulness is measured by several indicators that reflect the benefits of VR technology in hadith learning. The average score of PU is 4.2 out of 5, indicating that the majority of respondents feel the use of VR is very useful in improving understanding and memorization of hadith. Perceived Ease of Use measures the ease of use of VR technology. The average PEOU score was 4.0 out of 5, indicating that the majority of students rated VR as a technology that is easy to use and does not require great effort to learn. Intention to Use measures students' intention to use VR in future learning. The average score for intention to use is 4.3 out of 5, indicating that students have a strong intention to continue using VR in their studies. Actual Use measures the frequency and duration of use of VR technology. The average actual use score is 3.8 out of 5, indicating that most students use VR regularly in their learning activities.

Validity and Reliability Test Results

In this study, we performed validity and reliability tests to confirm the dependability and precision of the measurement tools employed. The validity test involved examining the outer loading to assess the correlation between indicators and latent variables. For the reliability test, we utilized Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) to measure internal consistency and the proportion of variance explained by the constructs (Table 1).

The validity and reliability test results show that the "Actual Use" variable has a fairly good outer loading, with values between 0.647 to 0.728, indicating adequate convergent validity. The Cronbach's Alpha value of 0.776 and Composite Reliability of 0.793 indicate good reliability, while the AVE of 0.590 indicates that this variable meets the minimum requirement of convergent validity (>0.5). For the variable "Intention to Use," the outer loading values range from 0.561 to 0.740. Although ITU3 has a slightly lower outer loading (0.561), this value is still acceptable. However, the Cronbach's Alpha value of 0.609 is slightly below the ideal minimum requirement (>0.7), which indicates that the internal consistency of this variable needs improvement. The Composite Reliability value of 0.771 and AVE of 0.560 indicate fairly good reliability and convergent validity.

The variable "Perceived Ease of Use" has an outer loading value between 0.517 to 0.888, with some indicators being very strong (PEOU2 and PEOU3 above 0.85). The Cronbach's Alpha value of 0.703 and Composite Reliability of 0.819 indicate good internal consistency and reliability, while the AVE of 0.547 meets the requirements of convergent validity. Finally, the variable "Perceived Usefulness" shows an outer loading that varies from 0.537 to 0.933, with the PU3 indicator being very strong (0.933). The Cronbach's Alpha value of 0.653 indicates less than optimal internal consistency, while Composite Reliability of 0.794 and AVE of 0.510 indicate that this variable still meets the requirements of reliability and convergent validity. Overall, most of the variables showed good validity and reliability, although there are some areas that require improvement, particularly in the Cronbach's Alpha values for the variables "Intention to Use" and "Perceived Usefulness". Theoretical references regarding these limits can be found in the literature such as Hair et al. (2010) who suggest that these values are used to assess measurement models in management and marketing research.

Table 1. Validity and Reliability Test Results

Variable	Indicator	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Actual Use	AU1	0,715	0,776	0,793	0,590
	AU2	0,647			
	AU3	0,728			
	AU4	0,708			
Intention to Use	ITU1	0,740	0,609	0,771	0,560
	ITU2	0,682			
	ITU3	0,561			
	ITU4	0,714			
Perceived Ease of Use	PEOU1	0,517	0,703	0,819	0,547
	PEOU2	0,858			
	PEOU3	0,888			
	PEOU4	0,699			
Perceived Usefulness	PU2	0,537	0,653	0,794	0,510
	PU3	0,933			
	PU4	0,592			
	PU1	0,791			

Multicollinearity Test Results

In this study, a multicollinearity test was performed to evaluate the correlation between independent variables by utilizing the Variance Inflation Factor (VIF). A VIF value below 10 is considered to indicate the absence of serious multicollinearity problems, with an ideal value below 5 to ensure more stable and accurate regression analysis results (Hair et al., 2010).

Table 2. Multicollinearity Test Results

	VIF
AU1	1,109
AU2	1,215
AU3	3,203
AU4	3,073
ITU1	1,186
ITU2	1,189
ITU3	1,130
ITU4	1,297
PEOU1	1,093
PEOU2	2,058
PEOU3	2,250
PEOU4	1,351
PU2	1,205
PU3	2,935
PU4	1,256
PU1	2,335

The test results show that for the variable "Actual Use" (AU), the VIF values range from 1.109 (AU1) to 3.203 (AU3). Although AU3 (3,203) and AU4 (3,073) have higher VIF values, they are still below the threshold of 10, thus not indicating a significant multicollinearity problem. The variable "Intention to Use" (ITU) has a VIF value between 1.130 (ITU3) to 1.297 (ITU4), indicating no significant multicollinearity problem. For the variable "Perceived Ease of Use" (PEOU), the VIF values range from 1.093 (PEOU1) to 2.250 (PEOU3), also indicating the absence of serious multicollinearity problems. Finally, the variable "Perceived Usefulness" (PU) shows VIF values ranging from 1.205 (PU2) to 2.935 (PU3), which is still below the limit of 10. Overall, these results indicate that there is no serious multicollinearity problem among the variable indicators, so the regression analysis conducted can be considered valid and reliable.

Hypothesis Test Results

The following are the results of testing the research hypothesis:

Table 3. Hypothesis Test Results

Hypothesis	Original Sample (O)	T Statistics ($ O/STDEV $)	P Values	Conclusion
Hypothesis 1	0,840	6,237	0,000	Accepted
Hypothesis 2	-0,107	0,725	0,469	Rejected
Hypothesis 3	0,836	26,856	0,000	Accepted
Hypothesis 4	0,608	13,340	0,000	Accepted

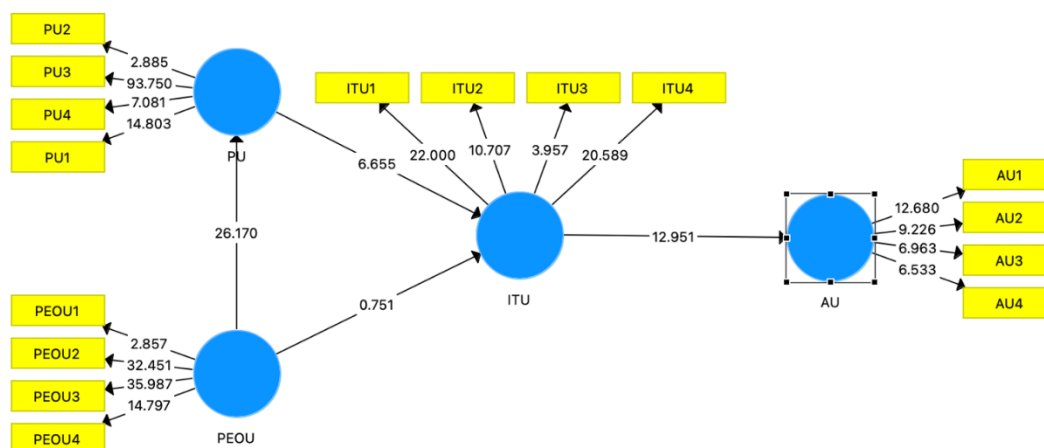


Figure 1. SEM Model

In this study, hypothesis testing was employed to assess the relationships between variables using Original Sample (O) values, T Statistics ($|O/STDEV|$), and P Values. The results for the first hypothesis (H1) demonstrate that Perceived Usefulness (PU) significantly and positively influences Intention to Use, with an Original Sample (O) value of 0.840, T Statistics of 6.237, and a P Value of 0.000. This confirms the acceptance of H1, as the T Statistics value exceeds 1.96 and the P Value is below 0.05, aligning with the statistical significance criteria outlined by Hair et al. (2010). The second hypothesis (H2) proposed that Perceived Ease of Use (PEOU) positively affects Intention to Use; however, it is rejected. The Original Sample (O) value is -0.107, with T Statistics of 0.725 and a P Value of 0.469. These results, with a T Statistics value less than 1.96 and a P Value greater than 0.05, indicate that H2 is not statistically significant.

The third hypothesis (H3) posits that Perceived Ease of Use (PEOU) positively influences Perceived Usefulness (PU). This hypothesis is accepted, evidenced by an Original Sample (O) value of 0.836, T Statistics of 26.856, and a P Value of 0.000. These findings show a highly significant positive effect, fulfilling the criteria for statistical significance. Finally, the fourth hypothesis (H4) suggests that Intention to Use positively impacts Actual Use. This hypothesis is also accepted, with an Original Sample (O) value of 0.608, T Statistics of 13.340, and a P Value of 0.000. This indicates a significant positive relationship between these two variables. Overall, most hypotheses in this study are supported, with the exception of H2, which does not exhibit a significant effect.

The findings of this study reveal that Perceived Usefulness (PU) has a significant positive impact on the Intention to Use VR technology for Hadith learning. This aligns with previous research by Cheung and Vogel (2013), which demonstrated that the perceived usefulness of a technology substantially influences users' intentions to adopt it. This implies that when students recognize the tangible benefits of employing VR in their learning processes, they are more inclined to utilize it. However, the study also found that Perceived Ease of Use (PEOU) did not significantly influence Intention to Use, which contrasts with earlier studies, such as Park (2009). This discrepancy might be attributed to the unique context of Islamic religious education, where VR technology is relatively new and users may need more time to adapt. This suggests that while ease of use is generally important, its impact may vary depending on the novelty of the technology and the specific educational context.

Moreover, this study discovered that PEOU significantly enhances PU, indicating that the ease with which VR technology can be used boosts its perceived benefits. This finding is consistent with the conclusions of Marangunić and Granić (2015), who found that technologies that are easier to use are often perceived as more

useful. In the specific context of Hadith learning, if students find VR technology user-friendly, they are more likely to appreciate its advantages and integrate it into their study routines. The fourth hypothesis, which posited that Intention to Use has a positive effect on Actual Use, was also supported. This indicates that the intention to use VR significantly predicts its actual usage. This finding aligns with the research by Fussell and Truong (2022), which highlighted that the intention to use technology is a strong predictor of its actual adoption. This is particularly important in the context of Islamic religious education, as it suggests that when students have a strong intention to use VR, they are more likely to incorporate it into their learning activities.

Overall, the results of this study underscore the importance of enhancing the perceived benefits of VR technology and ensuring its ease of use to increase its adoption in Hadith learning. Educational institutions should focus on these factors to develop effective strategies for integrating VR technology into their curricula. This can ultimately lead to improved student engagement and learning outcomes, as evidenced by the studies of Allcoat and von Mühlenen (2018) and Asad et al. (2021). Furthermore, these results contribute significantly to the education literature by demonstrating that while VR technology holds substantial potential, its successful adoption requires careful consideration of usability and perceived ease of use. This study provides valuable insights for educators and policymakers aiming to implement VR in educational settings, particularly within the realm of Islamic religious education. By focusing on these critical factors, institutions can better leverage VR technology to enhance the educational experiences and outcomes for their students.

Conclusions

In this study, it was discovered that the perceived usefulness (PU) of VR technology positively impacts users' intention to utilize it in Hadith learning. Conversely, perceived ease of use (PEOU) does not significantly influence the intention to use it. However, ease of use directly enhances the perceived benefits of VR. Additionally, the intention to use VR significantly predicts its actual usage. In the context of Islamic religious education, focusing on the perceived benefits and ease of use of VR is crucial for increasing its adoption in learning. This research provides valuable insights into the factors influencing the adoption of VR in Islamic religious education. For future research, it is recommended to look deeper into the factors that influence the perceived benefits and ease of use of VR in the context of Islamic religious education. In addition, further research can examine the effectiveness of VR implementation in Hadith learning and its impact on student learning outcomes. Longitudinal studies can also be conducted to track the development of VR usage over a longer period of time. In addition, comparative research between VR and traditional learning methods can also provide additional insights into the relative merits of each approach. With further research, more effective strategies for integrating VR technology into the Islamic religious education curriculum can be developed.

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