

Virtual Reality Acceptance in Tourism Product Information: A Study Among Young Travelers in Pulau Pangkor, Perak

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ABSTRACT

Virtual reality (VR) is a computer-generated simulation that enables interaction between users and digital systems, offering immersive three-dimensional (3D) visual experiences that closely replicate real-world environments. This technology is particularly advantageous for presenting information about tourism products. In recent years, VR has attracted substantial attention in Malaysia's tourism industry because it can deliver interactive, engaging, and distinctive experiences for tourists. Conventionally, obtaining tourism-related information at physical tourism counters can be both time-consuming and costly, as it typically requires direct, face-to-face engagement. VR presents an innovative alternative by enabling young travelers to obtain tourism information remotely, without the need for physical presence. As an emerging technology, VR has significant commercial potential, particularly in tourism. This study explores young travelers' acceptance and use of VR to access tourism product information in Pulau Pangkor, Perak. The study used non-probability convenience sampling, distributing questionnaires to a sample of 100 young respondents. The results indicated that Hedonic Motivation exhibited the strongest correlation with behavioural intention to use VR (Pearson's $r = .781$), identifying it as the principal factor influencing VR adoption. These findings suggest that young travelers are increasingly receptive to VR as a viable alternative to traditional means of obtaining tourism information, such as physical tourism counters or online searches. The study contributes to the existing body of knowledge by providing empirical evidence on VR adoption in the Malaysian tourism context and offers valuable insights for future research and technological development in this area.

Keywords: *Virtual Reality, Tourism, Acceptance & Use, Young Traveler, Pulau Pangkor*

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1. INTRODUCTION

Virtual Reality (VR) technologies have been widely applied in the tourism industry because they offer users a novel experience that makes an artificial environment or scene feel like the real world. As a result, VR is highly sought after because it offers a new way to engage tourists and enhance their travel experience. (Cham et al., 2023). VR leverages computer technology to construct interactive, three-dimensional environments that simulate elements of the physical world (Jailani & Nurbatra, 2019). This technology offers users an immersive experience by enabling exploration and interaction within digitally generated virtual spaces (Godovykh et al., 2022). Integrating digital technologies into the tourism industry has significantly transformed how tourists access information, introducing more interactive and efficient methods that reduce the time and effort traditionally required for information-seeking. By using VR, the tourism sector can provide immersive, comprehensive experiences that help travellers learn about tourism products. One key advantage of using VR to present tourism product information is its ability to provide users with a more detailed, immersive, and realistic representation of tourism offerings (Sun, 2023).

Unlike traditional methods, such as static images, which often fail to capture a destination's full essence, atmosphere, and experiential aspects, VR lets potential tourists engage more deeply with the product, improving both understanding and decision-making. VR technologies in the tourism sector have introduced innovative dimensions to the presentation and consumption of travel experiences (Sobarna et al., 2025). These tools facilitate deeper immersion and enhance the perceived authenticity of tourism experiences (Fan et al., 2022). VR are able to take travellers on a virtual tour, allowing them to witness the entire scenario of the tourism product (Bretos et al., 2023). Wang (2022) states that by donning a dedicated VR headset, users are fully immersed in a virtual world that effectively stimulates their senses of vision, touch, hearing, and even smell and taste. VR technology is increasingly used across diverse sectors, including township planning, the halal industry, education, entertainment, and medical training. In today's digital era, the demand for accessible and transparent information about tourism products has grown significantly. Integrating VR offers a promising solution by delivering accurate, immersive product information that meets travellers' evolving expectations (Sobarna et al., 2025).

In the tourism industry, VR offers several notable advantages. First, it lets prospective tourists experience a destination's atmosphere and distinctiveness without physical travel, offering a more immersive and engaging experience than conventional photographs or videos (Kim, Lee & Jung, 2020). Second, VR serves as an appealing, interactive platform for promoting tourism destinations (Adachi et al., 2022). Virtual tours that highlight natural landscapes, cultural heritage and local activities have proven effective in attracting potential visitors (Jorge et al., 2023). Lastly, VR delivers information about history, culture, and key attractions in an interactive way, enhancing tourists' understanding and appreciation of the destination (Atzeni et al., 2022). These benefits enhance young travellers' perception of tourism product information and increase their overall eagerness to learn about tourism. By creating virtual environments, young travellers can explore tourism product information without being at the destination, as they can access it through digitalisation. Using VR to access tourism information can increase young travellers' interest in learning about tourism (Talwar et al., 2023), promote cultural understanding, and foster emotional attitudes and values. (Zhang & Yin, 2020). VR can empower young travellers to access tourism product information whenever they need it, without being at the required location. Virtual reality is poised to revolutionise the way product information is presented and accessed by travellers. Its ability to enhance product visualisation, deliver engaging education, provide global access, support interactive decision-making, and promote eco-friendliness makes VR an invaluable tool for tourism businesses (Talwar et al., 2023). As the demand for tourism products continues to grow, embracing VR technology can not only meet this demand but also foster trust, transparency, and informed travellers' choices in obtaining tourism information.

In order to identify the acceptance of virtual reality in tourism product information among young travellers in Pulau Pangkor, Perak, this study underlines three (3) main objectives: -

- i. To identify VR factors influencing Young Travellers Virtual Information Behavioural Intention (YTVIBI)
- ii. To identify Young Travellers Virtual Information Behavioural Intention (YTVIBI) and its impact on Young Travellers Virtual Information Use Behaviour (YTVIUB)

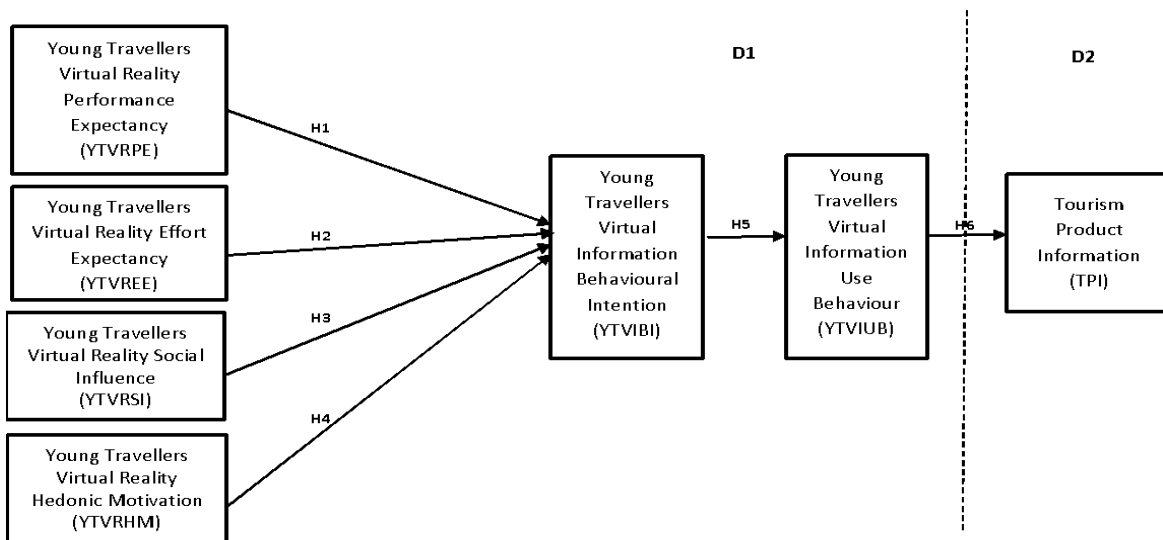
- iii. To study the acceptance and use of Young Travellers Virtual Information Use Behaviour (YTVIUB) and its impact on Tourism Product Information (TPI)

This study uses the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) (Venkatesh et al., 2012) as its theoretical foundation to explore the factors influencing young travelers' adoption and use of VR technology to obtain tourism product information. Before developing UTAUT2, Venkatesh et al. (2003) introduced the UTAUT model, which identified Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) as the primary factors driving technology acceptance. UTAUT has gained widespread recognition as an effective framework for understanding technology adoption, and it has been extensively applied in numerous studies on technology acceptance and use. Variables such as age, gender, experience, and voluntary use also moderate these factors. The UTAUT model provides a robust framework for predicting and explaining technology acceptance (Fareed & Kirkil, 2025; Azalan et al., 2022) and shows stronger predictive power than other models. Over time, UTAUT has been refined, and UTAUT2 now includes three additional constructs: Hedonic Motivation (HM), Price Value (PV), and Habit (H), to better account for behavioral intention and usage behavior. In this study, the UTAUT2 framework is adapted to understand and predict young travelers' behavioral intentions and usage patterns toward VR technology for acquiring tourism product information. Figure 1 presents the theoretical framework for VR adoption, integrating UTAUT2 (Venkatesh et al., 2012) to assess acceptance of this new technology in the context of tourism product information (Saha et al., 2021).

Figure 1.

Research Theoretical Framework

The following hypotheses are obtained from the research theoretical framework in Figure 1.



Unified Theory of Acceptance and Use of Technology 2 (Venkatesh et al, 2012)

Saha et al., (2021):
Tourism Product &
Services

- H₁:** There is a significant relationship between Young Travelers Virtual Reality Performance Expectancy (YTVRPE) and Young Travelers Virtual Information Behavioural Intention (YTVIBI)
- H₂:** There is a significant relationship between Young Travelers Virtual Reality Effort Expectancy (YTVREE) and Young Travelers Virtual Information Behavioural Intention (YTVIBI)
- H₃:** There is a significant relationship between Young Travelers Virtual Reality Social Influence (YTVRSI) and Young Travelers Virtual Information Behavioural Intention (YTVIBI)
- H₄:** There is a significant relationship between Young Travelers Virtual Reality Hedonic Motivation (YTVRHM) and Young Travelers Virtual Information Behavioural Intention (YTVIBI)
- H₅:** There is a significant relationship between Young Travelers Virtual Information Behavioural Intention (YTVIBI) and Young Travelers Virtual Information Use Behaviour (YTVIUB)

H₆: There is a significant relationship between Young Travelers Virtual Information Use Behaviour (YTVIUB) and Tourism Product Information (TPA)

2. LITERATURE REVIEW

2.1. The Development of Virtual Reality

Virtual reality is an emerging form of communication that offers users immersive, interactive experiences, bridging the physical and digital worlds. VR offers unparalleled immersion, enabling young travellers to step into entirely digital worlds and communicate and interact with them in real-time. By simulating realistic environments, VR creates a sense of presence, transporting travellers to places and situations that were previously unimaginable (Khodabandeh, 2022). Over the past few decades, VR technology has advanced significantly, transforming digital content and reshaping numerous industries. VR has emerged as a powerful tool for the tourism industry, with potential benefits for tourists of all ages. VR has changed how people access product information, shifting it into a different learning environment where high-fidelity graphics and immersive content delivered via head-mounted displays (HMDs) enable travellers to explore complex information in ways traditional methods cannot (Atzeni et al., 2022). VR utilises computer-generated 3D graphics, allowing travellers to explore a broad range of tourism product information environments from pre-existing 3D assets. This creates a versatile range of resources that travellers of all ages can use to continuously gain product information through VR (Xie et al., 2021). Virtual reality delivers an immersive and interactive environment that transcends the limitations of the physical world (Hilken et al., 2021; de Keyser et al., 2019).

This interactivity has been shown to enhance user engagement, particularly among younger travellers, by increasing their willingness to seek out and absorb information about tourism products. Initially regarded as a niche innovation, VR has since evolved into a multifaceted technology with broad applications across industries, including gaming, healthcare, marketing, halal product development, education, and beyond. Despite its rapid advancement, VR has faced several technical challenges, particularly in graphical rendering and user interface design, both of which are critical to ensuring a seamless and engaging user experience. VR has the potential to revolutionise various industries by offering unparalleled opportunities for innovation and transformation. In tourism, VR enhances learning by creating immersive simulations and virtual field trips, allowing travellers to gain practical knowledge and understand different cultures (Cham et al., 2023). Weijdom (2022) wrote that VR is a new medium within the digital environment, where the user metaphorically steps into a virtual reality world to explore interactive information, attend conferences, and play games. Digitalisation offers travellers a unique platform to engage with content and virtual environments that closely simulate real-world experiences (Talwar et al., 2023). It enables users to perceive and interact with computer-generated elements within a three-dimensional space, thereby fostering a highly interactive environment. As computing power and display technologies advance, VR hardware costs have fallen, making it more accessible to a broader audience (Hashem et al., 2021).

2.2. Tourism Product Information

Tourism became the world's most important economic activity in the second half of the twentieth century (Azmi et al., 2023). The World Tourism Organisation (WTO) and the World Travel and Tourism Council (WTTC) reported that the tourism sector generates approximately 11% of global gross domestic product (GDP) and consistently employs over 200 million people worldwide. As a result, tourism is an essential vehicle for regional and national development and a major contributor to local economies in many countries and regions (Kunjuraman et al., 2022). Virtual Reality (VR) technology has emerged as a transformative tool in the tourism industry, revolutionising the way travellers explore destinations and experience tourism products (Cham et al., 2023). By immersing users in lifelike virtual environments, VR offers a unique way to showcase destinations, attractions, and experiences, providing travellers with a compelling preview of what to expect. One of VR's primary advantages in tourism is its ability to provide vivid, realistic visualisations of destinations, allowing travellers to explore iconic landmarks, natural wonders, and cultural sites from the comfort of their homes (Beck, 2019).

According to Lee (2020), tourism is influenced by pull factors that attract tourists to 'where to go', 'how long to stay', and 'what to do'. By having virtual reality in tourism product information, it's able to facilitate immersive cultural experiences by transporting travelers to distant lands and heritage sites, enabling them to engage with local traditions, customs, and lifestyles (Godovych et al., 2020). Through virtual cultural exchanges, travelers can participate in traditional ceremonies, festivals, and rituals, gaining a deeper understanding and appreciation of diverse cultures and societies. VR fosters empathy

and cross-cultural understanding by breaking down barriers and promoting intercultural dialogue and exchange. Through immersive 360-degree videos and virtual tours, travellers are able to navigate through streets, monuments, and attractions as if they were physically present, gaining valuable insights into the destination's ambiance, architecture, and atmosphere. According to Wirawan and Gading (2022), traditional methods such as reading maps, consulting travel blogs, or obtaining information from tourism counters were once the primary sources of travel-related information. However, with the emergence of VR, travellers can virtually explore a wide array of tourism products in a highly immersive, interactive environment.

3. METHODOLOGY

This research uses a cross-sectional survey in which a questionnaire was distributed to young travellers aged 18 to 25 years (Adams et al., 2021; Peng et al., 2020) in Pulau Pangkor, Perak, Malaysia. This age group was chosen because it is widely recognised as the stage of "emerging adulthood," a developmental period characterised by significant transitions and identity exploration (Arnett & Tanner, 2016). This age range falls within emerging adulthood, a phase between adolescence and young adulthood. Young travellers in this stage often experience a sense of being "in-between," marked by instability, self-focus and a multitude of possibilities for the future. Arnett & Tanner (2016) describe this period as unique because young travellers explore various life directions before making enduring adult commitments; if a young traveller thinks VR is good, they are more likely to use it later. According to Richard et al. (2015), this age group undergoes behavioural adjustments tied to basic psychosocial developmental tasks, where emotion and intellectual thinking affect brain development. During this period, young travellers experience increased personal freedom, experimentation, and growing independence from their families (Zarrett & Schulenberg, 2006). In today's digital world, youngsters are growing up in an era where internet-based smartphones, laptops, and tablets influence all aspects of modern life (Cottin et al., 2022). Additionally, this age period is an exploration and identity formation, where youngsters are more open to new experiences and willing to engage in self-reflection (Koumoutzis et al., 2021). This openness to new ideas and self-exploration can contribute to the validity and richness of survey responses, as young travellers are more willing to provide honest and introspective answers. This survey used convenience sampling in Pulau Pangkor, Perak, because respondents met the age criteria and the island is frequently visited by international and domestic tourists. The study employed a traditional paper-and-pencil survey approach, as it has been shown to generate higher response rates than online surveys. This decision was influenced by concerns that some participants might be less inclined to take part in an online format because of limited motivation or a preference for digital engagement (Lefever et al., 2007). The results indicate that the effect of response field length is more pronounced in the paper-and-pencil condition than in the web survey condition (Fuchs, 2009). Of those who took part in this questionnaire, 42.9% were male, and 57.1% were female.

4. FINDINGS AND DISCUSSION

4.1. To Identify VR Factors Influencing Young Traveller Virtual Learning Behavioural Intention (YTVLBI)

A one-tailed test was employed to examine the likelihood of a relationship occurring in a predetermined direction, intentionally excluding the possibility of an association in the opposite direction. Table 1 presents the results of the factors influencing Young Travelers' Virtual Learning Behavior Intention (YTVLBI), as determined through Pearson correlation analysis. The findings show that Young Travelers' Virtual Reality Hedonic Motivation (YTVRHM) has the strongest correlation with YTVLBI in the first dimension ($r = .781$), making it the primary influencing factor. Hedonic motivation plays a vital role in young travellers' acceptance and use of VR technology in the tourism sector. By understanding and leveraging hedonic motivation in VR, end users enhance the overall user experience and drive adoption and continued use of VR technology. 74.5% of young travellers in Pulau Pangkor strongly agree that using VR for tourism is fun, while only 1.5% disagree. Bracq et al., (2019) conducted a research on accepting new technology and number of participants noted that virtual reality was an enjoyable experience, and that the system was fun: *"You have to familiarize yourself with the system and you have to understand, but it doesn't take long and it becomes fun"*, *"we do it while having fun, it's fun and enjoyable"*. This intrinsic enjoyment reflects hedonic motivation (Meena & Sarabhai, 2023). Consistent with previous findings, studies by Bower and Lai (2020) and Sharif and Raza (2017) have demonstrated that hedonic motivation is a significant predictor of behavioural intention to adopt new technologies. By prioritising fun, enjoyable learning, Malaysia's

tourism sector can strengthen and broaden this digitalisation approach, as young travellers enjoy interactive tourism information through VR adoption. The next Pearson correlation results are as follows: YTVRSI ($r = .723$) and YTVRPE ($r = .688$). The least influential factor in the relationship with YTVLBI is YTVREE ($r = .602$); however, this factor remains significant because young travellers perceive that using VR provides convenient tourism product information, saves time, and is easy to use. The constructs of YTVRPE, YTVREE, YTVRSI, and YTVRHM are significantly related to YTVLBI among young travellers; thus, hypotheses H1, H2, H3, and H4 are supported. Numerous studies have confirmed that PE, EE, SI, and HM significantly impact BI's adoption of new technologies. This has been demonstrated in various contexts, including students' acceptance of the Use & Go Pay platform (Batoro, 2020), the Moodle Learning Management System (Zwain, 2019) and the adoption of e-scooter VR services (Huang, 2020). These findings collectively underscore the pivotal role of these factors in shaping users' willingness to embrace emerging technological solutions.

Table 1
Summary Results of Pearson Correlation ($n = 100$)

Variable	Pearson Correlation (r)
YTVRPE > YTVLBI	.688
YTVREE > YTVLBI	.602
YTVRSI > YTVLBI	.723
YTVRHM > YTVLBI	.781

4.2. To Identify Young Traveller Virtual Learning Behavioural Intention (YTVLBI) And Its Impact Towards Young Traveller Virtual Learning Use Behavioural (YTVLUB)

The Pearson correlation analysis indicated a strong and significant relationship between YTVLBI and YTVLUB, with $r = .820$. Based on this result, H_5 is supported. According to Kunjuran (2022), technology in a globalised world has transformed the tourism sector, shifting it from conventional platforms to a virtual learning environment. Because the respondents in this study are young travellers aged 18 to 25, an age group commonly associated with emerging adulthood, they tend to show strong enthusiasm and openness to adopting new technologies. This developmental stage is characterised by exploration, adaptability and a heightened receptiveness to innovation, making these individuals particularly responsive to technological advancements in the tourism sector. Their eagerness to engage with novel digital experiences, such as virtual reality, reflects a broader trend among young adults who view technology not only as a tool for information gathering but also as an enriching and enjoyable part of their travel experiences.

4.3. To Identify Young Traveller Virtual Learning Use Behavioural (YTVLUB) And Its Impact Towards Tourism Product Information (TPI)

In the second dimension, where TPI is the dependent variable, researchers find that YTVLUB influences TPI with a Pearson Correlation ($r = .737$). These findings indicate that YTVLUB plays a substantial role in explaining TPI; thus, this result shows a significant relationship between YTVLUB and TPI among young travellers, as indicated in H_6 . Graphics-based visuals have significantly affected traveller behaviour, particularly how they seek information (Beck, 2019). In the second dimension, where TPI is the dependent variable, the analysis shows that YTVLUB significantly influences TPI, as evidenced by a Pearson correlation coefficient of $r = .737$. This finding suggests that YTVLUB plays a critical role in shaping young travellers' intentions to seek information about travel-related activities. Consequently, H_6 is supported, confirming a strong relationship between YTVLUB and TPI among this demographic group. Moreover, graphics-oriented visuals, such as interactive content and immersive experiences, have been shown to significantly affect traveller behaviour, particularly in information acquisition (Beck, 2019). The results highlight the importance of engaging digital content and active usage behaviours in influencing young travellers' intentions to gain tourism product information, reinforcing the value of immersive technologies in modern tourism strategies.

5. CONCLUSION

One significant contribution of VR is its use in the tourism sector, where young travellers are emphasising alternative ways to access tourism product information. VR in tourism is gaining significant attention for its ability to create immersive, interactive experiences that transcend conventional information transmission (Bretos et al., 2023). This technology enables young travellers to engage with tourism information products in ways previously impossible, allowing them to explore complex concepts, historical events, scientific phenomena, and much more through simulated environments. As a result, travellers are not only passively absorbing information but actively participating in their own tourism journey, fostering deeper comprehension and retention of product information. By allowing young travellers to explore virtual tourism environments and interact with digital objects, VR promotes active, interactive engagement with tourism product information and enables a hands-on experience that goes beyond what is possible in a traditional setting (Weissblueth & Nissim, 2018). Additionally, VR in tourism provides a safe, controlled environment for young travellers to learn skills and practice scenarios that may be difficult or impossible to replicate in real life. The COVID-19 pandemic has had profound effects on various aspects of society, including the tourism sector. Prior to the pandemic, traditional methods of getting tourism information through an information centre or a brochure were the norm. However, the COVID-19 pandemic has forced the tourism sector to swiftly adopt digitalisation to continue disseminating tourism information (Godovykh et al., 2022).

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