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Visitors' Engagement in Second-Chance Tourism: Gender Differences in the Perception of Trust and Emotional Involvement Through Virtual Reality Technologies

Kim-Lim Tan ^{a,b}, Ivy S.H. Hii ^c, and Tat-Huei Cham ^{d,e,f,*}

^aJCUS Business School, James Cook University, Singapore, Singapore; ^bFaculty of Business Administration, Ton Duc Thang University, Ho Chi Minh City, Vietnam; ^cFaculty of Business, Curtin University, Sarawak, Malaysia; ^dUCSI Graduate Business School, UCSI University, Kuala Lumpur, Malaysia; ^eSymbiosis International (Deemed University), Pune, Maharashtra, India; ^fChongqing University of Arts and Sciences, Chongqing, China

ABSTRACT

Virtual tourism, offering immersive experiences, is revitalizing destinations with troubled pasts through second-chance tourism. However, research gaps remain in understanding emotional involvement and trust dynamics, particularly concerning gender differences. Using purposive sampling and data from 317 consumers, this study employed partial least squares structural equation modeling. Findings reveal that perceived ease of use and entertainment positively influence both forms of trust, which subsequently affect emotional involvement and behavioral intention. Males are more responsive to experiential aspects and exhibit stronger seller trust linked to emotional involvement, but weaker product trust than females. This is the first study that answered whether virtual reality technologies would encourage users' engagement in second-chance tourism. It further integrates technology acceptance model dimensions with emotional involvement and the two trust forms. Finally, it addresses whether gender-specific preferences would result in different outcomes, which is particularly important when making sound managerial recommendations in second-chance tourism.

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Introduction

In the field of tourism, virtual tourism is becoming a transformative tool that enhances the overall travel experience for consumers. This approach leverages cutting-edge technologies to provide individuals with immersive and interactive virtual journeys, allowing them to explore destinations, landmarks, and cultural attractions from their homes.

The democratization of travel information has further supported a new form of tourism – second-chance tourism (Bec et al., 2021). Second-chance

CONTACT Kim-Lim Tan  kimlim.tan@jcu.edu.au; tankimlim@tdtu.edu.vn  JCUS Business School, James Cook University, Singapore/Ton Duc Thang University, Ho Chi Minh City, Vietnam

^{*}Faculty of Business, Design and Arts, Swinburne University of Technology Sarawak Campus, Sarawak, Malaysia.

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tourism represents offering a renewed lease of life to destinations, attractions, sites, or artifacts that have faced destruction or deterioration (Bec et al., 2021). It encapsulates the idea of revitalization where places with a troubled past can reclaim their significance and allure. Once marred by adverse events such as natural disasters, economic downturns, or social upheavals, these destinations are granted a second “life” through intentional efforts to restore and rejuvenate.

Through virtual reality, travel information becomes more accessible, which empowers communities to showcase their resilience and recovery from past adversities. It provides immersive storytelling where tourists can now engage with the rich history and unique narratives of second-chance destinations without needing physical presence. This fosters a deeper understanding of the challenges locals have overcome and promotes a sustainable approach by reducing the environmental impact associated with traditional tourism.

Despite these promises, the concept of virtual reality and second-chance tourism remains nascent. As highlighted earlier, second-chance tourism refers to revitalizing and rebranding destinations that have declined visitor numbers or struggled to maintain their appeal (Bec et al., 2021). In other words, these areas may have been impacted by economic hardship, natural disasters, environmental damage, or other challenges that negatively affected their tourism sector. The core idea behind second-chance tourism is to give these places a renewed opportunity to attract visitors (Calisto & Sarkar, 2024). In this regard, most of the tourism studies examining the usage of virtual reality generally focus on tourists’ behaviors toward well-established destinations (Calisto & Sarkar, 2024). While these offer insights, leveraging these findings on second-chance tourism can bias our understanding. The distinctive differences in emotional responses between tourists visiting well-established destinations and those exploring places undergoing recovery highlight the need for tailored approaches. Additionally, overlooking the unique cultural, social, and economic aspects of second-chance tourism destinations may introduce bias into the interpretation of virtual reality applications.

Arising from these considerations, researchers are beginning to adopt a more nuanced and context-specific approach when investigating virtual reality in second-chance tourism. Yet, many did not provide a holistic appreciation of the phenomena. For instance, Bec et al. (2021) introduce the concept of second-chance tourism and highlight the role of innovative preservation methods, such as virtual and mixed reality. However, the framework lacks empirical validation to substantiate their propositions. Similarly, Gordon (2023, p. 528) mentioned that the current ecological challenges would further strengthen arguments for second-chance tourism. He highlighted that future research could position it “within the broader multidisciplinary frame of tourism research.”

Third, the connection between virtual tourism, emotional involvement and forms of trust is missing in existing literature, much less in second-chance tourism (Bec et al., 2021; Tan, Hii, Zhu, et al., 2023). Virtual tourism has undoubtedly become an important conduit to arouse tourists' emotions (Oncioiu & Priescu, 2022). In second-chance tourism, such emotions could be even stronger. In this regard, it is expected that trust is essential in virtual space (Williams & Baláz, 2020). Trust influences how users engage with virtual environments, make decisions based on the presented content, and immerse themselves in simulated experiences (Babamiri et al., 2022). However, studies like Zhong et al. (2022) tend to operationalize trust as a unidimensional construct, and Williams and Baláz (2020) highlighted that future studies should examine its nuanced dimensions. This study responds to the call by examining the relationship between the various forms of trust to better understand how it contributes to emotional involvement in second-chance tourism.

At the same time, we perform a gender analysis of virtual tourism engagement within the context of second-chance tourism. Previous studies, such as Tan, Sim, et al. (2022), have acknowledged the impact of gender on travel behaviors, highlighting how men and women often differ in their motivations, decision-making processes, and modes of engagement with tourism experiences. Besides, a study by Ariza-Colpas et al. (2023) has indicated that men tend to demonstrate stronger spatial awareness and may engage more readily with interactive 3D maps or immersive virtual environments. In contrast, women often excel in verbal and emotional processing, making them more responsive to narrative-driven content and empathetic storytelling (Bem, 1981). Women also tend to exhibit greater risk sensitivity and a more detailed-oriented approach to travel planning, which can influence how they interact with virtual representations of destinations (Lyu et al., 2021). Understanding these differences is essential for designing inclusive and effective virtual tourism experiences that cater to diverse user preferences and support the broader goals of second-chance tourism (Cham et al., 2023). In the same vein, extending this lens to virtual tourism in the context of second-chance destinations would address a gap by allowing us to explore whether there are gender-specific patterns in the adoption of virtual reality technologies and the emotional connections formed during these experiences.

The absence of empirical support raises questions about virtual reality's practical applicability and effectiveness in the context of second-chance tourism, leaving a significant gap in our understanding of the actual impact and outcomes of these innovative preservation methods. As such, this study aims to examine the role of virtual reality in second-chance tourism by exploring the interplay between emotional involvement, trust, and gender-specific engagement patterns. Specifically, the research objectives are to investigate (1) the influence of virtual tourism design factors on the two forms of trust; (2) the role of trust (both seller and product trust) in shaping tourists' emotional

involvement; (3) the impact of emotional involvement on tourists' behavioral intentions; and (4) if there are any gender-specific differences among these relationships.

Theoretical Framework

This study leverages the technology acceptance model (TAM) and the stimuli-organism-response (S-O-R) model to examine the phenomena under investigation. TAM is a model that seeks to understand and predict individuals' technology acceptance and usage. According to Davis et al. (1989), TAM posits that perceived ease of use and perceived usefulness are key determinants influencing users' attitudes and intentions to adopt a particular technology. The model suggests that if individuals perceive a technology as easy to use and believe it will enhance their performance or productivity, they are more likely to accept and adopt it (Lee, 2009). On the other hand, the S-O-R model is a broader psychological framework used to analyze the relationships between environmental stimuli, individual organisms change within people, and their responses (Chopdar & Balakrishnan, 2020). The S-O-R model suggests that external stimuli evoke physiological and cognitive responses in individuals, leading to various behaviors or actions. In the context of technology adoption, studies such as Le et al. (2021) demonstrated that external stimuli include users' perspective of features, design, or marketing efforts that influence individuals' emotions (organisms) toward it. According to Jacoby (2002), an organism refers to one's changes of affection and cognitive states due to stimuli, which subsequently impact their responses, such as acceptance or rejection of the technology. Both TAM and the S-O-R model contribute valuable insights into the complex dynamics involved in this study (see Figure 1). TAM focuses specifically on the acceptance process, and the S-O-R model provides a broader perspective on the psychological processes underlying human behavior in response to stimuli.

Research Context

This study situates its research context within China, a country characterized by a rich tapestry of cultural heritage and historical sites, many of which have suffered due to natural disasters and urban development that have been ravaged by past civil wars (Agyeiwaah et al., 2022). China presents a unique canvas for the application of virtual tourism, particularly in the realm of second-chance tourism. The nation's efforts to rehabilitate and promote its cultural and historical sites align with the objectives of second-chance

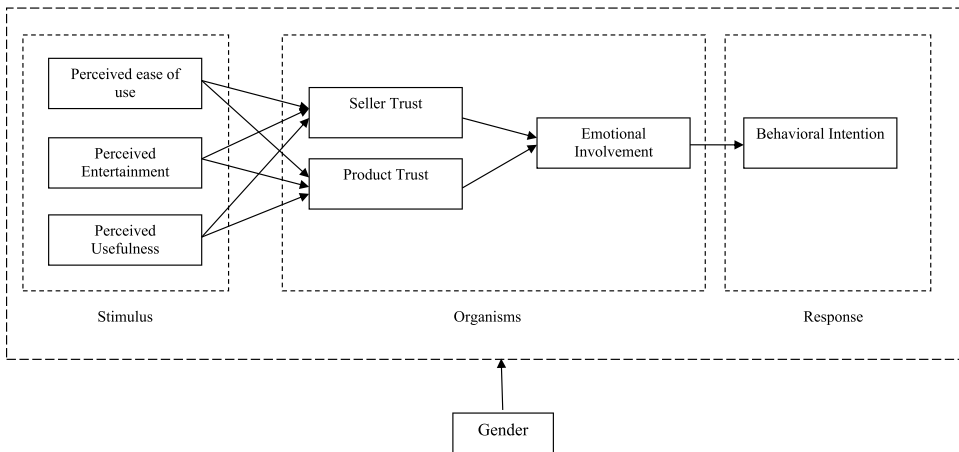


Figure 1. Conceptual framework.

tourism – revitalizing locations that have experienced adversity and reintroducing them to domestic and international tourists through innovative, sustainable methods (Global Times, 2022).

China’s rapid technological advancements and widespread adoption of digital and virtual reality technologies offer a fertile ground for deploying virtual tours and interactive experiences (Talafubieke et al., 2021). These technologies aim to enhance tourist engagement without the physical strain on these sensitive sites and foster a deeper appreciation and understanding of the site’s historical and cultural significance (Bec et al., 2021). Furthermore, the Chinese government’s initiatives, such as the “Beautiful China” campaign, underscore the potential for virtual reality to play a pivotal role in educating and engaging the public while responsibly driving tourism revenue (China Daily, 2024).

In sum, this setting provides insights into how such technologies can be scaled and adapted to various cultural contexts, thereby offering lessons on the global application of virtual and second-chance tourism strategies. Moreover, analyzing tourists’ emotional and behavioral responses to these virtual experiences will enrich our understanding of the dynamic interplay between culture, technology, and tourism in the digital age.

Literature Review

Second-Chance Tourism

Second-chance tourism can be explained as a redevelopment and rebranding of destinations that have experienced a decline in tourism or faced challenges in their attractiveness to visitors (Bec et al., 2021). These destinations may have suffered from economic downturns, natural disasters, environmental degradation, or other factors that have negatively impacted their tourism industry.

While several tourism models share overlapping features, second-chance tourism distinguishes itself through its strong emphasis on sustainability, regeneration, and stakeholder collaboration. For example, Sharma and Martini (2024) highlighted that dark tourism draws visitors to sites associated with tragedy or suffering (e.g., former conflict zones or disaster-stricken areas). Still, it often lacks a deliberate focus on supporting these destinations' long-term recovery or revitalization. Similarly, eco-tourism and regenerative tourism promote environmentally conscious travel, yet they typically focus on preserving natural environments rather than reviving destinations that have experienced a decline (Rastegar, 2025). Additionally, voluntourism and pro-poor tourism emphasize social benefits, but their efforts are usually localized at the project or individual level (Gill & Kenworthy, 2025). Achieving second-chance tourism would require a commitment toward sustainability practices (Calisto & Sarkar, 2024). This perspective suggests that industry players must go beyond merely attracting tourists. It also ensures that no further harm or damage is caused to the environment or the local community. In other words, involving the community and tourists is integral to second-chance tourism's success (Bec et al., 2021). In essence, second-chance tourism embodies a holistic and transformative approach to destination management, aligning with the broader sustainability principles. By addressing challenges, implementing thoughtful strategies, and fostering collaboration, destinations can recover from setbacks and emerge as vibrant, sustainable, and appealing tourist destinations.

Perceived Ease of Use

Perceived ease of use refers to the degree to which users believe that interacting with a technology platform is effortless, intuitive, and free from complexity (Davis, 1989). Virtual tourism encompasses features such as a user-friendly interface, straightforward navigation, and smooth interaction, all of which contribute to a positive user experience (Do et al., 2020). When users perceive a system as easy to use, they are more likely to engage with it confidently without feeling overwhelmed or uncertain. Research has shown that ease of use can be vital in shaping users' attitudes and behaviors, particularly in digital environments where trust is a key factor (Haritha, 2023). Therefore, a well-designed and easily navigable platform often reflects professionalism and attention to detail, which can influence users' perceptions of the service provider and the product being offered.

Perceived Entertainment

Perceived entertainment refers to the extent to which users find an experience enjoyable, engaging, and emotionally stimulating when interacting with

a technology platform (Beck et al., 2019). In virtual tourism, it refers to elements such as immersive visuals, interactive features, storytelling, and gamified experiences that captivate users and make the virtual tour more pleasurable (Calisto & Sarkar, 2024). As highlighted by Assiouras et al. (2024), entertainment is an essential component in virtual reality as it enhances user engagement and can influence their overall perception of the platform's quality and appeal. Studies such as Kieanwatana and Vongvit (2024) have further demonstrated its importance, showing that perceived entertainment significantly impacts user attitudes, particularly in hedonic systems where enjoyment is a primary motivation for use. As a result, incorporating engaging and emotionally rich content into virtual tourism platforms can strengthen users' connection to the experience and increase their trust in the product and the provider.

Perceived Usefulness

Perceived usefulness is the degree to which a user believes using a particular technology will enhance their performance or fulfill their goals (Davis, 1989). For virtual tourism, it is about how effectively users perceive the platform in helping them plan, preview, or simulate a real-world travel experience. When users find a helpful virtual tourism platform, they are more likely to view it as a valuable resource that adds meaning or efficiency to their travel-related tasks (Jo & Park, 2023). Prior studies such as Teng et al. (2024) have shown that perceived usefulness plays a significant role in technology adoption, particularly in virtual tourism. Across the literature, its importance lies in the fact that users are more inclined to trust, adopt, and continue using a system that they believe provides practical benefits or enhances their experience (Davis, 1989; Jo & Park, 2023; Wang & Li, 2019). In other words, a platform that is perceived builds trust in the technology's ability to deliver relevant and reliable experiences, thereby increasing the likelihood of continued use and positive word-of-mouth.

Trust in Virtual Tourism

Trust plays a vital role in consumer behavior. It has been explained across literature, such as Singh and Sinha (2020), that trust is a belief between two parties that information exchanges are accurate without nefarious intention. In virtual tourism, trust plays an even more critical role. Unlike other purchases where consumers rely on their sense of touch and taste before making decisions, trust in virtual tourism reflects confidence in the accuracy of the information provided by the provider (Tan, Hii, Lim, et al., 2023).

In the context of second-chance tourism, positive word-of-mouth and testimonials play a crucial role in rebuilding trust. Information could convey that the destination has evolved, addressing past issues, and now offers a more

convincing experience. In other words, trust assumes a multifaceted responsibility in virtual reality tourism. This argument aligns with Shankar and Balasubramanian (2009) observation that researchers should examine trust from multiple fronts to gain a complete appreciation of it. This viewpoint is especially crucial because various trust types provide varied outcomes depending on the situation. Following Tan, Hii, Lim, et al. (2023), trust can come in seller and product trust.

Seller Trust

Seller trust is built on the perceptions of reliability where the advice and perspectives the seller provides are seen as honest and without nefarious intention. Different studies, such as Wongkitrungrueng and Assarut (2020), highlight that seller trust is based on communication, being transparent with views, and demonstrating ethical practices. From a virtual tourism perspective, seller trust goes beyond product assurance. It is about having confidence that the seller offers authentic products, adheres to ethical business practices, and being transparent in presenting accurate and essential information about the destination (Calisto & Sarkar, 2024).

Product Trust

On the other hand, product trust revolves around the consumer's confidence in the quality, performance, and adherence to promises made by the product itself (Calisto & Sarkar, 2024). This trust is influenced by product reviews, brand reputation, warranty policies, and the item's perceived value. In other words, trust in the virtual tourism product focuses on the confidence that the seller will deliver an immersive and high-quality representation of the destination or attraction, and the description provided in the virtual environment is the same as the experience (Tan, Hii, Zhu, et al., 2023).

Hypotheses Development

Perceived Ease of Use on Seller Trust and Product Trust

In virtual tourism, we hypothesized that virtual reality technology's perceived ease of use is crucial in shaping users' trust in the seller and the product. Studies such as Singh and Sinha (2020) have indicated that the ease of use reduces perceived risks associated with online transactions, assuring users of a secure and straightforward process. A well-designed platform is also associated with professionalism, signaling the seller's commitment to providing a trustworthy service. Similarly, higher perceived ease of use positively influences trust in the virtual tourism product. It is assumed that when users find the virtual experience accessible and user-friendly, they are more likely to trust that the virtual tour will deliver a high-quality and satisfying travel experience.

Many existing studies, such as Guo et al. (2021) and Almaiah et al. (2022), demonstrate that perceived ease of use increases trust without specifying the trust forms. Given the above arguments and the lack of empirical evidence, it is not unreasonable to posit that user experience on navigation and interaction fosters trust in the professionalism and commitment of the seller and the product.

H1a: Perceived ease of use positively influences seller trust.

H1b: Perceived ease of use positively influences product trust.

Perceived Entertainment on Seller Trust and Product Trust

Perceived entertainment is an essential component of virtual experiences as it may significantly influence emotions, attitudes and motivational behavior (Benitez et al., 2022; Do et al., 2020; Ooi & Tan, 2016). In virtual reality, the purpose is to create a compelling and captivating experience that goes beyond mere information delivery (McKinsey, 2024). Perceived entertainment in virtual reality involves interactive and visually stimulating content, engaging storytelling, and a sense of presence that transports users to a different reality (Calisto & Sarkar, 2024). In virtual tourism, perceived entertainment is pivotal in enhancing the overall user experience, contributing to the user's enjoyment of the destination or activity being virtually explored (Wei et al., 2023). As users find the experience entertaining, Tan, Hii, Zhu, et al. (2023) highlighted that it not only adds value to the virtual tourism product but also influences their trust in the technology, the content provider, and the overall quality of the virtual experience, leading us to the following set of hypotheses:

H2a: Perceived entertainment positively influences seller trust.

H2b: Perceived entertainment positively influences product trust.

Perceived Usefulness on Seller Trust and Product Trust

Perceived usefulness in the context of virtual tourism is about consumers' assessment that the content of the experience serves a utility purpose in fulfilling their specific objectives. This perception is deeply intertwined with the practical benefits and applications that virtual reality offers, ranging from immersive educational experiences and realistic simulations to advanced training programs and interactive entertainment (Wang & Li, 2019). In this regard, studies such as Jo and Park (2023) have indicated that users are more

likely to trust a virtual product when they perceive it as a helpful tool for obtaining relevant and engaging information about a destination. From the perspective of virtual tourism, scholars such as Bec et al. (2021) have argued that the usefulness of virtual tourism could enhance heritage preservation as it reduces the worsening of destinations. For this to happen, an underlying construct would be trusted, where users rely on the virtual reality experience to deliver meaningful and practical insights. Our next set of hypotheses are:

H3a: Perceived usefulness positively influences seller trust.

H3b: Perceived usefulness positively influences product trust.

Seller Trust and Product Trust on Emotional Involvement

Buildig on earlier arguments, we propose hypotheses examining the relationship between the two forms of trust and emotional involvement. A common line of argument among different literature is virtual reality can potentially influence participants' emotional states through the experiences that individuals undergo (Calisto & Sarkar, 2024; Zulkarnain et al., 2024). In other words, the user's interaction with the virtual environment would cause one to be in a state of flow where one would invest emotions into the digital narrative of the experience. According to Wirth et al. (2012), emotional involvement results from interaction with a specific media that intensifies feelings, often related to the duration, peak level and frequency.

With this as the background understanding, our arguments are grounded in the idea that when consumers trust the seller, they will likely experience sentiments such as confidence, comfort, and a sense of security (Hidayat et al., 2021). Similarly, when consumers trust the product, they feel assured that they will enjoy the same as they experience virtually (Glikson & Woolley, 2020). The presence of these sentiments would develop a bond between the users and the seller that allows users to be more immersed in the process, leading to intense feelings. The next set of hypotheses is:

H4a: Seller trust positively influences emotional involvement.

H4b: Product trust positively influences emotional involvement.

Emotional Involvement and Behavioural Intention

Emotional involvement and behavioral intention play pivotal roles in shaping the narrative of second-chance tourism, where destinations grappling with

past adversities seek renewal through visitor engagement (Bec et al., 2021). As highlighted earlier, emotional involvement refers to the depth of emotional connection individuals feel toward a product (Zulkarnain et al., 2024). In consumer behavior studies, emotional involvement has always been a key issue for research as it has been consistently described as a key determinant influencing a purchasing decision (Shavanddasht & Allan, 2018). This is the same for tourism studies. Results from studies such as Biswas et al. (2020) have shown that positive emotional involvement positively influences revisiting intention. Similarly, Ma et al. (2018) underlined that tourists' emotions drive positive behavioral outcomes such as tourist satisfaction.

Having said that, within second-chance tourism, the intention extends beyond physically visiting the destination. Owing to the nature of second-chance tourism, the intention is also to contribute to its economic and social rejuvenation (Bec et al., 2021). Based on this, it is reasonable to postulate that within the context of second-chance tourism, users' emotional connection, resulting from the interaction with the virtual environment, develops a desire to contribute positively to the destination's rebuilding process.

H5: Emotional involvement positively influences the intention to be involved in second-chance tourism.

Gender as a Moderating Variable

Gender dynamics have become a significant factor in understanding consumer behavior, mainly due to the evolving roles and expectations of men and women in society (Figueroa-Domecq & Segovia-Perez, 2020). Gender differences are socially constructed and have cognitive and emotional dimensions that influence how individuals process information and make decisions. The Gender Schema Theory aligns with this argument, suggesting that individuals internalize culturally defined gender roles, which shape their preferences, perceptions, and behaviors (Bem, 1981). For example, men are often associated with agentic traits such as assertiveness, independence, and goal orientation, while women are associated with communal traits including empathy, sensitivity, and emotional expressiveness (Eagly, 1997; Eagly & Wood, 1999). These psychological distinctions can affect how each gender interacts with products, services, and marketing messages. According to Figueroa-Domecq and Segovia-Perez (2020), females tend to be hedonistic, focusing on emotive appeals, while males tend to be utilitarians, focusing on the actual benefit when making decisions. Regarding education, Sim et al. (2020) found that males consider varied sources of information when deciding their selection.

What makes this aspect even more intriguing is the shift in societal expectations, which has led to changing gender norms. Females are now seen

performing tasks traditionally dominated by males (Tan, Sim, et al., 2022). Additionally, females are more educated, outspoken, and assume masculine behavior (Schnurr et al., 2020). At the same time, men are also more involved in activities that were once dominated by females, displaying their affectionate part of themselves (Shockley et al., 2021). Given these changes, a fresh examination is needed to understand the perspectives between males and females regarding taking action for second-chance tourism. We postulate that:

H6a: There is a significant difference in the relationship between perceived ease of use and seller trust for males and females.

H6b: There is a significant difference in the relationship between perceived ease of use and product trust for males and females.

H7a: There is a significant difference in the relationship between perceived entertainment and seller trust for males and females.

H7b: There is a significant difference in the relationship between perceived entertainment and product trust for males and females.

H8a: There is a significant difference in the relationship between perceived usefulness and seller trust for males and females.

H8b: There is a significant difference in the relationship between perceived usefulness and product trust for males and females.

H9a: There is a significant difference in the relationship between seller trust and emotional involvement for males and females.

H9b: There is a significant difference in the relationship between product trust and emotional involvement for males and females.

H10: There is a significant difference in the relationship between emotional involvement and intention to be involved in second-chance tourism for males and females.

Methodology

Sampling

Using purposive sampling, the responses were collected from individuals over 2 months, from September 2023 to December 2023. Memon et al. (2024) explain

that purposive sampling is a non-probability sampling technique in which participants are selected based on specific characteristics or qualities that align with the research objectives. In other words, this method allows the researcher to focus on particular groups of interest and obtain rich, relevant, and in-depth data from those most likely to provide meaningful insights into the research topic. A similar sampling strategy has been used in studies such as Fam et al. (2019).

To ensure bona-fide respondents were selected for this study, we provided filter questions to ensure respondents have basic English proficiency, have a basic understanding of virtual reality technology, are familiar with the basic concept of second-chance tourism, and have visited China at least once in the last 6 months. Using the G*power software, we adopted the power analytics method to determine the minimum sample size. At 80% power, four predictors and an effect size of 0.15, the minimum sample size required is 85. On this note, the effect size of 0.15 was selected based on Cohen (1988) guidelines and has been commonly used as a benchmark in studies (see Fam et al., 2019, 2020; Tan, Ho, et al., 2023). Additionally, we used Kock and Hadaya (2018) recommendations as the benchmark, where they advised 146 as the minimum sample size for the partial least square structural equation modeling (PLS-SEM) analysis method. Considering both, our final sample size of 317 surpasses both recommended benchmarks. Table 1 contains the breakdown of respondents.

Data Collection

Data was collected using the online platform Qualtrics. As one of the more popular platforms used in research, Qualtrics allows for advanced features

Table 1. Respondents' profile ($n = 317$).

Characteristics	Frequency	Percent
Gender		
Male	148	46.69%
Female	169	53.31%
Age		
Below 20	22	6.94%
21–30	183	57.73%
31–40	89	28.08%
31–50	21	6.62%
Above 50	2	0.63%
Highest education		
Secondary school	2	0.63%
Junior colleges	18	5.68%
Bachelor's degree	160	50.47%
Master's degree	125	39.43%
Doctorate degree	12	3.79%
Employment		
Student	147	46.37%
Part time	37	11.67%
Full time	122	38.49%
Retired	11	3.47%

such as skip and display logic functions that allow customization to specific research audiences (Cushman et al., 2021). Through Qualtrics, a hyperlink was created and shared with all participants, containing details about the survey's objectives, confidentiality and anonymity assurances, and the researchers' contact information. Before entering the survey, participants must provide their consent, indicating their understanding and agreement with the survey's purpose.

Instrument

The survey questions are adapted from different studies (see [Annex A](#)). The 12 items regarding perceived ease of use ($\alpha = 0.929$), perceived usefulness ($\alpha = 0.833$) and perceived entertainment ($\alpha = 0.929$) are adapted from Kim and Hall (2019). At the same time, we adapted seven items measuring seller trust ($\alpha = 0.918$) and product trust ($\alpha = 0.895$) from Tan, Hii, Zhu, et al. (2023). Biswas et al. (2020) is used to adapt three items measuring emotional involvement ($\alpha = 0.862$). Finally, four items on behavioral intention ($\alpha = 0.908$) were adapted from Tan, Sia, et al. (2022). All items were measured on a 5-point Likert scale.

Controlling Method Bias

Remedies were applied to reduce control method bias. First, we pre-tested the survey with tourism practitioners and researchers to ensure that any ambiguous terms were rewritten so that participants could understand and respond as intended (Memon et al., 2017). At the same time, we reiterated data confidentiality to the respondents and the need for them to provide honest opinions. Finally, we performed Harman's one-factor test, which demonstrated that the variance explained by the single largest factor is less than 50%. Besides, we deployed the full collinearity assessment where vertical and lateral variance inflation factors (VIF) are less than 3.3. Following both Podsakoff et al. (2003) and Kock (2015), these imply that common method bias is not a significant issue in our study.

Results

Measurement Model

With all constructs in our model specified as reflective, we tested the measurement model by examining the indicator reliability, convergent validity, and internal reliability. In this regard, [Table 2](#) demonstrates that, across the three databases, the indicators loading, composite reliability and average variance

extracted exceeded the threshold of 0.7, 0.5 and 0.7, respectively. Using the heterotrait-monotrait (HTMT) ratio of correlations, discriminant validity across the three databases has been established as the values are less than 0.85 (see Table 2).

Structural Model

After that, we tested the structural model by first examining the VIF. According to Table 3, multicollinearity is not an issue, given that the VIF values are lesser than 3.3. At the same time, Table 3 demonstrates that H1a-H5 are supported except for H3a. Specifically, it demonstrates that perceived ease of use positively influences both seller trust (H1a: $\beta = 0.476$, $p < .001$) and product trust (H1b: $\beta = 0.332$, $p < .001$). Likewise, perceived entertainment demonstrates similar findings where it establishes positive relationships with seller trust (H2a: $\beta = 0.192$, $p < .01$) and product trust (H2b: $\beta = 0.185$, $p < .01$). Interestingly, perceived usefulness only influence product trust (H3b: $\beta = 0.159$, $p < .01$) but not seller trust (H3a: $\beta = 0.047$, $p = .251$). Expectedly, both seller trust (H4a: $\beta = 0.527$, $p < .001$) and product trust (H4b: $\beta = 0.237$, $p < .01$) demonstrate a positive relationship with emotional involvement, which in turn, demonstrate a positive relationship with behavioral intention to involve in second-chance tourism (H5: $\beta = 0.648$, $p < .001$). At the same time, the coefficient of

Table 2. Measurement Model.

Complete ($n = 317$)	Convergent validity				Discriminant validity using HTMT						
	FL	CA	CR	AVE	BI	EMO	PEOU	PEN	PU	PT	ST
BI	0.863–0.909	0.908	0.936	0.784							
EMO	0.865–0.895	0.862	0.916	0.783	0.729						
PEOU	0.791–0.854	0.929	0.95	0.825	0.640	0.872					
PEN	0.891–0.918	0.929	0.95	0.825	0.693	0.769	0.842				
PU	0.773–0.859	0.833	0.889	0.667	0.583	0.774	0.703	0.784			
PT	0.890–0.931	0.895	0.935	0.827	0.615	0.741	0.558	0.587	0.629		
ST	0.851–0.925	0.918	0.942	0.803	0.658	0.802	0.568	0.572	0.712	0.874	
Male ($n = 148$)											
BI	0.875–0.892	0.905	0.908	0.778							
EMO	0.870–0.892	0.857	0.865	0.777	0.631						
PEOU	0.754–0.824	0.794	0.802	0.616	0.620	0.875					
PEN	0.865–0.903	0.905	0.912	0.777	0.750	0.725	0.899				
PU	0.709–0.862	0.791	0.828	0.607	0.628	0.799	0.684	0.782			
PT	0.894–0.939	0.907	0.909	0.843	0.673	0.735	0.542	0.509	0.555		
ST	0.896–0.929	0.935	0.936	0.837	0.686	0.836	0.647	0.533	0.731	0.897	
Female ($n = 169$)											
BI	0.862–0.924	0.914	0.918	0.795							
EMO	0.868–0.903	0.868	0.869	0.792	0.838						
PEOU	0.825–0.868	0.863	0.868	0.708	0.670	0.871					
PEN	0.910–0.941	0.950	0.953	0.869	0.662	0.810	0.784				
PU	0.814–0.868	0.863	0.863	0.710	0.554	0.754	0.714	0.782			
PT	0.881–0.906	0.887	0.889	0.816	0.546	0.745	0.578	0.665	0.711		
ST	0.799–0.936	0.892	0.900	0.758	0.626	0.766	0.500	0.64	0.720	0.824	

Note (s): (1) FL: Factor loading, CA: Cronbach's Alpha, CR: Composite reliability, AVE: Average variance extracted, BI: Behavioral intention, EMO: Emotional involvement, PE: Perceived ease of use, PEN: Perceived entertainment, PU: Perceived usefulness, PT: Product trust, ST: Seller trust. (2) Discriminant validity achieved at HTMT_{0.90}.

Table 3. Structural Model.

	Hypotheses	Std beta	Std error	t_value	5.00%	95.00%	VIF	f ²	R ²
H1a	Perceived ease of use -> Seller Trust	0.476	0.061	7.769***	0.367	0.571	1.913	0.206	0.424
H1b	Perceived ease of use -> Product Trust	0.332	0.073	4.568***	0.210	0.451	1.913	0.090	0.361
H2a	Perceived Entertainment -> Seller Trust	0.192	0.069	2.777**	0.082	0.310	2.443	0.026	
H2b	Perceived Entertainment -> Product Trust	0.185	0.074	2.514**	0.065	0.308	2.443	0.022	
H3a	Perceived Usefulness -> Seller Trust	0.047	0.071	0.673 ^(NS)	-0.076	0.159	2.624	0.001	
H3b	Perceived Usefulness -> Product Trust	0.159	0.072	2.218*	0.042	0.279	2.624	0.015	
H4a	Seller Trust -> Emotional Involvement	0.527	0.082	6.402***	0.394	0.665	2.677	0.221	0.531
H4b	Product Trust -> Emotional Involvement	0.237	0.084	2.813**	0.092	0.367	2.677	0.045	
H5	Emotional Involvement -> Behavioral Intention	0.648	0.039	16.419***	0.578	0.708	1.000	0.723	0.420

Note: * $p < .1$, ** $p < .05$, *** $p < .001$, NS: Not significant.

determination (R^2) demonstrated that all the variations in the values of seller trusts, product trusts, emotional involvement and behavioral interaction accounted for at least 36.1% by its respective endogenous variables, making it a substantial model (Cohen, 1988). Similarly, the R^2 for both trusts on emotional involvement is 53.1%. A similar trend has been observed in effect sizes (f^2), where the majority ranges from medium to large effect.

Multigroup Analysis

We commenced the multigroup analysis by ascertaining measurement invariance through configurational and compositional invariance. Following Henseler et al. (2016), configural invariance has been achieved as all three datasets contain the same factor, structure, and data treatment (see Tables 2 and 3). Following this, we examined the compositional invariance, where Table 4 shows the establishment of partial measurement invariance, implying that we can proceed with the analysis. To this end, Table 5 shows that there are significant differences between males and females on perceived entertainment to seller trust (H7a: $\beta = 0.500$, $p < .001$) and perceived usefulness to seller trust (H8a: $\beta = -0.449$, $p < .001$). Similarly, gender differences are observed in both seller trust (H9a: $\beta = 0.268$, $p < .05$) and product trust (H9b: $\beta = -0.274$, $p < .05$) to emotional involvement. Finally, when compared between males and females, the relationship between emotional involvement and behavioral intention is lesser for males than females (H10: $\beta = -0.184$, $p < .01$). Hence, H7a, H8a, H9a, H9b and H10 are all supported.

Discussion

Referring to Table 3, our results demonstrated that perceived ease of use and perceived entertainment significantly influence both seller and product trust.

Table 4. MICOM analysis.

Composite	C value (= 1)	5% quartile of the empirical distribution of C	p-value	Composite invariance
Behavioral Intention	1.000	0.999	0.349	Yes
Emotional Involvement	1.000	0.999	0.33	Yes
Perceived Entertainment	1.000	0.999	0.523	Yes
Perceived Usefulness	1.000	0.996	0.086	Yes
Perceived ease of use	1.000	0.997	0.736	Yes
Product Trust	1.000	0.999	0.44	Yes
Seller Trust	1.000	1.000	0.072	Yes
	Difference of the composite mean value	95% confidence interval	p-value	Equal means values
Behavioral Intention	−0.003	[−0.223; 0.207]	0.712	Yes
Emotional Involvement	−0.001	[−0.233; 0.212]	0.314	Yes
Perceived Entertainment	−0.002	[−0.235; 0.216]	0.276	Yes
Perceived Usefulness	−0.004	[−0.215; 0.225]	0.113	Yes
Perceived ease of use	−0.002	[−0.230; 0.234]	0.099	Yes
Product Trust	0.003	[−0.221; 0.229]	0.527	Yes
Seller Trust	0.002	[−0.219; 0.221]	0.986	Yes
	Logarithm of the composite's variance ratio	95% confidence interval	p-value	Equal means values
Behavioral Intention	0.239	[−0.286; 0.293]	0.110	Yes
Emotional Involvement	0.207	[−0.300; 0.305]	0.175	Yes
Perceived Entertainment	−0.060	[−0.263; 0.275]	0.665	Yes
Perceived Usefulness	−0.140	[−0.272; 0.263]	0.324	Yes
Perceived ease of use	−0.048	[−0.255; 0.253]	0.731	Yes
Product Trust	0.344	[−0.238; 0.238]	0.007	No
Seller Trust	0.534	[−0.250; 0.259]	0.000	No

In virtual second-chance tourism, this could be due to several reasons. Firstly, when individuals find the technology easy to navigate and interact with, they are more likely to feel confident in the platform and the information it presents (Lew et al., 2020). This has been demonstrated in several studies, such as Tan, Liu, et al. (2023). In the case of second-chance tourism, where users may be exploring destinations with complex narratives or historical contexts, an intuitive and user-friendly virtual reality interface enhances their overall experience and fosters trust in the information's accuracy and reliability.

Secondly, the perceived entertainment value of virtual reality experiences can significantly impact trust perceptions. This is evident from Xu and Ye

Table 5. Multigroup analysis.

		Male (n = 148)			Female (n = 169)			Difference (male – female)		
		Std Beta	Std Error	t-value	Std Beta	Std Error	t-value	Std Beta	p-value MGA	Supported
H6a	PEOU -> ST	0.485	0.075	6.431***	0.484	0.086	5.625***	0.001 ^(NS)	0.496	Not supported
H6b	PEOU -> PT	0.279	0.097	2.866**	0.399	0.106	3.753***	−0.120 ^(NS)	0.201	Not supported
H7a	PEN -> ST	0.461	0.088	5.216***	−0.039	0.092	0.425 ^(NS)	0.500***	0.000	Supported
H7b	PEN -> PT	0.27	0.131	2.063**	0.107	0.088	1.215 ^(NS)	0.163 ^(NS)	0.151	Not supported
H8a	PU -> ST	−0.188	0.094	2.004*	0.261	0.085	3.085**	−0.449***	0.000	Supported
H8b	PU -> PT	0.077	0.127	0.606 ^(NS)	0.236	0.079	2.981**	−0.159 ^(NS)	0.145	Not supported
H9a	ST -> EMO	0.691	0.115	6.033***	0.423	0.107	3.970***	0.268**	0.047	Supported
H9b	PT -> EMO	0.072	0.118	0.610 ^(NS)	0.346	0.111	3.104**	−0.274**	0.048	Supported
H10	EMO -> BI	0.565	0.060	9.364***	0.750	0.041	18.324***	−0.185**	0.006	Supported

Note(s): (1), BI: Behavioral intention, EMO: Emotional involvement, PE: Perceived ease of use, PEN: Perceived entertainment, PU: Perceived usefulness, PT: Product trust, ST: Seller trust. (2) Note: * $p < .1$, ** $p < .05$, *** $p < .001$, NS: Not significant.

(2020), who indicated that the entertaining component in live-streaming makes consumers trust sellers and the product more. Similar findings echoed this result (e.g. Tan, Hii, Lim, et al., 2023; Zhong et al., 2022). A probable reason is engaging and immersive virtual tours of second-chance destinations can captivate users’ attention and evoke positive emotions, leading to a heightened sense of trust in both the seller offering the experience and the destination itself. Besides, entertainment value can be a proxy for the overall quality and authenticity of the virtual reality experience. Users are more likely to perceive entertaining and memorable experiences as well-executed and professionally curated, which can enhance their trust in the seller offering the experience and the destination itself.

Interestingly, our result shows that perceived usefulness influences product trust but not seller trust. A possible reason is consumers may primarily evaluate the usefulness of virtual reality experiences based on their ability to provide informative, engaging, and immersive tours of second-chance destinations. This argument aligns with the definition of perceived usefulness as being more closely linked to users’ specific goals and preferences (Jo & Park, 2023). In virtual second-chance tourism, it could well mean that consumers may perceive the virtual reality experience as a critical conduit for satisfying their curiosity, learning about the destination’s history, or simply enjoying a unique experience. This is particularly important considering that most consumers engaging in second-chance tourism are likely seeking meaningful and educational experiences that allow them to connect with the destination deeply while contributing to its revitalization and preservation efforts (Bec

et al., 2021). Besides, seller trust goes beyond the perceived usefulness of the experience. As consistently highlighted by scholars such as Tan, Hii, Zhu, et al. (2023); Zhong et al. (2022), additional factors such as the credibility of the seller, transparency of process and recommendations are other factors that contribute to one's evaluation of sellers' trustworthiness.

Expectedly, both types of trust are found to improve emotional involvement. Consistent with Hidayat et al. (2021), trust creates a sense of security and confidence, allowing them to engage in the experience without fear or concerns. In other words, trust establishes a foundation of reliability and authenticity, which can enhance users' emotional involvement by creating a sense of immersion and connection with the destination. Therefore, they are likelier to engage with the content wholeheartedly and invest emotionally in the experience.

Emotional involvement would lead to behavioral intention to engage in second-chance tourism. Aligning with many existing literature, such as Biswas et al. (2020); Shavanddasht and Allan (2018); Wirth et al. (2012); Zulkarnain et al. (2024), by being emotionally involved enhances users' attachment and affinity toward the destination showcased in the virtual reality experience. Especially for second-chance tourism, which entails more than just visiting a destination, emotional involvement may lead to a sense of obligation or responsibility toward the destination and its preservation efforts.

The multigroup analysis shows three significant differences between males and females. For one, perceived entertainment has a stronger impact on trust in the seller for males compared to females. This finding could be attributed to the cognitive processing style. At the same time, the impact of perceived usefulness on trust in the seller is weaker for males than females. These results suggest that males respond more to experiential and hedonic aspects when forming trust. These phenomena can be explained through Meyers-Levy and Loken (2014). Their study concluded that females tend to exhibit a more thorough and inclusive approach when detecting and utilizing information compared to males, as evidenced across various contexts such as search behavior, communication patterns, and assessment practices (Meyers-Levy & Loken, 2014). In other words, males tend to focus on a narrower range of information, engage in less elaborate communication, opt for more straightforward and more direct search strategies when shopping, and rely more on heuristic reasoning or gut feeling when making assessments (Qing, 2020).

Similarly, our result demonstrated that compared to females, males are stronger in seller trust to emotional involvement while weaker in product trust to emotional involvement. This runs contrary to Tan, Sim, et al. (2022), where the study found that product functionality is more important to males than females. Various psychological and social factors could explain the observed differences in the strength of the relationship. In this regard, social psychology research indicates that males are more

inclined to trust online shopping than females (Oghazi et al., 2021). Studies such as Hong et al. (2018) have consistently shown that males tend to display higher trust in online shopping environments than females. This argument was further supported by Calisto and Sarkar (2024), who indicated that males are more dependent on relationships than women as they have fewer friends and lesser sources of emotional support. In all, these literatures explain why males rely more on seller trust to invest higher emotions than product attributes.

Finally, one possible explanation for males having lower emotional involvement toward behavioral intention in second-chance tourism is that males and females may have different emotional responses and levels of emotional engagement when interacting with virtual reality experiences. Research suggests that females tend to be more emotionally expressive and empathetic, whereas males may be more reserved or less inclined to express their emotions openly (Chaplin, 2015). Similarly, Cai et al. (2016) indicated that males are less emotionally expressive in humans' daily communication and engage more in emotion-expressive suppression than females. As such, females may experience stronger emotional connections with the destination and its narratives during virtual reality experiences, leading to a greater influence of emotional involvement on their behavioral intentions to visit the destination in person. In contrast, males may be less emotionally engaged or express their emotions differently, resulting in a weaker impact of emotional involvement on their behavioral intentions.

Implications

Theoretical Implications

The findings of this study provide several theoretical implications. Firstly, the developing nature of virtual tourism applications, particularly regarding second-chance destinations, calls for a nuanced and context-specific approach. This is the first study that responded to Bec et al. (2021) in providing empirical evidence on the different impact of TAM dimensions toward fostering trusts, emotional involvement and behavioral intention within the context of second-chance tourism.

As far as we know, no research has integrated TAM dimensions, emotional involvement with both forms of trusts in a single model. We enrich the body of knowledge by building upon prior research, such as Hidayat et al. (2021), underscoring the need for researchers to understand the pivotal role of various nature of trusts in influencing business outcomes within the tourism sector. Besides, this study supplemented the literature by examining factors that build seller and product trust. By elucidating the factors that underpin trust formation, the study provides valuable insights into consumer behavior and decision

making processes in virtual reality experiences. This expanded theoretical framework enhances our comprehension of trust dynamics within second-chance tourism and offers practical implications for businesses aiming to optimize their virtual reality offerings and improve customer satisfaction and loyalty.

Furthermore, the results of this study add to the existing virtual tourism and second-chance tourism literature by addressing a question posed in previous research (see Bec et al., 2021; Calisto & Sarkar, 2024) – Do virtual experiences encourage consumers' behavioral intention in engaging second-chance tourism? Our findings indicate that virtual experience is a supplementary force where factors such as usefulness, entertainment and ease of use will facilitate individuals emotionally and manifest both types of trust.

Lastly, the study unveils significant gender differences in trust formation, underscoring the need to consider gender-specific preferences and cognitive processing styles in virtual reality design and marketing strategies. Adopting an integrative model approach, our research extends prior studies such as Calisto and Sarkar (2024), specifically within the context of second-chance tourism. Ultimately, this study considers the evolving social changes that reflect the values and complexities inherent in interactions between males and females.

Managerial Implications

Based on the findings and discussions provided, several managerial implications can be derived for virtual second-chance tourism. First, tourism companies should focus on creating virtual reality experiences that are intuitive, entertaining and easy to navigate. Clear instructions, user-friendly interfaces, and interactive features can help users feel more confident and comfortable exploring the virtual environment. Investing in user experience design and conducting usability testing can ensure that the virtual tours are accessible and enjoyable for many users. At the same time, incorporating storytelling, interactivity, and immersion elements can captivate users' attention and evoke positive emotions. Collaborating with content creators, storytellers, and immersive technology experts is a good start to developing engaging and memorable virtual tours that leave a lasting impression on users.

Both trusts are instrumental in creating emotional involvement that shapes behavioral intention. Tourism companies should prioritize transparency, credibility, and ethical practices in their virtual reality offerings. Providing accurate information, disclosing sources, and addressing user concerns can build trust and credibility with users. At the same time, frequent engagement with users through social media, customer reviews, and testimonials can foster community and trust in the product.

Finally, considering the gender differences in cognitive processing and decision-making styles, tourism companies should tailor their marketing

strategies to appeal to male and female users. For instance, targeting males with immersive and entertaining virtual experiences while appealing to females with educational and informative content that emphasizes authenticity, cultural significance, and emotional resonance.

Limitations and Future Research Directions

The usage of cross-sectional designs would inhibit the generalizability of the content. Future researchers can collect or position data from different sources as a longitudinal study. Another limitation of this study is the generalization of gender differences in information processing and trust, particularly in men's behavior in online purchasing contexts. For instance, while our results suggest that men may pay less attention to detailed product features and place greater trust in the vendor, such patterns may vary depending on the type or category of product being evaluated. This study did not account for product type as a moderating variable, which could influence the extent and nature of gender-based trust formation. Future research should explore how gender perspectives differ across the different product types. In addition, while virtual reality was central to the research context, the study did not include screenshots or visual representations of the virtual scenes used in the evaluation. As the primary focus was on users' perceptions rather than the design or content of the experience itself, this aspect was intentionally excluded. Future studies could consider incorporating scene visuals or conducting content-based evaluations to assess how specific design elements affect trust and emotional responses, as it could provide additional insight into how VR content influences user engagement.

Besides, our study's R^2 values showed that additional elements might be involved that could influence a person's intention to engage in second-chance tourism. Hence, qualitative remarks might be added to empirical results by future researchers to produce more robust supporting data. At the same time, we advised future studies to consider additional factors, including personality traits and challenge and hindrance mind-sets, to examine the phenomenon better.

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No potential conflict of interest was reported by the author(s).

ORCID

Kim-Lim Tan  <http://orcid.org/0000-0001-8343-5103>

Ivy S.H. Hii  <http://orcid.org/0000-0002-5267-3341>

Tat-Huei Cham  <http://orcid.org/0000-0001-7636-5928>

Data Availability Statement

Data would be made available upon reasonable request from the corresponding author.

Ethics

Ethics approval was granted from Curtin University approval number CU4354.

Informed Consent

Informed consent was obtained from all participants.

References

- Agyeiwaah, E., Badu Baiden, F., Gamor, E., & Hsu, F. C. (2022). Determining the attributes that influence students' online learning satisfaction during COVID-19 pandemic. *Journal of Hospitality*, 30, 100364. <https://doi.org/10.1016/j.jhlste.2021.100364>
- Almaiah, M. A., Al-Rahmi, A., Alturise, F., Hassan, L., Lutfi, A., Alrawad, M., Alkhalaf, S., Al-Rahmi, W. M., Al-Sharaieh, S., & Aldhyani, T. H. H. (2022). Investigating the effect of perceived security, perceived trust, and information quality on Mobile payment usage through near-Field communication (NFC) in Saudi Arabia. *Electronics*, 11(23), 1–22. <https://doi.org/10.3390/electronics11233926>
- Ariza-Colpas, P. P., Piñeres-Melo, M. A., Morales-Ortega, R.-C., Rodriguez-Bonilla, A.-F., Butt-Aziz, S., Naz, S., Contreras-Chinchilla, L. D. C., Romero-Mestre, M., & Vacca Ascanio, R. A. (2023). Tourism and conservation empowered by augmented reality: A scientometric analysis based on the science tree metaphor. *Sustainability*, 15(24), 16847. <https://doi.org/10.3390/su152416847>
- Assiouras, I., Giannopoulos, A., Mavragani, E., & Buhalis, D. (2024). Virtual reality and mental imagery towards travel inspiration and visit intention. *International Journal of Tourism Research*, 26(2). <https://doi.org/10.1002/jtr.2646>
- Babamiri, M., Heidarimoghadam, R., Ghasemi, F., Tapak, L., Morteza pour, A., & Useche, S. A. (2022). Insights into the relationship between usability and willingness to use a robot in the future workplaces: Studying the mediating role of trust and the moderating roles of age and STARA. *Public Library of Science ONE*, 17(6), e0268942. <https://doi.org/10.1371/journal.pone.0268942>
- Bec, A., Moyle, B., Schaffer, V., & Timms, K. (2021). Virtual reality and mixed reality for second chance tourism. *Tourism Management*, 83, 104256. <https://doi.org/10.1016/j.tourman.2020.104256>
- Beck, J., Rainoldi, M., & Egger, R. (2019). Virtual reality in tourism: A state-of-the-art review". *Tourism Review*, 74(3), 586–612. <https://doi.org/10.1108/tr-03-2017-0049>
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, 88(4), 354–364. <https://doi.org/10.1037/0033-295X.88.4.354>
- Benitez, J., Ruiz, L., & Popovic, A. (2022). Impact of mobile technology-enabled HR gamification on employee performance: An empirical investigation. *Information & Management*, 59(4), 103647. <https://doi.org/10.1016/j.im.2022.103647>
- Biswas, C., Deb, S. K., Hasan, A. A.-T., & Khandakar, M. S. A. (2020). Mediating effect of tourists' emotional involvement on the relationship between destination attributes and

- tourist satisfaction. *Journal of Hospitality and Tourism Insights*, 4(4), 490–510. <https://doi.org/10.1108/jhti-05-2020-0075>
- Cai, A., Lou, Y., Long, Q., & Yuan, J. (2016). The sex differences in regulating unpleasant emotion by expressive suppression: Extraversion matters. *Frontiers in Psychology*, 7, 1011. <https://doi.org/10.3389/fpsyg.2016.01011>
- Calisto, M. D. L., & Sarkar, S. (2024). A systematic review of virtual reality in tourism and hospitality: The known and the paths to follow. *International Journal of Hospitality Management*, 116, 116. <https://doi.org/10.1016/j.ijhm.2023.103623>
- Cham, T.-H., wei-Han Tan, G., Aw, E. C.-X., Ooi, K.-B., Jee, T.-W., & Pek, C.-K. (2023). Virtual reality in tourism: Adoption scepticism and resistance. *Tourism Review*, 79(2), 337–354. <https://doi.org/10.1108/tr-10-2022-0479>
- Chaplin, T. M. (2015). Gender and emotion expression: A developmental contextual perspective. *Emotion Review: Journal of the International Society for Research on Emotion*, 7(1), 14–21. <https://doi.org/10.1177/1754073914544408>
- China Daily, (2024). *Beautiful China initiative aims to shift to more new energy*. Retrieved September 28 from www.global.chinadaily.com.cn
- Chopdar, P. K., & Balakrishnan, J. (2020). Consumers response towards mobile commerce applications: S-O-R approach. *International Journal of Information Management*, 53, 102106. <https://doi.org/10.1016/j.ijinfomgt.2020.102106>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cushman, J. E., Kelly, M. R., Fusco-Rollins, M., & Faulkner, R. (2021). Resource review-using Qualtrics core XM for surveying youth. *Journal of Youth Development*, 16(1), 161–167. <https://doi.org/10.5195/jyd.2021.886>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Davis, F. D., Richard, P. B., & Paul, R. W. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Do, H. N., Shih, W., & Ha, Q. A. (2020). Effects of mobile augmented reality apps on impulse buying behavior: An investigation in the tourism field. *Heliyon*, 6(8), e04667. <https://doi.org/10.1016/j.heliyon.2020.e04667>
- Eagly, A. H. (1997). Sex differences in social behavior: Comparing social role theory and evolutionary psychology. *American Psychologist*, 52(12), 1380–1383. <https://doi.org/10.1037/0003-066X.52.12.1380.b>
- Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved dispositions versus social roles. *The American Psychologist*, 54(6), 408–423. <https://doi.org/10.1037/0003-066X.54.6.408>
- Fam, K.-S., Syed Annuar, S. N., Tan, K. L., Lai, F. H., & Ingko, I. A. (2019). Touring destination and intention to consume indigenous food. *British Food Journal*, 122(6), 1883–1896. <https://doi.org/10.1108/bfj-08-2019-0635>
- Fam, K.-S., Ting, H., Tan, K.-L., Hussain, K., & Cheah, J.-H. (2020). Does it matter where to run? Intention to participate in destination marathon. *Asia Pacific Journal of Marketing & Logistics*, 32(7), 1475–1494. <https://doi.org/10.1108/apjml-12-2019-0737>
- Figuerola-Domecq, C., & Segovia-Perez, M. (2020). Application of a gender perspective in tourism research: A theoretical and practical approach. *Journal of Tourism Analysis: Revista de Análisis Turístico*, 27(2), 251–270. <https://doi.org/10.1108/jta-02-2019-0009>
- Gill, C., & Kenworthy, A. L. (2025). Leading in response to crisis: Business war volunteer tourism. *Annals of Tourism Research*, 112, 112. <https://doi.org/10.1016/j.annals.2025.103952>

- Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Review of empirical research. *Academy of Management Annals*, 14(2), 627–660. <https://doi.org/10.5465/annals.2018.0057>
- Global Times. (2022). *Five world heritage sites in Beijing to have restoration work in 2022*. Retrieved September 28 from <https://www.globaltimes.cn/>
- Gordon, J. E. (2023). Climate change and geotourism: Impacts, challenges, and opportunities. *Tourism and Hospitality*, 4(4), 514–538. <https://doi.org/10.3390/tourhosp4040032>
- Guo, L., Hu, X., Lu, J., & Ma, L. (2021). Effects of customer trust on engagement in live streaming commerce: Mediating role of swift guanxi. *Internet Research*, 31(5), 1718–1744. <https://doi.org/10.1108/intr-02-2020-0078>
- Haritha, P. H. (2023). Mobile payment service adoption: Understanding customers for an application of emerging financial technology. *Information & Computer Security*, 31(2), 145–171. <https://doi.org/10.1108/ICS-04-2022-0058>
- Henseler, J., Ringle, C. M., Sarstedt, M., Sinkovics ruey-Jer “Bryan” Jean, R., & Daekwan, K. R. (2016). Testing measurement invariance of composites using partial least squares. *International Marketing Review*, 33(3), 405–431. <https://doi.org/10.1108/imr-09-2014-0304>
- Hidayat, A., Wijaya, T., Ishak, A., & Endi Catyanadika, P. (2021). Consumer trust as the antecedent of online consumer purchase decision. *Information*, 12(4), 1–10. <https://doi.org/10.3390/info12040145>
- Hong, J. C., Hwang, M. Y., Tai, K. H., & Tsai, C. R. (2018). Effects of gender and age on learning spatial concepts from a virtual reality game. 2018 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE), Wollongong, NSW, Australia. December 4–7 2018.
- Jacoby, J. (2002). Stimulus-organism-response reconsidered: An evolutionary step in modeling (consumer) behavior. *Journal of Consumer Psychology*, 12(1), 51–57. https://doi.org/10.1207/S15327663JCP1201_05
- Jo, H., & Park, D. H. (2023). Affordance, usefulness, enjoyment, and aesthetics in sustaining virtual reality engagement. *Scientific Reports*, 13(1), 15097. <https://doi.org/10.1038/s41598-023-42113-1>
- Kianwatana, K., & Vongvit, R. (2024). Virtual reality in tourism: The impact of virtual experiences and destination image on the travel intention. *Results in Engineering*, 24, 103650. <https://doi.org/10.1016/j.rineng.2024.103650>
- Kim, M. J., & Hall, C. M. (2019). A hedonic motivation model in virtual reality tourism: Comparing visitors and non-visitors. *International Journal of Information Management*, 46, 236–249. <https://doi.org/10.1016/j.ijinfomgt.2018.11.016>
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1–10. <https://doi.org/10.4018/ijec.2015100101>
- Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, 28(1), 227–261. <https://doi.org/10.1111/isj.12131>
- Le, A., Tan, K.-L., Yong, S.-S., Soonsap, P., Lipa, C. J., & Ting, H. (2021). Perceptions towards green image of trendy coffee cafés and intention to re-patronage: The mediating role of customer citizenship behavior. *Young Consumers*, 23(2), 165–178. <https://doi.org/10.1108/YC-03-2021-1291>
- Lee, M.-C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic Commerce Research and Applications*, 8(3), 130–141. <https://doi.org/10.1016/j.elerap.2008.11.006>

- Lew, S., Tan, G. W., Loh, X. M., Hew, J. J., & Ooi, K. B. (2020). The disruptive mobile wallet in the hospitality industry: An extended mobile technology acceptance model. *Technology in Society*, 63, 101430. <https://doi.org/10.1016/j.techsoc.2020.101430>
- Lyu, J., Leung, X., Bai, B., & Stafford, M. (2021). Hotel virtual reality advertising: A presence-mediated model and gender effects. *Journal of Hospitality & Tourism Technology*, ahead-of-print(ahead-of-print), ahead-of-print(ahead-of-print). <https://doi.org/10.1108/jhtt-04-2020-0080>
- Ma, A., Chow, A., Cheung, L., Lee, K., & Liu, S. (2018). Impacts of Tourists' Sociodemographic characteristics on the travel motivation and satisfaction: The case of protected areas in South China. *Sustainability*, 10(10), 3388. <https://doi.org/10.3390/su10103388>
- McKinsey. (2024). *Tourism in the metaverse: Can travel go virtual?* Retrieved January 21 from www.mckinsey.com
- Memon, M. A., Thursamy, R., Ting, H., & Cheah, J.-H. (2024). Purposive sampling: A review and guidelines for quantitative research. *Journal of Applied Structural Equation Modeling*, 9(1), 1–23. [https://doi.org/10.47263/jasem.9\(1\)01](https://doi.org/10.47263/jasem.9(1)01)
- Memon, M. A., Ting, H., Ramayah, T., Chuah, F., & Cheah, J.-H. (2017). A review of the methodological misconceptions and guidelines related to the application of structural equation modeling: A Malaysian scenario. *Journal of Applied Structural Equation Modeling*, 1(1), i–xiii. [https://doi.org/10.47263/JASEM.1\(1\)01](https://doi.org/10.47263/JASEM.1(1)01)
- Meyers-Levy, J., & Loken, B. (2014). Revisiting gender differences: What we know and what lies ahead. *Journal of Consumer Psychology*, 25(1), 129–149. <https://doi.org/10.1016/j.jcps.2014.06.003>
- Oghazi, P., Karlsson, S., Hellström, D., Mostaghel, R., & Sattari, S. (2021). From Mars to Venus: Alteration of trust and reputation in online shopping. *Journal of Innovation and Knowledge*, 6(4), 197–202. <https://doi.org/10.1016/j.jik.2020.06.002>
- Oncioiu, I., & Priescu, I. (2022). The use of virtual reality in tourism destinations as a tool to develop tourist behavior perspective. *Sustainability*, 14(7), 1–15. <https://doi.org/10.3390/su14074191>
- Ooi, K.-B., & Tan, G. W.-H. (2016). Mobile technology acceptance model: An investigation using mobile users to explore smartphone credit card. *Expert Systems with Applications*, 59, 33–46. <https://doi.org/10.1016/j.eswa.2016.04.015>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Qing, S. (2020). Gender role attitudes and male-female income differences in China. *Journal of Chinese Sociology*, 7(1). <https://doi.org/10.1186/s40711-020-00123-w>
- Rastegar, R. (2025). Regenerative justice and tourism: How can tourism go beyond restoration? *Annals of Tourism Research*, 111, 111. <https://doi.org/10.1016/j.annals.2025.103896>
- Schnurr, S., Zayts, O., Schroeder, A., & Le coyte-Hopkins, C. (2020). 'It's not acceptable for the husband to stay at home': Taking a discourse analytical approach to capture the gendering of work. *Gender, Work & Organization*, 27(3), 414–434. <https://doi.org/10.1111/gwao.12408>
- Shankar, V., & Balasubramanian, S. (2009). Mobile marketing: A synthesis and prognosis. *Journal of Interactive Marketing*, 23(2), 118–129. <https://doi.org/10.1016/j.intmar.2009.02.002>
- Sharma, N., & Martini, A. (2024). Dark tourism geographies: Ontological, epistemological and axiological perspectives. *Tourism Geographies*, 27(3–4), 1–10. <https://doi.org/10.1080/14616688.2024.2319103>
- Shavanddasht, M., & Allan, M. (2018). First-time versus repeat tourists: Level of satisfaction, emotional involvement, and loyalty at hot spring. *Anatolia*, 30(1), 61–74. <https://doi.org/10.1080/13032917.2018.1498363>

- Shockley, K. M., Clark, M. A., Dodd, H., & King, E. B. (2021). Work-family strategies during COVID-19: Examining gender dynamics among dual-earner couples with young children. *Journal Of*, 106(1), 15–28. <https://doi.org/10.1037/apl0000857>
- Sim, A. K. S., Tan, K.-L., Sia, J. K.-M., & Hii, I. S. H. (2020). Students' choice of international branch campus in Malaysia: A gender comparative study. *International Journal of Educational Management*, 35(1), 87–107. <https://doi.org/10.1108/IJEM-01-2020-0027>
- Singh, N., & Sinha, N. (2020). How perceived trust mediates merchant's intention to use a mobile wallet technology. *Journal of Retailing and Consumer Services*, 52, 1–13. <https://doi.org/10.1016/j.jretconser.2019.101894>
- Talafubieke, M., Mai, S., & Xialifuhan, N. (2021). Evaluation of the virtual economic effect of tourism product emotional marketing based on virtual reality. *Frontiers in Psychology*, 12, 759268. <https://doi.org/10.3389/fpsyg.2021.759268>
- Tan, K.-L., Hii, I. S. H., Lim, X.-J., & Wong, C. Y. L. (2023). Enhancing purchase intentions among young consumers in a live-streaming shopping environment using relational bonds: Are there differences between “buyers” and “non-buyers”? *Asia Pacific Journal of Marketing & Logistics*, 36(1), 48–65. <https://doi.org/10.1108/apjml-01-2023-0048>
- Tan, K.-L., Hii, I. S. H., Zhu, W., Leong, C.-M., & Lin, E. (2023). The borders are re-opening! Has virtual reality been a friend or a foe to the tourism industry so far? *Asia Pacific Journal of Marketing & Logistics*, 35(7), 1639–1662. <https://doi.org/10.1108/apjml-05-2022-0417>
- Tan, K.-L., Ho, J.-M., Sim, A. K. S., Dubos, L., & Cham, T.-H. (2023). Unlocking the secrets of Miri country music festival in Malaysia: A moderated-mediation model examining the power of FOMO, flow and festival satisfaction in driving revisiting intentions. *Asia Pacific Journal of Tourism Research*, 28(5), 416–432. <https://doi.org/10.1080/10941665.2023.2245500>
- Tan, K.-L., Liu, Y., & Ye, Q. (2023). A gendered discourse on truthful disclosure of financial fraud practices among accountants in China: Implications to corporate governance. *Accounting Research Journal*, 36(2/3), 230–250. <https://doi.org/10.1108/arj-07-2022-0160>
- Tan, K.-L., Sia, J. K.-M., & Tang, D. K. H. (2022). Examining students' behavior towards campus security preparedness exercise: The role of perceived risk within the theory of planned behavior. *Current Psychology*, 41(7), 4358–4367. <https://doi.org/10.1007/s12144-020-00951-6>
- Tan, K.-L., Sim, P.-L., Ting, H.-B., Sim, W.-Y., & Donohue, T. (2022). A gendered discourse of third-generation Chinese migrants on diaspora tourism: Implications to industry players in Malaysia. *Journal of China Tourism Research*, 19(2), 335–358. <https://doi.org/10.1080/19388160.2022.2069900>
- Teng, Y.-M., Wu, K.-S., & Kuo, F.-J. (2024). Virtual reality tourism: Intention to use mediated by perceived usefulness, attitude and desire. *Tourism Review*. <https://doi.org/10.1108/tr-02-2024-0133>
- Wang, P., & Li, H. (2019). Understanding the antecedents and consequences of the perceived usefulness of travel review websites. *International Journal of Contemporary Hospitality Management*, 31(3), 1086–1103. <https://doi.org/10.1108/ijchm-06-2017-0380>
- Wei, Z., Zhang, J., Huang, X., & Qiu, H. (2023). Can gamification improve the virtual reality tourism experience? Analyzing the mediating role of tourism fatigue. *Tourism Management*, 96, 104715. <https://doi.org/10.1016/j.tourman.2022.104715>
- Williams, A. M., & Baláž, V. (2020). Tourism and trust: Theoretical reflections. *Journal of Travel Research*, 60(8), 1619–1634. <https://doi.org/10.1177/0047287520961177>
- Wirth, W., Hofer, M., & Schramm, H. (2012). The role of emotional involvement and trait absorption in the formation of spatial presence. *Media Psychology*, 15(1), 19–43. <https://doi.org/10.1080/15213269.2011.648536>

- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers”. *Journal of Business Research*, 117, 543–556. <https://doi.org/10.1016/j.jbusres.2018.08.032>
- Xu, Y., & Ye, Y. (2020). Who watches live streaming in China? Examining viewers’ behaviors, personality traits, and motivations. *Frontiers in Psychology*, 11, 1–13. <https://doi.org/10.3389/fpsyg.2020.01607>
- Zhong, Y., Zhang, Y., Luo, M., Wei, J., Liao, S., Tan, K.-L., & Yap, S. S.-N. (2022). I give discounts, I share information, I interact with viewers: A predictive analysis on factors enhancing college students’ purchase intention in a live-streaming shopping environment. *Young Consumers*, 23(3), 449–467. <https://doi.org/10.1108/yc-08-2021-1367>
- Zulkarnain, A. H. B., Cao, X., Kókai, Z., & Gere, A. (2024). Self-assessed experience of emotional involvement in sensory analysis performed in virtual reality. *Foods*, 13(3), 375. <https://doi.org/10.3390/foods13030375>

Annex A: List of Items

Perceived Ease of Use

- PE1. It is easy for me to understand how to manipulate the tourism-related VR activity
- PE2. Using the tourism-related VR activity does not require a lot of mental effort.
- PE3. I think that using the tourism-related VR activity is simple.
- PE4. I find that it is easy to get what I want when I am using the tourism-related VR activity.

Perceived Usefulness

- PU1. I gain useful knowledge from the VR tourism experience of the second chance destination.
- PU2. The VR tourism experience helps me collect relevant information about the second chance destination.
- PU3. I find the VR tourism experience of the second chance destination beneficial.
- PU4. The VR tourism experience helps me connect with others who are interested in the second chance destination.

Perceived Entertainment

- PEN1. I find the VR tourism experience of the second chance destination enjoyable.
- PEN2. I find the VR tourism experience of the second chance destination pleasurable.
- PEN3. I find the VR tourism experience of the second chance destination fun.
- PEN4. The VR tourism experience of the second chance destination makes me feel happy.

Trust in Seller

- TS1. I believe in the information that the seller provides using VR.
- TS2. I can trust sellers that use VR.
- TS3. I believe that sellers who use VR are trustworthy.
- TS4. Sellers who use VR would NOT take advantage of me.

Trust in Product

- TP1. I believe the actual experience at the second chance destination will be similar to what is shown in the VR tourism experience.
- TP2. I trust that I will enjoy the actual tourism experience at the second chance destination as much as I enjoyed the VR experience.
- TP3. I believe the tourism products at the second chance destination will match what was presented in the VR tourism experience.

Emotional Involvement

- EMO1. I feel deeply involved in the VR tourism experience of the second chance destination.

EMO2. I am emotionally moved by the VR tourism experience of the second chance destination.

EMO3. I feel a strong emotional connection to the second chance destination shown in the VR tourism experience.

Behavioral Intention

BI1. I plan to visit the second chance destination featured in the VR tourism experience.

BI2. I intend to visit the second chance destination shown in the VR tourism experience in the near future.

BI3. I am willing to visit the second chance destination shown in the VR tourism experience.

BI4. I intend to invest time and money to visit the second chance destination shown in the VR tourism experience.

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