

Virtual Reality vs. Traditional Previews: The Role of Self-Construal in Customer Decision-Making

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Abstract:

Purpose

The present research explores the effectiveness of 360-degree Virtual Reality (VR) videos compared to traditional preview modes in shaping customer perceptions and behavioral intentions toward the hospitality service provider. Specifically, the study investigates how self-construal moderates this relationship, offering novel and nuanced understanding of the customer decision-making process in the hospitality sector.

Design/methodology/approach

Three experiments were carried out. Study 1 examined the impact of preview modes on customers' behavioral intentions. Study 2 examined the psychological mechanism of mental imagery and being hooked in the relationship between preview modes and behavioral intentions. Study 3 examined the moderating role of self-construal in the relationship between preview modes and behavioral intentions.

Findings

The study findings revealed that 360-degree VR videos are more effective than traditional preview modes in determining customers' behavioral intentions. Mental imagery and being hooked explain this relationship. Furthermore, customers with highly independent self-construal evaluate 360-degree VR videos more favorably, while those with highly interdependent self-construal evaluate traditional preview modes more positively.

Originality

The originality of the study lies in its pioneering efforts to explore how self-construal shapes customer responses to different preview modes. Furthermore, this study reveals the importance of psychological constructs in understanding the impact of VR applications on customer behaviors.

Practical implications

The research indicates that adopting VR applications can offer competitive advantage for hospitality service providers. The study findings provide hospitality providers with insights to tailor their marketing strategies by selecting preview modes that align with the psychological profiles of the customers.

Keywords: Virtual reality, preview mode, pre-consumption, mental imagery, being hooked, customer journey

1. Introduction

Advances in digital technologies are driving the adoption of virtual reality (VR) in the hospitality sector (Buhalis *et al.*, 2022; Fung So and Li, 2023; Ratten, 2024). Leading hotels, such as Atlantis, Pullman, Marriot, and Holiday Inn, are using VR as a modern preview mode in the pre-consumption stage to provide customers with immersive experiences (Lee *et al.*, 2020). A recent report from Statista notes that the global VR market is expected to grow from \$12 billion in 2022 to \$22 billion by 2025 (Alsop, 2023). VR offers a three-dimensional, computer-generated environment designed to replicate real-world settings, engaging customers in interactive, immersive, and multisensory experiences (Han *et al.*, 2022; McLean and Barhorst, 2022). Previous research suggests that VR enhances visualization of hospitality services during the pre-consumption stage, enabling customers to ‘try-before-they-experience’ (Fan *et al.*, 2022; Martínez-Molés *et al.*, 2022). However, using VR in the pre-consumption stage may lead to challenges like unrealistic expectations and cognitive overload, leading to dissatisfaction (Farshid *et al.*, 2018). Thus, an in-depth understanding is needed of how and when VR tools, compared to traditional preview modes in the pre-consumption stage, influence customer outcomes.

This study addresses the above research gaps by comparing the effectiveness of VR (360-degree VR videos), a key technology of the evolving metaverse, with that of traditional preview modes (static pictures and 2D videos) in determining customers’ behavioral intentions during the pre-consumption stage. 360-degree VR videos offer a vivid and dynamic virtual environment of the hospitality service provider, enabling customers to explore its facilities and amenities in all directions from a first-person perspective using a mouse or a keyboard (Kim *et al.*, 2022). The ability to preview such experiences before actual purchase facilitates mental imagery which helps customers visualize themselves experiencing the services. This, in turn, fosters a state of being

hooked, where customers are deeply engaged and involved in what the hospitality service provider offers. Additionally, it enables customers to more accurately assess whether the hospitality service provider meets their needs and preferences (Cao et al., 2021; Ryu et al., 2019). Thus, mental imagery and being hooked serve as the underlying mechanisms that influence customers' evaluation of different preview modes, including VR tools, and their subsequent behavioral intentions toward the hospitality service provider. This comparison is crucial as it describes the unique effects of VR over traditional preview modes, offering novel insights for optimizing the use of digital and immersive technologies in influencing customer decisions (Cheng et al., 2023). Furthermore, it underscores the importance of adopting emerging technologies in the hospitality sector, which can lead to more engaged customers and higher customer loyalty (Shin et al., 2022). Despite that, limited research has examined the underlying mechanisms comparing the use of different preview modes in customer decision-making.

Previous research indicates differences in the customer evaluation of VR tools and customer intentions to use and recommend them (Bogicevic *et al.*, 2021; Fan *et al.*, 2022). These studies suggest that such differences might be attributed to either macro- or micro-level factors (Flavián *et al.*, 2021; Martínez-Molés *et al.*, 2022). In the present study, we examine the moderating role of a micro-level factor, namely, customers' self-construal, in the evaluation of different preview modes and their impacts on behavioral intentions. Self-construal refers to how customers perceive themselves in relation to others, either as independent or interdependent (Singelis, 1994). Those with independent self-construal often emphasize uniqueness and autonomy and see themselves as distinct from others. On the other hand, interdependent customers focus on connectedness and interpersonal harmony and see themselves as part of the group. Previous research indicates that customers' self-construal significantly shapes their behaviors such as risk taking, impulsive buying,

and social media communication (Hofmann *et al.*, 2021; Mandel, 2003). Relevant to our research, prior studies found that customers with an independent construal are more likely to engage in virtual brand communities, interactive mobile applications, and AI-enabled consumer experiences (Hwang *et al.*, 2023; Joe *et al.*, 2021) compared to those with an interdependent self-construal. Despite the significant role self-construal plays in customer decision-making, its impact on the evaluation of different preview modes, including VR tools, remains unexplored.

The present study aims to compare the effectiveness of different preview modes (360-degree VR videos and traditional tools) in determining customers' behavioral intentions, i.e., intentions to adopt the hospitality service provider. We propose that mental imagery and being hooked are the underlying mechanisms explaining this effectiveness of different preview modes. Furthermore, this study examines the moderating role of customers' self-construal (interdependent vs. independent) in the relationship between preview modes and behavioral intentions. The research draws on media richness theory in investigating the comparative effects of different preview modes on customer decision-making (Daft *et al.*, 1987).

This study contributes to the hospitality literature in several ways. It responds to the recent calls for research on emerging technologies, such as VR, in shaping customer decision-making (Kim *et al.*, 2023; Park *et al.*, 2023). Specifically, the research contributes to our understanding of the psychological mechanisms through which the VR preview mode in the pre-consumption stage shapes customers' perceptions and behaviors (Bogicevic *et al.*, 2021; Zhao *et al.*, 2023). Furthermore, this study contributes to our understanding of the differences in the evaluation of VR tools by assessing the moderating role of customer self-construal (Fan *et al.*, 2022; Martínez-Molés *et al.*, 2022). The study findings inform hospitality service providers about customizing experiences and developing segmentation strategies.

2. Theoretical Background

2.1. *Virtual Reality in the Hospitality Sector*

The rise of VR has resulted in a significant shift in customer behavior and perceptions in various domains, including the hospitality sector. Steuer (1992, pp, 76-77) defined VR as “a real or simulated environment in which a perceiver experiences telepresence.” In other words, VR provides an interactive computer-simulated environment where customers feel present. Guttentag (2010) and Flavián *et al.* (2021) highlighted navigation, immersion, and interaction, as key characteristics of VR. Unlike the traditional preview modes, such as static pictures and videos, which offer a fixed perspective, limited interactivity, and passive experience, VR allows customers to actively interact with the virtual environment, leading to a more dynamic and engaging experience. Although VR is not a recent phenomenon, it has emerged as a key technology of metaverse that provides customers with a highly immersive experience in a digitally created hospitality environment (Han *et al.*, 2022; Shin *et al.*, 2024). This immersiveness—a key feature of metaverse and VR—transports customers from the physical world to the virtual environment (Buhalis *et al.*, 2022). VR is used in various hospitality operations, such as marketing and accessibility, training and development, planning and management, and heritage preservation. VR enables the delivery of innovative virtual tours of facilities, realistic previews of accommodations and amenities, simulations of unique experiences, and the facilitation of virtual events (de Lurdes Calisto and Sarkar, 2024; Pijls *et al.*, 2023; Shin and Jeong, 2022). Previous studies have shown that the application of VR technology in the hospitality sector has a positive impact on cognitive (Leung *et al.*, 2020), affective (Slevitch *et al.*, 2022), brand (Bogicevic *et al.*, 2021), and behavioral (Lee *et al.*, 2021) responses.

Previous research has examined the impacts of different types of VR tools on customer perceptions and behaviors in the hospitality industry. Depending on the extent to which VR tools are immersive in nature, they are categorized as non-immersive, semi-immersive, and fully immersive (Beck *et al.*, 2019). This categorization reflects the degree of immersion VR offers, i.e., the extent to which customers can distinguish between being in the physical world and being in the virtual world. In the present study, we examine the impact of semi-immersive VR tools such as 360-degree VR videos on customer decision-making. 360-degree VR videos can be considered as semi-immersive VR as they do not completely involve the customer in the virtual environment. Customers view 360-degree VR videos on a desktops, laptop, or mobile phone, making them remain cognizant of their real-world surroundings. Furthermore, the ability to drag, pinch, or move within the video makes it a more engaging form of VR experience. Beck *et al.* (2019, pp. 592) defined 360-degree VR videos as those that display “synthetic or 360-degree real-life captured content on a conventional (computer) screen, enabling virtual ...experiences that simulate the visual sense and potentially other senses of the user ...often presented to the user on a desktop, laptop, or smartphone.”

Research on VR tools has demonstrated their effectiveness in comparison to product packaging details, brochures, and magazines (Cowan *et al.*, 2021; Hyun and O’Keefe, 2012). These studies demonstrate that 360-degree VR offers a greater sense of presence than traditional applications. Such enhanced sense of presence allows customers to fully engage with the product or service, eliciting favorable emotional responses and increasing their attachment to the VR application and the marketing offering (Kim *et al.*, 2020). Recent studies also showed that customers’ VR readiness, motives, device types, and social interactions influence their evaluation of 360-degree VR tools (Flavián *et al.*, 2019; Hollebeek *et al.*, 2020; Hudson *et al.*, 2019). While

it is assumed that the extent of immersion in VR determines the sense of presence, a few researchers have reported non-significant or minimal differences in customer responses to fully immersive and non-immersive VR applications (Brivio *et al.*, 2021; McLean and Barhorst, 2022). This suggests that 360-degree VR videos serve as an effective and economical alternative to immersive VR in influencing customer behaviors in the hospitality sector.

2.2. *Mental Imagery*

Being able to imagine or visualize the amenities, facilities, and experiences offered by the hospitality provider can significantly influence the customer decision-making process (Lee and Kim, 2020). Mental imagery “is the cognitive process of representing sensory information and cause-and-effect simulations in working memory” (DeRosia and Elder, 2019, p. 639). It is a subjective mental visualization that customers form to represent objects, environments, and events in their minds (MacInnis and Price, 1987). Mental imagery is manifested in terms of the number of images formed in the mind and the vividness of these mental images. It is either formed by a single sensory stimulus or a combination of sensory stimuli (Miller and Stoica, 2004). Mental imagery goes beyond the immediate sense of presence to include customers’ imagination and memory. Previous research showed that mental imagery significantly impacts customers’ evaluation of new products, their desire to try or consume products, and behavioral intentions toward offerings (Lee and Kim, 2020; Miller and Stoica, 2004). We consider mental imagery in the present study, as hospitality services are experiential and subjective in nature (Kim and So, 2022), and mental imagery can help customers better visualize the quality of service provided by the hospitality business. Furthermore, as VR tools can create vivid images about the facilities of the hospitality service provider in the customers’ minds, mental imagery is expected to play a pivotal role in the customer decision-making (Hollebeek *et al.*, 2020).

2.3. *Being Hooked*

The concept of ‘being hooked’ closely aligns with narrative transportation, which refers to the subjective experience of being lost or fully immersed in a story or media content (Ryu *et al.*, 2019). Previous research describes it as a state of sustained attention that allows the customer to become deeply engaged with the target or technology. Being hooked manifests as cognitive and affective engagement and evokes specific feelings and reactions toward the target. In the present study, we define being hooked as a psychological state of heightened attention and engagement elicited by the preview mode of the hospitality service provider (Cao *et al.*, 2021). This is because previous research indicates that customers’ attention and engagement are critical in the evaluation of different preview modes and in determining attitudes and behavioral intentions toward the hospitality service provider. In other words, being hooked extends beyond mere attention-capturing to play a critical role in deeply engaging customers with the preview mode. Despite its significance, limited research has examined the role of being hooked in the customer evaluation of VR tools.

2.4. *Self-construal*

Self-construal is defined as “constellation of thoughts, feelings, and actions concerning one’s relationship to others, and the self as distinct from others” (Singelis, 1994, p. 581). Based on the individual’s self-concept and how it is constructed in relation to others, two types of self-construal, namely interdependent and independent, are distinguished (Markus and Kitayama, 1991). Independent self-construal emphasizes the individual self as separate from others and prioritizes autonomy, personal achievement, and individual rights. Interdependent self-construal sees the individual self as part of a larger social group or network and prioritizes connectedness, social context, and relationships (Markus and Kitayama, 1991). While both interdependent and

independent forms of self-construal co-exist within each individual, the extent to which each is exhibited depends on situational factors, personal experiences, and contexts (Singelis, 1994). Understanding the nuances of self-construal is pivotal in the customer decision-making in the hospitality sector, as it influences how customers evaluate the hospitality service provider, form relationships with them, engage in word-of-mouth communications, and assess services (Fan et al., 2020; Kwon and Mattila, 2015; Wei et al., 2012). Furthermore, previous research showed that self-construal influences cognitive flexibility, self-reliance, and autonomy, all of which impact customer decision-making in the hospitality sector (Joe et al., 2021; Ma and Li, 2023). Given the differences in evaluation and decision-making between customers with interdependent and independent self-construal, we propose that these orientations also influence the evaluation of different preview modes in their decision-making process.

3. Hypotheses Development

Figure 1 presents the conceptual framework of the present study. We compare the effectiveness of 360-degree VR videos and traditional media (pictures and 2D videos) preview modes in determining customers' behavioral intentions toward the hospitality service provider. We propose that mental imagery and being hooked explain the relationship between preview modes and behavioral intentions. Finally, customers' self-construal (independent vs. interdependent) moderates the impact of 360-degree VR videos on behavioral intentions. This study relies on media richness theory (Daft et al., 1987) to examine the effectiveness of different preview modes in influencing customers' behavioral intentions. Media richness theory suggests that media that can convey rich information are more effective in reducing uncertainty. Drawing on this theory, we propose that 360-degree VR videos can be considered as richer media than

traditional media due to their immersive and interactive nature. This may enhance mental imagery and engagement, thereby influencing behavioral intentions.

[Insert Figure 1 about here]

3.1. Preview Modes and Behavioral Intentions

The present study posits that the 360-degree VR video preview mode significantly influences customers' behavioral intentions more than traditional modes, such as static pictures and 2D videos. We argue that the distinctive levels of immersion and interactivity that these preview modes offer are critical in shaping customers' perceptions and evaluations (Kim et al. 2021; McLean and Barhorst, 2022). Specifically, the heightened immersion provided by 360-degree VR videos enhances the pre-consumption experience by enabling dynamic interactions, such as dragging, rotating, zooming, and panning with the content. These interactions facilitate a deeper engagement with the hospitality service provider, a feature that traditional preview modes fail to offer (Zhao et al., 2023). Such enhanced engagement not only offers a sense of control, but also empowers customers to personalize their exploration, leading to well-informed decisions.

The immersive nature of 360-degree VR videos provides customers with an extensive view of the facilities of the hospitality service provider, offering a perspective that static pictures and 2D videos cannot offer. This comprehensive visualization fosters a heightened sense of presence, a crucial perception that increases customers' emotional connection to the hospitality service provider (Yung et al., 2021). Moreover, customers who feel a strong sense of presence within a virtual environment may be more likely to visualize themselves enjoying the hospitality facilities (Orús et al., 2021). Thus, by creating vivid experiences, 360-degree VR videos can effectively connect customers' virtual exploration with their intention to purchase, encouraging them to choose the hospitality service provider. For example, Lee et al. (2021) and de Amorim et al. (2022)

showed that media-rich VR experiences influence information search, brand engagement, and willingness to buy. Pleyers and Poncin (2020) found that compared with photos, the use of non-immersive VR in real estate results in a more positive attitude and behavioral intentions to visit the property. Similarly, Orús et al. (2021) showed that viewing real content through VR leads to a higher intention to book. More recently, Cowan et al. (2023) and Mauri et al. (2024) demonstrated that immersive VR experiences positively influence customers' behavioral intentions in the real estate and retailing services contexts, respectively. Thus, we propose that:

H₁: Preview mode has a significant impact on customers' behavioral intentions toward the hospitality service provider, such that the 360-degree VR video preview mode leads to higher behavioral intentions than traditional preview modes such as static pictures and 2D videos.

3.2. Mediating Role of Mental Imagery and Being Hooked

The present study proposes that mental imagery plays a mediating role in the relationship between preview modes and customers' behavioral intentions. More specifically, we posit that the immersive nature of 360-degree VR videos leads to enhanced mental imagery in the pre-consumption stage, resulting in higher behavioral intentions toward the hospitality service provider. We argue that traditional preview modes require customers to exert greater cognitive efforts to visualize their consumption experiences. However, this process is simplified when using VR tools, as they offer a more immersive and realistic preview of the hospitality service provider (Bigne and Maturana, 2023; Pleyers and Poncin, 2020). In other words, the immersive experience provided by 360-degree VR videos reduces the cognitive load and dissonance associated with generating mental visualization, and facilitates a more favorable evaluation of the hospitality service provider (Barta *et al.*, 2023). Previous research offers some support for the role of mental imagery in influencing virtual experiences. For example, Hilken et al. (2022) showed that VR applications

lead to a greater fluency of product- and context-based mental imagery, which impacts brand attitudes and purchase intentions. Similarly, Park and Yoo (2020) demonstrated that controllability, responsiveness, and playfulness of augmented reality positively influence elaboration and quality of mental imagery, which in turn, positively impact attitudes and behavioral intentions. Zhang et al. (2024) extended this to show that VR HMD leads to greater elaboration and quality of mental imagery, which affect purchase intentions. These studies indicate that mental imagery may serve as a pivotal mechanism through which VR tools enhance customer decision-making. Thus, we propose that:

H₂: Mental imagery mediates the relationship between preview modes and behavioral intentions toward the hospitality service provider.

This study proposes an additional mechanism involving a sequential mediation of mental imagery and being hooked in the relationship between preview modes and behavioral intentions. We argue that by offering a more immersive and detailed visualization of the hospitality service provider's facilities, 360-degree VR videos significantly enhance the fluency of mental imagery. Such enhanced mental imagery further fosters greater attentiveness, attachment, and involvement, effectively leading customers to a state of being hooked (Bogicevic et al., 2019). When customers possess this vivid imagery and find themselves hooked during the pre-consumption stage, they are more likely to positively evaluate the hospitality service provider. Conversely, traditional preview modes, such as static pictures and 2D videos, provide less compelling mental visualization, which may lead to lower levels of being hooked (Bogicevic et al., 2019). This limitation reduces customers' attentiveness and involvement, reducing the likelihood of being hooked. This reduction in being hooked implies that customers have lower emotional connection and mental imagery, adversely impacting their behavioral intentions. Thus, the sequential mediation of mental imagery

and being hooked offers a nuanced pathway through which preview modes affect behavioral intentions. Thus, we propose that:

H3: Mental imagery and being hooked sequentially mediate the relationship between preview modes and behavioral intentions toward the hospitality service provider.

3.3. Moderating Role of Customer Self-Construal

We propose that the influence of preview modes on customers' behavioral intentions is moderated by self-construal. Specifically, customers with a high level of independent self-construal, who prioritize personal interests and achievements, are likely to be more receptive to 360-degree VR videos. This preference is due to the immersive and interactive experiences provided by VR, which align with their values of individuality and autonomy. The ability of 360-degree VR videos to offer a personalized and engaging exploration of the facilities of the hospitality service provider caters to their psychological needs for control and autonomy (Zhou *et al.*, 2023). Additionally, the novelty of the VR technology aligns with the self-oriented preference of customers with highly independent self-construal (Lee and Lee, 2016). Such customers are usually more tech-savvy and open to novel digital experiences. On the contrary, customers with a high level of interdependent self-construal place greater emphasis on social connections and harmony. Thus, they are likely to prefer traditional preview modes, such as pictures and 2D videos, as they are widely used and socially accepted. Furthermore, choosing traditional preview modes allows customers with interdependent self-construal to avoid social risks associated with making new or unique choices (Chu *et al.*, 2016; Aljukhadar *et al.*, 2017). Thus, we propose that:

H4: Self-construal moderates the effect of preview modes on customers' behavioral intentions toward the hospitality service provider, such that those with a highly independent self-construal are likely to positively evaluate 360-degree VR videos (H_{4a}), while those with

a highly interdependent self-construal are likely to favorably assess traditional preview modes (H_{4b}).

4. Overview of the Studies

Three online experiments were carried out to test the proposed hypotheses. The participants were recruited from Prolific Academic, an online crowdsourcing platform, known for its reputation in collecting high-quality responses from a diverse respondent pool (Douglas et al., 2023). Prolific also offers various prescreening options that allow researchers to recruit relevant participants for their research (Arndt *et al.*, 2022). Data collection in the present research followed a two-step process, in which participants relevant to our research context were screened in the preliminary study, and then they were invited to participate in the subsequent main experiments. Five prescreening questions were used in the preliminary study to identify relevant participants: > 18 years old, stayed at a hotel in the past three months, traveled abroad, had knowledge of VR and metaverse, and did not experience discomfort in a virtual environment. Following the screening process, participants who met the criteria were invited to participate in the main experiments. Experiments were conducted in September and October 2023.

In each experiment, participants were randomly assigned to different preview modes. They assessed the stimuli and responded to the questions that followed. This study followed ethical considerations, provided clear instructions, and addressed privacy concerns at the beginning of the questionnaire in each study. This ensured compliance with the American Psychological Association (APA) code of ethics (Tham *et al.*, 2021). Those who consented to participate in the study completed the questionnaire. The present study used Qualtrics for data collection and SPSS 29.0 for data analysis. The details of the three experiments carried out to test the proposed relationships are presented in the following sections.

5. Study 1: The Effect of Preview Modes on Behavioral Intentions

The objective of Study 1 was to examine whether the 360-degree VR video preview mode leads to higher behavioral intentions toward the hospitality service provider than the traditional preview mode (H_1).

5.1. Method

A one-factor (preview mode: static pictures vs. 360-degree VR videos) between-subjects experimental design was carried out. In this study, preview mode refers to the method through which the facilities of the hospitality service provider are presented to participants. Participants were instructed to imagine they are planning an international holiday to Melbourne, Australia, and considering booking their stay through Kaolahome, a leading P2P accommodation platform. While browsing through various listings on Kaolahome, one particular accommodation caught their attention, and they decided to visit its page for more details. They were then presented with information about the accommodation and a preview of the accommodation. While participants previewed three static pictures of the accommodation (bedroom, bathroom, and living room) in the control condition, they were provided with a link to access the 360-degree VR video of the same accommodation. Participants in the VR condition were informed that the stimulus is an interactive video, and they can move their cursor to click and drag within the video frame to explore the accommodation. To control for the confounding effect of engagement levels, participants were given a similar amount of time to review the accommodation previews (45 seconds).

After reviewing the stimuli, they responded to questions on behavioral intentions toward the accommodation, technology readiness, manipulation check questions, cyber sickness, and demographic information. Behavioral intention was measured with three questions adapted from

Mackenzie and Lutz (1989) ($\alpha = 0.93$). Sample questions included “I am highly inclined to book a stay at this accommodation.” Technology readiness was measured with four items adopted from Demirci and Ersoy (2008) ($\alpha = 0.85$). Sample items include “In general, I am among the first in my circle of friends to acquire new technology when it appears.” We controlled for the effect of technology readiness, as previous research demonstrated its impact on customer evaluation of VR (Özekici and Küçükergin, 2023). Respondents in the 360-degree VR video condition were asked about experiencing cyber sickness when reviewing the stimulus. Those who confirmed experiencing this issue were excluded from the analysis.

The manipulation check for the preview mode was measured with two questions: “did the stimulus include elements of virtual reality” and “to what extent was the stimulus interactive”. All measurement items in the main study questionnaire used a 7-point Likert-type scale, ranging from ‘1’ (strongly disagree) to ‘7’ (strongly agree). Along with participants’ demographic information of age and gender, we also measured the time (in seconds) each participant took to complete the survey. We tested the differences in the time taken to complete the questionnaire to validate our findings. Specifically, we showed that differences in customer behaviors were attributed to the preview modes and not influenced by the time taken to complete the survey questionnaire.

A total of 201 participants who met the screening criteria took part in Study 1. We excluded two incomplete responses as they reported experiencing cybersickness when assessing the 360-degree VR video. This resulted in 199 complete responses (56.0% male and 33.5% between 30 and 39 years old).

5.2. Results

Manipulation check: The manipulations were successful. Participants in the 360-degree VR video condition reported that the stimulus was highly interactive ($M_{360} = 5.76$, $SD = 1.95$ vs.

$M_{\text{control}} = 2.40$, $SD = 1.38$, $F_{1,198} = 197.21$, $p < 0.01$, $\text{partial } \eta^2 = 0.499$) and included VR ($M_{360} = 5.98$, $SD = 1.66$ vs. $M_{\text{control}} = 2.18$, $SD = 1.66$, $F_{1,198} = 261.25$, $p < 0.01$, $\text{partial } \eta^2 = 0.569$).

Time taken for completion of questionnaire: We did not find a significant difference in the time taken to complete the survey questionnaire ($M_{360} = 250.62$, $SD = 163.48$ vs. $M_{\text{control}} = 274.54$, $SD = 142.48$, $F_{1,198} = 1.21$, $p = 0.27$, $\text{partial } \eta^2 = 0.06$). This ruled out the confounding effects of time and effort, ensuring differences observed were due to preview modes.

Testing H_1 : The results of the analysis of variance (ANOVA) revealed a significant main effect of preview mode on behavioral intentions toward the accommodation ($F_{1,198} = 11.87$, $p < 0.01$, $\text{partial } \eta^2 = 0.057$). More specifically, participants in the 360-degree VR video preview mode condition ($M = 5.35$, $SD = 1.27$) indicated a higher behavioral intention toward the accommodation than those in the static picture preview mode condition ($M = 4.62$, $SD = 1.68$). Including control variables, such as age ($p < 0.05$), gender ($p = 0.09$), and technology readiness ($p = 0.54$), did not change the significance of the effect of preview mode on behavioral intentions ($F_{1,194} = 11.19$, $p < 0.01$, $\text{partial } \eta^2 = 0.055$). This provides support for H_1 . The main effect of preview type on behavioral intentions is plotted in Figure 2.

[Insert Figure 2 about here]

5.3. Discussion

The findings of Study 1 provide support for our core hypothesis that using 360-degree VR video preview mode increases customers' behavioral intentions to choose the accommodation over traditional mode such as static pictures of the accommodation. By ruling out the confounding effect of time, we confirm that the increased behavioral intentions are directly attributable to the immersive experience offered by 360-degree VR videos, rather than duration of exposure to the preview content. We test the underlying mechanism for this relationship in the following study.

6. Study 2: Mediation effect of mental imagery and being hooked

The objective of this study was to investigate the mediating roles of mental imagery and being hooked in the relationship between preview modes and customers' behavioral intentions toward the hospitality provider (H₂ and H₃). Additionally, we examined the main effect of preview modes on behavioral intentions by using 2D video rather than static image as control condition in Study 2. This approach provides stronger validity for assessing the effectiveness of VR preview mode in influencing customer decision-making.

6.1. Method

Study 2 followed a similar data collection approach as in Study 1 with three key differences. First, the participants who met the screening criteria were invited to participate in the main study. They were asked to imagine that they are planning a holiday trip to Hong Kong and considering Island Shangri-La hotel for their stay. They visited the hotel website and watched the preview of the hotel. This study followed a one-factor (preview mode: 2D video vs. 360-degree VR video) between-subjects experimental design. Participants were randomly assigned to one of the two preview conditions. Those in the 2D video condition view a traditional 2D video of the hotel facilities while those VR condition previewed an interactive 360-degree VR video of the same hotel. Participants were instructed to watch the video for at least 60 seconds. Those in the VR condition were informed that this is an interactive video, and they could use the cursor and mouse to explore the hotel experience.

Second, along with behavioral intentions ($\alpha = 0.87$), we measured mental imagery ($\alpha = 0.95$), being hooked ($\alpha = 0.92$), and familiarity with the hotel. Mental imagery was measured with four items adapted from Schlosser (2003). Sample items include “offers vivid description of the hotel experience” and “generates concrete mental images of the hotel experience to my mind.” Being

hooked was measured using seven items adapted from Escalas (2004). Sample items include “the video held my attention throughout,” “really intrigued me,” and “drew me in (engaged).” Brand familiarity was measured with a single item “I am highly familiar with Shangri-La hotels.” Participants also answered questions on manipulation check, cyber sickness (360-degree VR condition only), and demographic information.

A total of 250 participants who met the screening criteria were invited to participate in the study. We excluded ten responses because they indicated experiencing symptoms of cyber-sickness and failed the attention check question. Thus, 240 responses (48.8% male and 32.5% between 30 and 39 years of age) were used for the final analysis.

6.2. Results

Manipulation check: The manipulations were successful, as participants in the VR condition reported the stimulus to be more interactive ($M_{360} = 4.80$, $SD = 2.02$ vs. $M_{\text{control}} = 3.83$, $SD = 1.99$, $F_{1,238} = 13.87$, $p < 0.01$, $\text{partial } \eta^2 = 0.055$) and more likely to include VR elements ($M_{360} = 4.40$, $SD = 2.23$ vs. $M_{\text{control}} = 1.99$, $SD = 1.66$, $F_{1,238} = 88.19$, $p < 0.01$, $\text{partial } \eta^2 = 0.270$), compared to those in the control condition. We did not find a significant difference in the time taken to complete the survey questionnaire ($p = 0.24$), ruling out its confounding effect on customer outcomes.

Testing H_1 : The results of the ANOVA revealed that preview mode has a significant impact on behavioral intentions ($F_{1,238} = 27.12$, $p < 0.01$, $\text{partial } \eta^2 = 0.102$), such that the 360-degree VR video ($M = 5.31$, $SD = 1.15$) leads to higher behavioral intentions toward the service provider than the traditional 2D video ($M = 4.31$, $SD = 1.75$). This provides further support for H_1 . Including control variables of age, gender, and familiarity did not change the significance of the results.

The effects on mental imagery and being hooked: We found that the 360-degree VR video leads to a higher perception of mental imagery ($M_{360} = 5.46$, $SD = 1.50$ vs. $M_{\text{control}} = 5.94$, $SD = 1.00$, $F_{1,238} = 8.53$, $p < 0.01$, $\text{partial } \eta^2 = 0.035$) and being hooked ($M_{360} = 4.94$, $SD = 1.31$ vs. $M_{\text{control}} = 5.57$, $SD = 0.91$, $F_{1,238} = 18.47$, $p < 0.01$, $\text{partial } \eta^2 = 0.072$) than traditional 2D video. Including control variables of age, gender, and familiarity did not change the significance of the results.

Testing H₂: The PROCESS Model 4 in SPSS 29.0 with 5000 bootstrapped resamples was used to test the mediating role of mental imagery. We found support for H₂ as the 95% confidence interval (CI) of the indirect effect of mental imagery in the relationship between preview mode and behavioral intentions did not include zero (indirect = 0.33, SE = 0.12, 95%CI = 0.10 to 0.58). As shown in Figure 3, preview mode has a positive impact on mental imagery ($\beta = 0.48$, $p < 0.01$) and mental imagery has a positive effect on behavioral intentions toward the hospitality service provider ($\beta = 0.69$, $p < 0.01$).

[Insert Figure 3 about here]

Testing H₃: We used PROCESS Model 6 in SPSS 29.0 with 5000 bootstrapped resamples to test H₃. We found support for H₃. Specifically, mental imagery and being hooked serially mediate the relationship between preview modes and behavioral intentions, as the 95%CI of the indirect effect did not include zero (preview mode → mental imagery → being hooked → behavioral intention: indirect = 0.25, SE = 0.10, 95%CI = 0.08 to 0.45). Figure 4 plots the serial mediation.

[Insert Figure 4 about here]

6.3. Discussion

The results of Study 2 provide support for the mediating roles of mental imagery and being hooked in the relationship between preview modes and behavioral intentions. Specifically, the 360-

degree VR video preview enhances mental imagery, inducing a state of being hooked, which in turn, increases behavioral intentions toward the hospitality service provider compared to traditional online video previews.

7. Study 3: Boundary Condition of Customer Self-Construal

The objective of Study 3 was to test the moderating role of customer self-construal in the relationship between preview modes and customers' behavioral intentions (H₄).

7.1. Method

We followed a similar data collection procedure in Study 3 as in Study 1, with one key difference. We adopted a one-factor (preview mode: static pictures vs. 360-degree VR video) between-subjects experimental design. While the preview mode was manipulated, self-construal was measured. Participants were instructed to imagine planning for a trip to Australia and visited Kaolahome to book their accommodation. The participants were then randomly assigned to one of the two preview mode conditions of static pictures (control) and a 360-degree VR video. They assessed the stimuli and responded to the questions that followed.

The survey questionnaire consisted of three sections. In the first section, participants answered questions on self-construal. Independent self-construal ($\alpha = 0.78$) and interdependent self-construal ($\alpha = 0.81$) were measured using 12 items each adopted from Singelis (1994). Sample items included "I enjoy being unique and different from others in many respects" and "I can talk openly with a person who I meet for the first time, even when this person is much older than I am" for independent self-construal and "even when I strongly disagree with group members, I avoid an argument" and "I have respect for the authority figures with whom I interact" for interdependent self-construal. Following this, participants reviewed either the 360-degree VR video preview mode or the static picture preview mode in the second section of the survey questionnaire. In the last

section, participants responded to questions on behavioral intentions ($\alpha = 0.90$), mental imagery ($\alpha = 0.96$), being hooked ($\alpha = 0.94$), manipulation check, and demographic information.

A total of 250 participants who met the screening criteria were invited to participate in Study 3. Two responses were excluded as they reported cyber-sickness in the virtual environment, leaving a usable sample of 248 responses (52.0% male and 35.9% between 30 and 39 years of age).

7.2. Results

Manipulation check: The manipulation of preview mode was successful as participants in the 360-degree VR video condition assessed the stimulus as highly interactive ($M_{360} = 4.69$, $SD = 2.07$ vs. $M_{\text{control}} = 3.36$, $SD = 1.95$, $F_{1,246} = 26.80$, $p < 0.01$, partial $\eta^2 = 0.098$) and containing VR elements ($M_{360} = 3.87$, $SD = 2.25$ vs. $M_{\text{control}} = 2.78$, $SD = 2.03$, $F_{1,246} = 15.98$, $p < 0.01$, partial $\eta^2 = 0.061$), compared with those in the traditional statistic picture condition. No significant difference was detected in the time taken to complete the questionnaire between the conditions ($p = 0.36$).

Main effects: The results of ANOVA showed that the 360-degree VR video preview leads to higher behavioral intentions than the traditional mode ($M_{360} = 5.02$, $SD = 1.38$ vs. $M_{\text{control}} = 4.58$, $SD = 1.56$, $F_{1,246} = 5.41$, $p < 0.05$, partial $\eta^2 = 0.022$). This provides support for H_1 .

Furthermore, the 360-degree VR video resulted in higher mental imagery ($M_{360} = 5.70$, $SD = 1.27$ vs. $M_{\text{control}} = 5.05$, $SD = 1.61$, $F_{1,246} = 12.51$, $p < 0.01$, partial $\eta^2 = 0.048$) and higher perception of being hooked ($M_{360} = 5.35$, $SD = 1.32$ vs. $M_{\text{control}} = 4.62$, $SD = 1.36$, $F_{1,246} = 18.26$, $p < 0.01$, partial $\eta^2 = 0.069$) than the traditional preview mode. Including control variables did not change the significance of the effects of preview modes on customer outcomes.

Testing H_4 : H_4 was tested using PROCESS Model 1 in SPSS 29.0 with 5000 bootstrapped resamples. The behavioral intention was included as the dependent variable, preview mode (0 =

static picture, 1 = 360-degree VR video) as the independent variable, and independent self-construal as the moderator. The results of this analysis showed a significant interaction effect of preview mode and independent self-construal on behavioral intentions ($\beta = 0.52, p < 0.05$). The Johnson-Neyman analysis reveals that the effect of preview mode on behavioral intentions turns significant when independent self-construal is higher than 4.80 (59.68% of the respondents). This provides support for H_{4a}. Figure 5 presents the Johnson-Neyman plot for independent self-construal.

[Insert Figure 5 about here]

A similar analysis with interdependent self-construal as the moderator in the regression analysis reveals a significant interaction effect of preview mode and interdependent self-construal on behavioral intentions ($\beta = -0.69, p < 0.01$). The results of Johnson-Neyman analysis show that, at lower levels of interdependent self-construal (less than 4.60), preview mode has a negative effect on behavioral intentions (53.23% of the respondents). Furthermore, we also observed that at high levels of interdependent self-construal (higher than 6.17 or 2.02% of respondents), preview mode has a negative effect on behavioral intentions. Figure 6 demonstrates the Johnson-Neyman plot for interdependent self-construal. This supports H_{4b}.

[Insert Figure 6 about here]

7.3. Discussion

The findings of Study 3 support the moderating role of customers' self-construal in evaluating preview modes and their impact on behavioral intentions. Specifically, individuals with highly independent self-construal positively evaluate VR tools, while those with highly interdependent self-construal prefer traditional preview modes in their decision-making. The implications of our empirical studies are discussed in the following sections.

8. General Discussion

Leading hospitality service providers, such as Shangri-la Hotel and Marriot Hotel, have recently leveraged VR applications, offering potential guests a novel way to experience their facilities and amenities remotely (Leung *et al.*, 2020). This innovative approach opens new avenues for customer engagement, potentially transforming decision-making processes and perceptions of the hospitality service experience (Lee *et al.*, 2021; McLean and Barhorst, 2022). Despite the adoption of VR applications within the hospitality sector, there remains a need for in-depth understanding of its effects on customer decision-making (Calisto and Sarkar, 2024). Specifically, limited attention has been paid to customers' perspectives on VR applications in shaping their experiences and perceptions of hospitality service providers (Pijls *et al.*, 2023). Our study draws on media richness theory (Daft *et al.*, 1987) to explore the impact of 360-degree VR videos as a mode of previewing the offerings of the hospitality service provider in the pre-consumption stage of the customer decision-making process. Through three online experiments, we examined how and when the 360-degree VR technology influences customers' behavioral intentions.

The findings of this study reveal that in the pre-consumption stage, the 360-degree VR video preview significantly outperforms traditional modes of preview, such as pictures (Study 1) and 2D videos (Study 2), in shaping potential customers' intention to choose the hospitality service provider. The findings of Study 2 show that 360-degree VR videos not only enhance customers' ability to mentally picture their stay (increasing mental imagery), but also intensify their engagement (being hooked), leading to a greater desire to act on these perceptions by choosing the hospitality service provider. This interplay between mental imagery and the resulting hooked sensation critically shows why, during pre-consumption decision-making, 360-degree VR

previews are evaluated more positively than traditional preview modes. These findings provide a more in-depth understanding of how 360-degree VR videos enhance customer decision-making in the pre-consumption stage (Calisto and Sarkar, 2024; Leung et al., 2020). Moreover, the findings of Study 3 reveal the role of customers' self-construal in the evaluation of 360-degree VR previews. Specifically, customers with a highly independent self-construal found 360-degree VR previews more compelling, aligning with their autonomous decision-making style (Lee and Lee, 2016; Ma and Li, 2023). On the contrary, those with an interdependent self-construal prefer traditional preview modes, highlighting diverse responses to VR applications based on customers' personal identity. This corroborates with broader observations about the impact of customer personality traits on technology adoption (Boo and Chua, 2022; Ratchford and Ratchford, 2021). These findings not only highlight the functional applications of VR technology in hospitality, but also elaborate on the decision-making process behind its adoption by customers.

8.1. Theoretical Implications

The study findings offer significant contributions to the hospitality literature. First, managing customer experience has emerged as a key priority for hospitality service providers (Rahimian et al., 2021). Given the heterogeneity of hospitality services, a key challenge involves identifying critical touchpoints where customers interact with hospitality services (Holz et al., 2023). This underscores the need for innovative approaches that enable hospitality service providers to effectively present their offerings to customers during decision-making. Digital innovations, such as VR, serve as a transformative tool for hospitality service providers, allowing potential customers to visualize and connect with the services before making a purchase (Hollebeek *et al.*, 2020). Thus, our study contributes to the burgeoning literature on digital innovations in the hospitality sector by providing empirical evidence for the effectiveness of 360-degree VR videos in influencing

customer decision-making (Cao *et al.*, 2022). Furthermore, it extends our understanding of media richness theory by demonstrating the effectiveness of VR tools in customer decision-making (de Amorim *et al.*, 2022; Lee *et al.*, 2021).

Second, hospitality service providers engage with customers across different stages of the customer journey, including the prospective pre-consumption stage, an active hospitality experience stage, and a reflective post-consumption stage (Kwok and Lin, 2023). While previous research has demonstrated that interactions during pre-consumption stage influence customers' value perceptions, it also presents unique challenges for customers given the intangible and experiential nature of hospitality services. As customers aim to preview and evaluate service effectively before making a purchase, the traditional preview tools, such as pictures and videos, may fall short in conveying the full experience and value of the services offered (Cai and Chi, 2021; Veloso and Gomez-Suarez, 2023). Our study contributes to this stream of literature by examining the effectiveness of 360-degree VR video previews in influencing customer decision-making during the critical pre-consumption stage.

Third, previous research has extensively examined the role of various VR technologies, including immersive, semi-immersive, and non-immersive, in influencing customer decision-making (Lurdes Calisto and Sarkar, 2024). While a growing body of literature has explored the impact of VR tools on the evaluation of hospitality services (Flavián *et al.*, 2023; Lee *et al.*, 2020), these studies produced mixed results. For example, Bogicevic *et al.* (2021) found that VR tools resulted in higher visit intentions compared to 360-degree tours and static images. On the contrary, Bigne and Maturana (2023) and Slevitch *et al.* (2022) did not find the use of VR tools to significantly influence customers' cognitive and affective responses more than traditional tools. Our study contributes to this discourse by investigating how and when VR preview tools influence

customer decision-making during the pre-consumption stage. Specifically, this study revealed the pivotal role of psychological constructs and customer personality traits in determining the effectiveness of VR tools.

Fourth, while existing research on VR tools has emphasized their attributes, such as interactivity and immersion (Hudson *et al.*, 2019; Lee *et al.*, 2020), the exploration of psychological mechanisms that impact customer decisions through VR remains limited. This is a significant research gap, given that the effectiveness of VR applications depends on customers' psychological and physiological mechanisms, which are central to interpreting and responding to virtual experiences (de Lurdes Calisto and Sarkar, 2024). The present study addresses this gap by examining the psychological mechanisms of mental imagery and being hooked in determining the effectiveness of VR preview modes. These factors are crucial as mental imagery enables customers to vividly imagine themselves in the VR environment and being hooked enhances cognitive and emotional engagement that drives increased immersion into the virtual environment (Cao *et al.*, 2021; Lee and Kim, 2020). By examining the psychological mechanisms, this study offers a nuanced understanding of how VR experience goes beyond visual appeals to deeply engage customers in shaping their decision-making.

Finally, recent research highlights the significant impact of individual differences on customers' VR experiences (Martínez-Molés *et al.*, 2022). This understanding has a significant potential for nuanced customer segmentation and personalized VR applications in hospitality (Cai and Chi, 2021). This study advances this emerging field by critically examining the role of self-construal in the customer evaluation of VR and traditional preview modes in their decision-making. Self-construal provides a critical psychological lens to understand how customers' sense of self can shape their responses to virtual environments (Fan *et al.*, 2022; Hu *et al.*, 2016). By examining

self-construal, this research illustrates the important role of personal identity and offers actionable insights for creating more engaging and tailored customer experiences.

8.2. Practical Implications

This study offers several implications for hospitality service providers, highlighting the critical role VR tools play in influencing customer evaluation and perceptions during the pre-consumption stage. The study findings reveal that 360-degree VR videos enable customers to better visualize the hospitality service experience before making an actual purchase. Moreover, by offering a realistic representation of the hospitality facilities, 360-degree VR videos help in managing customer expectations during the pre-consumption stage. Such management of expectations plays a crucial role in shaping customer evaluation and satisfaction during the consumption stage. When the expectations set during the pre-consumption stage align with the experience encountered in the consumption stage, it can enhance customer loyalty and generate positive word-of-mouth in the post-consumption stage. 360-degree VR tools can also familiarize prospective customers with new or unknown hospitality service providers and their facilities, setting realistic expectations and aiding in informed decision-making. Therefore, hospitality service providers should invest in VR tools to allow prospective customers to preview their facilities on their websites and third-party platforms. Such preview experiences stimulate mental imagery, engaging customers and keeping them hooked on the hospitality service provider. Thus, VR tools have the potential to enhance the hospitality customer journey from exploration to booking, thereby differentiating the hospitality service provider in the competitive market.

Additionally, the findings of the present study regarding self-construal indicates that hospitality service providers should exercise caution when leveraging VR tools to influence customer decisions. Specifically, we found that customers with highly independent self-construal

are more likely to positively evaluate 360-degree VR videos, whereas those with highly interdependent self-construal are more likely to favorably evaluate traditional modes. These findings offer critical insights for hospitality services providers in segmenting the market based on customers' self-construal. Through effective segmentation, hospitality service providers can improve customer decision-making by providing either VR or traditional preview modes that best align with their personalities and preferences. However, a key challenge involves identifying customers' self-construal. Hospitality service providers can employ psychometric questionnaires on their websites or leverage data from third-party platforms to determine customers' self-construal. Moreover, since customers are likely to engage in behaviors that reflect their self-expression, hospitality service providers can use travel behavior as a proxy for identifying customers' self-construal. For example, business travelers with highly independent self-construal might exhibit a preference for 360-degree VR videos, as they offer a quick and immersive overview of the hospitality service provider's facilities, catering to their need for efficiency and autonomy. On the contrary, leisure travelers may prefer traditional preview modes as they can effectively present communal areas that resonate with their desire for social connection. Thus, by matching the preview mode with customers' self-construal, hospitality service providers can increase the probability of customers selecting their services.

8.3. Limitations and Future Research Directions

Despite the significant insights offered by the current study, it has several limitations that warrant further research. First, while this study shows that 360-degree VR videos impact customer decision-making more than static pictures and videos, future research should investigate the effectiveness of more immersive VR technologies. With VR widely used in the hospitality sector (de Lurdes Calisto and Sarkar, 2024; Lee et al., 2020), comparing the effectiveness of different

types of VR technologies on customer preferences and evaluations is critical for enhancing our understanding of how digital previews can improve the customer experience in the hospitality sector. Additionally, with emerging digital technologies, such as metaverse, continually transforming the hospitality sector, future research could explore how these technologies influence customer engagement and decision-making processes (Cheng et al., 2023; Ratten, 2024). For example, recent studies revealed that metaverse applications enhance customer experience, value co-creation, and behavioral intentions (Buhalis et al., 2022; Cai et al., 2024; Shin et al., 2024). Similarly, immersive technologies can personalize the customer journey and impact their engagement and perceived value (Abou-Shouk et al., 2024). Studies examining the role of these emerging technologies in the customer decision-making process can provide valuable insights for hospitality service providers in their investment strategies toward VR and emerging digital technologies in order to enhance customer experience.

Second, it is important to note that this study examined the role of 360-degree VR videos as the primary digital preview mode. This may limit the generalizability of our findings to other VR tools, which may interact differently with customers. This potential limitation highlights the need for future studies to investigate fully-immersive VR in the hospitality services context. Furthermore, our study focused on understanding the role of VR technology in the hospitality sector. Thus, the study findings may not extend to service contexts where customer interaction with technology is more dynamic and adoption rates are higher. Given these considerations, future research should replicate this study in other sectors and with diverse VR technologies to fully understand their impact on customer decision-making.

Third, the present study focused on the effectiveness of 360-degree VR videos on customer decision-making in the pre-consumption stage. The findings highlight the potential of VR tools in

influencing customer engagement in the initial stages of the customer journey. However, the customer journey comprises various stages, including consumption and post-consumption (Kwok and Lin, 2023). Future research should, therefore, expand our study to explore how expectations formed via VR tools in the pre-consumption stage impact customer evaluations and behaviors in the consumption and post-consumption stages. Furthermore, while this study offers evidence for the role of psychological mechanisms of mental imagery and being hooked and rules out the confounding effect of time or duration of experience, future studies could explore other mechanisms and rule out the role of curiosity, novelty, and attractiveness of the stimuli in the relationship between VR preview modes and customers' behavioral intentions.

Fourth, this study focused on psychological factors such as mental imagery and being hooked in understanding the influence of VR tools on customer decisions. However, given the complexity of the customer decision-making process, future research should examine the role of cognitive and emotional processes in shaping customer behaviors toward VR tools. For example, Soon et al. (2023) showed that expressive emotions determine the impact of AR tools on customer desire. Similarly, Leung et al. (2020) showed that the VR commercial type increased advertisement cognition and attitude. While these studies offer the initial understanding of the underlying cognitive and emotional processes, further research on how specific VR features impact these processes could help hospitality service providers in optimizing VR tools to influence customer decisions effectively (Ratten, 2024). Furthermore, this study did not consider the potential temporal shifts in technology acceptance and cultural norms that may influence the relationship between self-construal and VR adoption. As VR technology becomes more prevalent, there is a need for future research to understand these dynamics over time.

Fifth, while the online experiments we carried out offer support for the effectiveness of VR tools, future studies should analyze the actual customer data about how they use VR and other preview tools in their decision-making. Such field studies could provide a more nuanced understanding of how customers interact with and respond to various preview modes in a real-world setting. Furthermore, it could help to identify customer preferences and usage patterns that may not be evident in more controlled experimental settings. Future researchers may utilize neural network and regression analysis to identify key factors that determine the use of virtual previews (Pandey and Rai, 2023).

Finally, although our study findings demonstrate that 360-degree VR videos are more effective than traditional preview modes, many websites present visual and virtual preview modes simultaneously. This raises important questions about how offering multiple preview options impact customer evaluations and preferences. Previous research indicates that presenting multiple options may lead to choice overload, causing decision difficulty and reduced customer satisfaction (Guillet *et al.*, 2020). Thus, future researchers should examine how presenting different preview modes, such as visual and virtual, could impact customer decisions.

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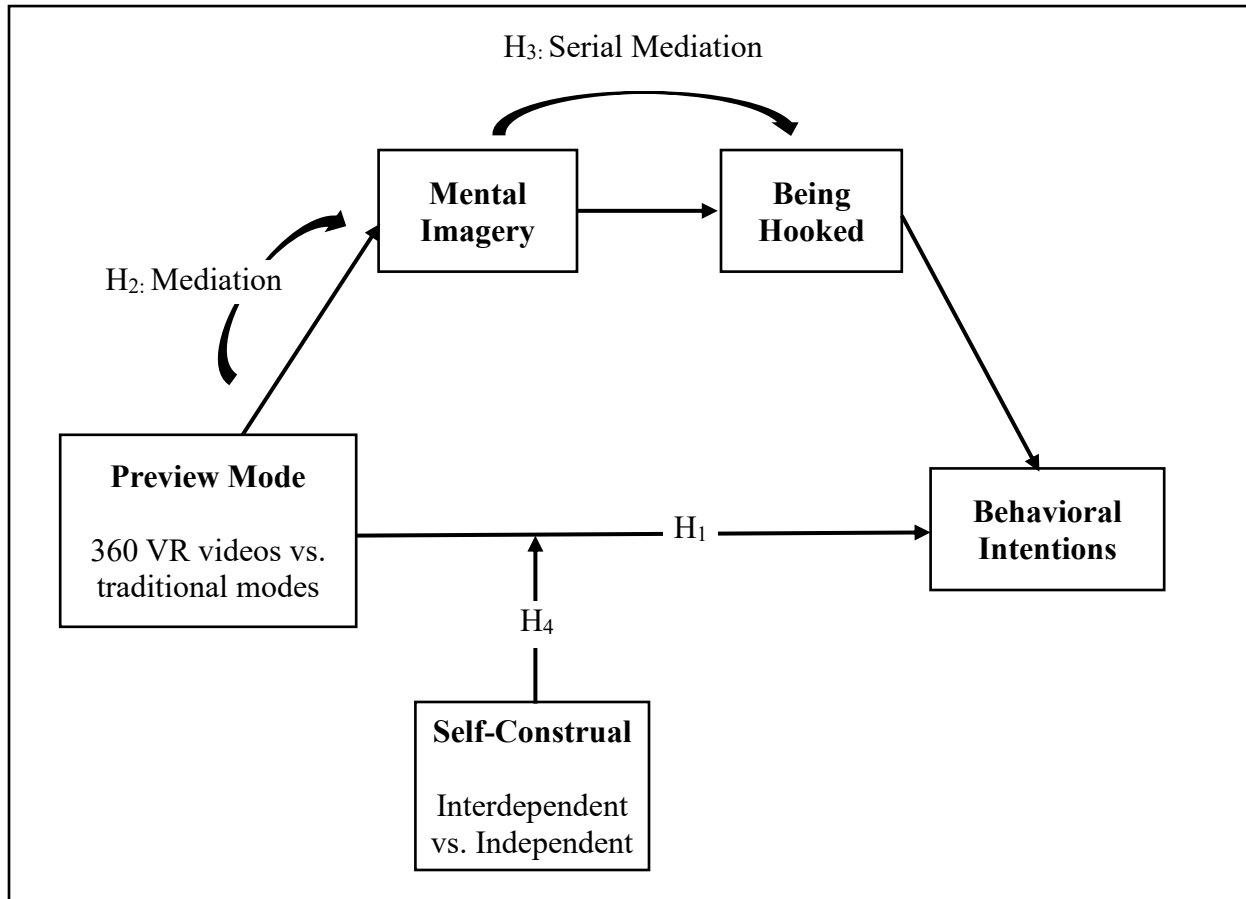
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Figures



Study 1. Conceptual framework of the study
Source: Authors own creation

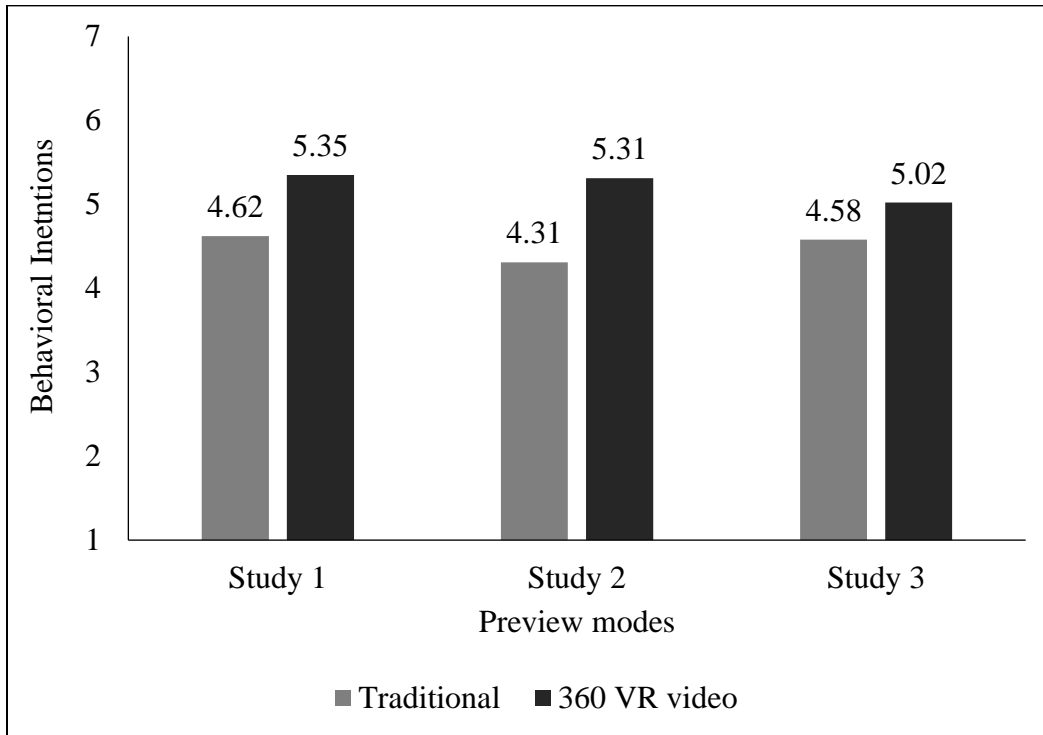


Figure 2. Effect of Preview Modes on Behavioral Intentions
Source: Authors own creation

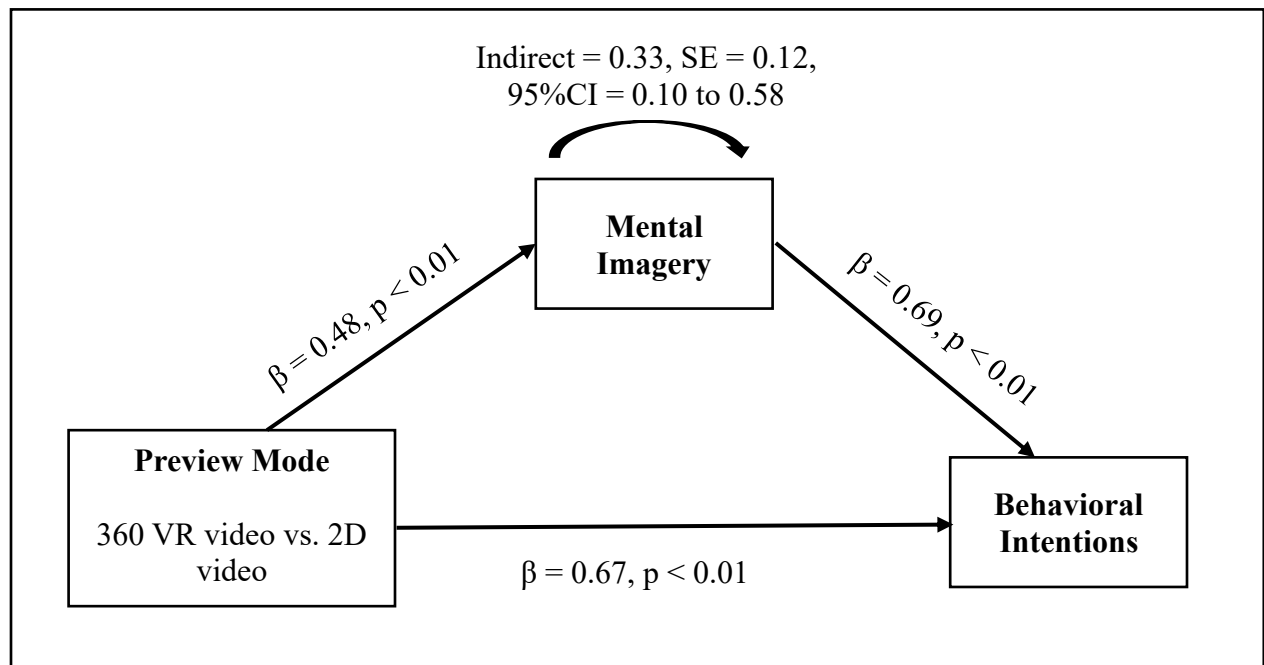


Figure 3. Mediation effect of Mental Imagery (Study 2)

Source: Authors own creation

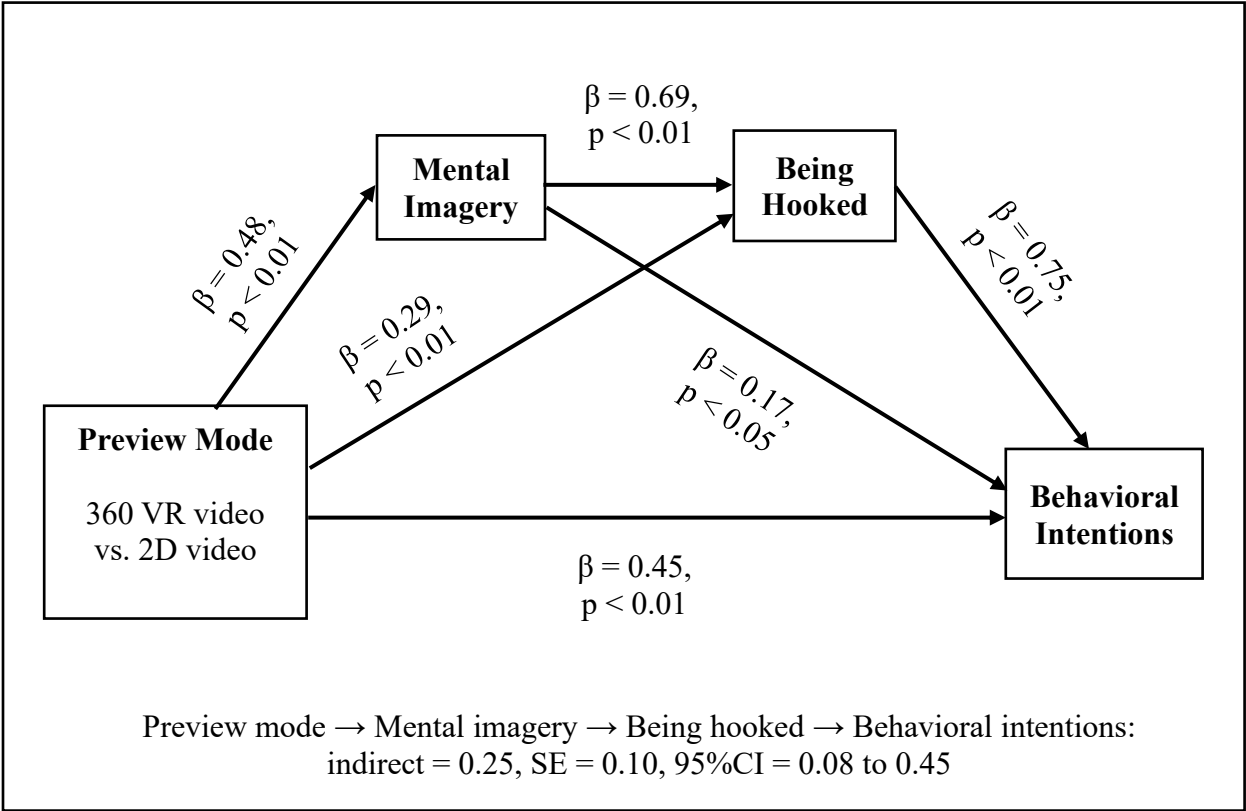


Figure 4. Serial Mediation of Mental Imagery and Being Hooked (Study 2)

Source: Authors own creation

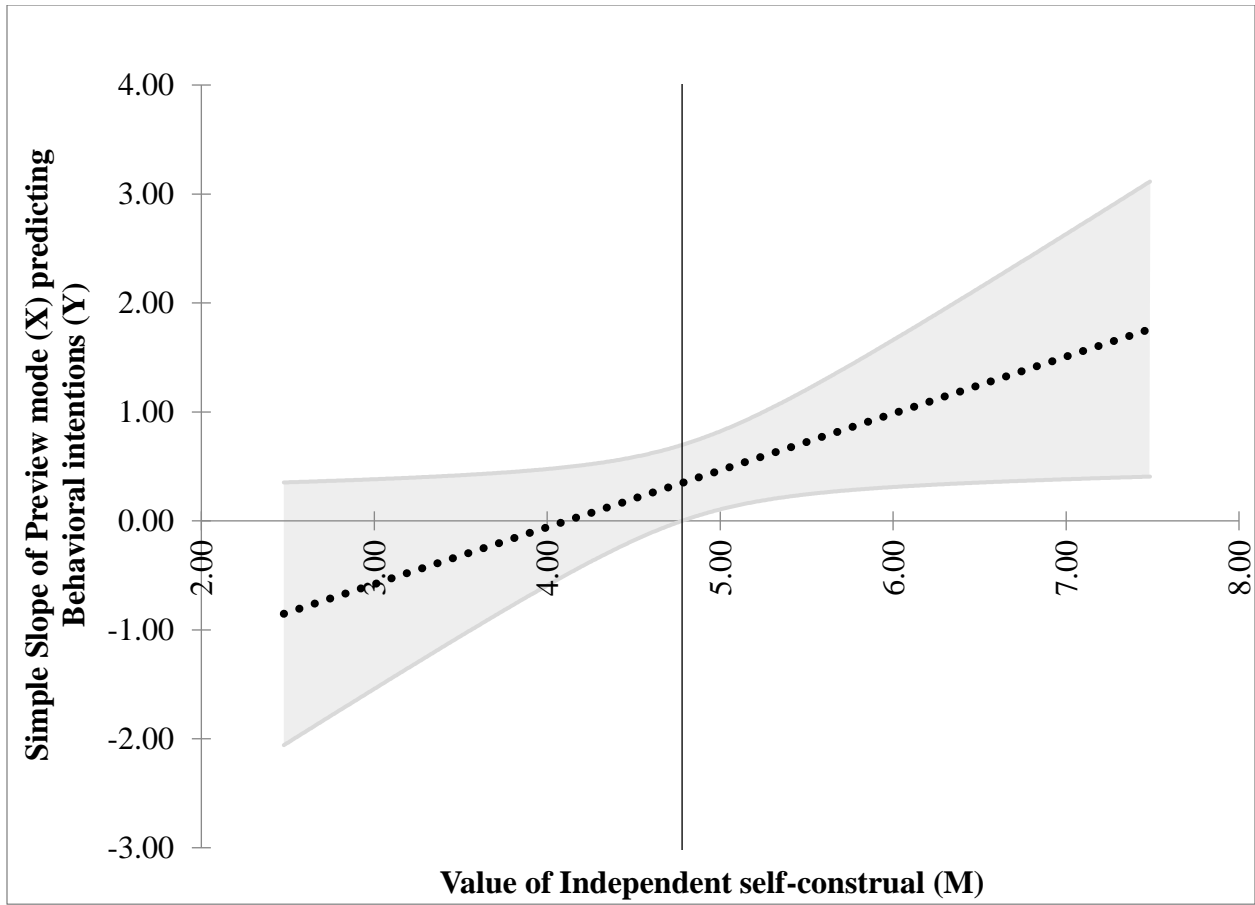


Figure 5. Johnson-Neyman plot of the interaction effect of independent self-construal and preview modes

Source: Authors own creation

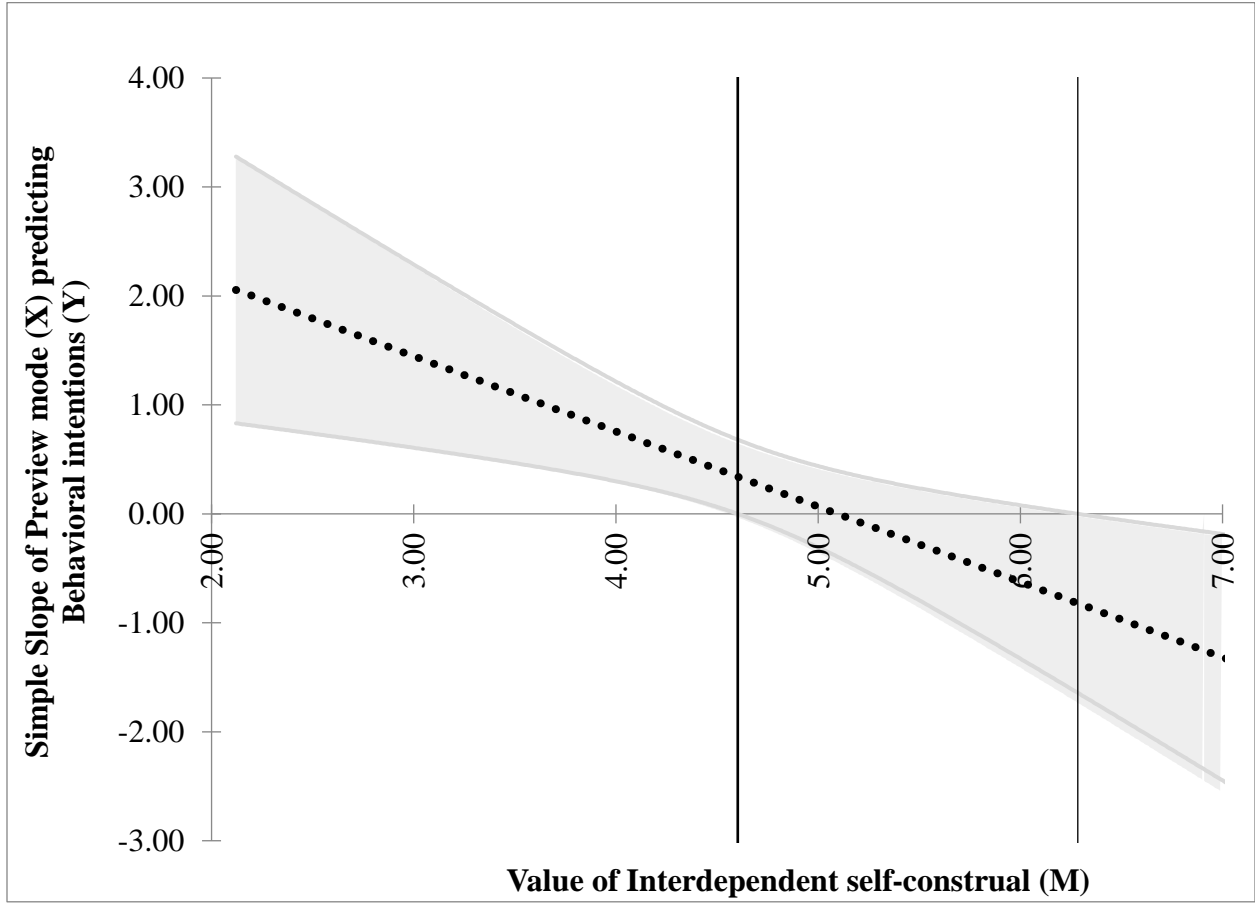


Figure 6. Johnson-Neyman plot of the interaction effect of Interdependent self-construal and preview modes

Source: Authors own creation