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The VR Experience and Purchase Intentions in the Real State

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UI/BD/151513/2021 (Fundação para a Ciência e Tecnologia - FCT) ABSTRACT

The real estate sector is adopting cutting-edge solutions that provide better consumer experiences and facilitate transactions. One of the latest technologies to emerge is virtual reality (VR). This technology has the potential to completely change the way consumers interact, purchase, and sell real estate. Although there is a great deal of interest in VR, few studies have been conducted to understand how it impacts real estate companies and consumers. This study seeks to address this opportunity by suggesting a model that examines the impact of virtual reality on real estate consumers' purchase intentions concerning constructs such as playfulness, informativeness, perceived risk, and purchase intentions. A quantitative approach in which 200 responses were collected from a questionnaire conducted after a virtual reality experience. The data and hypotheses were analyzed and interpreted using the Partial Least Squares Structural Modelling (PLS-SEM) approach. Findings suggest that playfulness and informativeness have a positive impact on improving real estate purchase intentions and that perceived risk is negatively associated with real estate purchase intentions. The results further identify a positive, significant, and direct impact of playfulness on informativeness. Playfulness also influences purchase intentions, but this relationship is mediated by informativeness. However, the relationship between playfulness and purchase intention is not mediated by perceived risk, according to the results.

Keywords: VR experience; real state; Playfulness

INTRODUCTION

Real estate is one of the most significant assets traded in person or online among other products, services, and commodities (Ullah et al., 2021). Although the real estate sector is growing rapidly, the implementation of new technologies in this sector is considered slow (Baum, 2020). To transition from a conventional to a property technology (PropTech) approach, the real estate sector must enhance its use of disruptive technologies (Ullah et al. 2018; Saull et al. 2020).

Virtual reality (VR) technology produces an immersive virtual world that represents reality, allowing users to manage their actions (Pleyers and Pocin, 2020). Through VR, real estate consumers can visualize a property remotely, as if they were physically present at the property, and faster transactions (Sihi, 2018). However, little is known about the potential impact of VR on real estate and its impact on real estate purchase intentions (Starr, 2020; Xiong et al., 2022). Thus, this study aims to: (1) examine the impact of playfulness, informativeness, and perceived risk on real estate consumer purchase intentions; (2) investigate how informativeness mediates the connection between playfulness and real estate consumer purchase intentions; (3) analyze the influence of perceived risk as a mediator in the relationship between playfulness and real estate purchase intention.

BACKGROUND

Real Estate Industry and Virtual Reality

Real estate serves as a pivotal sector in global economies (Lecomte, 2019), and thrives on intricate, high-stake decisions and acquisitions (Kumar and Khandelwal, 2018). VR technology is set to revolutionize shopping (Martinez-Navarro et al., 2019). Major global retailers have already incorporated VR into their e-commerce offerings (Xiong et al., 2022). In real estate, immersive VR allows consumers to preview under-construction buildings and explore various property features like layout, amenities, location, and neighborhood (Sihi, 2018; Hou and Wu, 2020). Consequently, VR is commonly employed as a marketing tool in real estate (Hou and Wu, 2020). According to Xiong et al. (2022), integrating VR into property marketing strategies boosts in-person visits, reduces time on the market, and enhances market transparency. Moreover, VR can have a significant impact on the buyers' decision-making process and throughout the customer journey, namely on their motives, goals, information, interactions, and reactions (Juan et al., 2018; Wedel et al., 2020).

Playfulness

Playfulness indicates how much a particular environment makes purchasing a fun and enjoyable activity (Hung et al., 2016). Consumers tend to obtain pleasure from VR experiences (Kang et al., 2020). From a playful experience, it is believed that the collection of information about the property and the perception of risk improves (Koh et al., 2013; Kang et al., 2020). A customer's playful ability with online shopping technology is favorably influenced by their experience, and consequently, affects their evaluation of the complexity of online shopping (Çelik, 2010). In real estate, playfulness is the enjoyable experiential result of online home searches and consequently, in-person visits (Xiong et al., 2022). On this basis, the following hypotheses were proposed:

H1: Playfulness is positively and significantly related to informativeness when using VR to purchase a property.

H2: Playfulness is significantly related to the perceived risk when using VR to purchase a property.

H4: Playfulness is positively and significantly associated with real estate purchase intentions.

Informativeness

Sihi (2018) argues that with VR, consumers can learn more about the properties they are looking for, enabling a more favorable experience and consequently a more informed purchase decision. VR technology can be a source of supplementary product information, which reduces risks and supports customers in the decision-making process (Kang et al., 2020). Customers who have access to more information tend to be happier and more likely to buy or rent a home (Ullah et al., 2018). Hence, we hypothesize that:

H3: Informativeness is positively and significantly associated with real estate purchase intentions.

Perceived Risk

Risk is initially noticed by consumers when they identify a need (Koklic, 2011). When searching for information and evaluating options, consumers employ risk reduction measures if the risk is too great (Koklic, 2011). Perceived risk is considered a key factor in consumer behavior when searching for a property to purchase since consumers' decisions are affected solely by the risk that is considered perceived subjectively (De-Juan-Ripoll et al. 2018). The

level of perceived risk can impact the interest in purchasing a property through VR (Sarkady et al., 2021). Based on this the following hypotheses are presented:

Hypothesis 5: Perceived risk is positively and significantly associated with real estate purchase intentions.

METHODOLOGY

To obtain quantitative results, data was collected from a sample of 200 participants who visualized a property through a VR headset and then answered the questionnaire. Regarding the measures used, playfulness was adapted from Pleyers and Pocin (2020), informativeness was adapted from Kang et al. (2020), perceived risk from Klokic (2011), and purchase intention from Azim et al. (2021). Most of the respondents were aged between 18 to 24 years old (28%), followed by 45 to 54 years old (22.5%). The suggested model was analyzed using the PLS-SEM - Partial Least Squares Structural Equation Modelling - approach.

RESULTS AND DISCUSSION

Regarding the model's reliability, all constructs displayed acceptable Cronbach Alpha, CR, and AVE values, along with an HTM ratio lower than 0.90 and VIF scores below the lower limit of 3. The first hypothesis (H1) was supported by the results ($\beta=0.47$, $t=4.467$, $p<0.05$), indicating that there is strong statistical evidence that playfulness has a positive and significant effect on informativeness. The more playful the participant's perception of the property through VR, the stronger the perception of information they retain from this experience. In line with the retail literature, this result is consistent with the Holdack (2021) study that states that customers who identify VR as playful also perceive higher levels of informativeness.

Moreover, H3 ($\beta=0.271$, $t=3.678$, $p<0.05$) and H4 ($\beta=0.373$, $t=35.232$, $p<0.05$) are supported. The results corroborated the findings from the previous research (Ahn et al. 2007; Kim et al. 2017; Kang et al. 2020; Pleyers and Pocin 2020), confirming that informativeness and playfulness positively impact real estate consumers' purchase intention.

However, H2 is not supported by the results ($\beta=-0.135$, $t=1.600$, $p>0.05$). The findings conclude that despite being in a playful scenario, such as viewing a property through VR, consumers do not feel less risk. Likewise, H5 is also not supported by the results ($\beta=0.013$,

$t=0.828$, $p>0.05$). Hence, our results indicate that the perceived risk associated with buying property through VR does not affect purchase intentions. This outcome is consistent with existing e-commerce research, which demonstrates that, on the internet, customer risk negatively influences purchase intentions (Sullivan and Kim 2018).

CONCLUSIONS AND IMPLICATIONS FOR THEORY AND PRACTICE

This study contributes to the theory in 3 major ways. First, it confirms the impact of playfulness and informativeness on real estate purchase intentions. Second, our findings underscore the positive correlation between playfulness and purchase decisions in real estate marketing, suggesting that VR real estate tours can enhance market efficiency and consumer decision-making by offering a playful experience. Third, this study highlights how the use of VR to experience a property tour can make consumers feel more informed, which increases purchase intentions.

Regarding the managerial implications, this study emphasizes that real estate buyers are more likely to make purchases using VR when the experience is both playful and informative. To improve consumer experiences, real estate managers should invest in high-quality, realistic VR solutions, offer immersive neighborhood views, and provide accessible mobile VR experiences while maintaining personal customer interactions.

This research explores the role of VR in the real estate industry, shedding light on its potential and limitations. Many participants lacked familiarity with VR and displayed apprehension, suggesting a need for broader adoption and user education. Future research can investigate the moderating effect of familiarity with technology and further consider psychological factors, such as fear and anxiety. In addition, the study examines how playfulness, informativeness, and perceived risk influence real estate purchase intentions. However, it suggests that other factors like trust and willingness to pay can be added to the model and included in future studies. Lastly, future research could benefit from both qualitative and quantitative methods to gain a deeper understanding of user perceptions.

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