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Exploring the Potential of Integrating Virtual Reality into the Real Estate Sector: Unveiling user Experiences and Marketing Applications

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The aim of this study is to examine the use of Virtual Reality (VR) in Pakistan's real estate business/sector to determine how VR technology can be practised to improve real estate marketing and increase industry competitiveness. This study used qualitative technique to collect data through interviews. However, the interviews were carefully selected to acquired close about virtual reality, as well as perspectives that may be unexpected or underexplored within the real estate sector. The findings prove that VR marketing in real estate sectors focuses on the initial phases of awareness and decision-making process. However, there was a crucial gap in VR incorporation across the whole property buying experience. Although VR develops requirements and better consumer experiences, it often overlooks the vital issue of increasing both corporate and customer value. The results highlight the need to optimize customer journeys while considering omni-channel and cross-channel factors to deliver a consistent VR-integrated consumer understanding. This study investigated the possible of VR in the Pakistani real estate business, providing the existing body of knowledge. This explores how VR can be utilized as a valuable tool for real estate marketing and competitiveness development. Moreover, it presents new insights and hassles the necessity for a complete strategy for VR integration, thereby providing a distinct element to the exchange around VR technology in the real estate sector.

1. Introduction

In today's digital era, Virtual Reality (VR) has come out as a transformative technology that transcends physical boundaries and immerses diverse users in their surroundings. Virtual reality (VR) bring into play specialized headset and sensory equipment to provide a visual experience (Alcañiz et al., 2019). VR has transformed industrial processes and consumer interaction. It will enable companies to examine and improve their goods in a virtual environment, reducing costs and time to market (PwC, 2022). VR applications are used in various fields, such as tourism, fashion, medicine, and education. Real estate, marketing, training, and gaming promise improved user experiences and inventive problem resolution (Deloitte, 2021; Deep et al., 2023; Kim & Choo, 2023; Yadav et al., 2023).

According to Smith et al. (2021), VR has improved medical training and therapy in healthcare, transforming vehicle design and testing in the automobile sector. VR has been widely used in educational settings as a powerful tool for immersive learning experiences that improve student engagement and knowledge (Sánchez et al., 2020). Virtual reality has transformed online fashion purchasing by enabling buyers to explore collections, try on clothes, and make educated selections (Jin & Shin, 2021). Chefs use VR to practice in realistic virtual kitchens, while restaurants use it to provide consumers with immersive, location-based dining experiences (Siegrist et al., 2019). These breakthroughs demonstrate VR's usefulness of VR in transforming organizations and boosting consumer experiences. Although virtual reality (VR) has evolved significantly across numerous industries in developed countries, its rise in developing nations, particularly within their real estate sectors, is noteworthy and relatively untapped (Morrow et al., 2023; Jaung, 2022). Consequently, this study takes a pivotal step in linking VR technology to the real estate market—a sector of paramount economic significance.

Focusing on Pakistan's real estate sector as a research context, this study is pertinent as the sector has exhibited resilience and contributed significantly to the country's GDP despite economic fluctuations. Recognizing VR's capacity to attract potential clients and enhance property presentations, the Pakistani real estate sector has increasingly adopted VR as a dynamic marketing technique (Deep et al., 2023; Adeola et al., 2022). However, there is a scarcity of research on VR's cutting-edge applications within this sector, leaving ample scope for investigation and experimentation. Therefore, this study aims to address this gap by exploring the role of VR technology in augmenting the effectiveness and impact of Pakistan's real estate sector such as how these technologies can reshape property marketing strategies and influence consumer behaviour (Lee et al., 2022; Wahid et al., 2021). Accordingly, this study poses the following research questions to answer.

1.1 Research Question

What role does the implementation of Virtual Reality (VR) technology play in enhancing the effectiveness and impact of Pakistan's real estate sector?

1.2 Research Question

How does the adoption of VR technology affect customer perceptions and decision-making in Pakistan's real estate market?

This study contributes to practice and theory in the following ways. Managerially, this study aims to provide insights into the transformative potential of VR adoption in Pakistan's real estate sector (Xiong et al., 2022). By conducting a comprehensive case study and evaluating the impact of VR on customer purchase intentions, we aim to provide actionable recommendations for industry stakeholders (Tang et al., 2023). Theoretically, this study extends the application of VR technology to a novel context and advances our understanding of its implications in the real estate market (Azmi et al., 2023) Additionally, our study contributes to the growing body of literature on technology adoption and its impact on consumer decision-making (Yadav et al., 2023).

The subsequent sections comprise the literature review, the theoretical underpinning of the study, the research methodology employed, and the presentation of our analysis and findings. The outcomes are delineated in the findings section, while the discussion chapter explicates the conclusions drawn from the study.

2. Literature Review

2.2 Virtual Reality Applications

Although VR was introduced long ago, research studies exploring the significance of VR in different fields have yielded intriguing findings in recent years (Sutherland, 1962; Techcrunch, 2023). Investigations into the use of VR in healthcare training show that VR simulations enhance medical students' procedural skills and confidence levels (Smith et al., 2021). In education, studies show that VR-based learning modules lead to better retention of complex concepts compared to traditional teaching methods (Sánchez et al., 2020). VR is a useful tool in clothing retail. In their study, Yin et al. (2023) show that VR-enhanced shopping experiences increase client happiness and purchase intent. Virtual try-on capabilities are particularly useful in lowering uncertainty related to online garment shopping, and much research has been conducted on the effects of VR on culinary instruction (Cheung et al., 2023).

According to Xiong et al. (2022), VR tours generate more interest and close deals more quickly. Mathabathe and Bolokang (2022) in their study show that VR-based driver training programs increase road safety, decrease accidents, and improve driver performance. VR has been investigated in HR for staff training. Similarly, VR simulations in HR training may improve employee learning, engagement, and retention of HR rules and procedures (Madathil et al., 2017).

2.3 Virtual Reality and Consumer Experience

Businesses are adopting VR technologies to increase their productivity and competitiveness. This is described as the ability of VR users to have an experience that is comparable to the actual world while engaging with the material. Customers view these items as essentials of the actual world, just as people play games, take pictures, design, or mimic things. Therefore, in the framework of the VR experience, what the user is doing becomes reality. Consumers' intentions to visit a project using VR technology during an intelligent visit were examined by researchers (Chung et al., 2018). Additionally, Adachi et al. (2020) suggest that although traditional is static, VR experiences are effective, allowing for great customer experiences.

As consumers can now observe a specific place in real-time from their smartphones, tablets, and laptops through virtual reality technology, marketers argue that this is a driving factor for users to adopt VR (Herz & Rauschnabel, 2019). Customers may experience brands and products in a virtual world, which has been mentioned as a new type of marketing channel. An important level of involvement and engagement with brand users is offered through virtual experiences. They are comparable to direct experiences, according to research (Boyd & Koles, 2019). Users can inhabit a world of their creation using virtual reality to overcome restrictions imposed by the actual world. The research shows that consumer interactions with businesses through technology have an impact on brand perceptions, buying intentions, and product knowledge (Awais et al., 2022; Kim, 2015; Yu, 2011). VR technology has great potential and may be a vital part of marketing strategies for companies and brands, giving them the chance to expand their customer base.

2.4 Virtual Reality and Real Estate

It is simple to predict that VR will soon exceed interactive marketing strategies when considering its role and potential (Chan et al., 2023). One of the pioneer businesses that are quickly adopting virtual reality is the real estate sector. It does this by providing unique experiences that may promote interactions when consumers engage with the objects they view in VR (Chung et al., 2018).The real estate sector in industrialised countries has already started to use VR technology. VR aids a range of businesses in gaining consumer admiration, satisfaction, and attention because of its unique imaging experience (Adachi et al., 2020). Along with developing an excellent memory of the brand for future purchases, customers will gain many advantages from having a unique virtual reality experience. To expand the scope and quality of the virtual experience as well (Ullah et al., 2018).

To display a product to customers from multiple perspectives, the business employs rotatable visuals of what is sold. A strong, distinctive, and successful relationship with the organisation can be built with the use of virtual reality stimuli. It can be beneficial for marketing teams to give their firm life by giving it a personality by using VR technology in the right way (Chan et al., 2023). The standard of VR equipment must be raised to keep up with the quick advancement of technology. The VR device's higher resolution and improved display can be leveraged to further VR technology (Yoo et al., 2021). Furthermore, using the head-mounted display, enhances the performance of VR devices in the goggles. Additionally, it has an impact on how customers communicate with the company, which in turn has a significant impact on how much control clients have over the market. Many of their early researchers studied basic VR technology rather than the more advanced Head-Mounted Display (HMD), which was the one that was accessible because customer reaction would determine whether VR technology is adopted or rejected. To build a broadly based theory that considers a global perspective, research is required to determine customers' purchasing intention or response after using HMD because there are few studies based on HMD (Chung et al., 2018).

Previous research has shown the potential of virtual reality (VR) technology in the building, urban planning, and real estate industries. The idea, perception, and results of initiatives within these industries can all be improved with the use of these technologies (Verkerk, 2022). Real estate agents can improve their performance, enhance customer

satisfaction, and promote trust among consumers. VR can speed up property inspections, save travel time, and improve property visualizations (Lizam, 2019).

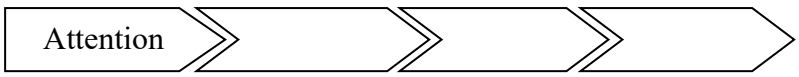
VR in real estate has significant ramifications. Virtual reality lets purchasers see residences without visiting. This saves buyers and sellers time and money and increases remote buyers' reach. Real estate VR technology improves property layout visualization and understanding (Sun & Zhong, 2020). This improved visualization helps buyers make better decisions and eliminates several house visits.

Our findings might change real estate marketing in practical terms. Our study suggests optimizing VR property displays may increase customer experience and competitiveness in dynamic markets (Meirinhos et al., 2022). This research optimizes VR technology for property presentations in Pakistan's real estate industry to improve customer experience and market competitiveness by giving realistic and immersive virtual tours. The potential of residential real estate-related VR and AR technologies was assessed (Pasquale et al., 2022).

2.5 Theoretical Framework

The AIDA paradigm begins with attention, which raises awareness and knowledge about a phenomenon. The 1925 AIDA model, which outlines the buying process, is a popular marketing theory. Although initially designed for sales, it is now widely utilized in persuasive communication (Wiyaya, 2012). The AIDA model attracts client attention, builds interest in the product's characteristics and benefits, generates desire by proving superiority over competitors, and implements calls for purchase (Rowley, 1998).

Figure No 1: AIDA Framework



This research examines whether real estate marketing managers are aware of Virtual Reality (VR) and its potential use in marketing efforts. On the second level, organizations seek to exploit this technology for marketing. Thus, we must determine if real estate companies in the research are interested in VR and willing to use it in marketing. Desire, the third phase, involves real estate marketers seeing VR as a helpful tool.

Our study examines whether real estate marketers find VR useful. Finally, the fourth step, action, relates to integrating VR into the real estate marketing process. This research examines how much VR technology is used in real estate marketing.

3. Methodology

3.1 Sample and Data Collection

This research uses qualitative analysis of Pakistani real estate firms. The primary data-gathering method was interviews with business owners or administrators. These interviews aimed to understand people's ideas, attitudes, and perspectives on important topics, including those foreign to many real estate businesses. The study also interviewed Pakistani real estate businesses to understand current concerns. These forums allow for the exchange of real estate sector viewpoints. This qualitative study examines people's ideas and perceptions, clarifies their views, and provides real estate market forecasts.

This research uses industry professionals' experiences and opinions to comprehend better real estate market difficulties, opportunities, and future potential. Organizations pre-scheduled Zoom and in-person interviews. An interview was recorded using a mobile sound recorder and turned into text. This research used purposeful sampling to discover experts or firsthand experience with marketing difficulties. This strategy incorporates recommendations from various target demographic viewpoints to investigate the issue further. The data collection included six interviews. Every interview was carefully scheduled and lasted 25–50 minutes. Participants had enough time to share their thoughts, experiences, and viewpoints, allowing for a complete discussion of the research concerns. The interview results are below.

3.2 Results and Findings

A. Real estate marketing prospects were interviewed throughout the study's first phase. Appointments were organized to guarantee research-appropriate conditions, and a short interview summary was given over the phone. Offices and restaurants were used for interviews to simplify the participation. This approach fostered open-ended talks and helped participants feel at ease. During sessions, questions and replies were translated into Urdu and English, enabling participants to speak freely in their preferred language. These interactions recorded participants' nuanced answers. Interviews usually lasted 15–30 minutes, but some may reach 50 minutes depending on dispute and engagement. The interviews were filmed for two hours. After the interviews, meticulous transcription was done to preserve the talks and enable extensive data analysis. Semi-structured interviews were done with six organizations with equal VR users and non-users. Three individuals used VR, whereas three did not. This fair distribution allowed a complete analysis of both groups' viewpoints, revealing the organizations' VR technology adoption experiences and effects.

3.3 Users of VR Technology Interviewed

The study report methodology comprises three VR questions for real estate companies. Participants were asked to answer these questions entirely based on the topics.

Q 1: How are virtual reality technology and user acceptance growing?

Answer: According to interviews, market managers may need help convincing clients to use VR headsets for projects. Virtual reality may initially be dismissed as entertainment. With effective interaction and demonstration, market managers can help customers comprehend the advantages of virtual reality for visualization.

The following are participant opinions and themes:

1. The participant stressed "education and awareness." They recommended that market managers educate customers on VR's many uses and advantages.
2. "Demonstrations and Experiences" worked for the second participant. Market managers should provide hands-on VR to change client perceptions. Demos or interactive experiences in project-related virtual worlds assist customers in understanding VR technology's advantages and usage. Effective communication requires consideration of the target audience and "tailored messaging," according to the participant. Marketers

should personalize communications to audience needs, interests, and concerns. Customers may react effectively to communications about VR's practical usage, time-saving advantages, and improved decision-making.

3. The third responder stressed the need for "engaging content": VR can grab clients by creating visually appealing and intriguing content showcasing the project's potential. Customers may consider VR as more than simply entertainment if they see high-quality visuals, precise simulations, and concise representations of its benefits.

Candidates additionally highlighted the crucial importance of treating customers' educational and technical backgrounds individually. While some consumers need more digital knowledge, generalizing about all customers' educational levels or technical abilities is dangerous. Market managers should approach customers with empathy, provide relevant information, and personalise their explanations to enable comprehension and participation across a range of age groups and education levels.

Marketers may increase VR technology adoption by educating clients, giving demonstrations, personalising messages, and generating appealing content. By emphasising VR's actual applications and advantages, market managers may help clients recognise its worth in project visualisation and decision-making, pushing beyond simply enjoyment.

Question 2: What advantages and disadvantages can point to VR technology?

Answer: Interviewers highlighted that using VR technology in the real estate market may generate various benefits, as indicated in the statement you provided:

1. The participant recognised and evaluated the following aspects of “Planning Efficiency”: Using virtual reality, project promoters may analyse a project's viability remotely from their office, saving time and eliminating the need for several visits with architects. They can investigate potential possibilities, assess their feasibility, and consider any limits imposed by local rules. This speeds up the planning process while also making it easier to anticipate and resolve future issues.
2. The participant expressed and believed that using VR technology in the real estate business can result in “Cost and Time savings”. Virtual reality may reduce the need for in-person designer meetings, saving time and money on travel and consulting costs. VR visualization may save expensive project adjustments and delays by proactively addressing issues.
3. VR technology could increase "communication and engagement" in real estate initiatives, according to the participant. This technology helps real estate developers sell their projects, encourage public engagement, and connect with prospective clients. This increased involvement helps prospective renters or buyers see and experience residences, increasing interest and engagement. Improvements in communication and engagement are easily integrated with "VR applications" research throughout development. VR technology adoption in the real estate industry depends on the investor's level, the availability of VR tools and platforms, and party flexibility.

Q 3: Why should VR implementation is prioritized this year? How does it aid project planning, visualization, and promotion?

Comments from participants: This year, we may prioritize VR technology while also considering alternative options. This summarizes their statements:

1. Based on respondents' opinions on "VR Implementation," VR adoption is our aim this year. This choice shows how VR may improve our company. We want to leverage VR for project planning, visualization, and advertising.
2. The interviewers said we are assessing several technologies' potential advantages. This involves evaluating whether these technologies can help our company or if other service providers can.

Q 4: How will virtual reality technology affect the use, efficiency, integration with other technologies, and overall effect of the real estate sector?

Participants believe that there will be a market for VR in the future, and they see tremendous potential for VR in the real estate industry, with widespread adoption. The following is some information about their foresight:

1. Interviewees observe "increased utilization" as the organization evaluates the value and potential benefits of different technologies. The firm is investigating if these technologies will assist or whether other service providers can give adequate answers.

2. Increased Efficiency: Interviewees expect VR technology to improve user experience. Automation or connection with current systems may help VR data input. Data input and processes must be simplified to boost adoption and efficiency.

Technology is constantly evolving, according to respondents. IT and social media are growing. Real estate businesses quickly examine new platforms and technology and profit from them. Staying competitive and satisfying customer expectations requires installing new VR solutions or integrating VR into current platforms.

1. Participants stressed the compatibility between VR tools and cutting-edge technologies like AR, AI, and IoT. This connection was meant to improve VR's real estate value. It may provide real-time data overlays, personalized property recommendations, and smart home connectivity.
2. The participants anticipate "Industry Standardization" as VR technologies acquire importance in the real estate sector. Industry-specific standards and best practices may be created. Standardized data formats, VR device compatibility, and tips for producing immersive and user-friendly VR experiences may be covered here.

3.4 B. Non-VR Technology Users Interviewed

Real estate professionals without VR equipment have been asked questions.

Q 1: Are you utilizing any of these digital tools?

Answer: Participants were concerned with resource constraints and obstacles while using existing technologies in real estate. Adopting and integrating current technology requires time, knowledge, and resources, which may be difficult for certain businesses, particularly if their human resources are completely committed to their ongoing tasks. In such situations, it is critical to thoroughly consider the viability and possible benefits of integrating novel

technologies. Consider available resources, such as human resources, budgets, and time restrictions. There are a few aspects to consider.

1. The participant stressed resource allocation: the company's human resources must be assessed. Installing and managing new technology may be problematic if all resources are used for current tasks. Finding a balance between existing operations and new technology requires prioritizing and allocating resources.
2. Interviewers suggest "joint ventures or collaborations" with outside service providers that offer and manage the essential technology. Outsourcing or external expertise may help overcome resource limits and enable technological adoption. They advised considering a phased or progressive approach instead of full-scale execution. Resource optimization, learning, and gradual adoption are possible by starting with smaller trial projects or concentrating on areas where the technology will have a significant effect.
3. Interviewers emphasized "prioritization, ROI assessment, and continuous learning and adaptation."Prioritization and ROI assessment involve estimating each technology's ROI. Prioritize technology that supports a company's goals, has clear advantages, and can be implemented with present resources. A cost-benefit analysis evaluates each technology's viability. Technology and industry trends are needed for continuous learning and adaptation. Keep an open mind and adapt to new ideas and users. Reassessing resource availability and considering the advantages of new technology ensures an organization's relevance and competitiveness.

Q 2: Why is your company not currently utilizing VR technology?

Answer: Participants explored various VR difficulties real estate firms confront. Lack of knowledge and budget restrictions are major barriers to VR adoption. These issues are examined more here.

1. The participant identified budget constraints as a critical hurdle. VR devices, software, content, and maintenance are all expensive. The participant identified budget constraints as a critical hurdle. VR devices, software, content, and maintenance are all expensive. Due to cost constraints, they may need help to use VR technology.
2. Participants considered money restrictions a significant obstacle. Initial investments in VR equipment, software, content, and upkeep are high. Due to this high cost, small or financially strapped enterprises may struggle to invest in VR technology and may not fully employ it due to cost constraints.
3. The employees were worried about customers' preference for conventional marketing. VR may only be suitable for some target audiences, causing doubt. Businesses may be wary about VR marketing since consumers prefer conventional methods. Therefore, significant market research is essential to understand client preferences and prepare technology adoption. Therefore, extensive market research is needed to understand customer preferences and plan technological acceptance.

Q 3: What are the disadvantages of communication tools that are based on technology?

1. The answer mentioned "Technological Restrictions," stressing that technology dependability and accessibility impact communication instruments. Due to network

connection or software faults, these technologies may degrade communication. Businesses must overcome technical challenges to integrate and operate communication technologies.

2. The participant recognized the "learning curve" of modern communication methods. Introduced technology requires operators and receivers to learn how to utilize it. Those who oppose change or struggle to adapt may find learning new technology challenging. Overcoming these challenges requires adequate training and guidance to transfer and use new communication technologies smoothly.
3. The participant expressed concern about "inclusion and accessibility" in digital communication tools. Understanding that not everyone has access to or feels comfortable utilizing this technology is crucial. Technology proficiency may be affected by age, socioeconomic situation, and handicap. Communication systems must be flexible enough to suit various individuals to ensure everyone can access and benefit from these resources. Businesses that promote accessibility and inclusion may develop communication methods to reach more people and create a more inclusive atmosphere.
4. The participant expressed concern that technology-based communication would lose "the human touch and personal connection." Virtual meetings frequently fail to build trust and rapport like in-person talks. Virtual environments may make it harder to connect and form relationships. Therefore, firms must recognize and solve these limits and discover methods to bring human warmth and originality to virtual interactions, increasing engagement and connection.

5. Discussion and Conclusion

According to the study's research, many VR marketing campaigns and tools largely target the awareness and decision phases of the purchasing process. The restricted breadth of VR applications in marketing may be due to the absence of integrated devices that cover the full purchasing process. Contrarily, VR marketing solutions typically place a higher priority on improving the consumer experience and offering better product descriptions. VR technology is ideal for boosting outcome explanations and providing a virtual experience of a good or service, especially when it adds context-specific and highly relevant information to the actual world. These types of technologies are relatively straightforward to implement and offer immediate benefits, which could explain their prevalence.

However, there seems to be a gap in focusing on the true business value and customer perceived value of VR solutions that facilitate customer interaction with products and simplify purchasing decisions throughout the entire buying process. The study highlights a need for a broader perspective and a stronger emphasis on delivering holistic solutions that maximize customer experience while supporting the entire customer journey.

VR is relevant in marketing situations because it improves perceptions of usability and usability of usage (Chung & Jung, 2015). Cross-channel and omni-channel factors must be considered to build a holistic solution that offers this capability and optimises the customer experience. Marketing professionals can build a smooth and integrated consumer experience that enhances outcome engagement and makes purchase choices easier by integrating VR technology across various channels and interactions. In conclusion, the study suggests that there is a need to broaden the scope of VR technologies in marketing to encompass the entire

buying process. By focusing on true business value, customer perceived value, and incorporating marketers can leverage VR technology to deliver more comprehensive and impactful solutions that enhance the customer experience and facilitate purchasing decisions.

The integration of modern technologies requires significant human and financial resources, which can be a barrier for smaller businesses. The exploration and implementation of these technologies may be hindered by budget constraints and a lack of specialized personnel. As a result, some companies may struggle to fully embrace and leverage the potential benefits of innovative technologies. However, as the future unfolds, it is expected that technology providers will adapt their offerings to make them more accessible and affordable, allowing businesses of all sizes to utilize these tools effectively.

In the interviews conducted, it is acknowledged that there is awareness and knowledge about innovative technologies among professionals in the real estate industry. However, the practical adoption of these technologies may be contingent upon cost considerations. Businesses must examine the costs and advantages of deploying new tools and accordingly changing their plans. As the real estate sector changes and technology suppliers adapt to market expectations, firms should find it easier to use their current technologies. This would allow them to harness the potential of these tools, enhance their operations, and better serve their customers.

5.1 Study Limitations and Future Research Directions

This study focuses on VR marketing campaigns and technologies for the awareness and decision stages of the purchase process. The study's scope did not include a thorough analysis of VR apps throughout the buying process, including post-purchase interactions. Future study might look into integrating VR technology throughout the customer experience to have a better grasp of its usefulness in marketing.

Future study might look deeper into the genuine business benefit and perceived value of VR solutions in terms of enabling consumer contact with items and simplifying purchasing decisions throughout the buying process. Furthermore, researching the viability of combining VR technology across several channels and interactions to create a smooth and integrated customer experience would be advantageous. Furthermore, investigating the influence of financial restrictions and resource limits on the adoption and implementation of novel technologies, such as virtual reality, in marketing strategies might give useful insights for organisations of all sizes.

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