The Impact of Augmented Reality on Interior Purchase Intentions: A Study in Vietnam

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Abstract

Augmented reality (AR) technology, integrating virtual elements into the physical environment, offers promising avenues for marketers to engage consumers. Despite the AR market's anticipated growth and adoption across industries, its influence on consumer behaviour in shopping, particularly in Vietnam, remains underexplored. This study addresses this gap by quantitatively examining the effects of AR applications on customer dimensions - product knowledge, attitudes, and purchase intentions - compared to traditional website-based product experiences. Drawing data from a survey of 402 respondents in Vietnam, comprising both experimental and control groups, this research investigates AR's impact on shopping behaviour, with a focus on Generation Y consumers. The findings indicate that the AR application is seen as both enjoyable and useful, significantly increasing purchase intentions when compared to traditional website experiences. Although product attitude does not emerge as the main factor driving purchase intentions, the immersive AR experience and the unique product knowledge it offers are identified as key influencers. This study enhances our understanding of AR's potential to improve the shopping experience in Vietnam and offers valuable insights for marketers aiming to leverage AR technology to effectively engage consumers.

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ผลกระทบของความจริงเสริม (Augmented Reality) ต่อเจตนาซื้อสินค้าในงานตกแต่งภายใน: การศึกษาในเวียดนาม

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บทคัดย่อ

เทคโนโลยีความจริงเสริม (Augmented Reality - AR) ซึ่งผสมผสานองค์ประกอบเสมือนจริงเข้าไปในสภาพแวดล้อมทางกายภาพ ได้เปิดโอกาสใหม่ที่น่าสนใจสำหรับนักการตลาดในการดึงดูดผู้บริโภค แม้ว่าตลาด AR คาดว่าจะเติบโตและได้รับการนำไปใช้ในหลายอุตสาหกรรม แต่การมีอิทธิพลของ AR ต่อพฤติกรรมผู้บริโภคในการช็อปปิ้ง โดยเฉพาะในเวียดนาม ยังคงเป็นเรื่องที่ยังไม่ได้รับการศึกษามากนัก การศึกษานี้ได้ตอบโจทย์นี้โดยการศึกษาผลกระทบของแอปพลิเคชัน AR ต่อมิติของลูกค้า เช่น ความรู้เกี่ยวกับผลิตภัณฑ์, ทัศนคติ, และเจตนาซื้อสินค้า โดยเปรียบเทียบกับประสบการณ์การซื้อสินค้าผ่านเว็บไซต์แบบดั้งเดิม โดยการเก็บข้อมูลจากการสำรวจความคิดเห็นของผู้ตอบ 402 คนในเวียดนาม ซึ่งประกอบด้วยกลุ่มทดลองและกลุ่มควบคุม การวิจัยนี้ได้ศึกษาผลกระทบของ AR ต่อพฤติกรรมการซื้อสินค้า โดยมุ่งเน้นที่ผู้บริโภคในกลุ่มเจนเนอเรชัน Y ผลการศึกษา พบว่า การใช้ AR ถูกมองว่าเป็นประสบการณ์ที่สนุกสนานและมีประโยชน์ ซึ่งช่วยเพิ่มเจตนาซื้อสินค้าสำหรับผู้บริโภคได้มากกว่าการใช้เว็บไซต์ทั่วไป แม้ว่าทัศนคติของผลิตภัณฑ์จะไม่เป็นปัจจัยหลักที่กระตุ้นเจตนาซื้อ แต่ประสบการณ์การใช้ AR ที่ดึงดูดและความรู้เกี่ยวกับผลิตภัณฑ์ที่ได้รับจาก AR ถูกพบว่าเป็นปัจจัยที่สำคัญ การศึกษานี้ช่วยเพิ่มความเข้าใจในศักยภาพของ AR ที่สามารถยกระดับประสบการณ์การช็อปปิ้งในบริบทของเวียดนาม และให้ข้อมูลที่เป็นประโยชน์สำหรับนักการตลาดที่ต้องการใช้เทคโนโลยี AR อย่างมีประสิทธิภาพในการดึงดูดผู้บริโภค

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Introduction

The quick pace of technology growth has resulted in the quick obsolescence of earlier innovations. An example is how smartphones have replaced the use of old cellular phones, while the automotive industry is poised to transition to solar, hybrid, and electric vehicles (Do et al., 2020). The revolution is also seen in the convergence of several daily-use gadgets into a smartphone, which serves functions previously served by other tools, such as writing letters, alarm setting, flashlight use, listening to the radio, music playing, calendar organization, and telling time (Javornik, 2014). The advertising industry has been at the forefront of the revolution, raising awareness of the products as well as influencing purchase behavior by highlighting the most desirable aspects (Jamil, 2019).

In Vietnam, Augmented Reality (AR) is poised to transform the interior design market by providing interactive, real-time visual product information that seamlessly integrates virtual 3D objects into physical environments (Jung et al., 2015; Vonkeman et al., 2017). In comparison to the static 360-degree view provided by traditional 3D technology, AR allows consumers to see furniture and decor in their real-world living spaces, enhancing the shopping experience significantly (Olsson & Salo, 2011). The technology is already being adopted by big brands such as Ikea and Tiffany & Co., which speaks to its power to disrupt the market. The rise in the use of smartphones has also boosted the growth of AR, with it being a key tool in contemporary marketing (Martínez et al., 2014).

Despite the proven benefits of AR in fields such as education, gaming, and tourism (Do et al., 2020; Kogan et al., 2017; Liou et al., 2017), its impact on consumer behavior in mobile shopping, particularly within the interior design sector, remains underexplored. This research seeks to bridge this gap by examining how AR influences consumer purchase intentions and satisfaction in Vietnam's interior design market. Identifying the mediators and conditions under which AR is most effective will provide valuable insights for marketers in this burgeoning industry.

AR technology's capability to merge real-world and digital elements enhances the user experience, offering something unique compared to fully

immersive virtual reality (VR) (Sun et al., 2022). Since its creation by Boeing in the early 1990s, AR has undergone significant development, fueled by technological advancements, decreased costs, and the widespread availability of the internet and GPS (Javornik, 2016). Significant investments by prominent technology companies such as Google, Microsoft, Snapchat, and Facebook highlight the increasing significance and potential of AR (Constine, 2017). An understanding of the impact of AR on consumer behavior is significant, as it can revolutionize the strategy for marketing through the generation of interactive, immersive experiences with the power to engage consumers in a more meaningful way (Yaoyuneyong et al., 2016). The dilemma of whether AR can be effective in influencing customer attitude and purchase behavior is a marketer's dilemma (Owyang, 2010). The dilemma is addressed in the present study by focusing in the Vietnamese market for interior design, creating a unique context in which to explore the capability and effectiveness of AR.

Given the rapid digital transformation and the increasing importance of consumer engagement in Vietnam, researching AR in the interior design sector is both timely and essential. It will provide insights into leveraging AR technology to create more engaging and effective marketing strategies, ultimately contributing to the growth and innovation of Vietnam's interior design market. Further, with the increasing popularity of AR, it is worth discovering how it will impact older consumers, those most likely to be resistant to new technology, and how to break through these barriers (Bower et al., 2014). Also, the shifting consumption of media, with consumers viewing more smart screens and less TV, underscores the need for marketers to adjust their strategies in order to effectively engage with their consumers (Hopp & Gangadharbatla, 2016; Liao, 2015).

Despite the promising potential of AR technology, challenges remain in terms of its limited usage and graphical content, creating uncertainty about its future and the sustainability of investments (Bilgili Sülük & Aydin, 2019). This study aims to address these challenges specifically within the context of Vietnam's interior design market, providing a comprehensive analysis of AR's role and effectiveness.

Furthermore, the primary goal of this research is to bridge gaps in the existing literature on augmented reality by exploring its business potential, with a particular focus on its influence on consumer purchase intentions in Vietnam. This research seeks to provide empirical evidence on how AR applications impact consumer behavior in the Vietnamese market, offering practical insights for marketing managers in this field. Specifically, the study aims to answer the following research questions:

- RQ1: How does the use of augmented reality applications affect customers' purchase intentions in the Vietnamese market?

- RQ2: What specific factors contribute to the potential increase in purchase intentions when utilizing augmented reality applications in Vietnam?

This investigation specifically focuses on purchase intentions related to AR applications on smart devices in Vietnam, excluding other dimensions such as usage intentions or the application of AR in advertising. It is important to note that the findings of this study may be limited in their generalizability to other geographical regions due to the targeted focus on consumers within Vietnam. Additionally, cultural nuances and specific market conditions in Vietnam will be carefully considered throughout the analysis.

Furthermore, this study provides a comprehensive set of definitions to establish a shared understanding of key terms pertinent to the research, including AR, ARM (Augmented Reality Marketing), e-commerce, and purchase intention, within the unique context of the Vietnamese market.

Literature Review

Development of Augmented Reality (AR)

The concept of Augmented Reality (AR) originated in the 1950s when Morton Heilig envisioned enhancing movie viewing by stimulating the senses. Although his Sensorama simulator, developed in 1962, did not receive funding, the term «augmented reality» was later coined in the early 1990s by David Mizell and Tom Caudell from

Boeing (Carmigniani et al., 2011). The technology was initially used in the military, industrial, and medical industries, later extending to the commercial, marketing, sport, entertainment, and journalism industries (van Krevelen & Poelman, 2010). AR imposes digital elements over real-world scenery, which can be experienced through smartphones or large interactive screens (Javornik, 2014). In the business sector, AR enables consumers to try products such as clothes or furniture virtually in their environment, enhancing the consumer experience (Javornik, 2016). Popular brands including Converse, Coca-Cola, and IKEA use AR for advertising and demonstrations in order to engage customers (Marr, 2021). The use of AR in advertising has been further supported by the success of technology including Pokémon GO and the AR features of Snapchat, which have increased consumer awareness and adoption (Aslam, 2024; Seitz, 2016).

In the future, wearable computers such as Microsoft HoloLens and Google Glass have the potential to deliver more immersive AR experiences (Kalantari & Rauschnabel, 2018). Accessibility, data security, and privacy, however, remain the primary barriers (Statt, 2014). In the context of marketing, the research has been focused towards consumer adoption of AR, the impact of AR ads on purchase behavior, and how AR can be utilized to reduce return behavior while maximizing conversions in online shopping (T.-L. Huang & Liao, 2015; Javornik et al., 2017; Kim & Forsythe, 2010; Sung & Cho, 2012). The study shows AR can actually capture the attention of consumers in ads, improving the general shopping experience (Javornik et al., 2017).

AR Application in Marketing Research

Research in augmented reality (AR) marketing has mainly focused on a few topics. First, studies on consumers' adoption of AR technology have been done to explore the factors that influence consumers' adoption of AR applications (T.-L. Huang & Liao, 2015). Second, studies on consumers' perceptions of AR advertisements have been done to explore how consumers perceive and respond to the advertisement communications delivered through AR media (Yaoyuneyong et al., 2016).

Moreover, the research has made suggestions for designing effective AR experiences with the aim of achieving maximum user engagement and satisfaction (Javornik et al., 2017; Scholz & Smith, 2016). Scholars have also analyzed anticipated consumer response to various media aspects of AR and how various features of AR apps influence user behavior and attitude (Javornik, 2016).

Furthermore, consumer post-experience surveys have been conducted in order to assess the performance and impact of AR experiences in influencing the decision-making behavior of consumers (Kim & Forsythe, 2010). Of special relevance, the impact of AR in influencing purchase intentions, in the context of apparel retail, for instance, has been studied (Schwartz, 2011).

Schwartz (2011) in a seminal study underscored the power of AR to transform online retailing by providing consumers with more interactive and instant contact with products. Increased engagement, Schwartz added, could lead to a decrease in returns and an increase in the rate of conversions. AR has also been hailed as a powerful tool for attention-grabbing in advertising, offering marketers the possibility of creating effective campaigns.

Types of Augmented Reality (AR) in Marketing

Over the last few years, innovative outdoor ads with the use of augmented reality (AR) have been getting much media attention as well as consumer interest. A Swedish pharmacy, for example, added an interactive screen billboard in Stockholm with a smoke alarm which activated an anti-smoking video when it sensed smokers heading towards it (Mallinson, 2017). Pepsi also caught the attention of commuters by displaying real-time video with superimposed 3D objects, such as a tiger stalking or an attack robot on the glass front of a bus shelter (Fedko, 2023).

The transition to affluent hypermedia advertisements illustrated the power of AR in transforming consumer interaction with advertisements. Yaoyuneyong and team (2016) verified that AR hypermedia advertisements were more effective than print ads and QR ads in several areas including general performance, quality of the ads, attractiveness of the ads, recall of the ads, and success of the ads.

While the AR option required a smart device in order to view more information, the subjects believed it was more time- and effort-saving, which illustrates its information worth (Sung & Cho, 2012). The older, limited type of AR, the QR codes, did not receive broad consumer adoption through inefficient utilization of the advertising strategy, thereby limiting their impact in advertising (Stratten & Kramer, 2013).

In the field of AR applications in retailing, the focus lies in providing consumers with interactive products experiences to counter the lack of physical contact in digital environments. AR features such as virtual try-ons have been shown to be able to increase the rate of conversions as well as the rate of reductions in returns for online consumers (Schwartz, 2011). Moreover, off-line retail stores can apply AR to allow consumers to try products in the comfort of their homes before a purchase in the physical retail outlet, thereby enhancing the overall retail experience as well as the rate of sales (Lu & Smith, 2007). The success of AR in selling products, however, hinges on the effective influence of the virtual experience it presents to consumers as well as the level of consumers' adoption of the technology of augmentation.
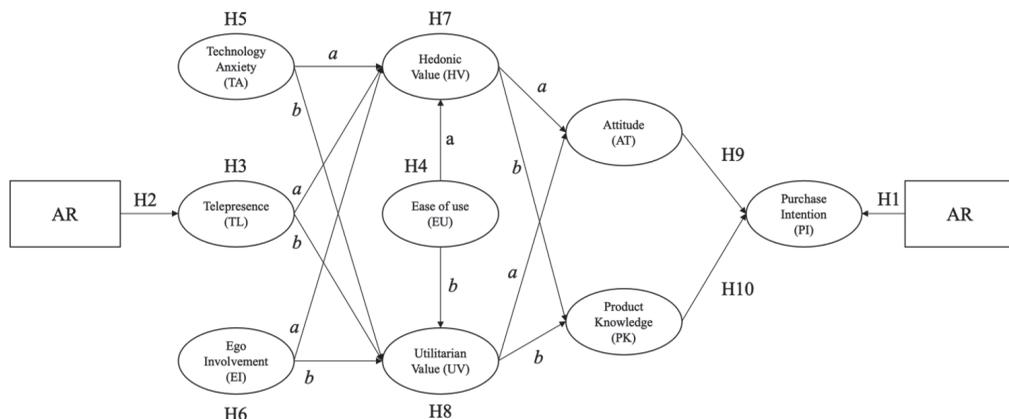
Conceptual Framework:

Figure 1: Proposed Conceptual Framework

This study investigates the influence of augmented reality (AR) in influencing consumer behavior and purchase intentions in the Vietnamese market for interior design. The conceptual framework integrates the most significant variables such as interactive image technology (IIT), telepresence, technology acceptance, and consumer behavior, and analyzes how the variables interact with one another in order to influence purchase decisions.

Interactive Image Technology (IIT) and Telepresence

Interactivity, or the ability for users to modify and interact with content in real-time, is a key feature of augmented reality (AR) technology. The interactive nature of AR is key in engaging consumers by enabling them to view products in their real environment and be able to interact with them (T.-L. Huang & Liao, 2015). Telepresence, or the sense of being physically present in a mediated or virtual environment, is a significant component in enhancing consumer experience. Research has proven the capacity of AR to create high telepresence levels to have a positive impact on consumer attitude towards products, as well as purchase intention (L. Huang et al., 2019). Telepresence is influenced by factors such as user control, media richness, as well as vividness, with user control being key in increasing the level of engagement in AR applications (Whang et al., 2021).

The Technology Technology Acceptance

The Technology Acceptance Model (TAM) suggests the most influential factors in technology adoption are perceived ease of use and perceived usefulness (Davis, 1989). More contemporary work added intrinsic factors such as enjoyment and entertainment value to the model, which are significantly influential in the adoption of AR applications (Venkatesh et al., 2003). User characteristics such as technology anxiety and innovativeness also have an impact on the adoption of AR technology. Gender also enters the equation in the relative weighting of hedonic values (Kim & Forsythe, 2010), which indicates the role of personality traits in technology adoption.

Consumer Behavior and Purchase Intentions

This strategy employs the Theory of Planned Behavior (TPB) which emphasizes the role of attitudes in the formation of purchase intentions (Ajzen, 1991). In AR, positive attitudes towards the technology and the product lead to higher purchase intentions. AR applications with visual attractiveness, ease of use, and enjoyment will likely generate positive consumer attitudes towards purchases (T.-L. Huang & Liao, 2015). Authenticity of the product in AR applications also plays an important role in the generation of confidence and purchase intentions. The accuracy of the display of products in AR is critical in the preservation of consumer confidence, as inaccuracies can destroy confidence and undermine the power of AR in driving purchases (Xu et al., 2023).

Hypotheses Development

The hypotheses development section presents a theoretical framework for the assessment of the impact of AR applications on purchase intentions in the Vietnamese market for interior design, an extension of Schwartz's model. By integrating hedonic and utilitarian values, usability, and human traits into the extended model, the research offers a comprehensive framework for evaluating the impact of AR-based shopping apps on consumers. Past studies have established the ability of AR to enhance telepresence, which is a primary purchase behavior driver. Given its highly interactive product displays, AR should be able to provide exciting shopping experiences resulting in favorable consumer outcomes (Mollen & Wilson, 2010; Tan et al., 2022). Based on these findings, the first hypothesis is as follows:

Hypothesis 1: AR experiences lead to higher purchase intentions compared to traditional 2D visuals within the Vietnamese interior context.

Telepresence in AR refers to the feeling of "being present" when interacting with virtual products in a real-world environment. AR, with its high interactivity, enables users to adjust the size and position of products in their living spaces, which is expected to result in higher telepresence compared to 2D product

presentations (T.-L. Huang & Liao, 2015; Saleem et al., 2024). Therefore, the second hypothesis is:

Hypothesis 2: AR experiences lead to higher telepresence levels compared to traditional 2D visuals within the Vietnamese interior context.

In addition to telepresence, AR is expected to enhance both utilitarian and hedonic values. AR allows users to control product interactions from various angles, helping them make more informed and rational decisions, especially for high-involvement purchases like furniture (T.-L. Huang & Liao, 2015). Moreover, AR provides a visually engaging and enjoyable experience, contributing to an increase in hedonic value (Sihi, 2018). Therefore, the following hypotheses are proposed:

Hypothesis 3a: Telepresence has a positive impact on utilitarian value within the Vietnamese interior context.

Hypothesis 3b: Telepresence has a positive impact on hedonic value within the Vietnamese interior context.

The perceived ease of use of AR applications is another critical factor in determining user satisfaction and the benefits they perceive. Studies have shown that the easier it is to use an AR application, the more gratifying and beneficial it is perceived to be (T.-L. Huang & Liao, 2015; Sihi, 2018; Tan et al., 2022). Hence, the following hypotheses are proposed:

Hypothesis 4a: Perceived ease of use has a positive impact on hedonic within the Vietnamese interior context.

Hypothesis 4b: Perceived ease of use has a positive impact on utilitarian value within the Vietnamese interior context.

Furthermore, technology anxiety can be a barrier to adopting AR. Previous studies have shown that technological apprehension negatively affects enjoyment and perceived utility of new technologies (Kim & Forsythe, 2010). Therefore, the following hypotheses are proposed:

Hypothesis 5a: Technology anxiety has a negative impact on hedonic value within the Vietnamese interior context.

Hypothesis 5b: Technology anxiety has a negative impact on utilitarian value within the Vietnamese interior context.

Ego involvement is hypothesized to influence users' perception and adoption of new technologies, including AR, particularly within the Vietnamese interior context (M. Kang, 2014). Therefore, the following hypotheses are proposed:

Hypothesis 6a: Ego involvement has a positive impacts on hedonic value within the Vietnamese interior context.

Hypothesis 6b: Ego involvement has a positive impacts on utilitarian value within the Vietnamese interior context.

Telepresence, through its influence on both hedonic and utilitarian values, is expected to affect consumer attitudes toward products and their product knowledge. Studies have shown that telepresence influences both attitudes and product knowledge (Do et al., 2020). Thus, the following hypotheses are proposed:

Hypothesis 7a: Hedonic value has a positive impact on attitudes towards the product within the Vietnamese interior context.

Hypothesis 7b: Hedonic value has a positive impact on product knowledge within the Vietnamese interior context.

Hypothesis 8a: Utilitarian value has a positive impact on attitudes towards the product within the Vietnamese interior context.

Hypothesis 8b: Utilitarian value has a positive impact on product knowledge within the Vietnamese interior context.

Finally, consumer knowledge of the product as well as consumer attitude will most likely have a direct influence on purchase intention. Previous research shows consumers are more likely to buy when there is a positive attitude towards the product, especially when consumers have the knowledge of the product through AR experiences (Smith & Swinyard, 1983). Given that telepresence is

generated by AR, which is felt as a direct interaction with the product (Saleem et al., 2024), the attitude expressed is predicted to be nearer to purchase intention. Therefore, the last two hypotheses are:

Hypothesis 9: Attitude towards the product has a positive impact on purchase intention within the Vietnamese interior context.

Hypothesis 10: Product knowledge has a positive impact on purchase intention within the Vietnamese interior context.

Methodology

Research Design, Population, and Sample:

Development of a research design plays a significant role in mapping the path of marketing research. Due to the suggestions of new research, the current study utilizes a conclusive design, its causal type, in exploring the cause-and-effect relationship between the experiences of augmented reality (AR) and consumer behavior in the Vietnamese market for interior design. Causal research has been well known to reveal cause-and-effect relationships in marketing environments (Bell et al., 2022).

The key to this strategy lies in the accurate definition of the targeted population and sampling plan. The study focuses on Generation Y due to their high technology usage and high adoption of AR. Generation Y, or digital natives, have high technology usage and purchasing power (Venkatesh et al., 2019). Studies have shown that 74% of the generation owns a smartphone, which makes them the ideal population to study AR-based consumer behavior (Vogels, 2019).

Population and Sample Characteristics

The population of study is Generation Y consumers in Vietnam, the future customers for interior design products, namely furniture, with smartphone or tablet accessibility. Generation Y is used in this study because of their technology adoption behavior, with most of them being among the early adopters of digital technologies such as AR, thus being apt for the topic of this study, which is the adoption of AR (Fadhilah & Aruan, 2023). The sample will be diverse in the sense that it will be

representative of different age groups, different gender groups, and different income groups, with the demographic variables of age, gender, and income controlled for during the analysis in order to avoid any bias.

Sampling Method

There are two broad approaches to sampling: random sampling and non-random sampling (Etikan, 2016). In light of the nature of the research, random sampling would have been the best for generalizability, but such a sampling process is impossible to implement in the absence of an exhaustive sampling frame, which we did not have at our disposal (Fink, 2024). Non-random sampling was, therefore, applied, specifically purposive sampling. The procedure lies in the selection of the participants in line with the relevance to the research topic, with only those fulfilling the specified criteria being admitted to the sample (Palinkas et al., 2015). We selected individuals with experience with or interest in AR technology, specifically in the field of interior design and furniture purchases.

To make the sampling process more efficient, convenience sampling was used, which is mostly utilised in academe research for its cost-effectiveness and ease of accessibility (Etikan, 2016). The convenience sampling process allowed us to get data from easily accessible populations such as university students, online forum participants, and consumers of online furniture discussion boards. While the process cannot ensure the same level of representativeness as random sampling (Jager et al., 2017), efforts were made to control for age, gender, and income to ensure the generalizability of the results.

Sample Size Calculation

To determine the appropriate sample size, the sample size calculation formula for proportions was applied, considering the study's use of regression analysis. The formula used is as follows:

$$n = \frac{Z^2 . p\ (1-p)}{E^2}$$

Where:

- n is the required sample size,
- Z is the Z-score corresponding to a 95% confidence level (1.96),
- p is the estimated population proportion (0.5 for maximum variability),
- E is the margin of error (set to 0.05).

Using this formula, a sample size of approximately 400 respondents was deemed sufficient to achieve reliable results and account for potential non-responses or incomplete data. This sample size ensures statistical robustness and improves the generalizability of the findings.

Research Measurement:

The collection of data for the research involved the combination of primary data with the secondary data to provide a solid foundation for reliable research (Saunders et al., 2003). The research began with the utilization of the secondary data, which comprised raw data alongside previously released summaries of other studies (Birks & Malhotra, 2006; Saunders et al., 2003). The secondary data formed the foundation for the research model as well as the literature review. The comprehensive review was significant in placing our research in the Vietnamese interior industry context.

Experimental Setup:

The research employs an experimental approach to investigate the causation between purchase intention and the use of augmented reality (AR) technology. The participants were divided into two groups: the control group saw only the images of the products online, while the experimental group used AR technology. The purpose was to examine whether the use of AR will impact purchase intention. The participants in the experimental group engaged with an AR application in a specially designed controlled lab environment meant to resemble the environment at home. The control group, however, responded to a survey after seeing the images of the products. The same product was used by both groups to control for variables such as price, quality of the product, and brand. The influence of the intervention was kept at

a minimum, with the internal validity assured by keeping the two groups completely apart, with the participants recruited from different sources.

Questionnaire Design

There was no existing research in the area of our specific queries, so primary data was obtained through a standardised questionnaire. The questionnaire was spread through the use of Google Forms to facilitate easy response with automatic transfer of data to SPSS for the purpose of analysis.

The control group and the experimental group both used the same questionnaire with itemized scales for measuring attitude and preference (Birks & Malhotra, 2006). A 7-point Likert scale with the options ranging from «Strongly Disagree» to «Strongly Agree» was used in order to capture the sentiments of the participants (Saunders et al., 2003). Exceptions were made for the questions regarding perceived knowledge of the products with Schwartz's (2011) scale ranging from «None» to «A Ton". Purchase intention with Papagiannidis et al.'s (2014) likability scale ranging from «Not at all likely» to «Very likely». Both the positive and the negative questions were provided in order to engage the participants fully (Saunders et al., 2003). The Vietnamese language was used in the questionnaire in order to ensure comprehension, with the questions being adapted for the scenarios of AR and online shopping while keeping the questions' meanings unchanged.

The structure of the questionnaire includes:

1. Demographic Information: Questions about age, gender, income, educational level, and occupation were included to control for demographic influences on consumer behavior and ensure comparable characteristics between the experimental and control groups.

2. Attitudes and Product Perception: Questions about participants' attitudes toward the interior product were measured using a 7-point Likert scale (Schwartz, 2011) to assess their liking, satisfaction, and perception of quality.

3. AR/ 2D Visual Experience and Interaction with Product: Questions gauging the effectiveness of AR/ 2D visual in helping participants visualize products in their environment were adapted from Venkatesh et al. (2003). Example questions include: "Did you find it easy to use AR to visualize the product?" and "Did AR help you make a more confident purchase decision?"

4. Purchase Intention: Purchase intention was assessed using a 7-point Likert scale from «Not at all likely» to «Very likely» (Papagiannidis et al., 2014), with questions like: "After using AR, are you likely to purchase this product?"

5. Product Knowledge: Knowledge of the product was assessed with a scale from «None» to «A lot» (Schwartz, 2011), evaluating understanding of features like material, functionality, and aesthetics.

Each question was carefully designed to ensure accuracy in data collection. The questionnaire was written in Vietnamese to ensure clarity and relevance, with answers processed in SPSS for analysis.

Data Analysis:

To analyze the experimental data, SPSS software was used. Data from Google Forms were first transferred to Excel to convert responses into numerical values, and then imported into SPSS for outlier and missing value checks. A software issue caused some responses related to ease of use to be unavailable. Since these missing responses were deemed to be missing completely at random (MCAR), they were removed on a pairwise basis when necessary for specific analyses (Pallant, 2020). To assess the characteristics of the sample, various statistical and exploratory techniques were applied, focusing particularly on the age and gender distribution within the control group to confirm that all participants were from Generation Y. Factor analysis (FA) was used to check reliability due to wording modifications in the scales. Principal component analysis (PCA) confirmed the appropriateness of the analysis, with the Kaiser-Mayer-Olkin (KMO) measure at .846 and Bartlett's test for sphericity confirming suitability (Pallant, 2020).

Cronbach's alpha was applied in the evaluation of scale reliability with the scales having satisfactory values between 0.712 and 0.901 ((Nunnally & Bernstein, 1978). Validated items by PCA were summed up to create scaled mean measures, while eta squared was applied in the calculation of the effect sizes with the cut-offs being .01, .06, and .14 for small, medium, and large effects (Cohen, 2013a). Spearman's rank-order correlation was applied in the exploration of relationships between variables as the distributions of the scores were non-normal (Pallant, 2020). Multiple linear regression analyses using the ordinary least squares (OLS) method were conducted to explore the relationships between variables. Multicollinearity was assessed through correlation matrices and diagnostic measures like «tolerance» and «VIF» (Pallant, 2020). Baron and Kenny's (1986) procedure and the Sobel test were applied in mediation with the indirect effects verified by the SPSS macro-PROCESS through bootstrapping for greater reliability in smaller samples

Results: Descriptive Statistics on Survey Respondents

Table 1: Results of Descriptive Statistics on Survey Respondents

		Experimental Group (n=158)		Control Group (n=244)		Total	
		Freq.	%	Freq.	%	Freq.	%
Gender	Male	68	43.04	147	60.25	215	53.48
	Female	90	56.96	97	39.75	187	46.52
Age	1829-	37	23.42	70	28.69	107	26.62
	3049-	91	57.59	132	54.10	223	55.47
	5065-	21	13.29	31	12.70	52	12.94
	65+	9	5.70	11	4.51	20	4.98
Education Level	High School	8	5.06	29	11.89	37	9.20
	Vocational School	27	17.09	23	9.43	50	12.44
	Bachelor's Degree	101	63.92	159	65.16	260	64.68
	Master's Degree	18	11.39	31	12.70	49	12.19
	Doctoral Degree	4	2.53	2	0.82	6	1.49
Occupation	Student	17	10.76	42	17.21	59	14.68
	Worker	48	30.38	78	31.97	126	31.34
	Officer	27	17.09	32	13.11	59	14.68
	Owner/ Business Founder	32	20.25	49	20.08	81	20.15
	Freelancer	21	13.29	37	15.16	58	14.43
	Others	13	8.23	6	2.46	19	4.73
Monthly Income (VND)	Under 10M	37	23.42	72	29.51	109	27.11
	From 10M to under 20M	51	32.28	89	36.48	140	34.83
	From 20M to under 30M	32	20.25	32	13.11	64	15.92
	From 30M to under 40M	17	10.76	19	7.79	36	8.96
	From and Over 40M	21	13.29	32	13.11	53	13.18

Table 1 provides a rich and detailed profile of survey respondents involved in a Vietnamese interior market study, showcasing the experimental group (n=158) and the control group (n=244).

As far as gender is concerned, 56.96% are female in the experiment and 39.75% are female in the control. On the other hand, 60.25% are male in the control and 43.04% are male in the experiment. When it comes to the age, the 3049- range is most dominant, where 57.59% are in the experiment and 54.10% are in the control. The 1829- year olds represent 23.42% in the experiment and 28.69% in the control, indicating a high youth presence.

The educational attainment of the respondents is quite high. Most of them hold Bachelor's Degrees, with 63.92% and 65.16% of the experimental and control groups, respectively. Holders of Master's Degrees are also prominent, occupying 11.39% and 12.70% of the experimental and control groups, respectively, while those who hold Doctoral Degrees are less prominent, comprising a minority in each group.

The occupational composition is varied, with workers being the most dominant, taking 30.38% and 31.97% in the experimental and control populations, respectively. Students and officers follow in the second order, with students taking 10.76% and 17.21% in the experimental and control populations, respectively, and officers taking 17.09% and 13.11%, respectively. Business proprietors and freelancers also represent major segments in both populations, reflecting the varied professional backgrounds.

Income levels are highly variable between respondents. The most common range is 10M and below 20M VND, which represents 32.28% of the experiment and 36.48% of the control groups. Respondents with below 10M VND represent 23.42% of the experiment and 29.51% of the control groups, indicating a high number of respondents with lower income levels.

Univariate Analysis

The experimental group had higher scores on all but one dimension, but lower scores on telepresence and technology anxiety (Table 2). However,

the telepresence difference was not statistically significant, which is the opposite to what was found by Schwartz (2011) and Fiore et al. (2005), who hypothesized that interactivity in AR enhances telepresence. Misregistration of virtual furniture and lack of graphical vividness most likely reduced user control, which may have impacted telepresence (Papagiannidis et al., 2014). Additionally, use of a tablet computer instead of a large screen could be to blame for the disparate findings. Additionally, belief in the accuracy of AR regarding product size and color was found to influence telepresence (Kim & Forsythe, 2010).

Table 2: T-test Results

	Experimental Group (AR Experience)		Control Group (2D Visual Experience)		Sig (2-tailed)	t	df.	eta squared
	Mean	Standard Deviation	Mean	Standard Deviation				
PI	4.82	1.00	4.08	0.78	0.000*	4.680	175	0.12
PK	3.45	0.82	3.53	0.91	0.211	-1.034	175	
AT	4.99	1.01	4.73	1.45	0.241	1.500	175	
UV	5.76	1.09	4.83	1.08	0.000*	4.601	175	0.13
EU	5.49	1.29	5.41	1.23	0.202	0.752	152	
HV	5.57	0.91	4.41	1.12	0.000*	5.241	150	0.23
TL	3.61	1.41	3.81	1.58	0.230	-0.711	175	
TA	2.33	0.67	2.67	0.86	0.002	-1.772	175	
EI	3.84	1.23	3.92	1.43	0.234	0.701	175	
Significant at the .01 level (2-tailed)								

As expected for Generation Y participants, both groups showed low levels of technology anxiety (Kim & Forsythe, 2010). Ego involvement was not strongly linked to furniture shopping. Product knowledge levels were similar across groups, contrary to findings by Li et al. (2002). However, the experimental group scored higher on «style,» «size,» and purchase confidence, with «size» being significantly higher.

The control group scored higher on «comfort,» «design features,» and «quality,» likely due to the vividness of high-resolution images. Therefore, while AR did not significantly improve overall product knowledge, it provided valuable information, such as product size, which enhanced the shopping experience compared to conventional e-commerce.

Both groups were positively disposed towards the product, with more positive attitude scores for the experimental group, though not statistically significant. Schwartz (2011) found a significant AR effect on attitude, which was not found in this study. This may be due to the fact that there was an equal amount of telepresence, which did not permit users to fully immerse themselves, or to the fact that both websites and AR equally affected attitude. The fact that the armchair was familiar and that the design was neutral may also have led to the lack of significant differences in attitude.

Both the app and website were found to be easy to use by the participants. There was no significant difference in how easy they were to use between the control and experimental groups, perhaps because Generation Y as a whole is so eager to adopt new technologies (Rowinski, 2012). They are used to frequent interaction with AR via social media applications like Snapchat (Rowinski, 2012) and Pokémon GO (Seitz, 2016).

The author identified greater purchase intention, and greater hedonic and utilitarian values, for the experimental group (AR experience) versus the control group (2D visual experience). This means that the AR experience is more enjoyable and functional than an ordinary website experience. The effect sizes were moderate to large for purchase intention and utilitarian value, and very large for hedonic value . While telepresence was equivalent between groups, the experimental group had significantly higher purchase intention, and telepresence may have a smaller effect on purchase intention than was believed (Papagiannidis et al., 2014). The interactive, hedonic features of AR may have more influence on purchase intention than product authenticity (Suh & Chang, 2006).

Gender distribution (59.3% females, 40.7% males) might affect group differences. Separate t-tests validated differences for each gender. Both genders showed significant differences in purchase intention, hedonic, and utilitarian values between groups, indicating AR's effects are not gender-specific. Higher purchase intention in the experimental group supports Hypothesis 1.

Results of Hypothesis Testing

Correlations Analysis:

Multiple regression analyses were conducted in order to assess the impact of augmented reality (AR) on participants' purchase intentions. Correlation analyses were conducted prior to conducting these analyses in order to determine the direction and size of the relationships between variables and to check for multicollinearity. Correlation matrices for the control group and experimental group showed no issues with multicollinearity ($r < .9$) (See Table 3).

A positive, monotonic, and statistically significant correlation was found between hedonic and utilitarian values, and between product knowledge and purchase intention in the experimental group (Table 3). This indicates that as these variables increase, purchase intention increases. A significant correlation was also observed between telepresence and product knowledge, indicating a positive monotonic relationship between the two variables, based on Cohen's (2013b) large correlation measure. It is also important to note that no significant correlations were found between ego involvement, technology anxiety, and the other variables. These personality traits capture the participants' stable characteristics instead of the experimental stimulus, and the low correlation values are expected, as they are influenced by individual differences instead of the study's manipulation.

Table 3: Correlation Matrix for Both the Experimental and Control Groups

	PI	PK	AT	UV	EU	HV	EI	TL	TA
PI	1								
PK	.713** (.510**)	1							
AT	.352** (.411**)	.305* (.306**)	1						
UV	.708** (.431**)	.423** (.171)	.398** (.222*)	1					
EU	.312** (.327*)	.389* (.465**)	.231 (.102)	.298* (.177)	1				
HV	.601** (.578**)	.423** (.490**)	.383** (.379**)	.531** (.567**)	.484** (.401**)	1			
EI	.081 (.307**)	-.076 (.067)	.182 (.198)	.045 (.287**)	.041 (.059)	.268 (.297**)	1		
TL	.541** (.298**)	.671** (.598**)	.334* (.295**)	.412** (.213)	.358** (.134)	.432** (.179)	.094 (.236)	1	
TA	-.052 (-.055)	-.134 (-.001)	.042 (-.081)	.040 (-0.189)	.023 (.032)	-.112 (.004)	-.072 (.071)	.083 (-.179)	1

(**) .01 level (Sig. 2-tailed), (*) .05 level (Sig. 2-tailed). Control group data are in parentheses.

Regression Analysis:

Table 4: Result of Hypothesis Testing

Hypotheses	Relationship	Coefficient*	p		Result	Adj. R²
H2	AR -> TL**	.062	.450	No sig.	Rejected	-.004
H3a	TL -> HV	.391	.020		Accepted	.287
H4a	EU -> HV	.341	.021		Accepted	
H5a	TA -> HV	-.242	.009		Accepted	
H6a	EI -> HV	.145	.292	No sig.	Rejected	
H3b	TL -> UV	.435	.000		Accepted	.282
H4b	EU -> UV	.182	.168	No sig.	Rejected	
H5b	TA -> UV	-.076	.530	No sig.	Rejected	
H6b	EI -> UV	-.001	.882	No sig.	Rejected	
H7a	HV-> AT	.191	.242	No sig.	Rejected	.174
H8a	UV -> AT	.303	.072	No sig.	Rejected	
H7b	HV-> PK	.392	.019		Accepted	.312
H8b	UV -> PK	.242	.108	No sig.	Rejected	
H9	AT -> PI	.181	.132	No sig.	Rejected	.545
H10	PK -> PI	.701	.000		Accepted	
standardized coefficient: β						
**data of both groups*						

In order to examine the impact of augmented reality (AR) on purchase intention, a six-step multiple regression analysis was performed to examine the paths and hypotheses of the model (Table 4). While all regression analyses were statistically significant (p <.05), simple linear regression on telepresence was not significant, indicating that exposure to the AR application or website is not a strong predictor of telepresence. This finding is aligned with the univariate analysis, which showed that technical problems and graphical limitations in the AR application may have undermined telepresence. The literature has emphasized that elements of

interactivity, user control, and graphic quality are salient in inducing telepresence (Papagiannidis et al., 2014). As such, hypothesis H2 is rejected.

The first regression analysis, where hedonic value was the dependent variable, included telepresence, ease of use, technology anxiety, and ego involvement as independent variables. Among these, telepresence and ease of use were the strongest predictors of hedonic value, and technology anxiety was also significant. Ego involvement was not a significant predictor. Collectively, these variables accounted for 28.7% of the variance in hedonic value (Adjusted R^2 =.287), whereby a one standard deviation increase in telepresence resulted in a.319-point increase in hedonic value. The negative contribution of technology anxiety indicates that higher anxiety decreases hedonic value, which supports the findings of Kim and Forsy the (2010). Hypotheses H3a, H4a, and H5a are thus supported, but H6a is not. The second regression indicated telepresence to be the only significant predictor of utilitarian value, accounting for 28.2% of its variance. A one standard deviation increase in telepresence resulted in a.435-point increase in utilitarian value. Hypotheses H4b, H5b, and H6b are thus rejected, and hypothesis H3b is supported.

The third regression analyzed the influence of hedonic values (HV) and utilitarian values (UV) on product attitude. Neither value significantly predicted attitude, against previous research (T.-L. Huang & Liao, 2015). The low Adjusted R^2 (.174) suggests the presence of other variables that can affect product attitude, and therefore hypotheses H7a and H8a are rejected. The fourth regression analyzed the influence of hedonic and utilitarian values on product knowledge, and hedonic value was the sole significant predictor. It explained 31.2% of the variance in product knowledge (Adjusted R^2 =.312), where an increase in hedonic value by one standard deviation would increase product knowledge by.392 points. This is consistent with the fact that emotional involvement helps in learning (Deater-Deckard et al., 2013). Therefore, hypothesis H8b is rejected, while H7b is supported.

Finally, the fifth regression examined the direct impact of attitude and product knowledge (PK) on purchase intention (PI). The sole significant predictor was product knowledge, which explained 54.5% of the variance of purchase

intention. Against the presumed attitude-behavior consistency (Schwartz, 2011), hypothesis 9 was rejected and hypothesis 10 was supported. The two groups' similar levels of product knowledge and attitude toward the product suggest that a greater purchase intention of the experimental group cannot be attributed to product knowledge only. One plausible explanation is that the features of products, including the chair's size discovered by AR, have determining roles in stimulating purchase intention. Alternatively, other unforeseen variables also take part in the effect on purchase intention. An additional regression analysis, in which hedonic and utilitarian values and product knowledge were predictors, yielded a significant model (f(3.62) = 79.83, p <.000, Adjusted R² =.819). Utilitarian value contributed the most (β =.501), followed by product knowledge (β =.421) and hedonic value (β =.316), validating the direct effect of hedonic and utilitarian values on purchase intention.

Table 5: A Mediation Analysis of HV through PK on PI

		β	Unstandardized coefficients	Standard Error	Sig.	Adj. R²
total effect	HV → PI	.750	.520	.631	.000	.558
	HV → PK	.548	.542	.103	.000	.290
	HV → PI	.488	.661	.109	.000	.710
	PK → PI	.469	.660	.121	.000	
Indirect (std.) effect	(.550) * (.462) = (.254)					

Mediation analysis (Table 5) revealed that product knowledge partially mediates hedonic value's effect on purchase intention, as corroborated by the Sobel test (z = 3.69, p <.01) and standardized effect (.254). This suggests that while hedonic value has a direct influence, communication of product knowledge is essential to bring about high purchase intention in the AR experience. In the context of augmented reality (AR) and how it impacts purchase intention in the Vietnamese interior industry, it is clear that hedonic value, utilitarian value, and product knowledge obtained through the use of AR are the determinants of purchase intention. In the case of

the experiment group, the formation of purchase intention is more than the direct experience of telepresence and attitude mediation, as suggested by Schwartz (2011). Alternatively, creating a pleasant experience in terms of hedonic value-driven allows for the conveyance of product knowledge. Surprisingly, in the control group, hedonic value was the strongest driver of purchase intention (See Table 6). This connection between hedonic value and purchase intention is consistent with earlier research on non-augmented online shopping, offline consumer behavior (Chiu et al., 2014), and virtual product experiences in computer-generated environments (Papagiannidis et al., 2014).

Table 6: Predictors of PI

Variables	Experimental Group (AR Experience)		Control Group (2D Visual Experience)	
	β	Sig.	β	Sig.
HV	.259	.005	.376	.000
UV	.442	.000	.089	.212
PK	.386	.000	.278	.000
AT	-.065	.401	.209	.001

In comparison to the control group, it is apparent that both product knowledge and utilitarian value have a bigger influence on purchase intention (Table 7). This means that being able to experience virtual furniture in one's own home makes the experience more interactive, and the product knowledge acquired from it is more relevant to users' intentions and purchasing decisions. Although the direct influence on purchase intention is less strong in the experiment group, the overall influence, including the indirect influence through product knowledge (Table 5), is the same.

The findings obtained here differ from Schwartz's (Schwartz, 2011) findings, where attitude was the most significant predictor of purchase intention and also mediated the effect of product knowledge in uses of virtual try-on. There are several reasons why these findings could differ, including the type of the AR app, which is

less directly engaging users than personal virtual try-ons, the highly ego-involving type of apparel products in Schwartz's study (Michaelidou & Dibb, 2006), and the failure to provide a higher level of telepresence by the app than by the website (Table 2). These variables emphasize the importance of rational factors related to furniture (PK) and the user's attitude toward the app itself (HV and UV).

Finally, Figure 2 illustrates the adjusted model representing the processes leading to purchase intention for the experimental group. The model reflects the complex interaction between hedonic values and utilitarian values, product knowledge, and their combined effect on purchase intention in the Vietnamese interior applications.
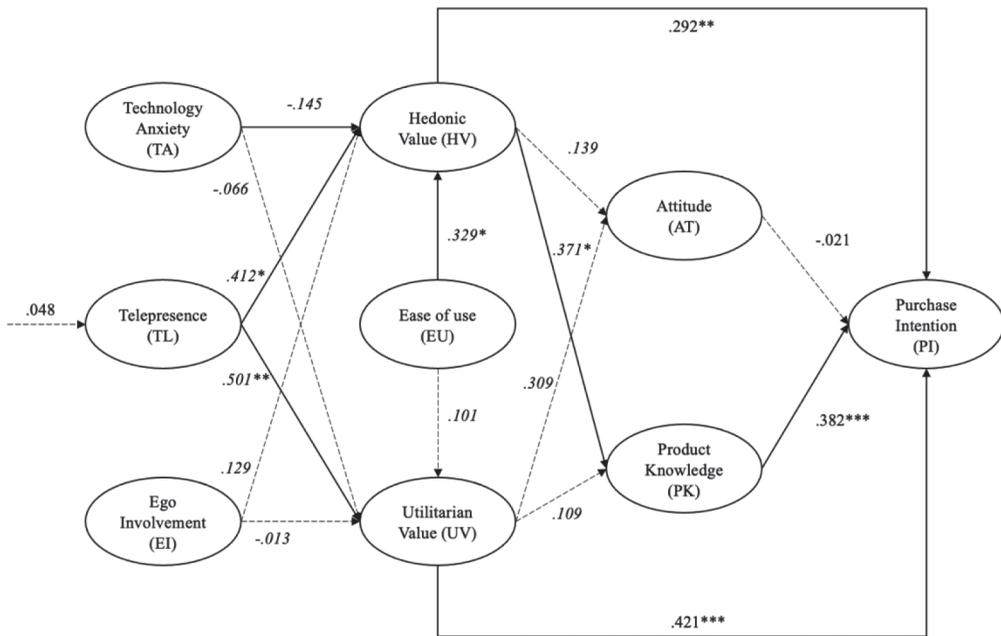
Dashed arrows represent pathways that were not found to be statistically significant. (*) p<.05, (**) p<.01, (**) p<.001

Figure 2: Revised Model for the Experimental Group

Discussion

This research illustrates the influence of augmented reality (AR) apps on Vietnamese consumers' purchase intentions. The research validates that hedonic and utilitarian values and product knowledge acquired through the AR experience play a significant role in developing purchase intention. These findings illustrate the progress of interactive technology over the research of Olsson and Salo (2011). The research further illustrates how the cultural background in Vietnam affects the adoption of AR, indicating that cultural issues have a great influence on technology acceptance and usage.

While our approach was quantitative in nature, qualitative remarks were elicited from the participants, with them being amazed at the capability of the AR application to mirror real furniture. This finding is in agreement with Javornik's (2016) AR study. While new, Generation Y lacks hands-on experience with AR. A few of the participants liked the AR experience but did not see it being used in the future for purchases, in agreement with concerns about AR being considered gimmicky (Owyang, 2010; Scholz & Smith, 2016) with low usage intention. This can be attributed to cultural factors, with Vietnamese consumers placing importance in other aspects of the purchase experience. Our trial highlighted the significance of ease of use and telepresence for AR applications to be considered useful.

The research also investigated the influence of AR by gender. Hedonic and utilitarian values and purchase intentions were equally affected in men and women. Women, however, showed greater technology anxiety, as implied by Reidsma (2013). The control group females liked the experience more than the control group males, in line with the finding that women shop for fun while males shop for rational choice (Dennis et al., 2010). This supports the idea that AR applications may be attractive in various ways to various demographic groups, and tailored experiences may be needed in order to maximize engagement.

Despite the skepticism surrounding the utility of AR, our findings showed that AR experiences positively influence purchase intentions. The finding, although in its preliminary stage, can change the minds of marketing managers and justify

AR investments. The opening up of Facebook's open AR platform by Mark Zuckerberg (Constine, 2017) underscores the promise of AR, as it allows developers to create with the present smartphones. This indicates the changing role of AR in the digital marketplace, particularly in markets such as Vietnam, whose mobile technology consumption is increasing. Our data showed the AR application was as simple for the participants to use as traditional e-commerce websites, which proves the acceptability of AR technology by Generation Y.

Low technology anxiety with high hedonic and utilitarian values suggest a high intention to use AR technology, especially among Generation Y. The cultural setting should be taken into account, however, as consumers in Vietnam may have different levels of awareness of AR as well as different expectations for its use in shopping experiences. The generation should be targeted by companies with AR applications, with entertainment and usability placed at the forefront in order to maximize engagement and purchase intentions. AR applications can be used to raise knowledge of the product, potentially reducing return rates as Schwartz (2011) suggests. AR, however, will need to use more in-depth information about the product as well as opinions in order to fully replace traditional ways of shopping. The participants also highlighted the assessment of personal comfort, which suggests AR applications will need to balance fun with usability.

AR can be viewed by retailers as a behavior-influencing technology, with experiential rather than functional benefits (T.-L. Huang & Liao, 2015). Quality of the graphics, saturation of the color, and elimination of bugs in the program can enhance telepresence and engagement. Allowing the possibility of viewing multiple furniture products at once may enhance the shopping experience, just the same as in the instances of e-commerce and m-commerce (McDowell et al., 2016). Businesses should also consider the cultural preferences of the targeted market when creating AR applications to ensure compatibility with the behavior and expectations of the consumers in the area.

The results of the study must be viewed in the context of several limitations. The lab experiment and the convenience sampling can potentially limit

the generalizability of the results to other populations outside Generation Y and in real-world environments. The cultural variations in technology adoption were also not completely tested, which can impact the generalizability of the results in other markets. The sample size for the experimental group can be too low for the results to be generalizable, and the single-product category of the study can limit generalizability. The ease-of-use ratings can be influenced by the tutorial presented by the researchers, and the use of a bigger display device in the lab setting can impact the perception of the participants.

Considering the novelty of AR technology and the limited existing research, there is a need for more empirical work. Future research can use experiential approaches in measuring the response of participants to AR technology with stimuli representing real interactive experiences. Researchers can also investigate the impact of cultural factors in the adoption of AR since cultural beliefs can influence consumers' behavior in responding to AR applications as well as how consumers interact with AR applications. Further evaluation of the developed model with other augmented products and virtual try-on applications can yield more precise results. Researchers can investigate UX factors related to enjoyable experiences and whether user attitude towards AR apps can impact purchase intentions.

Evaluation of the value of AR across various user segments and consideration of cultural variation in technology adoption will enhance the external validity of research on AR. Research should also examine the effects of AR on less interactive and more regularly purchased products, as utilitarian values linked to interactive image technology may vary by product category.

Conclusion

The purpose of the current study was to investigate the effect of an augmented reality (AR) shopping program towards the purchase intentions of customers in the Vietnamese interior market. In order to accomplish this, we addressed the following research questions.

RQ1: How does the use of augmented reality applications affect customers' purchase intentions in the Vietnamese market?

The primary research question was whether the purchase intention of Vietnamese consumers is influenced by an AR application. From our experiment, we observed higher purchase intention from the group of experimental, which experienced the AR, compared with the group of control, which watched a static screenshot of an online shopping website. The outcome contrasts with Schwartz (2011), in which the presentation of the AR technology had been in video form. From the findings, it is obvious that an interactive AR application is not a novelty, but an effective instrument, which can efficiently alter users' purchase intentions and potentially convert them into actual purchasers.

RQ2: What specific factors contribute to the potential increase in purchase intentions when utilizing augmented reality applications in Vietnam?

The second research question analyzed the determinants of the enhanced purchase intentions when consumers engage with an augmented reality application in Vietnam. The results reveal a number of significant determinants of the enhanced purchase intention with the AR application. More specifically, the greater utilitarian and hedonic values of the AR experience had a direct impact on users' purchase intentions. The hedonic value of the AR experience, specifically its ability to increase product knowledge, also contributed to the increase in purchase intentions. In alignment with previous studies, the learned product knowledge by 3D augmentation positively impacts subsequent purchase intentions. However, it should be noted that, despite the product knowledge provided by AR being unique compared to traditional online experience, it is somewhat limited.

Contrary to expectations, the AR experience did not influence product attitude and did not have a direct influence on purchase intentions. The hypothesis that AR-induced telepresence is the primary driver of increased purchase intentions could not be supported. Yet, the AR experience, based on hedonic and utilitarian values and enhanced product knowledge, can increase purchase intentions if the app is simple to use and can trigger effective telepresence.

In light of the reviewers' comments, it is important to note that the use of AR technology should be focused not just on how it will influence consumer behavior, but also the effective measures business organizations can take in order to utilize AR. The study highlights the importance of having a fun as well as a rewarding AR experience as the two have a great impact on purchase intentions. Moreover, business organizations, particularly in the interior design industry, can optimize the use of AR by ensuring the information provided is accurate and useful to the consumer, leading to an increase in the rate of conversion.

The findings also show cultural factors can be a significant determinant in the adoption of AR technology. While the study focuses on the Vietnamese market, future research should examine how cultural factors can be applied to influence consumer behavior towards AR. Different cultural values and consumption behavior can influence how AR is perceived and embraced, which can vary in different regions. Future research should, therefore, examine how cultural nuances can be applied to influence marketing strategies, ensuring the effective design of AR applications to match the needs of different consumer groups.

In short, the current research emphasizes the ability of AR applications to elevate purchase intentions in the Vietnamese interior market. By leveraging the unique strengths of AR, such as increased knowledge of products and interactive user experience, business organizations can potentially increase their rate of conversion as well as revenue generation. However, for maximizing the benefits of AR, business organizations should try to increase usability, the accuracy of the information about products, as well as the attractiveness of the application. Moreover, future research should explore the contribution of cultural differences in the adoption of AR as well as how such factors can be integrated into more effective marketing campaigns in various consumer markets.

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