

Analyzing The Phenomenon of VR Shopping Based on SWOT Analysis

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Abstract. People and businesses are becoming more interested in VR shopping as online shopping grows. The goal of this research was to examine the benefits, drawbacks, possibilities, and risks of virtual reality buying, as well as how perceived ease of use (PPEOU) and usefulness (PU) influence consumers' behavioral intentions. This paper used the method of SWOT analysis and came to several conclusions. That is, VR shopping has some strengths. Firstly, it is convenient, which is related to PEOU and PU. Additionally, it strongly affects behavioral intention. Secondly, it is enjoyable, allowing customers to have an immersive shopping experience, and it has perceived usefulness. Furthermore, PU enhances behavioral intention. Finally, it offers a more user-friendly and straightforward interface, which is connected to PEOU and PU. For the weakness, the technology of VR shopping is not perfect enough, which cannot show more details for consumers such as the texture of clothing. This is linked to PEOU and PU and, as a result, lowers behavioral intention. For the opportunities, VR shopping in the age of fast e-commerce growth. For the threatens, the epidemic cad problems with funding, which means there is not enough money to develop VR shopping technology. It affects PEOU and PU, ultimately lowering behavioral intention. Overall, companies should build on their strengths and avoid taking risks. Thus, developing VR shopping is better.

Keywords: Technology Acceptance Model (TAM); Perceived ease of use; Perceived usefulness; VR shopping; SWOT.

1. Introduction

1.1 Research Background

With the development of the technological era and the advent of 5G technology, sales networks have a certain scale. In addition, sales networks covered the entire world. As well as that, many people cannot go out due to COVID-19. As a result, more and more people choose to do their shopping online by using a shopping app such as Taobao. However, online shopping cannot enable people to choose a suitable product. The reason for this is that people cannot try on new clothes or shoes so that many people find they cannot buy the product they really like. For example, the style of clothes and shoes does not suit them. However, they cannot find that via online shop-ping. Therefore, it promotes the emergence of a new shopping method of VR. The VR shopping method converts information into experience, which improves effectiveness. VR can enable people to try on new clothes or shoes via the Internet. The new shopping method of VR can help people choose the clothes or shoes that suit them. In addition, virtual reality is the best medium for creating immersive and engaging content. The VR shopping method is convenient and enables people to better know the product, such as a house. Currently, more and more businesses use the VR to see the house in full. People can see the real house's structure and rooms, which is convenient for them. The reason for this is that they can see the house from their home instead of going out. Compared to the traditional structure map, the VR map enables people to have an immersive experience and obtain a more intuitive feeling.

Now, virtual reality is being used in every aspect of life and has become a new trend in sales. More and more businesses are paying attention to the application of VR in shopping. VR shopping means that people can choose the product that is best for them before they go to the physical store. As well as that, VR shopping enables people to shop in a three-dimensional environment. That is, people can look at three-dimensionally realistic scenes of shops and goods, and they can try out all kinds of goods in the mall as they wish. For the VR shopping method, some studies have been done by some

researchers. For example, the research showed that interactive user-defined gestures as a flexible input method are widely applied in the area of human-computer interaction, such as VR, which aims at achieving the new interaction modes. That is, people can use their own knowledge, psychological models, and experiences when they use VR technology. However, gesture-based applications still lack the traditional routine and common guidelines. As a result, some research has been done on gestures like the challenge and the solution [1, 2]. Furthermore, several researchers showed that VR shopping lacks a good user interface and have investigated if the user interface of VR shopping centers has a positive impact on customer satisfaction when compared to traditional shopping centers [3, 4]. For example, Lee and Chung studied the user interface of the VR shopping center to determine whether it has positive impact on consumers' satisfaction compared with a common shopping center [3]. Speicher also researched similar projects, specifically the user interface. It was thoroughly researched on how to improve the quality of the user interface, such as by using a three-dimensional interface.

1.2 Research Gap

Although there is a great deal of research about VR shopping, the way people shop has changed due to the emergence of the epidemic, the development of people's shopping patterns, and the extension of online platforms. There are only a few studies about some aspects of the new shopping method of VR shopping. For example, what are the benefits of VR shopping for various marketing outcomes, and how would consumers' attitudes and behavioral intentions regarding the VR buying channel differ based on PEOU and PU? This paper will aim at those two points to conduct a study. VR shopping is different from traditional shopping. This paper tells people about the benefits of virtual reality shopping, which can help businesses decide whether to create a virtual reality shopping center. As well as that, VR shopping enables consumers to obtain engagement, and VR as a new marketing idea is becoming more and more popular in this society. It is necessary for every company to know the marketing value of VR shopping so that they can get higher returns. As well as that, it is worth setting up a VR shopping mall, which can help consumers acquire a better shopping experience. People no longer have to worry about not being able to go out and buy the appropriate products because of COVID-19. As a result, it is important for companies to use VR for marketing to maximize profits.

1.3 Structure of this paper

Firstly, this paper will describe VR shopping applying the theory of the technology acceptance model. That is, it will utilize the PEOU and PU to explain VR shopping. Secondly, it will conduct verification via the SWOT method, which identifies strengths, weaknesses, opportunities, and threats. Finally, it will draw some conclusions. For example, the benefits of VR shopping have different marketing effects. As well as that, the advantages and disadvantages of the VR shopping model.

2. Literature Review

2.1 Definition & Development

The Technology Acceptance Model (TAM) is a theory of information systems that were developed to predict technology acceptance [5]. The theory of TAM is regarded as the most powerful and commonly applied theory to characterize individuals' technology acceptance. The PEOU is that individuals assert to some systems will be effortless to the extent [6]. The PU of an item of information corresponds to the usefulness that a decision-maker attaches to it in a certain decision-making process [7]. Fred Davis proposed the Technology Acceptance Model in his Doctoral dissertation in 1985. [5]. He pointed out the purpose of this model, which is to explain the determining factor in accepting the computer [5]. These factors are thought to explain the widespread utilization of computers by people [5]. As well as that, he suggested that system usage is a reaction that can be described or anticipated with user motivation, which is impacted effectively by external stimulation

such as real system attributes and capabilities [5]. The technology acceptance model is widely utilized in different technologies.

2.2 Important Results

PEOU will benefit consumers' attitudes and behavioral intention. In 2011, one of the research projects done by Suki focused on 3G services and behavioral intention, primarily exploring the connection between 3G and behavioral intention. To obtain cross-sectional data for this work, 100 questionnaire surveys were used, which contained the two sections of the demo and the link between PEOU, attitude, and behavioral intention of customers utilizing 3G mobile services [8]. In addition, it is the Statistical Package for Social Sciences to conduct a correlation and regression analysis to discover and test for any causal relationship between two variables [8]. Finally, it was determined that PEOU improves customers' behavioral intentions and attitudes regarding 3G mobile services [8]. Verma and Sinha conducted another study that revealed that the research project was on the PEOU of mobile phone applications and behavior intention, and it primarily explored the link between the ease of use of technology and behavior intention [9]. This paper used the method of probabilistic sampling techniques for whole-group random sampling [9]. That is, it chose 173 farmers from different villages [9]. Besides, it used factorial analysis and regression analysis to conduct data analysis [9]. The method of collecting data is by using a questionnaire and the multiple models of ordinary least squares to do further data analysis [9]. Finally, it came to the conclusion that PEOU will benefit behavior intention, and attitude will play a mediating function in the link between PEOU and behavior intention [9].

PU has also positive impacts on consumers' attitudes and behavioral intentions. Nadim and Noorjahan complete the research that showed a relationship between PU and the area of electronic banking [10]. Besides, it mainly explored how PU is the determining factor of actual behavior and encouraged the utilization of more creative and friendly self-service machines in banks [10]. The reason for this is that it gives them more autonomy. Therefore, the higher the PU of utilizing e-banking services, the higher the probability of adopting e-banking [10]. In this paper, it adopted the structural questionnaire to collect data [10]. That is, it collected the data of private Business Banking e-banking users from Bangladesh [10]. Finally, it made the conclusion that PU has positive impacts on consumers' attitudes and adaptation [10]. Moslehpour et al. conducted another piece of research that indicated a link between the purchase intention of electronic products and their PU [11]. It took Internet consumers as the focus of the research project and primarily explored how PU affects consumers' purchase intentions [11]. This paper truncated sampling method and the questionnaire survey method [11]. Finally, it made a conclusion that PU will boost purchase intention of electronic products [11].

2.3 Summary

In conclusion, these studies outline that PEOU and PU will benefit the consumer's behavioral intention and attitude. The objectives of this paper were to show the connection between PEOU and PU as well as customer attitudes and behavioral intentions toward adopting VR purchasing channels. With the rapid development of technology, more and more people are using VR to make purchases. People should think about the effects of this purchase method. This paper takes into account PEOU and PU as favorable factors influencing VR purchase behavior.

3. Method

3.1 Research Design

This paper will adopt one research method. That is, it will conduct a qualitative analysis and a SWOT analysis of the research subject. According to the qualitative analysis approach, a simple test that often yields only pleasant and because findings is applied to identify whether a certain item exists or not [12]. That is, it depends on the subjective judgment and analysis abilities of the predictors. As

well as that, it is important to consider the perspective of other people, such as the expert's opinion [12]. The SWOT analysis has four components: strength, weakness, opportunity, and threat. As well as that, it can enable people to better understand how to their own strengths to achieve new opportunities [13]. As well as that, people can know the weaknesses to slow down progress and reduce the external threat [13]. In addition, SWOT analysis contributes to identifying the relationship between the various parts, and it is often applied in commercial fields such as business marketing [13]. Usually, this analysis method can conduct comprehensive, systematic, and accurate research, focusing on the situation of the research subject. What's more, the conclusions obtained through the SWOT analysis method are usually decision oriented.

This paper accords with the characteristics of the qualitative method with SWOT analysis. The reason for this is that this paper will give the conclusion and relationship through the SWOT analysis. As well as that, this paper wants to SWOT analysis to point out the strengths, weaknesses, opportunities, and threats of virtuality shopping, which can help companies implement this new marketing approach to varying degrees depending on their circumstances. Some researchers also applied the SWOT analysis to study similar research. For example, Ylilehto and others applied qualitative research methods to explore customers' shopping experiences in technological contexts [14]. Purwantono and others conduct a study that is about the online shopping experience, especially the VR shopping experience [15]. It applied the SWOT analysis method to assess the VR store's strengths, weaknesses, opportunities, and threats [15]. This paper considered that VR stores reduce people's long waiting times in physical stores. However, there are some technical challenges [15]. Therefore, a similar topic can be studied using these two approaches, and this paper will use these methods of qualitative analysis and a SWOT analysis to analyze VR shopping.

3.2 VR shopping

VR shopping is a three-dimensional shopping environment generated using VR technology. For example, VR shopping can enable people to see real store and products by wearing a glass, which can help people visit shopping malls all over the world and try all kinds of goods easily. In some environments, consumers can use head-mounted displays to enter a completely immersive three-dimensional environment [16]. As well as that, they can move their bodies, capture any products, and see the products from various perspectives [16]. The consumers even talk to the salesmen, who appear as a Robert [16]. In 1992, Steuer put forward the definition of VR, which is the experience of telepresence in a true or virtual environment [3]. In 1999, VR was defined as a high-level visualization form [3]. With the popularity of online shopping, people are gradually realizing that this is a very new way of shopping. However, online shopping methods do not help people choose the right style and size of products for themselves. As well as that, more and more people cannot go shopping due to COVID-19. As a result, people began to investigate the VR shopping model. VR shopping brings people a convenient and efficient shopping experience so that more and more people are willing to try this mode of shopping. The reason for this is that they can now explore diverse styles that they were previously afraid to try in physical stores.

3.3 SWOT Analysis

Strength. VR shopping has some strengths. Firstly, VR shopping as a new shopping method is convenient. It can enable people to use 3D measurements to scan their bodies, which can help them choose the best one. This strategy is described as PEOU and PU. Additionally, it significantly affects behavioral intention. The reason for this is that people can buy things like clothes in their size without having to go out. Due to COVID-19, more people cannot go out to choose their clothes. Therefore, this method of 3D measurements improved convenience, which will benefit behavioral intention. Secondly, the article showed that consumers pay attention to enjoyment when they are shopping [17]. This is because people discover interesting interactions pleasurable [17]. VR shopping can create a virtual mall to enable people to acquire an immersive experience. Therefore, VR shopping can help customers enjoy their purchases. Therefore, it has PU. As well as that, PEOU and PU will boost

behavioral intention. This is because the more customers enjoy the overall shopping atmosphere, the more they are willing to consume. Thirdly, VR shopping malls have a more friendly and clear interface [3]. This is because VR shopping malls include 3D pictures and virtual images [3]. The user's interface has PEOU and PU. It significantly improves the satisfaction and behavioral intentions of consumers [3]. This is because vivid media and websites can increase higher levels of consumer engagement [3]. Overall, VR shopping is convenient, which can improve its PU and PEOU. Besides, VR shopping makes customers enjoy shopping, which can improve its PU. As well as that, VR shopping malls have a new, clear, and vivid interface compared with traditional online shopping, which can improve their PU and PEOU. Each of these benefits will increase PEOU and practicality to varying degrees and ultimately increase consumers' behavioral intentions.

Weakness. The new model of VR shopping has some weaknesses. For example, the existing VR technology makes it difficult to show the details of each product, such as the material and texture of clothes [18]. This condition links to perceived PU and PEOU. Besides, it has negative impacts on consumers' behavioral intentions. The reason for this is that it is difficult for customers to better understand the products they want to buy. Hence, this condition will affect consumers' behavioral intentions. Overall, underdeveloped VR technology, such its inability to display every detail, lowers its perceived utility or usability, thus, in effect, lowers behavioral intention.

Opportunity. An e-commerce industry is expanding quickly, and online shopping is the most advanced shopping model. More and more people want to choose online shopping as their shopping model. Gupta showed that e-commerce has changed the Internet's pattern of competition [19]. As well as that, a computer network of communication creates an e-commerce market for consumers [19]. According to the World Trade Organization, e-commerce is important and efficient for trade and online shopping [19]. The external environment will boost consumers' behavioral intentions. Overall, the expansion of the e-commerce market has made online shopping popular, and the injection of a large number of companies into the online shopping platform has allowed VR shopping to reach its potential on the basis of online shopping. In addition, VR shopping technology will continue to develop and become more perfect. These opportunities will boost PU and PEOU. Ultimately, the improved PEOU and PU will affect behavioral intention. That is, it will improve consumers' behavioral intentions.

Threaten. Due to COVID-19, e-commerce in the United States, Europe, Asia, and other parts of the world is affected [19]. That is, the e-commerce market faced a challenge. The reason for this is that they have faced the uncertainty of a coronavirus outbreak [19]. For example, Amazon invested huge funds in shipments [19]. However, it has not been compensated so far [19]. As a result, more and more e-commerce businesses faced challenges that would affect consumers' behavioral intentions. This is because the consumer cannot receive the product in the required time. Overall, the uncertainty of the epidemic will affect the development of VR shopping such as businesses do not have enough money to develop the technology for VR shopping, thus affecting the PU and PEOU. Finally, it will hinder consumers' behavioral intentions.

4. Results & Discussion

VR shopping has some strengths and opportunities. For example, it can enable people to choose the clothes and shoes that suit them, and it is convenient. The reason for this is that they do not need to go out. Besides, VR shopping can enable consumers to acquire immersive shopping experiences so that they can enjoy the whole shopping process. In addition, VR shopping has a more vivid interface compared with traditional online shopping. With e-commerce growing fast, more and more businesses can choose VR shopping as a new marketing model to expand their sales coverage.

What's more, VR shopping has some weaknesses and threats. For example, VR technology is not mature enough to show the details of the product well. In addition, the e-commerce market has faced some challenges due to COVID-19. This is because the e-commerce market faced more uncertain conditions than before, such as logistics obstructions.

This research takes into consideration the positive effects that PU and PEOU have on customers' behavioral intentions. Furthermore, businesses ought to focus on enhancing perceived usability and usability while creating a virtual reality shopping mall. VR shopping has the convenience of allowing customers to select items that are suitable for them through 3D measurement. Besides, it also allows customers to experience immersive shopping, providing a good shopping experience. As well as that, it has a unique r interface. In addition, the gradual expansion of the e-commerce market has created positive conditions for the development of VR shopping. All of these strengths and opportunities can improve PU and PEOU. However, the VR shopping system cannot show the whole details of products, which will affect PU and PEOU and thus reduces the behavioral intention. As well as that, the epidemic has affected the e-commerce industry, thus affecting the development of VR shopping. This condition impacted PU and PEOU growth, thus affecting behavioral intentions.

This paper will give some advice. Firstly, VR shopping should further improve convenience, increase engagement between customers and the mall, and optimize the website. That is, VR shopping allows for online personalization, which can improve the PEOU and PU, thus increasing behavioral intention. Secondly, e-commerce enterprises should focus on improving the VR technology so that it can show more details of products to consumers, which means improving PU and PEOU. As well as that, it can increase consumers' behavioral intentions. Thirdly, VR shopping should take advantage of the possibility that the expansion of the e-commerce industry affords and keep up with technological advancements, thus improving the PEOU and PU. Finally, VR shopping should avoid risks. For example, e-commerce companies should regulate the utilization of their funds in a reasonable manner and plan a reasonable amount of money to develop VR shopping, thus continuously improving the PEOU and PU. Therefore, consumers' behavioral intentions will increase.

This paper tests some of the ideas of the previous generation. This research also comes to the same conclusion, which is that customers are more likely to buy if they assert something is useful and easy to use.

5. Conclusion

This paper studies the era of rapid development of online shopping and focuses on the field of VR shopping. It also examines the link between perceived utility, perceived simplicity of use, and behavioral intention. This article examined the SWOT analysis of VR shopping to identify the link between ease of use, usefulness, and behavioral intention by gathering the theoretical elements of the Technology Acceptance Model and applying them to VR shopping. Finally, this paper draws a conclusion. That is, VR shopping is convenient, enjoyable, and has a more friendly and clear user interface, allowing VR shopping to have PU and PEOU, both of which have beneficial effects on consumers' behavioral intentions.

Through this paper's research, there will be a contribution to future learning research. This is due to the fact that this paper examines the Technology Acceptance Model theory and confirms its PU and usefulness in VR shopping. As well as that, it combines TAM theory and VR shopping and summarizes the PEOU and PU of different aspects of VR shopping. In addition, this paper confirms again the association between PEOU, PU, and behavioral intention.

Future research will be influenced by the conclusions reached in this paper. The reason for this is that this paper puts forward some suggestions in the area of VR shopping. For example, VR shopping should improve its own technology so that it can display more details to consumers, which can enable consumers to get to know the product better, such as the texture of clothing. As well as that, it can improve the PEOU and PU so that improving behavioral intention. Additionally, the VR shopping company should comprehend prudent risk avoidance. This is due to the fact that COVID-19 enables major e-commerce companies to face challenges in funding. It is important for every business to their funds wisely, which can help them develop the technology of VR shopping. As well as that, this recommendation could enable further improvements in PU and PEOU.

However, there are some limitations on this paper. For example, it has a certain subjective factor and is based on the author's own summary analysis, which is a personal opinion and assessment. In addition, this paper is specific. The reason for this is that it focuses on the development of VR shopping during the COVID-19 period.

In future research, there should be more data analysis. This is due to the fact that the data can be d to further support the analysis results. In addition, it should be extended to cover the different periods of development of VR shopping, such as before and after the COVID-19 period.

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