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**How experiential marketing uses technology to increase customer engagement in retail stores?**

In Partial Fulfillment for the Requirements  
for the Bachelor of Science in Marketing

by

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## Table of Contents

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<b>Abstract</b>	<b>2</b>
<b>Introduction</b>	<b>3</b>
<b>Literature Review and Hypotheses</b>	<b>4</b>
<b>Introduction – In store technology</b>	<b>4</b>
<b>The technology acceptance model (TAM)</b>	<b>4</b>
<b>Antecedents</b>	<b>5</b>
<b>Variables and hypotheses</b>	<b>5</b>
<b>Perceived ease of use</b>	<b>5</b>
<b>Perceived usefulness</b>	<b>6</b>
<b>Attitude toward use</b>	<b>6</b>
<b>Intention to use</b>	<b>7</b>
<b>Moderation variables</b>	<b>7</b>
<b>Research methodology</b>	<b>9</b>
<b>Sampling</b>	<b>10</b>
<b>Results and discussion</b>	<b>11</b>
<b>Validity and reliability</b>	<b>11</b>
<b>Relationships test between the variables</b>	<b>11</b>
<b>Mediation and moderation analysis</b>	<b>11</b>
<b>Mediation analysis</b>	<b>11</b>
<b>Moderation analysis</b>	<b>12</b>
<b>Summary</b>	<b>12</b>
<b>Conclusion and implications</b>	<b>12</b>
<b>Discussion</b>	<b>12</b>
<b>Contributions to research and practice</b>	<b>13</b>
<b>Limitation and future research</b>	<b>14</b>
<b>References</b>	<b>16</b>
<b>Appendix</b>	<b>21</b>
<b>Table I – Examples of study that applied TAM</b>	<b>21</b>
<b>Table II – Demographic profile</b>	<b>24</b>
<b>Table III – Table of reliability</b>	<b>25</b>
<b>Table IV – Table of correlation</b>	<b>25</b>
<b>Table V – Result of Model 6</b>	<b>25</b>
<b>Table VI – Result of Model 15</b>	<b>26</b>
<b>Table VII – Results of hypotheses</b>	<b>26</b>
<b>Questionnaire</b>	<b>27</b>

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## **Abstract**

Consumers are expecting retailers to better serve them based on what the business knows about the customer. With the wealth of consumer data collected by retailers and the growing consumer expectation, quality products, competitive pricing, and excellent customer service are not enough to retain customers anymore. Instead, consumers are seeking a customized experience that fits their individual needs. Retailers have to focus on the relentless pursuit of innovation to build customer satisfaction and brand loyalty. This innovation can be offered through a variety of interactions, including digital marketing and in-store technologies, to entice consumers to shop in-store. However, managers are continually making decisions about whether or not to adopt new in-store innovations. As retailer companies wrestle with the decision on whether or not to invest and adopt these new technologies, they must have a full understanding of what the technology involves because some existing technologies have been less successful. They need to determine how it will affect the way they do business and whether or not the new technologies will create a customer shopping journey. So, retail companies struggle to find the best technology in conventional physical retail stores. The best solutions are that retailers should have the ability to integrate these technologies to launch new marketing strategies to enhance the customer experience, which will be the biggest beneficiaries. This study addressed how experiential marketing leverage technology that elevated customer engagement in retail. The model was tested using a set of questionnaires based on the Technology Acceptance Model (TAM), that was distributed to young Chinese consumers who are the target market of sportswear. Given the breadth of the survey, there are several different ways in which the data was analyzed, and the results presented. Structural Equation Modeling (SEM) was used as a statistical method to assess the statistical significance of the proposed relationships among sets of observed variables. It is a fact that there will be continuous innovations in retail technology and that consumers' expectations will continue to change. So, retailers to communicate the value of new technology to their consumers in just a few seconds or the competitors will grab the opportunities. The innovation must provide an immediate, tangible benefit to the consumer. This study provided some evidence that retail innovations offer a better shopping experience, tailored to the individual preferences of the particular customer. Retailers can further identify the factors leading to the creation of a positive retail customer's experience in terms of leveraging technology through experiential marketing. Creating a meaningful value and relationship with customers is not easy in the current competitive retail landscape. To stand out from the competition and capture the attention of consumers, retailers are moving towards experiential marketing innovations. This study will provide clear evidence of a sports store in China on how they create experiences which in overtime, build brand loyalty, and drive revenues.

## 1. Introduction

In-store technology has become an integral part of modern in-store. Whether as part of a marketing tool or as an in-store consumer aid tool, in-store technology has dramatically helped brick-and-mortar store operators attract new customers, as well as helping consumers complete the in-store shopping process. The self-service technology and Danholker *et al.*, (2003), which Wang (2012) mentioned in his research, are all high-tech products that are very common in modern life. Take self-scanning as an example, and these high-tech products are widely used in supermarkets, restaurants, and various service industries. The emergence of these products, in addition to convenient cash register functions, some of them also have store management functions, such as commodity management, membership management. Whether it is a personal retail store or a chain store, it can assist staff in doing an excellent job of store cash collection and management. Not only can we help cashiers reduce their workload, but they also improve store cash register and management efficiency. In addition to these self-service platforms, RFID technology is also quietly emerging. As Visich *et al.*, (2009) said, RFID technology has had an immeasurable impact on modern society through the "inventory control and efficiency. It cannot be separated from the support of RFID technology. Logistics warehousing is one of the most potential applications of RFID, UPS, DHL, FedEx, and other international logistics giants are actively experimenting with RFID technology, with a view to large-scale application in the future to enhance their logistics capacity. Applicationable processes include cargo tracking in the logistics process, automatic information collection, warehouse management applications, port applications, postal parcels, couriers, and so on. In retail brick-and-mortar stores, RFID technology can be used in identification, asset management, cargo management, access to information, etc. In addition to the high-tech in-store technologies mentioned above, the topics of information technology studied by Gil-Saure *et al.*, (2009), confirm in a more direct way that modern technology improves consumer efficiency and consumer experience. Even change consumer spending habits. The Reardon (1996) study suggests that technology is better able to turn assets into benefits than humans, which means that high-tech products are the best choice for future in-store in-store in-stores to assist consumers and store operators. The 270-degree panoramic video at Under Armour Experience Store in Shanghai is the primary source of this research project. Holograms are true three-dimensional images, and users do not need to wear stereoscopic glasses or any other auxiliary equipment, can be viewed from different angles naked. The underlying mechanism is to use light wave interference to record the amplitude and phase of the material light wave at the same time. Because the holographic re-phenomenon light wave retains the information of the amplitude and phase of the first material light wave, the re-phenomenon has the same three-dimensional characteristics as the original. Put, Under Armour's new technology allows people to see a holographic impact with the naked eye and allows the viewer to experience being immersed in the video. The study will examine how new technologies affect consumers' experiences in stores by analyzing some of their views on the technology.

As artificial intelligence outnumbers humans in more and more areas, humans face more unemployment, and the AI revolution will revolutionize the economy, especially the job market. This is a challenge that cannot be ignored, especially in China, which has a large population base. In the field of driverless cars, for example, five to 10 years ago, machines sounded like science fiction when they drove better than humans. Nevertheless, today, most industry experts think it is only a matter of time, and perhaps in the coming decades, computers and driverless drivers will replace tens of millions of taxi drivers, bus drivers, and truck drivers, leaving them

unemployed. The same thing happens in the financial world, where humans often make severe mistakes in making financial transactions worth tens of thousands of dollars, yuan, and euros because they are tired, unfocused, angry about something, or depressed. Nevertheless, artificial intelligence does not make the same mistake, and they do not have a body, so they never get hungry, tired, angry, or depressed. Because they do not have thoughts or emotions, they only make decisions based on the data they see, not on the underlying emotions. A few years ago, a Chinese internet technology company called Alibaba started the e-commerce revolution. The advent of the e-commerce era means that the end of the brick-and-mortar era is coming. The rise of e-commerce has had a significant impact on the real economy. Physical retail initially has multiple levels of the market, and the previous market process is from the design and development, raw materials market, manufacturing processing, agent, wholesale, and finally to retail, fewer links is not possible. Now the whole process is integrated by the e-commerce model when the manufacturing plant does its retail, wholesale, and there is no market. Moreover, the Internet is more vibrant and fuller of goods, providing more choices. Shipping costs for online shopping are also falling. Some products can even be delivered home on the same day. However, behind all this is the closure of brick-and-mortar stores, which directly lead to the unemployment of a large number of staff, which in turn exacerbates social contradictions. On this basis, this study starts with how to improve the consumer experience in-store through high-tech products — designed to provide physical store operators with a viable and immersive marketing program.

## **2. Literature Review and Hypotheses**

### **2.1 Introduction – In-store technology**

The consistent application of new technologies such as smart mobile devices and social networks, as well as the growing importance of in-store technology solutions, present new opportunities and challenges for retailers (Piotrowicz and Cuthbertson, 2014). The development of technology brings together opportunities and challenges. In this era of fast food and fast life, power has shifted from retailers to consumers. Today, consumers are changing faster than the retail industry, and the retail industry is changing faster than the infrastructure (Hopping, 2000). With the increasing acceptance of online retail in the United States. US retailers have sales of \$102.1 billion. In 2006, the use of self-service systems increased by 24% compared to 2005 (Liu *et al.*, 2007). Retail settings have had limited success (Dabholkar *et al.*, 2003). By introducing a self-service system, retailers make customers themselves productive resources. In the service delivery process, this, in turn, helps retailers overcome two major problems in traditional service engagement due to human interaction. First, the self-service system allows for the handling of demand fluctuations without the need for expensive adjustments to employees (Curran *et al.*, 2003). Second, the central part of the service process is a standardized technical interface that makes the service more consistent. The atmosphere is independent of the personality and mood of the employees (Liu *et al.*, 2004). Therefore, the introduction of high-tech technology has opened up the potential for retailers to improve productivity and service quality while reducing costs.

### **2.2 The technology acceptance model (TAM)**

The Technology Acceptance Model (TAM) is one of the most widely used theories in information systems research proposed by Davis (1989). The origins of TAM can be traced back to the Theory of Rational Behavior (TRA) (Fishbein and Ajzen, 1975). Table I lists out the

examples of studies that applied the TAM model. The theory requires that in order to relate to the specific behavior being studied, each action must lead to a significant belief about a person's attitude toward a particular behavior (such as online shopping). As a simplified transaction, TAM indicates that the user's decision to accept the new information technology is based on two reasonable assessments of its expected outcome: perceived Usefulness (PU). Which defined as the user's expectations to use new information technologies that may lead to improved performance, and perception Ease of Use (PEOU), defined as "the degree to which a person believes that a particular system can be used freely" (Davis, 1989).

The original TAM (Davis, 1986) has three constructs: perceived ease of use perceived Usefulness, and use. Its primary purpose is to predict and explain the use of technology. Later, the model was extended to include techniques as an intent to mediate variables between independent variables (perceived usability and perceived Usefulness) and dependent variables (industrial use cases). Perceptual ease of use and Usefulness were also replicated to confirm the reliability and validity of the scale (Adams *et al.*, 1992). Many studies have used extended and validated TAM in various types of technologies. Some people use TAM to investigate system usage (Gefen and Straub, 1997), while others explore the attitudes of TAM (Igarria *et al.*, 1995). TAM also Used to explain individual differences in access to information technology (Agarwal and Karahanna, 2000; McCloskey, 2003). Also explored cross-cultural issues using TAM to understand cultural differences and applicability of TAM (Taylor and Todd, 1995).

A considerable part of the literature on store technology investigates the determinants of store technology acceptance (Childers *et al.*, 2001; Curran and Meuter, 2005; and Dabholkar and Bagozzi, 2002). These studies are primarily inspired by technology acceptance studies, including the Technology Acceptance Model (TAM) (Davis 1989) and the Innovation Diffusion Theory (Rogers 2003). The theoretical basis of TAM is Theory of Action (TRA), which argues that attitudes toward specific behaviors and subjective norms influence behavioral intentions, which in turn determine behavioral performance (Fishbein *et al.*, 1980).

### **2.3 Antecedents**

For the use of the TAM model, in many previous articles, variables such as age, income, gender, etc. were studied as moderating variables (Arning and Ziefle, 2007; Grewal 2002; Zhang, 2009; Kelley, 1952). In this study, we also used four variables as moderating variables, and they are age, income level, gender, and education level. We hope to study these variables to see if these moderating variables affect the relationship between PU, PEOU, and Intention. Since the research object of this research is the high-tech in-store retail used by a sports brand company, we found that this technology plays a supporting role in the whole consumer consumption process. In Venkatesh's (2003) study, the relationship between Purchase Intention and Actual usage proved to be unsuccessful in some of his subjects, when TAM models were applied in some cases. At the same time, in our research. After completing the pre-test, we found it difficult to establish a relationship between the two. Hence, in our study, we modified the model we used and removed the actual usage variable, making the purchase intention a dependent variable. In the next section, we will discuss in detail the relationship between independent variables (PU and PEOU), intermediate variables (Attitude), and dependent variables (PI).

### **2.4 Variables and hypotheses**

#### **2.41 Perceived Ease of Use influences Perceived Usefulness**

Perceived Usefulness is defined as the degree to which a person believes that using a particular technology can improve his or her job performance (Davis, 1989). Perceived ease of use is defined as the extent to which one considers the use of the system effortless (Davis, 1989). Many empirical studies of information management have considered TAM and generally support TAM's hypothesis that perceived ease of use could enhance perceived Usefulness (Adams *et al.*, 1992; Davis, 1989; Davis *et al.*, 1989). In our study, the relationship between perceived ease of use and perceived Usefulness is the typical relationship, as mentioned in previous studies.

*H1: Perceived ease of use of in-store technology is positively affecting the Perceived Usefulness of in-store technology.*

#### **2.42 Perceived Usefulness and Perceived Ease of use affect Attitude Toward Use of technology**

According to TAM, the number of technical acceptances is reflected in the intensity of attitudes/intentions towards the use of technology (Davis *et al.*, 1989). Attitude can be defined as a negative or positive evaluation of a person's behavior. The intent is assumed to capture the motivational factors that influence behavior, indicating the degree of effort people are willing to try to perform the behavior or the extent to which they plan to work (Fishbein *et al.*, 1980). In a study by TAM, Davis, Bagozzi, and Warshaw (1989), they identified two basic structures for predicting computer technology acceptance in an organizational environment: perceived ease of use and Perceived Usefulness. Ease of use refers to the process leading to the end result. The achievement of the above results (rather than the process leading to the results) is expressed by Perceived Usefulness. Perceived Usefulness reflects a utilitarian view of shopping that consumers care about buying products in a timely and efficient manner (Childers *et al.* 2001; Sherry, McGrath, and Levy 1993).

Dabholkar and Bagozzi (2002) argue that the perceived usefulness dimension is not related to the technical self-service of “consumer participation but not possession.” In contrast, Dabholkar and Bagozzi (2002) used performance constructs as a determining factor in the acceptance of store technology. According to Dabholkar and Bagozzi (2002), performance is related to the extent to which in-store technology consistently and accurately accomplishes seven expected tasks. In our research, we believe that the above two perceptions of perceived Usefulness play a crucial role in shaping customer attitudes toward in-store technology. Therefore, we refer to the consistency and accuracy of in-store technology as the reliability associated with the use of in-store technology, while perceived Usefulness refers to the customer's interests associated with the use of in-store technology. We recommend that users face the potential benefits of the technology when faced with the choice of using technology in stores (Bateson 1985; Meuter *et al.*, 2000; Parasuraman *et al.*, 2005). This is consistent with the study by Childers *et al.* (2001), who argue that Usefulness is a significant driver of in-store professional attitudes in the retail shopping environment, reflecting the more instrumental aspects of shopping. In view of this, we propose the following hypothesis:

*H2: In-store technology perceived usefulness is positively related to customer attitudes toward in-store technology.*

Perceived ease of use (PEOU) is the measure of the efforts for using technology in a retailing store. (Kim, Lee, and Law, 2008). Customers may avoid using a technology that is challenging to

adopt. (Tingting Zhang, Soobin Seo and Jee Ahe Ahn, 2018) A consumer who can receive a service freely and directly tends to positively evaluate the result more (Deci and Ryan, 1987). With advanced technology (panoramic video), customers can access the service by watching the video, which is very convenience. As a consequence, Bitner *et al.* (2002) identified convenience as one factor that improves consumer satisfaction and positive attitudes.

As revealed in the literature review on personal use techniques, the ease with which users use technology has a positive impact on their attitude toward technology. W proved to be correct in the study of organizational behavior (Davis, Bagozzi, and Warshaw 1989; Venkatesh *et al.* (2003), and research in-store technology (Betterson 1985; Dabholkar 1996; 2002 Dabholkar and Bagozzi; Dabholkar, Bobbitt, and Lee 2003). Therefore, we believe that ease of use is a crucial independent variable that affects customers' attitudes toward in-store technology.

*H3: The ease of use of in-store technology is positively correlated with customer attitudes toward in-store technology.*

#### **2.43 Perceived Usefulness and Perceived Ease of use affect Intention to use in-store technology (Direct and indirect effect).**

Consider the difficulties in explaining the multidimensional aspects of use - mandatory and voluntary, informed and ignorant, effective and ineffective, and so on. DeLone and McLean (2003) suggest that using intent may be the right approach. Willingness to use is an attitude, and use is an act. Replacing the latter with the former may solve some of the processes and causal problems that Seddon (1997) proposed. Numerous studies over the past decade have provided evidence that perceived ease of use has a significant impact on intentional use, whether directly affecting perceived Usefulness (Agarwal and Prasad, 1999; Davis *et al.*, 1989; Hu *et al.*, 1999; Jackson *et al.*, 1997). In order to prevent "underutilized" problems, in-store technology must be both easy to learn and easy to use. Also, perceived ease of use is expected to directly or indirectly affect perceived Usefulness and use behavioral intent through its impact on perceived Usefulness (Venkatesh and Davis, 1996; Venkatesh and Morris, 2000).

There is also a large body of research providing evidence that the perceived Usefulness has a significant impact on the willingness to use (Agarwal and Prasad, 1999; Davis *et al.*, 1989; Hu *et al.*, 1999; Jackson *et al.*, 1997; Mannar, 1999, 2000). Previous studies have shown that perceived Usefulness has a positive impact on behavioral willingness to use. The ultimate reason people develop mobile banking systems is that they find them useful. Therefore, we propose the following assumptions:

*H4: Perceived ease of use of in-store technology is positively affecting customers' Intention to use in-store technology.*

*H5: Perceived Usefulness of in-store technology is positively affecting customers' Intention to use in-store technology.*

*H6: The relationship between Perceived ease of use and Intention to use the in-store technology is fully mediated by Perceived Usefulness and Attitude toward use.*

#### **2.44 Moderating Effects**

##### **Gender**

Many studies have shown that men seem to be highly motivated by achievement-related tasks, such as Usefulness, when they are adopting decisions. However, women are highly motivated

and affected by ease of use (Zhang, 2009). Previous studies have shown differences in perception and behavior between different genders. For example, in mobile commerce, gender differences are important contexts (for example, Jayawardhena *et al.*, 2009). Besides, gender is affecting Jordan's acceptance of mobile learning (Alksasbeh, 2012). Also, Riquelme and Rios (2010) show Gender influences the perception of ease of use and regulates the impact of behavioral intentions on technology adoption. Usefulness and subjective norms have a more significant impact on adoption decisions. Women are stronger than men. Many research reports similar results (Venkatesh and Morris, 2000; Ong and Lai, 2006; Zhang *et al.*, 2011; Okazaki Dos Santos, 2012; Liebana-Cabanillas *et al.*, 2014). In summary, the following assumptions are made:

*H7: The relationship between perceived ease of use in-store technology and Intention to use is fully moderated by gender.*

*H8: The relationship between perceived Usefulness of in-store technology and Intention to use is fully moderated by gender.*

### **Education Level**

People have different sensitivities to time-related issues (Grewal 2002). Durrande-Moreau and Usunier (1999) point out that people with high-quality work and education tend to show a more quantitative time orientation, which is reflected in the phrase "time is money." We also believe that people with higher levels of education are more likely to be exposed to technology. Not only It is in the workplace, and it is the same in everyday activities. Besides, it has been found that in an organizational environment, the nature of the task at hand and its interaction with technology play an essential role in the perception of technology by individuals (Rangarajan *et al.*, 2005). In the retail environment, the task of using this technology is second only to the main problem of shopping. Therefore, we propose:

*H9: The relationship between perceived ease of use in-store technology and Intention to use is fully moderated by education level.*

*H10: The relationship between perceived Usefulness of in-store technology and Intention to use is fully moderated by education level.*

### **Age**

Younger people are more familiar and more inclined to use new communication technologies than older people, so they are more likely to think that the online community is easy to use. Many physical changes associated with the aging process, such as decreased sensory and motor skills, can lead to delays in learning online skills (Van de, 2007). When assessing the availability of new technologies, these usability issues are more relevant to older people than younger people. For example, in an empirical study of the use of personal digital assistants (PDAs), ease of use is a predictive factor for older people's perceived Usefulness compared to younger adults (Arning and Ziefle, 2007). The decision to adopt new technology equipment, young people, delineate more factors, such as price and its iconic identity as a symbol, in addition to its ease of use, while the elderly are affected by a higher degree of ease of use (Arning and Ziefle, 2007). Previous studies have shown that young people are more concerned with the extrinsic value of new technologies and more concerned with performance-related rewards than older people, and are therefore more susceptible to the instrumental impact of new technologies (Hall and

Mansfield, 1975). The Usefulness and functionality of a new technology may also influence younger adoption decisions to a greater extent (Sun and Zhang, 2006). The autonomy of older people in technology decision-making is often weaker and more influenced by social and psychological factors. Therefore, the following assumptions are made:

*H11: The relationship between perceived ease of use in-store technology and Intention to use is fully moderated by age.*

*H12: The relationship between perceived Usefulness of in-store technology and Intention to use is fully moderated by age.*

### **Income Level**

Innovation often enters society through peer groups with high socioeconomic status (Rogers, 1995). Therefore, Internet users with higher socioeconomic status are less likely to persuade or influence individuals with lower socioeconomic status to use the Internet or new technology because cross-community communication is not frequent. The influence of the same group on individual consumer behavior involves the concept of a comparison function of the reference group, which promotes consumer attitude based on the perceived similarity of the individual to the group members (Kelley, 1952). Based on that, we propose people with different levels of income would be influenced differently by new technology. Also, their Intention to use will be affected. We assume that:

*H13: The relationship between perceived ease of use in-store technology and Intention to use is fully moderated by income level.*

*H14: The relationship between perceived Usefulness of in-store technology and Intention to use is fully moderated by income level.*

### **3. Research methodology**

The data for this study were obtained qualitatively and quantitatively. The questionnaire is the most critical data collection method for this research topic. All the factors and options set in the questionnaire come from previous research topics and literature. In order to confirm the reliability and validity of the results, nearly 70 people participated in a pre-test on Chinese perceptions and perceptions of technology in the Under Armour store. The results of the pre-test data show that in the questionnaire set, some options were unreasonable and were deleted. Some options that proved to be ambiguous were modified. All variables were measured using a seven-point Likert scale, which ranges from strongly disagree (1) to strongly agree (7). In the data analysis stage, marketing researchers and those who study organizational or consumer behavior strive to understand how marketing and other organizational effects operate, meaning the underlying cognitive, social, and biological processes that intervene between a stimulus and a response. Mediation analysis is a popular statistical procedure for testing hypotheses about the mechanisms by which a causal effect operates. In this study, a mediation model like the Hayes' PROCESS developed by Hayes (2013) was used as a statistical moderation and mediation analysis in SPSS to estimate the path coefficients using multiple regression for the continuous outcome (Preacher and Hayes, 2008). It provided insights on the boundary conditions about the

direct and indirect effect of the Independent Variables on the Dependent Variables through the existence of mediation variables.

### **3.1 Sampling**

The sample population was citizens of Shanghai and Zhejiang provinces. In the above areas, there are concept experience stores under the Under Armour brand. People have a higher chance to contact and experience the high-tech products in the Under Armour sports store. At the same time, the above two places are relatively developed urban areas along the eastern coast of China. The living standards, consumption levels, and education levels of the people are relatively high, which is, in a sense, conducive to ensuring the reliability and practicality of the survey results. The sample survey was conducted from February 2019 to April 2019. All participants completed the questionnaire voluntarily and if their answers were kept confidential.

A general rule of thumb is that no less than 50 participants participate in the correlation or regression, as the number of independent variables (IVs) increases (Cohen and Cohen, 1975; Harris, 1985; and Green, 1991). The models of Cohen and Cohen (1975), Harris (1985), and Green (1991) provide a comprehensive overview of the procedures used to determine the size of regression samples. According to Fritz and MacKinnon (2007), in order to obtain a power of .8, the sample size required to detect the mediation effect is at least 405 samples. As a result, a total of 500 questionnaires were sent to respondents.

Of the 409 questionnaires collected, after testing, 408 questionnaires were confirmed to be valid questionnaires. According to Table II, the ratio of males to females in this sample is very close to 1: 1, which is very beneficial for the study itself. At the same time, among all the respondents, the most aged 18 to 50 years old, nearly 80% of the total number. The data show that among all the respondents, 50% of them have an annual income of less than 20,000 US dollars, and only 4% have an annual income of more than 4 US dollars. In terms of education level, 52% of them have the education level of university or above. The education level of 24.27% of respondents was around high school. In general, the data provided in this sample has a significant positive impact on the subject research. This approach avoids conflicting results with previous research results.

## **4. Results and discussion**

### **4.1 Validity and reliability**

Cronbach's alpha internal consistency measure was used for reliability analysis. The results show that all variables have a high-reliability range from 0.889 to 0.902, exceeding the minimum acceptable value of  $\alpha = 0.7$ , as shown in Table III. Nunnally (1978) pointed out that the closer the value of  $\alpha$  is to 1, the higher the internal consistency and reliability of the instrument.

### **4.2 Relationships test between the variables**

Correlation tables are made to test the strength of the relationships among independent, dependent, mediation variables, and moderation variables. As shown in Table IV, as one of the independent variables, perceived usefulness has a strong positive correlation with perceived ease of use ( $r = 0.378$ ,  $p \leq 0.01$ ), attitude towards use ( $r = 0.378$ ,  $p \leq 0.01$ ), and intention to use ( $r = 0.378$ ,  $p \leq 0.01$ ). Meanwhile, as another independent variable, perceived ease of use also shows a strong positive correlation with attitude ( $r = 0.378$ ,  $p \leq 0.01$ ) and intention to use ( $r = 0.378$ ,  $p$

$\leq 0.01$ ). the result indicates a very significant correlation between attitude towards use and intention to use by the correlation value as ( $r = 0.378$ ,  $p \leq 0.01$ ).

For demographic variables of respondents, the correlation matrix indicates that gender, age, education, and income do not matter. The correlation coefficient of demographic variables is close to zero, indicating that there is no linear correlation between independent variables, intermediate variables, and dependent variables. Preferably, host variables are independent of independent and dependent variables to provide transparent and explainable interactions. The next section uses the Hayes process macro to analyze the moderation variables and mediation variables further.

### **4.3 Mediation and moderation analysis**

Haye (2013) used the Hayes' Process Macro as statistical mediation and moderation analysis in SPSS to measure the coefficients with multiple regression. As Chiu *et al.* (2017) concluded, the Hayes' Process Macro "provided insights on the boundary conditions of the direct and indirect effect of the IV on the DV through the existence of Moderation variables and mediation variable."

#### **4.31 Mediation analysis**

Mediation was tested by using "Model 6" in Profess Macro (Hayes, 2013), the results is displayed in Table V. Perceived ease of use and attitude towards use are both set as mediation variables. In model 6, it applied 5000 bias-corrected bootstrap samples and 95% confidence interval.

According to the result, the regression indicates the direct relationship between perceived ease of use, perceived usefulness, attitude towards use, and Intention to use all proved to be significant. Or even somehow, the relationship is very strong since the coefficient is around 0.3 while the  $p$  equivalent to 0.000. Hence,  $H1$ ,  $H2$ ,  $H3$ ,  $H4$ , and  $H5$  were supported. As for the total effect from IV (PEOU) to DV (ITU), the coefficient value is only 0.03, which is way lower than the direct effect PEOU has on ITU. However, the indirect effect can be determined by whether the significance passes through zero. By checking the table, the lower limit confidence interval (LLCI) and upper limit confidence interval (ULCI) travels from 0.014 to 0.051, which is all above zero. In this case, perceived Usefulness and attitude towards use as the mediation variables do mediate the relationship between perceived ease of use and Intention to use, but only with fragile effect. Hence,  $H6$  is proved to be significant.

#### **4.32 Moderation analysis**

Moderation was tested by using "Model 15" in Profess Macro (Hayes, 2013). The results is displayed in Table VI. In Model 15, Perceived ease of use and perceived Usefulness are used as independent variables. Meanwhile, gender, age, income, and education are used as modulation variables to modulate the relationship between the independent variables.

The data in Table VI show that for the perceived ease of use, the two variables, gender, and education in Moderation variables can quickly be confirmed to have no adjustment impact. Because of the highest threshold value of the significant value and the lowest threshold value, the interval passed zero. The other two moderation variables age and income, although the interval between their LLCI and ULCI have not passed zero, their ULCI value is infinitely close to zero, especially the variable income, whose absolute value of ULCI is only 0.003. In such cases, it is not considered that such variables play a moderating role in the relationship between the

independent and dependent variables in the model. A very similar situation also occurs in the Perceived Usefulness. For the relationship between the Perceived Usefulness and the attention to use, only the two variables of gender and age in the four moderation variables meet the condition that the interval between LLCI and ULCI cannot pass zero. However, the absolute value of the ULCI of the significance of the two variables, gender, and age, is also very close to zero, which is a very optimistic sign. Gender, for example, has an absolute value of significance of 0.007. In this case, the mediating role of all four moderation variables has been proven to be indicative. In summary, all the previously established hypotheses 7 to 14 proved to be invalid, which is very different from many previous studies and literature.

#### **4.4 Summary**

In summary, as the independent variables in two models (model 6 and model 15), perceived ease of use and perceived Usefulness both have positive effects on attitude towards use and attention to use. As a result, shown in Table VII. Mediating variables can also have a positive effect on attention to use. When discussing intermediary variables, although ATU as a mediation variable can indeed connect the relationship between independent and dependent variables, at the data level, this intermediary effect is fragile. For the four independent moderation variables, their moderating effect on the relationship between the independent and dependent variables in the model has proven to be non-existent.

### **5. Conclusion and implications**

#### **5.1 Discussion**

In all of the sections above, direct and indirect relationships between the arguments, the dependent variables, and the mediation variables in the model are demonstrated. This is consistent with the hypothetical relationship between the variables present in the TAM model, as proposed by Davis (1989). In contrast, the study found that the model first assumed that the moderating effect of the moderation variable was identified as insignificant. Here is a look at the possible factors that differ from the previous study's conclusions on the four demographic variables.

The first is the age, in this study, age as the main moderation variables to investigate whether it can affect the relationship between the argument, the dependent variable. The data results are realistic, and the age cannot have any effect in this model. This is contrary to the conclusion stated by Arning and Ziefle (2007). Arning and Ziefle suggest that people of all ages have entirely different attitudes towards ease of use. The reasonable explanation for this should be: in this study, due to the limitation of the sample size and related uncontrollable factors. Eighty percent of the 408 questionnaires collected were from the 18-50 age group, where adolescents under 18 years of age, as well as middle-aged and older people over 50, were not the subject of the study.

As far as gender is concerned, Zhang (2009) shows that men are more driven by a sense of accomplishment when making decisions. While women are more driven by product practicability, based on product practicability, in a study. In this study, we found that although the ratio of men to women who completed the questionnaire was almost 1 to 1, the results showed that gender had no effect on the final Intention to use and that a reasonable explanation for this was divided into two aspects. First, similar to the topics associated with the age described in the previous paragraph, the sample size limits the final result to some extent. On the other

hand, in this study, the subjects of the study were the high-tech hologram technology in Under Armour's store. Instead of traditional products, there is a significant difference between the different respondents thinking about these questions, rather than the question "Do I want to buy this product?" but in the way "Will I use such high-tech products to help me with my shopping?" As a result, according to data analysis, gender does not interfere with consumers' final purchase when faced with topics related to "using high-tech products."

Often, we think that people with a higher educational background are more willing to accept high-tech and more active in trying the portable life that high-tech has changed. The results of this study are indeed very unexpected. They show that education levels do not act as interference synods and exist between the perceived ease of use, perceived usefulness, and the Intention to use. For such a situation, the most reasonable explanation is that "the respondents are not familiar with the high-tech products mentioned in the questionnaire." In all previous literature, all studies have one thing in common, and the sample subjects are familiar with what is being asked. In this difference, in this survey, 90 percent of the respondents did not have real-life contact with the High-Tech holographic imagery in the Under Armour store. All the high-tech correlations that respondents can learn are a very brief text introduction and two pictures at the beginning of the questionnaire, which is not enough. That is, 90 percent of the respondents to the questionnaire still had an extensive understanding of holographic technology when they started answering the questionnaire and finished the answer. That is a natural explanation for why the results of the final data analysis show that people with different levels of education do not respond and answer different questions as they should.

As for the income level. Roger (1995) mentioned in a 1995 article that the innovation will-be-enters society through peer groups with high socioeconomic status. For the majority of respondents to the survey, Under Armour, as an emerging American sportswear brand, is not an expensive luxury item with a scarce supply. In contrast, Under Armour is seen more like a mid-range sports brand with a price. As a result, respondents did not reflect different perceptions of high-tech in Under Armour's stores when they answered questions. The vast majority of people surveyed would have felt that this was a brand that I could fully accept and was entirely within my reach, including the high-tech used in its stores. Therefore, the results of this study show that the concept of "different perceptions of high-tech products held by people of different income levels, and the concept of the different perceptions of the usefulness and intention to use" should have a big premise for different levels of high-tech products.

## **5.2 Contributions to research and practice**

The study was conducted with TAM (Davis et al., 1989; Venkatesh et al., 2003) is the theoretical basis, adding the age, gender, education, income level four demographic factors as the moderation variable. Explore the ability of the panoramic video high-tech used in-store under Armour Shanghai Experience stores to improve the consumer experience in-store. This explores how in-store experiential marketing can improve the consumer experience, and at the same time, derives the relevant factors (variables) that have an impact. According to the data analysis, in the operation of physical stores, if operators want to obtain a better consumer attitude, they should focus on giving consumers a "my product ease of use and practicality are very good" impact and concept. The experience is proven to act very well as an argument throughout the model. In other words, when customers enter the store for consumption, all the attitudes they have towards the product and the choices they make eventually come from the most basic, sense of product practicality and ease of use. In this regard, the marketing model of panoramic video used in

Under Armour stores is worth promoting, and customers are eager to experience this new experiential consumption model, while merchants can communicate product information to consumers in the best possible way in the shortest possible time. Increasing artificial intelligence shopping, detailed and vivid explanation of goods is also one of the perfect choices. such a strategy can not only significantly reduce the use of manual shopping costs, but also will attract more high-tech interested consumers to shop.

On the other hand, only from the results of this survey. Physical store operators do not spend much time researching different customer groups to customize different marketing strategies. Data analysis shows that neither age, gender, income level, nor the level of education can have any impact on consumer shopping behavior. Operators to different consumer customers to provide different personalized, customized goods are reasonable. However, operators, according to the analysis of different consumer customer groups, put forward the corresponding personalized marketing strategy is more than this. In other words, the ultimate effect of experiential marketing depends on the quality of the marketing approach itself and the benefits it can bring. It is not relevant at all to the nature of the customer involved in marketing and being marketed. Consumers of any age or gender are willing to try something new and practical. Moreover, high-tech products that make it easier for them to shop to help them spend and improve efficiency.

Of course, the most important thing is that all the above conclusions have a big premise, but also in the application of the real case, the first should take into account some of the problems. The data from the study came from consumers in Shanghai and Zhejiang province, who have an in-store high-tech attitude toward the Under Armour brand. Therefore, in the face of different problems, we need to consider industry differences, differences in different regions of people, and so on. Putting aside the problem of demographics, there is no doubt that "consumer impulses from any whereabouts start with the perception of the easy and the use of the product." That means that in setting an experiential marketing strategy for brick-and-mortar store operators in any regional industry, the first consideration should be whether the strategy as a whole is based on the two points of the experience and the operation of a series of subsequent marketing campaigns.

### **5.3 Limitation and future research**

The final section will discuss the limitations encountered in this study and the possible direction of the follow-up research. The discussion section mentions several reasons why these data analysis results do not match the results of previous surveys. Among them, there are also many problems and limitations encountered by the Institute. In terms of the subject itself, all the data used in this topic relates to the high-tech products used in Under Armour Shanghai Experience stores. Under such a premise, there will inevitably be a "many survey subjects are not familiar with the technology, the brand" situation mentioned earlier. At the same time, limited by the questionnaire object and the content of the questionnaire itself, whether the results of this survey can be applied to other industries is also worth exploring. Therefore, in future research, the use of brick-and-mortar stores in different industry areas as a provider of evidence will be necessary and meaningful attempts. Besides, the high-tech products in this survey are panoramic video, but there are already thousands of different high-tech products in the market. They are all used as an auxiliary tool to attract customers and improve their in-store consumer experience. Replacing the research subjects and using more new high-tech products as questionnaires will also be a practical option in future survey experiments. All the respondents to the questionnaire are from

Shanghai and Zhejiang, which is one of the problems. In subsequent studies, consumers from more urban areas in China should be welcomed and invited to participate in the questionnaire, thereby increasing the prevalence and diversity of the respondents. People in different regions have very different consumption habits and consumption concepts, which is a significant point for the study of consumer-related topics. China is a diverse and inclusive country, and consumer spending habits may even be biased in one city. Due to the limited time and channels for publishing the questionnaire, only about 400 questionnaires were eventually collected. Although this meets the minimum requirements required for data analysis, it is not enough to improve the accuracy of data analysis results. In future research, consumers with a broader base should participate in the survey process.

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**Appendix:**

**Table I – Examples of study that applied TAM**

Paper #	Author(s)	Type of Technology	Measurement	Theories	Consequences/Results
1	Chantal de Moerloose, Michael Antioco, Adam Lindgreen, Roger Palmer (2005)	information kiosks	t-tests and Chi-square tests	TAM、 TRA	The findings suggest that information kiosks can be implemented successfully with up to three easy-to-use kiosks at the entrance of the mall or inside the store and, if retailers allow, internet access to a limited number of web sites.
2	Ingrid Poncin, Mohamed Slim Ben Mimoun (2014)	e-atmospherics	ANOVA	TAM	These results offer an initial exploration of the effect of new technologies on shopping experiences in physical stores;
3	Michael Chih-Hung Wang, (2012)	self-service technology (SST)	Chi-square	TAM	The results show that perceived usefulness and perceived enjoyment both, initially, influence perceived control and convenience and then affect consumer satisfaction.
4	Pratibha A. Dabholkar, L. Michelle Bobbitt, Eun-Ju Lee, (2003)	Self-scanning	T-tests and ANOVAs	TAM	The perception of speed, Short lines and increased privacy at checkouts, Convenience, Free employees to help shoppers make purchase decisions.

5	John K. Visich, Suhong Li, Basheer M. Khumawala, Pedro M. Reyes, (2009)	radio frequency identification (RFID)	The evidence is classified by process and for each process by effect.	TAM, TRA	The empirical evidence shows that the major effects from the implementation of RFID are automational effects on operational processes followed by informational effects on managerial processes. The RFID implementation has not reached transformational level on either operational or managerial processes.
6	Richard Clodfelte (2010)	Biometric technologies	t-test	TAM	The majority of consumers probably do not recognize the value of a biometric checkout to them. Increased use of such systems is likely to reduce the incidence of identity theft, improve consumer convenience by eliminating or reducing password use, and lower prices by reducing fraud costs to retailers.
7	Irene Gil-Saura, Gloria Berenguer-Contró, Mari a-Eugenia Ruiz-Molina (2009)	Information technology (IT)	Descriptive analysis (ANOVA) Multiple regression analysis	TAM	Our results support the existence of a positive relation between consumer perceived intensity of use of retail IT solutions and customer satisfaction with such technology.

8	JAMES REARDON (1996)	Information Technology	Cobb-Douglas production function	TAM	These results indicate that, at current levels, information can improve the efficiency of capital more than labor.
9	Irwin Brown, John Russell (2007)	Radio frequency identification technology	descriptive statistical techniques	TAM	The findings showed that as at 2005 many retailers had not yet adopted RFID or even conducted pilot studies but intended to in the future.
10	J. Jeffrey Inman, Hristina Nikolova (2017)	Shopper-Facing Retail Technology	ANOVA	TAM, CDC, SFDC	the results of this supplementary study indicate that all six retail technologies chosen to demonstrate the use of the proposed shopper-focused decision framework have relatively high perceived ease of use, usefulness, and adoption likelihood.

**Table II – Demographic profile**

<b>Profile</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Gender</b>		
Male	156	50.49%
Female	153	49.51%
<b>Age</b>		
Below 18	36	11.65%
18-22	74	23.95%
23-30	82	26.54%
31-50	91	29.45%
Above 50	26	8.41%
<b>Annual individual income</b>		
Below \$20000	155	50.16%
\$20000 - \$29999	93	30.10%
\$30000 - \$39999	42	13.59%
\$40000 - \$49999	11	3.56%
\$50000 - \$59999	6	1.94%
More than \$60000	2	0.65%
<b>Education</b>		
Less than high school	51	16.50%
High school	75	24.27%
Some college	61	19.74%
Bachelor's degree	107	34.63%
Masters or higher	15	4.85%
<b>How many times per week do you go to Sports Apparel Store?</b>		
0	68	22.01%
1 to 2 times	124	40.13%
3 to 4 times	89	28.80%
5 to 6 times	13	4.21%
7 to 8 times	8	2.59%
9 times and above	7	2.27%
<b>How many hours do you spend in Sports Apparel Store?</b>		
Less than one hour	146	47.25%
1 -2 hours	114	36.89%
3 -4 hours	20	6.47%
5 – 6 hours	20	6.47%
More than 6 hours	9	2.91%

**Table III – Table of reliability**

Variables	Number of items	Cronbach's alpha
Perceived ease of use	6	0.889
Perceived usefulness	6	0.892
Attitude toward use	6	0.902
Intention to use	6	0.895

**Table IV – Table of correlation**

		Gender	Age	Income	Education	PU	PEOU	ATU	ITU
Gender	Correlation	1	.090	-.027	.017	.105*	.118*	.107*	.127*
	Sig. (2-tailed)		.070	.592	.737	.034	.017	.030	.010
Age	Correlation	.090	1	.329**	.032	.280**	.329**	.250**	.346**
	Sig. (2-tailed)	.070		.000	.520	.000	.000	.000	.000
Income	Correlation	-.027	.329**	1	.062	.156**	.029	.130**	.066
	Sig. (2-tailed)	.592	.000		.210	.002	.564	.008	.186
Education	Correlation	.017	.032	.062	1	.243**	.170**	.183**	.199**
	Sig. (2-tailed)	.737	.520	.210		.000	.001	.000	.000
PU	Correlation	.105*	.280**	.156**	.243**	1	.378**	.363**	.437**
	Sig. (2-tailed)	.034	.000	.002	.000		.000	.000	.000
PEOU	Correlation	.118*	.329**	.029	.170**	.378**	1	.354**	.358**
	Sig. (2-tailed)	.017	.000	.564	.001	.000		.000	.000
ATU	Correlation	.107*	.250**	.130**	.183**	.363**	.354**	1	.441**
	Sig. (2-tailed)	.030	.000	.008	.000	.000	.000		.000
ITU	Correlation	.127*	.346**	.066	.199**	.437**	.358**	.441**	1
	Sig. (2-tailed)	.010	.000	.186	.000	.000	.000	.000	

NOTE: N=408;

\*. Correlation is significant at the 0.05 level (2-tailed); \*\*. Correlation is significant at the 0.01 level (2-tailed).

**Table V – Result of Model 6**

	Coefficient	SE	T	p	LLCI	ULCI
PATH						
PEOU – PU	0.379	.0461	8.227	0.000	0.289	0.470
PU – ATU	0.279	0.050	5.510	0.000	0.180	0.379
PEOU – ATU	0.266	0.050	5.240	0.000	0.166	0.366
PEOU – ITU	0.364	0.047	7.730	0.000	0.272	0.457
PU - ITU	0.279	0.049	2.342	0.000	0.182	0.375
PEOU – ATU – ITU	0.074	0.022	3.424	0.000	0.036	0.123
PEOU – PU – ATU - ITU	0.030	0.010	3.785	0.000	0.014	0.051

Notes: \*p &lt; 0.01; \*\*p &lt; 0.05

**Table VI – Result of Model 15**

	Overall model	Coefficient	SE	T	p	LLCI	ULCI
Perceived ease of use							
Gender	R <sup>2</sup> = 0.25 F (402) = 26.26, p < 0.01	0.073	0.096	0.765	0.445	-0.115	0.261
Age	R <sup>2</sup> = 0.30 F (406) = 34.68, p < 0.01	-0.087	0.037	-2.346	0.020	-0.159	-0.014
Income	R <sup>2</sup> = 0.25 F (402) = 26.70, p < 0.01	-0.089	0.044	-2.205	0.041	-0.175	-0.003
Education	R <sup>2</sup> = 0.25 F (402) = 27.48, p < 0.01	-0.074	0.043	-1.725	0.085	-1.158	0.010
Perceived usefulness							
Gender	R <sup>2</sup> = 0.25 F (402) = 26.26, p < 0.01	-0.194	0.095	-2.041	0.042	-0.381	-0.007
Age	R <sup>2</sup> = 0.30 F (406) = 34.68, p < 0.01	-0.099	0.037	-2.655	0.008	-0.173	-0.026
Income	R <sup>2</sup> = 0.25 F (402) = 26.70, p < 0.01	-0.034	0.047	-0.723	0.470	-0.128	0.059
Education	R <sup>2</sup> = 0.25 F (402) = 27.48, p < 0.01	-0.063	0.043	-1.470	0.142	-0.148	0.021

NOTE: N=408;

\*. Correlation is significant at the 0.05 level (2-tailed); \*\*. Correlation is significant at the 0.01 level (2-tailed).

**Table VII – Results of hypotheses**

Hypotheses	Result
H1: PEOU positively significantly influences PU	Significant
H2: PU positively significantly influences ATU	Significant
H3: PEOU positively significantly influences ATU	Significant
H4: PU positively significantly influences ITU	Significant
H5: PEOU positively significantly influences ITU	Significant
H6: The relationship between PEOU and ITU is fully mediated by PU and ATU	Insignificant
H7: The relationship between PEOU to ITU is fully moderated by gender.	Insignificant
H8: The relationship between PEOU to ITU is fully moderated by age.	Insignificant
H9: The relationship between PEOU to ITU is fully moderated by education.	Insignificant
H10: The relationship between PEOU to ITU is fully moderated by income.	Insignificant
H11: The relationship between PU to ITU is fully moderated by gender.	Insignificant
H12: The relationship between PU to ITU is fully moderated by age.	Insignificant
H13: The relationship between PU to ITU is fully moderated by education.	Insignificant
H14: The relationship between PU to ITU is fully moderated by income.	Insignificant

# Questionnaire design

## Under Armour

### Panoramic video technology

#### Part1 profile

**1. Gender**

- Male
- Female

**2. Age**

- Below 18
- 18–22
- 23–27
- 28–32
- 33–37
- 38–42
- 43–47
- 48-52
- 53 and above

**3. Education**

- Less than high school
- High School
- Some college
- Bachelor's degree
- Masters or higher

**4. How many times per week do you go to Sports Apparel Store?**

- 0
- 1 to 2 times
- 3 to 4 times
- 5 to 6 times
- 7 to 8 times
- 9 times and above

**5. On average, how many hours do you spend in Sports Apparel Store?**

- Less than one hour
- 1 - 2 hours
- 3 - 4 hours
- 5 - 6 hours
- More than 6 hours

**Part 2**

<b>Perceived Usefulness</b>	Rating from 1 (lowest) to 7 (highest)						
1. Under Armour cinematic 360° Virtual Reality can improve my shopping efficiency for sportswear.							
2. Under Armour cinematic 360° Virtual Reality can help me buy products that fits me.							
3. Under Armour cinematic 360° Virtual Reality is useful in meeting my shopping needs.							
4. Under Armour cinematic 360° Virtual Reality will give me access to useful shopping information.							
5. Under Armour cinematic 360° Virtual Reality can improve my shopping quality for sportswear.							
6. Under Armour cinematic 360° Virtual Reality can make my chopping convenient.							
<b>Perceived Ease of Use</b>	Rating from 1 (lowest) to 7 (highest)						
7. Learning to operate the Under Armour cinematic 360° Virtual Reality is easy for me.							
8. I find it easy to get the Under Armour cinematic 360° Virtual Reality to do what I want it to do.							
9. Using Under Armour cinematic 360° Virtual Reality is clear and understandable.							
10. I would find Under Armour cinematic 360° Virtual Reality to be flexible to interact with.							
11. I would find it easy to get the information I need from Under Armour cinematic 360° Virtual Reality.							
12. It is easy to shop using the Under Armour cinematic 360° Virtual Reality							
<b>Perceived Enjoyment</b>	Rating from 1 (lowest) to 7 (highest)						
13. Shopping with the Under Armour cinematic 360° Virtual Reality would make me feel good.							

14. Shopping with the Under Armour cinematic 360° Virtual Reality would be fun to use.							
15. Using Under Armour cinematic 360° Virtual Reality would give me a pleasant shopping experience.							
16. I find using the Under Armour cinematic 360° Virtual Reality to be enjoyable							
17. The actual process of using the Under Armour cinematic 360° Virtual Reality is pleasant.							
18. Using the Under Armour cinematic 360° Virtual Reality is entertaining.							
<b>Attitude Towards Use</b>	Rating from 1 (lowest) to 7 (highest)						
19. Using the Under Armour cinematic 360° Virtual Reality technology in physical cosmetics store is a good idea.							
20. Using the Under Armour cinematic 360° Virtual Reality) technology is beneficial to my shopping experience.							
21. Using the Under Armour cinematic 360° Virtual Reality will provide quality service to my shopping experience.							
22. I am positive towards using the Under Armour cinematic 360° Virtual Reality.							
23. I am pleased with the service provided by the Under Armour cinematic 360° Virtual Reality.							
24. It makes sense to use the Under Armour cinematic 360° Virtual Reality.							
<b>Intention to Use</b>	Rating from 1 (lowest) to 7 (highest)						
25. I would recommend Under Armour cinematic 360° Virtual Reality to my friends to use.							
26. I will use the Under Armour cinematic 360° Virtual Reality frequently to do my shopping for beauty products.							
27. I would recommend Under Armour cinematic 360° Virtual Reality) to my family/relatives to use.							
28. I plan to use the Under Armour cinematic 360° Virtual Reality often in the future							

29. I will strongly recommend others to use the Under Armour cinematic 360° Virtual Reality.							
30. I will be using Under Armour cinematic 360° Virtual Reality whenever I am going to buy beauty products.							