Investigating Factors Affecting the Adoption of Virtual Fitting Rooms in Iranian Sportswear Stores: Application of CAT Theory

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Abstract

Purpose: Trying on clothes in sportswear stores is a very time-consuming and tiring task. Virtual fitting rooms provides conditions where the online consumer can try on the clothes he wants before shopping. This technology has recently received much attention due to its commercial potential. However, this technology has not arrived to Iran yet, and it is obscure if the Iranian consumers accept it. In this research, the researcher is trying to investigate the factors affecting the acceptance of this technology by online sports consumers.

Methods: This is an applied research. The mixed method was used, in which the Delphi technique was employed between experts of sportswear industry in the qualitative phase. In the quantitative phase, online consumers of sports products were selected as a sample. The snowball method was used to collect the subjects. The manager of Hafez store, a leading store in terms of providing online sport products in Shiraz, was asked to introduce 10 who often bought their sportswear online and were familiar with the newest technologies in this field. The subjects were requested to answer the questionnaire online and send it to other friends and acquaintances who bought most of their sportswear online and were familiar with the newest technologies in this field. Finally, 420 questionnaires were collected. The validity of the instrument was confirmed through the opinions of university professors and convergent validity. Cronbach's alpha and composite reliability were used to check the reliability. SPSS26 and Amos24 software were used for data analysis. Structural equation modeling was used to test the hypotheses and evaluate the overall fit.

Results: The results showed the positive effect of all the factors including perceived usefulness, perceived ease of use, pleasure, arousal and dominance on the adoption of virtual fitting room by online sport consumers.

Conclusion: The results of this research have practical implications for sports managers and retailers in relation to adopting the best management and marketing strategies to use virtual fitting rooms.

Keywords: Virtual fitting room, Adoption, Perceived usefulness, Perceived ease of use, Pleasure, Arousal, Dominance

Introduction

Today, competition between companies is getting very complicated and they are looking for ways to improve their sales volume and develop in various fields in the market so that they can guarantee their superiority and achieve their competitive goals (Sutaguna et al., 2023). Sportswear industries are no exception to this rule. They are defined as the companies providing clothing and shoes for participating in sports (Sharma & Jain, 2019).

Over the past three years, the global apparel industry has recorded a great performance due to increased sales of sportswear. For the third continuous year, sales of sportswear have surpassed all other clothing items (Jaworek, 2021). The size of the global sportswear market in 2022 was estimated at USD 185.9 billion. Experts predict that the growth of this market will reach 356 billion dollars by 2032. This shows a 6.9 percent growth of this industry from 2023 to 2032. The reason is the increasing awareness of healthy lifestyle as well as the health benefits that can be obtained with sports activities such as yoga, running, swimming and other sports. This market also develops with the increasing popularity of sports events such as the football world cup, the Olympic Games and the cricket world cup (Globe Newswire, 2023).

In this great industry, the tendency towards new designs is growing. Digital marketing has brought about extensive changes in this industry (Sharma & Jain, 2019). The arrival of smartphones and tablets have made it possible for the people to enjoy the benefits of online shopping anywhere, anytime (Taneja, 2021). Today, we can definitely say that online shopping has replaced traditional shopping. Almost all online stores offer services such as online payment, free shipping, and discounted prices. These online stores eliminate the hassles of parking, getting stuck in traffic and standing in long queues for bills. They have also benefited people who always complain about lack of time. That is why most people have turned to online shopping. Here, they enjoy easy access to attractive price ranges, fast customer support and free home delivery. There is no doubt that these are attractive features that attract the attention of consumers (Taneja, 2021).

Nevertheless, the question arises as how to sell the sportswear online without going to stores in this digital era. Specially, after the outbreak of the pandemic, this question has attracted the attention of many experts. If online sports retailers can provide the consumers with the systems to try on the sportswear before shopping them, their motivation to buy online will increase (Alvarez, 2017). Findings of Walker Sands (2015) show that if sportswear shoppers can try on products virtually instead of seeing their images, the probability of online shopping will increase by 35%. For this reason, some companies and industries have offered virtual fitting rooms (VFR) on their websites in order to create a shopping environment close to reality (Alvarez, 2017).

After the outbreak of Covid 19, we have seen a 60% growth in online shopping by Iranians (Rezaeinejad, 2021). According to the statistics, about twenty thousand online sports retail stores have been stablished in Tehran only in 2022. The value of the business activities of these retailers reaches 17.4 billion dollars (Sharei & Zare, 2023). However, there are some problems that prevent sport consumers from shopping online. For example, their inability to try on clothes before shopping is a major problem (Tehrani, 2018). Also, one of the challenges facing Iranian online retailers is providing appropriate solutions for clothing sizes and their fitness to sports consumers (Najafi et al., 2020). Online sports retailers usually rely on sizing provided by manufacturers as well as different sizing rules (Saurav, 2016). In order to buy sportswear, you can never rely only on the sizing provided by the manufacturers as well as the relevant laws, and it is necessary for the consumers to see the

relevant clothing on their body and try its fit. Some experts in this field refer to more flexible policies for returning sold items and refunding the cost in the store, as well as options for exchanging and replacing items as solutions to this problem. However, many experts suggest investing in virtual fitting rooms as a solution (Ishfaq et al., 2016).

The purpose of this research is to investigate the factors affecting the adoption of virtual fitting rooms in Iranian online sportswear stores. Following the theory of consumer acceptance of the technology (CAT theory), the current research examines the influence of the following factors on the intention of online sportswear shoppers to adopt virtual fitting room technology in Iran: perceived ease of use, perceived usefulness, pleasure, arousal, dominance.

Virtual fitting rooms (VFRs) are one of the emerging technologies in the sportswear industry, which aim to help consumers make more informed decisions by virtually trying on sportswear. In this technology, simulation technology is used to create avatars for users based on their measurements. This technology was first introduced in 2005 and widely used after 2010 (Dawndasekare et al., 2016).

The key goal of virtual fitting rooms is to enable online consumers to feel the clothes on their body and make more informed decisions regarding their appearance (Gültepe & Güdükbay, 2014). According to the findings of Beck & Crié (2016), virtual fitting rooms increase the curiosity of online shoppers about the product and their probability of financial support (online and offline) and also their purchase intention (online and offline). In addition, online shoppers can save time by using this virtual technology, because they no longer need to go to physical stores (Schnack et al., 2021). Also, the researches have shown that virtual fitting rooms reduce the probability of product returns because consumers can try the product before shopping online (Guo et al.,

2014).

The first step to use these technologies is for the user to enter personal body measurements into the system to produce a virtual body system (avatar). There are different methods for body input measurements. One of the methods is for the user to enter the size of different parts of his body such as height, waist, upper body, lower body and other measurements manually so that the system creates an avatar (Garvey, 2010). In some applications, it is enough for the user to take a full-length photo of his body and upload it to the application. In this way, consumers can try different products virtually and finally choose their desired product (Business Wire, 2016).

Although virtual fitting rooms use advanced technologies, they still have some shortcomings. For example, some virtual fitting rooms convert 2D photos of consumers into 3D avatars, which can cause errors in measurements (Liang, 2017). In addition, some consumers may be concerned about their privacy because they have to upload their measurements or photos to find out their virtual fitness (Wang & Guan, 2015). Additionally, uploading body measurements as well as photos of individuals may be time-consuming (Erra et al., 2018).

The technology acceptance model is taken from Fishbein and Ajzen's (1975) logical action theory. Davis (1985) proposed this model. This model explains how the behavioral decisions of online sports shoppers are influenced by external factors. In the technology acceptance model, perceived usefulness and perceived ease of use are two factors influencing the behavioral decision of online consumers in using virtual fitting rooms (Mohammadi and Gisundi, 2022). In this model, perceived usefulness refers to the subjective approach of sport online consumers regarding the use of virtual fitting rooms to improve their performance, and the perceived ease of use refers to the ease of using virtual fitting rooms.

These factors affect sport consumers in terms of adopting this technology (Herrocrespo et al., 2021). Therefore, the following two hypotheses are proposed in this regard:

Hypothesis 1: The perceived usefulness of virtual fitting rooms has an effect on the decision of sport consumers regarding the adoption of this technology.

Hypothesis 2: The perceived ease of use of virtual fitting rooms has an effect on the decision of sport consumers regarding the adoption of this technology.

The PAD emotional state theory is a psychological theory developed by Mehrabian and Russell (1974) to describe and measure emotional states. PAD theory uses three dimensions, pleasure, arousal and dominance, to represent all emotions. Based on this, all emotional reactions to physical and social environments include the three senses of pleasure, arousal, and dominance. In other words, people's reactions to different environments can be expressed in the form of one of these dimensions or a combination of them. Its initial application was in environmental psychology theory, the main idea being that physical environments influence people through emotional influence (Jeon et al., 2016). However, this theory was used to investigate the behavior of consumers towards sport technologies (Chang et al., 2014). PAD theory has been used in sports marketing researches to measure emotional and sensational responses to environmental stimuli. This theory has been used in response to environmental stimuli to study the consumers responses to the atmosphere of sports stores in retail environments (Jeon et al., 2016; Chang et al., 2014), emotions evoked by television advertisements (Spadaro et al., 2018), experiences related to the use of sports products (Cushion, 2018), services (Chang et al., 2021), online shopping pleasure (Kumar et al., 2021) and other marketing fields (e.g., Sulaiman et al., 2020). However, this research is trying to

show the impact of PAD theory on the adoption of virtual fitting room by online sportswear consumers.

Today, consumers do not buy sports products just to satisfy their needs. Rather, they also enjoy their shopping (Seong, 2021). Considering that some people see marketing as a tool for entertainment and satisfying their instinctive needs, paying attention to this factor can play an important role in the acceptance of virtual fitting room technology (Cole et al., 2018). Products that have complex technologies, have a high potential to entertain others and are expected to have a strong impact on the acceptance of virtual fitting room technology (Avşar, 2021). Several researches also support this point (Hajdas & Kłeczek, 2021). For example, Hwang and Kim (2018) showed in their research that pleasure has a positive and direct effect on the attitude towards virtual fitting room technology. Therefore, this hypothesis is proposed:

Hypothesis 3: Consumers' pleasure of virtual fitting room has an effect on the decision to adopt this technology.

On the other hand, arousal is one of the psychological and physiological variables that is closely related to the level of attention and concentration in a person. In other words, arousal creates a feeling in a person based on a reaction to an external stimulus (Mathôt, 2018). In addition, arousal affects complex activities such as memorizing information and remembering them, as well as the formation of attitudes. High levels of arousal cause disturbances in processing and recalling information and reduce the ability to identify characteristics related to virtual fitting room technology (Shi et al., 2021). Abdolmaleki et al. (2018) concluded that arousal had a positive effect on online shopping of sports products. Also, Ghasemi Siani et al. (2021) stated that arousal lead to a positive attitude towards sports advertisements. Therefore, this hypothesis is proposed:

Hypothesis 4: The arousal of sportswear consumers towards virtual fitting room technology has an effect on the decision to adopt this technology.

Also, dominance refers to the degree of control and mastery of sports product consumers over the online environment and virtual fitting room technology. On the other hand, "being submissive" refers to the fact that a person feels completely under the control of the online environment and surrenders to this technology (Kulviwat et al., 2007). In fact, the researches have shown that the influence of the dominance factor was much greater than other factors such as environmental and perceptual variables (Kumar and Shah, 2021). Studies have shown that the lack of dominance and submission to the online environment causes the consumers to be worried and full of stress and it leads to a negative attitude towards the acceptance of this technology (Kumar and Shah, 2021). In their research, Jeon et al. (2016) showed that in environments where the consumer is facing many choices, his control over the environment is greater and vice versa. Shorey and Ng (2021) stated that the anxiety caused by submission to the virtual space and the lack of mastery over this space creates a negative attitude towards the use of virtual fitting room technology. Therefore, this hypothesis is proposed:

Hypothesis 5: The dominance of sportswear consumers on virtual fitting room technology has an effect on the decision to adopt this technology.

CAT theory was presented in 2007 by Kulviwat et al. (2007) as an alternative to TAM theory. Kulviwat et al. (2007) stated that the TAM theory is not sufficient to explain the factors related to technology acceptance because this theory only deals with perceptual factors such as perceived ease of use and perceived usefulness, while emotional issues explain a large part of technology acceptance. Especially regarding optional technologies where the consumer does not have any obligation to accept the technology, the role of emotional factors becomes more pronounced. Therefore, in this theory, Kulviwat et al. (2007) tried to combine the emotional factors, which was previously known as the PAD theory and included the factors of arousal, pleasure and dominance, with the TAM theory and finally named his theory as Consumers Acceptance of Technology (CAT). Considering that this article is related to virtual fitting room technology and its adoption by consumers is optional, CAT theory seems to be able to provide a correct definition of the acceptance factors of this technology.
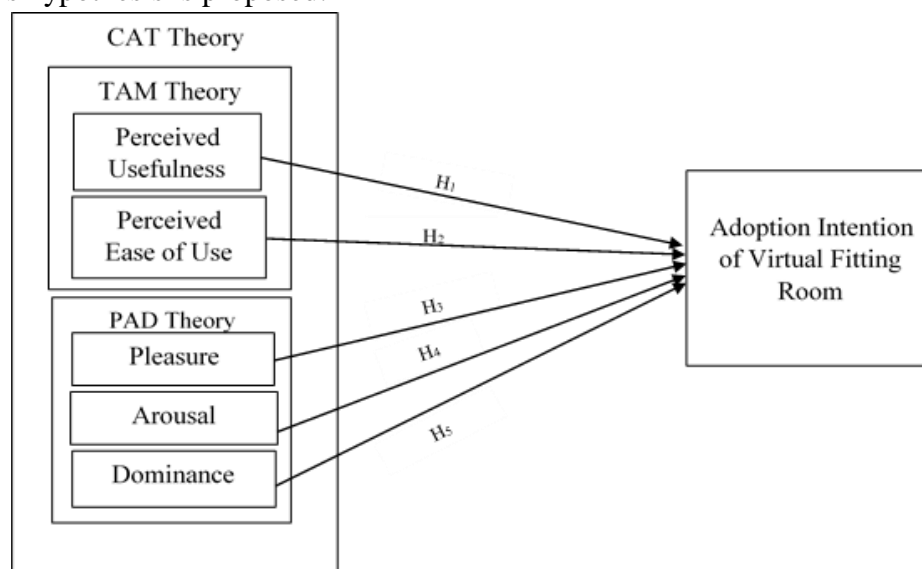
Figure 1: The theoretical framework of the research

Materials and Methods

The current research is applied in terms of the purpose. In terms of method, mixed method is used, in which Delphi qualitative method precedes the quantitative method. The research is based on structural equations which is used to design the model of factors affecting the adoption of virtual fitting room technology in Iranian sportswear stores.

The purpose of Delphi method is to reach the most reliable agreement of a group of experts on a specific subject, which is performed by using a questionnaire and asking experts for their opinions regarding the questionnaire (Humphrey-Murto, 2019). An interview protocol was prepared with the experts. Semi-structured interview fulfills the research objectives in the best way. In this research, the sampling process was carried out in two stages. In the qualitative phase, 20 subjects were selected as experts in the sportswear industry. In this stage, the sampling was non-random and purposeful.

The questions of the first questionnaire, which were to be evaluated by Delphi panel, were extracted from library studies and research literature. The opinion of the experts about the importance of each indicator has been collected with a 9-point Likert scale. Table 1 shows the statements extracted from research literature.

Table 1- Symbolization of open codes in Delphi technique

symbol	Extracted code
Q1	I think virtual fitting rooms help me save time.
Q2	I think virtual fitting rooms help me achieve my goals faster and by going through fewer steps.
Q3	I think virtual fitting rooms help me be more productive.
Q4	I think virtual fitting rooms make it easier for me to achieve my goals.
Q5	I think it would be easy to have access to this technology.
Q6	I think I can easily learn how to use this technology.
Q7	I think it is easy how to use this technology.
Q8	I think using this technology gives me a sense of happiness.
Q9	I think using this technology gives me a sense of peace.
Q10	I think using this technology gives me a sense of satisfaction.
Q11	I think using this technology gives me a sense of hope.
Q12	I think this technology stimulates my emotions.
Q13	I think I get excited when faced with this technology.
Q14	I think I get very motivated when working with this technology.
Q15	I think I feel in control when using this technology.
Q16	I think using this technology makes me feel like I have complete control over my online activities

Q17	I think using this technology makes me feel influenced by online environment.
Q18	I think using this technology makes me feel guided by other people.
Q19	I think using this technology makes me feel indebted to others.
Q20	If I have access to this technology, I will definitely use it.
Q21	If I have access to this technology, I will probably use it.
Q22	I have a strong desire to use this technology.

The opinions of 20 experts about each indicator
are shown in Table 2.

Table 2: The first round of Delphi

	responses	non-responses	mean	Middle	mode	S.D	variation range	Result
Q1	20	0	8.2	8	8	0.615	2	confirmed
Q2	20	0	8.25	8	8	0.550	2	confirmed
Q3	20	0	8.1	8	8	0.788	3	confirmed
Q4	20	0	4.70	6	4.5	0.553	3	rejected
Q5	20	0	7.45	8	8	0.944	3	confirmed
Q6	20	0	7.1	7	6	1.02	3	confirmed
Q7	20	0	7.15	7	7	1.039	4	confirmed
Q8	20	0	7.7	7	7	0.864	4	confirmed
Q9	20	0	4.8	7	4	0.744	4	rejected
Q10	20	0	8	8	8	0.858	3	confirmed
Q11	20	0	7.65	8	7	0.670	2	confirmed
Q12	20	0	7.6	8	8	0.940	4	confirmed
Q13	20	0	8.25	8	8	0.638	2	confirmed
Q14	20	0	7.9	8	8	0.788	3	confirmed
Q15	20	0	7.8	8	8	0.695	3	confirmed
Q16	20	0	8.15	8	8	0.489	2	confirmed
Q17	20	0	7.3	7	7	0.801	3	confirmed
Q18	20	0	7.9	8	8	0.718	3	confirmed

	Responses	non-responses	mean	Middle	mode	S.D	variation range	Result
Q19	20	0	7.35	7	8	1.05	4	confirmed
Q20	20	0	7.3	7.5	8	0.923	3	confirmed
Q21	20	0	8.20	8	8	0.695	3	confirmed
Q22	20	0	7.9	8	8	0.788	2	confirmed

Any measure whose mean and mode is less than 5 is removed. In the first round, based on the calculated values, two values were removed (4 and 9).

Delphi analysis continued for the factors identified in the second round. The criteria were based on the opinions of 20 experts in the first round. The results of Delphi in the second round are reported in Table 3.

Table 3: The second round of Delphi

	Responses	non-responses	mean	Middle	mode	S.D	variation range	Result
Q1	20	0	8	8	8	0.615	2	confirmed
Q2	20	0	8.15	8	8	0.550	2	confirmed
Q3	20	0	7.25	8	8	0.788	3	confirmed
Q4	20	0	7.65	8	7	0.670	2	confirmed
Q5	20	0	7.45	8	8	0.944	3	confirmed
Q6	20	0	7.1	7	6	1.02	3	confirmed
Q7	20	0	7.15	7	7	1.039	4	confirmed
Q8	20	0	7.7	7	7	0.864	4	confirmed
Q9	20	0	7.35	7	8	1.05	4	confirmed
Q10	20	0	8	8	8	0.858	3	confirmed
Q11	20	0	7.6	8	8	0.940	4	confirmed
Q12	20	0	8.25	8	8	0.638	2	confirmed
Q13	20	0	7.9	8	8	0.788	3	confirmed
Q14	20	0	7.8	8	8	0.695	3	confirmed
Q15	20	0	8.15	8	8	0.489	2	confirmed
Q16	20	0	7.3	7	7	0.801	3	confirmed
Q17	20	0	7.9	8	8	0.718	3	confirmed
Q18	20	0	7	7.5	8	0.923	3	confirmed

| Q19 | 20 | 0 | 7.45 | 8 | 8 | 0.695 | 3 | confirmed |
| Q20 | 20 | 0 | 7.1 | 8 | 8 | 0.788 | 2 | confirmed |

In the second round, no questions were omitted, which is a sign for the end of the Delphi rounds. In general, an approach to the end of Delphi is to compare the average scores of the last two rounds of questions. If the difference between the two stages of the very low threshold is smaller than 2, the Delphi process will be stopped.

Table 4: The difference between the results of the first and second round

	The result of the first round	**the result of the second round**	**difference**	**result**
Q1	8.2	8	0.2	confirmed
Q2	8.25	8.15	0.1	confirmed
Q3	8.1	7.25	0.85	confirmed
Q4	7.45	7.65	0.2	confirmed
Q5	7.1	7.45	0.35	confirmed
Q6	7.15	7.1	0.05	confirmed
Q7	7.7	7.15	0.55	confirmed
Q8	8	7.7	0.3	confirmed
Q9	7.65	7.35	0.3	confirmed
Q10	7.6	8	0.4	confirmed
Q11	8.25	7.6	0.65	confirmed
Q12	7.9	8.25	0.35	confirmed
Q13	7.8	7.9	0.1	confirmed
Q14	8.15	7.8	0.35	confirmed
Q15	7.3	8.15	0.85	confirmed
Q16	7.9	7.3	0.6	confirmed
Q17	7.35	7.9	0.55	confirmed
Q18	7.3	7	0.3	confirmed
Q19	8.20	7.45	0.75	confirmed
Q20	7.9	7.1	0.8	confirmed

Based on the results listed in Table 4, it was determined that in all cases the difference is

less than 2, so the Delphi rounds can be completed.

Kendall's consensus coefficient was used to calculate the agreement of the experts.

Table 5: Kendall's coefficient of agreement (research data source)

	Number of indicators	number of experts	Kendall coefficient	degree of freedom	significance value
Second round	20	20	0.860	19	0.001
Third round	20	20	0.887	19	0.001

Based on the results of Table 5, the value of Kendall's coefficient in the second round of the Delphi technique is 0.860, which shows that the consensus among the experts is moderate. Also, a significant value of 0.001 has been obtained, which shows that the obtained results can be relied on with 95% confidence. As a result, ignoring the indicators that scored below 0.7, other indicators have been used for the study in the second round. The Kendall coefficient in the third round of the Delphi technique was 0.887, which shows that the consensus among the experts is good. Also, a significant value of 0.001 has been obtained, which shows that the obtained results can be relied on with 95% confidence. Also, the average scores of all the items are around 0.7, which shows that the views are close. Therefore, the Delphi technique was stopped and the identified indicators were used for the final analysis.

In the quantitative phase, the snowball sampling was used to collect the subjects. The snowball sampling is used in cases where it is difficult to get access to the subjects who have the desired characteristics of the researcher (Parker et al., 2019). First, we went to Hafez store, which was one of the leading stores in the field of online sportswear in Shiraz. The store manager was asked to introduce 10 subjects who bought most of their sportswear online and were familiar with the newest technologies in this field. After obtaining their consent to participate in the research process and ensuring the confidentiality of the research process, the questionnaires were sent to them online. They were requested to answer the questionnaire and send it to the others they felt were familiar with the newest technologies in this field. Finally, 420 questionnaires were collected. The information related to the questionnaire is given in Table 6. Finally, the Excel file was downloaded and transferred to SPSS software. The validity of the questionnaire was confirmed by the opinions of experts and university professors. In addition, convergent validity obtained through the software confirmed the high validity of the tool. In order to check the reliability of the instrument, two tests of Cronbach's alpha and composite reliability were used, both of which confirmed the high reliability of the instrument.

Table 6- Reliability coefficient of research variables

Components	Relevant questions	Number of questions	Cronbach's alpha	AVE	CR	Source
Perceived Usefulness	1-3	3	0.897	0.68	0.90	Mohammadi, & Isanejad, (2018)
Perceived Ease of Use	4-6	3	0.911	0.78	0.93	Mohammadi, & Isanejad, (2018)

Pleasure	7-9	3	0.904	0.50	0.91	Kulviwat et al. (2007)
Arousal	10-13	3	0.890	0.65	0.86	Kulviwat et al. (2007)
Dominance	14-16	5	0.921	0.61	0.92	Kulviwat et al. (2007)
Adoption intention	17-20	3	0.895	0.65	0.89	Mohammadi, & Isanejad, (2018)

SPSS26 and Amos24 software were used for data analysis. Structural equation modeling was used to test hypotheses and evaluate the overall fit of the research model.

Results

The results of demographic statistics of the respondents in terms of gender, age and education are presented in Table 7.

Table 7. Demographic profile of the sample

Gender	F.	P.	age	F.	P.	education	F.	P.
Female	220	59.2	20<	253	66.9	High school	60	14.6
Male	200	40.8	20-25	78	17.2	Diploma	187	41.6
			25-30	56	11.1	Bachelor	122	30.2
			>30	33	4.8	Masters	39	8.4
						P.H.D	12	5.2

Measuring all the models is the first step to determine the acceptability of the indicators for the measurement models. Accordingly, three measurement models related to the variables were tested separately. The measurement indicators of the models showed that the models used for measuring the factors affecting the adoption of virtual fitting rooms in Iran were acceptable. The general indices of measurement fit are shown in table 8.
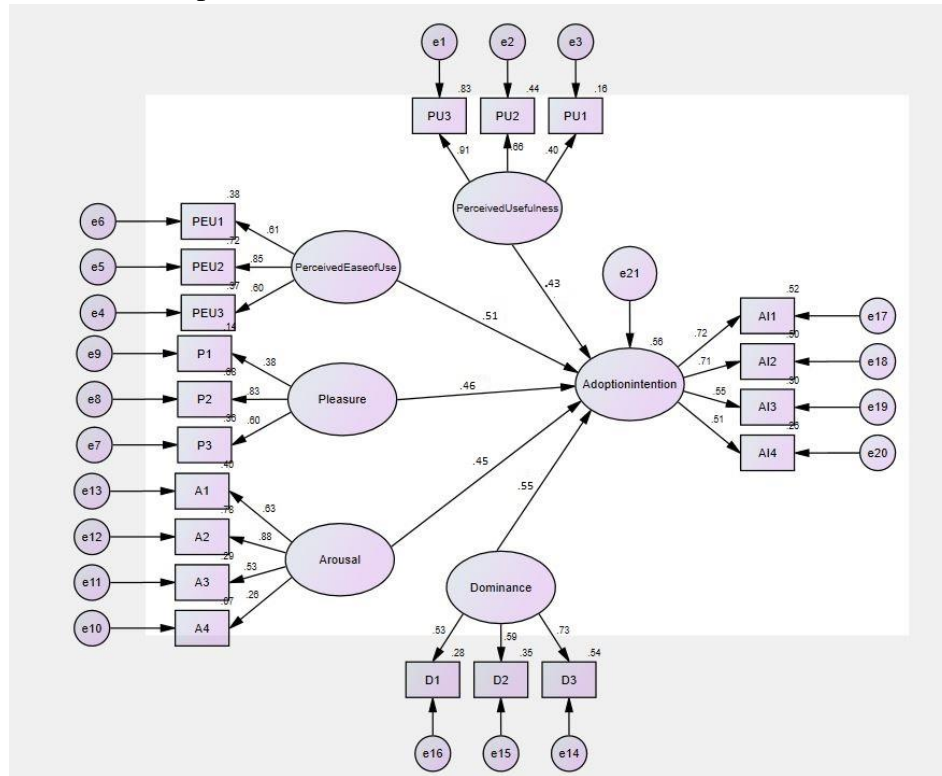
Table 8. General indicators of the fit of the measurement models

Variable	Index name					
	Cmin/df	GFI	AGFI	CFI	NFI	RMSEA
Factors affecting the acceptance of virtual fitting rooms in Iran	3.35	0.91	0.93	0.965	0.941	0.045
adoption Intention	3.02	0.93	0.96	0.98	0.96	0.065

| **Acceptable fit** | 5> | GFI>0.9 | AGFI>0.8 | 0.90<CFI<I | 0.90<NFI<I | RMSEA<0.08 |

According to the results of Table 8, a good fit of the measurement models was observed. In other words, according to the general indicators, the data fit the patterns well. After

checking and confirming the measurement models, structural equation modeling was used in the second step to test the hypotheses.

Figure 2. Pattern of structural equations of research hypotheses

General indicators of the conceptual research model fit are presented in Table 9.

Table 9. General indicators of structural model fit

Index name	Cmin/df	GFI	AGFI	CFI	NFI	RMSEA
Structural model	1.33	0.95	0.950	0.965	0.941	0.018
Acceptable fit	3>	GFI>0.9	AGFI>0.8	0.90<CFI<I	0.90<NFI<I	RMSEA<0.1

According to Table 9, the general indicators show a good fit between the model and the data. In other words, the collected data support the model well.

After checking and confirming the model, the P index was used to test the significance of the

Table 10. Regression coefficients and test results of hypotheses

hypotheses. Values less than 0.05 for P values indicate a significant difference calculated for regression weights with zero values at the 0.95 confidence level. Hypotheses with regression coefficients and P values for each hypothesis are presented in Table 10.

Hypothesis	The effect of the variable ...	on the variable ...	Regression coefficient	significance number	Result
1	Perceived Usefulness	Adoption Intention	0.43	0.001	supported
2	Perceived Ease of Use	Adoption Intention	0.51	0.001	supported
3	Pleasure	Adoption Intention	0.46	0.001	supported
4	Arousal	Adoption Intention	0.45	0.001	supported
5	Dominance	Adoption Intention	0.55	0.001	supported

The results of Table 10 show that all the hypotheses in the research were supported.

Discussion

Nowadays, customers are considered as the most important competitive advantage for sport industries. Long-term relationship with customers is a great source of making profit in sport organizations (Seong, 2021). Therefore, it is necessary for sports industries to pay special attention to customer retention (Ghazizadeh & Shirazi, 2018) and provide all the necessary facilities to improve their shopping experience and obtain their satisfaction (Torabi, Rahimi Nik, Vaddadi & Esmaeilpour, 2019). Virtual fitting rooms are a means of improving the customers shopping experiences and their satisfaction (Flacandji & Krey, 2020). In this research, the researcher is trying to investigate the factors influencing the adoption of virtual fitting room technology by online shoppers of sports products in Iran. The results are as follows:

This research has several important management implications for sportswear online retailers. According to the findings, perceived usefulness has a significant and positive effect on the adoption of virtual fitting room in Iranian sportswear stores. The reason can be explained by the ability of the consumers to save time and money. They can also have more choices regarding color and fitness. The consumers can also ask the idea of their friends online through this technology which adds to the usefulness of this technology. On the other hand, by this technology, the consumers have more access to the information about the products. Perceived ease of use is also important regarding the adoption of this technology. The reason for this issue can be justified according to the following factors: 1- It reduces the possibility of returning the garments bought online. 2- It is easy to have access to the technology. Everyone with a cell-phone can run the application program and enjoy the facilities. 3- Working with this technology is very easy for the consumers. All we have to do is to upload the sizes or take a picture of ourselves and upload in the program.

Also, the findings showed that arousal plays a great role regarding adoption of virtual fitting rooms by sportswear consumers. It is consistent with the results of Shorey and Ng (2021). They mentioned attractiveness of the technology as the main factor for motivating the consumers. It seems that virtual fitting rooms are somehow a

new technology in Iran. And new technologies are often accompanied by arousal in the consumers as they want to experience new and modern technologies. According to the research findings, pleasure is also one of the factors influencing the adoption of virtual fitting rooms. The meaning of this issue is that, sports consumers have the opportunity to interact and socialize with each other and with their friends and spend enjoyable time within virtual fitting rooms. For example, they can share the clothes they are going to buy and their sizing with their friends, and ask their opinions which is a source of pleasure. They can also try different clothes on at the minimum fraction of time and enjoy their look. And also, the other characteristics of this technology like time frugality are sources of pleasure. As I said, in this technology the possibility of returning the products is very little, which makes the consumers joyful. Also, the findings show the positive and significant effect of dominance on the adoption of virtual fitting rooms. It can be said that in most cases the consumers feel dominated by this technology. They feel that there is not much support for them in case of online risks such as disclosure of personal information, personal sizes and their photos. Therefore, the safer the online environment, the more confident the consumers will be in adopting this technology and the more control they have over this technology.

Conclusion

Our study examines the factors affective on the adoption of virtual fitting rooms in the Iranian sportswear stores. The results of this research have practical implications for sports managers and retailers in relation to adopting the best management and marketing strategies to use virtual fitting rooms. In other words, sports retailers should not only correctly define what their goals are by using this technology, but also consider how to make the consumers adopt this technology. Because, according to the results of this research, all the factors

mentioned are affective on the adoption of virtual fitting rooms by consumers. In addition, sport managers should focus on creating a new experience for customers in an exciting way to assure them about this technology and spread it in the society.

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