

# Research on The Factors Influencing Consumers' Purchase Intention of Sports Fashion Clothing Based on An Extended SOR Model with A Product Attribute Viewpoint

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**Abstract**—Sports fashion clothing has attracted the attention of more and more enterprises and consumers and meets the needs of consumers in the context of the normalization of the epidemic. Based on empirical research, this paper constructs a sports fashion clothing willingness to buy a model from the perspective of product attributes through SOR and FEA models and uses linear regression to test its hypothesis. The research results show that the functionality, expression and aesthetics of sports fashion clothing significantly affect consumers' purchase attitudes, of which the expression impact is the most obvious; the purchase attitude and aesthetics significantly affect consumers' willingness to buy. Finally, this article provides relevant suggestions for the development of sports fashion clothing products.

**Keywords**- sports fashion; SOR model; Consumer's purchase intention;

## 1. Introduction

At the end of 2021, the business trends board of the creative sharing site Pinterest introduced the concept of "Flexercise", which expresses that in 2022 all age groups around the world will start to focus on stretching, free walking and other "light exercise". At the opening ceremony of the 2022 Beijing Winter Olympic Games, the delegations entered wearing fashionable sports clothes, and many of the same clothes for the entrance ceremony were sold out quickly, and the topic of "Winter Olympics Wear" on the user sharing platform *Xiaohongshu* has reached 130,000 reads so far. In the same year, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council 2022 issued the "Opinions on building a higher level of public fitness system for all" proposed that the proportion of people who regularly participate in physical exercise will reach 45% in 2035. According to relevant information, the total sales of sportswear in China reached RMB 371.8 billion in 2021, with a two-year compound growth rate of 7.8% compared to 2019. It can be seen that since China entered the normalization of the epidemic in 2021, the Chinese sports market is gradually recovering and the sports apparel market will continue to grow.

Sports fashion has gradually received consumer attention in recent years, leading to the transformation of many sportswear companies into sports fashion. After accumulating a lot of experience in ergonomic design, sports brands have transformed into sports fashion to provide consumers with a relatively comfortable wearing experience and to meet their needs for self-

expression in life. The predecessor of sports fashion is "athleisure," which was created in 1979 to refer to clothing designed to "be used for both sports and other everyday things.". In 2016, scholar Zhao Yonggang proposed "Casual clothing" should not only meet its functional and aesthetic needs, but also reflect a lifestyle concept with fashion characteristics close to nature, which can facilitate the free combination of clothing to show the personality of the Generation Z group[1]. In the same year, scholars such as Bielefeldt argued that fashion in sports has been separated from the usual sports design and fashion design itself, and has become a new category of design, namely "sports fashion"[2].

Since the outbreak of the new COVID-19 epidemic in 2020, the Chinese consumer market and even the global economy have been severely hit, and potential consumers' current or expected incomes have decreased[3], leading consumers to begin to consume conservatively. At the same time, long periods of time at home have made consumers more emphasis should be placed on the psychological soothing effect on consumers[4]. According to scholar Duanzhen[5], sportswear itself focuses on the attribute of "clothing functionality", and compared with other categories of clothing, sportswear can better reflect its "technology" attributes and in effect give consumers a sense of comfort after a long time at home. With the normalization of the epidemic, consumers will re-examine the relationship between humans and nature and actively pursue a healthier, safer and more sustainable lifestyle, as well as more comfortable clothing with sustainable attributes, and warm tones and rustic floral styles are returning to the design elements of various clothing brands. Compared with other clothing categories, sports fashion clothing focuses more on portability and comfort as well as the applicability of clothing in a variety of scenarios[6], which is a good way to meet the needs of consumers for clothing under the normalization of the epidemic.

In accordance with previous views, this paper defines sports fashion clothing as a subcategory between professional sportswear and fashion, which belongs to sportswear and focuses on meeting consumers' fashion needs and life needs of multi-scene sports compared with professional sportswear. At present, the research on sports fashion is still in its infancy, and most of the relevant studies are review-type studies. Therefore, this paper will combine the background of epidemic normalization with the SOR model to develop the analysis of consumer purchase intention for sports fashion clothing from the perspective of product attributes.

## **2. Theoretical Basis and Model Assumptions**

### **2.1 Purchasing willingness and purchasing behavior**

Purchase intention was first proposed by scholars Fishbein and Ajzen in 1975 and indicates the subjective intensity of consumers' willingness to receive a good or a service. scholars such as Dodds, Han Rui, and Tian Zhilong proposed purchase intention as the likelihood of consumers' willingness to purchase a good. Bruce further demonstrated that consumer purchase behavior is directly related to purchase intention, and purchase intention has become a measure of consumer purchase behavior. The scholar Zhu Zhixian also proposed that purchase intention is a manifestation of consumer psychology and is a prelude to purchase behavior, which indicates that a product can satisfy the psychological needs of consumers.

## 2.2 SOR Model

In 1974, scholars Mehrabian and Russell proposed the SOR model, which evolved from the SR model and represents that the external stimulus S will make consumers motivated to buy, and then, driven by the purchase motivation, they will make the purchase decision O by matching supply and demand, and then implement the purchase behavior R, and even conduct post-purchase evaluation as well as request after-sale, as shown in Figure 1.

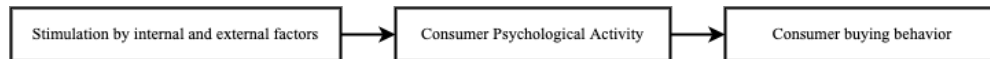


Figure 1. Stimulus - Organism - Response model.

In 2012, Fenfang Zhou [7] et al. applied the SOR model to the study of apparel online purchase intention, and the study confirmed that consumers are influenced by product characteristic factors and online retailer characteristic factors will affect consumers' emotions as well as cognitive factors, which will cause consumers' purchase intention to arise. In this paper, we will use sports fashion product attributes as the external stimulus, consumer purchase attitude as the organism, and consumer purchase intention as the outcome reflection.

## 2.3 Sports fashion clothing product characteristics latitude division

External stimulus variables, as some stimulus factors of external objective conditions, can affect users' purchase attitudes. Lamb et al [8]. proposed the FEA functional apparel design model based on consumer needs, and some scholars have conducted research on functional apparel using the FEA model. Although sports fashion apparel belongs to a subcategory under sports apparel, it must also meet consumers' needs for technical and practicality of apparel. Therefore, based on the research of Ye Jing et al [9]. this paper will take the theoretical model of three dimensions of functional-expressive-aesthetic (FEA) as the external stimulus variables and propose an extended SOR model is proposed.

## 2.4 Research Hypothesis

### 2.4.1 Product attitude and Purchase intention

Existing market consumption theories suggest that the more positive consumers' attitudes toward product purchase, the stronger their willingness to implement consumer behavior will be, and vice versa. The research hypothesis that consumers' purchase attitudes can influence their purchase intentions was also demonstrated by Zhang Qin[10] and Liu Hongwen [11] et al. in their studies in other product areas. Therefore, the following hypothesis is proposed:

H1: Consumers' purchase attitudes significantly and positively affect their purchase intentions.

### 2.4.2 Product attributes and product attitudes based on FEA model

Many studies have now shown that product attributes have a positive impact on the formation of consumers' purchase intention. For example, in an empirical study of the factors influencing brand attitudes and purchase intention, Yang Jie [12] et al. found that both product attributes and brand origin significantly and positively influenced customer purchase intention. Wang Huaiming and Chen Yiwen [13], et al. discussed the influence of product attributes on consumer attitudes from a psychological perspective in the context of product advertising. Based

on such studies, the FEA model was used to discuss the apparel attributes of sports fashion brands separately.

*a) Functionality*

In the FEA model, functional requirements include fit, mobility, protection, and comfort, all of which are related to the practicality of the garment and influence the user's attitude toward the product. The study by Tuanzhen et al. also showed that comfort has an impact on consumer attitudes. Therefore, the following hypothesis is proposed.

H2: Functionality positively influences consumers' purchase attitudes.

*b) Expressiveness*

Expressiveness involves symbolic communication characteristics of identity, such as values, roles, and self-esteem[14]. Based on the socio-cultural and psychological aspects of clothing, expressiveness refers to the fact that clothing products should match the status and self-image of the user[9]. Liu Jiafan[4]'s research shows that expressiveness in sports fashion apparel products as a match with consumer needs under epidemic normalization affects consumers' psychological needs for the product. Since psychological needs may affect product attitudes and purchase intentions, the following hypothesis is proposed.

H3: Expressiveness positively influences consumers' purchase attitudes.

H4: Expressiveness positively influences consumers' purchase intention.

*c) Aesthetics*

Aesthetics refers to the use of design elements in apparel[8], such as lines, silhouettes, colors, textures, patterns and other elements to create a pleasing design, and is an important criterion for consumers to evaluate apparel. Apparel is visually communicated through color, style, design, and other elements. Sports fashion focuses on the aesthetic expression of clothing, and some studies have found that aesthetics affects consumers' attitudes and purchasing behavior toward clothing[15]. In the previous discussion, Zhao Yonggang[1] showed in his study that aesthetic design is an important component of sports fashion apparel. Synthesizing the above analysis, this study proposes the following hypothesis:

H5: Aesthetics positively influences consumers' attitude to purchase.

H6: Aestheticity positively influences consumers' willingness to purchase.

### **2.4.3 Conceptual Model**

Based on the above research hypotheses, this study constructs a purchase intention model based on SOR and FEA, as shown in Figure 2.

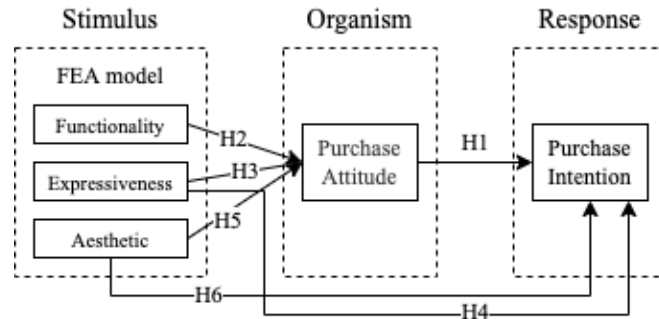


Figure 2. A conceptual model of willingness to buy sports fashion apparel based on expanding SOR

### 3. Research design and empirical results

#### 3.1 Questionnaire design

The questionnaire uses a 5-point Likert scale, with 1 meaning "strongly disagree" and 5 meaning "strongly agree". To ensure the reliability of the questionnaire, the initial questionnaire was designed with reference to the proven scales that have been empirically tested in domestic and international research literature, and the questions that were not applicable to sports fashion clothing were revised. Ten current undergraduate students were invited to conduct a small-scale pre-study to adjust the lack of clear statements in the questionnaire to form the final questionnaire.

Table 1 Scale items

Latent Variables	Variable Name	Questionnaire questions	Reference Sources
Functionality (FUN)	FUN1	I place great importance on the fit of sports fashion clothing	Wang et al. [16] Yang et al. [17] Shin[18]
	FUN2	I attach great importance to the skin-friendliness of sports fashion clothing	
	FUN3	I attach great importance to the convenience of sports fashion clothing	
	FUN4	Overall, I am satisfied with the functionality of sports fashion clothing	
Expressiveness (EXP)	EXP1	Sports fashion clothing can meet my dress code requirements	Bradforda et al. [19] Wang et al. [16]
	EXP2	Sports fashion clothes can make me match well with other clothes	
	EXP3	Sports fashion clothing can meet my lifestyle	
	EXP4	I would wear a sports fashion brand to a public event	
	EXP5	Wearing sports fashion clothing makes me feel mentally comfortable	
Aesthetic (AES)	AES1	I attach great importance to the fashionability of sports fashion clothing	Wang et al. [16] Cry et al. [20]
	AES2	I take the popularity of sports fashion	

		clothing very seriously	
	AES3	I attach great importance to the design of sports fashion clothing	
	AES4	I think sports fashion clothing is very fashionable	
	AES5	I really like the overall design style of sports fashion clothing	
Attitude (ATT)	ATT1	I think it is wise to buy sports fashion clothing	Hwang[21] Bakhshian et al. [22]
	ATT2	I have the idea of wearing sports fashion clothing	
	ATT3	Sports fashion clothing can meet my clothing needs	
	ATT4	Overall, I am positive about sports fashion clothing	
Purchase Intention (PI)	PI1	I am willing to try sports fashion clothing	Bakhshian et al. [22] Yang et al. [17]
	PI2	I am willing to buy sports fashion clothing	
	PI3	I will plan to buy sports fashion clothing in the future	
	PI4	I would recommend others to buy sports fashion clothing	

This survey focuses on Generation Z, which is more representative of sports fashion. With sports and life health gradually becoming the focus of the public, Generation Z's understanding of fashion is more from life, clothing should not only achieve its functional and aesthetic needs, but also reflect a kind of life concept with fashion characteristics close to nature, which can facilitate the free combination of clothing to show the personality of Generation Z [1].

### 3.2 Statistical analysis of sample description

SPSS was used to statistically analyze the samples in this study, and 82 valid questionnaires were gathered, with the descriptive statistical results provided in Table 2. In this survey, 39% of the subjects were female and 61% were male; 61% of the subjects were 18-24 years old; 46.3% of the subjects had a monthly discretionary income of more than 3,000 RMB; and 86.5% of the subjects had a basic understanding of sports design clothing.

Table 2 Descriptive statistics results of the sample

Categories	Items	Samples	Ratio/%
Gender	Male	32	39%
	Female	50	61%
Age	Under 18 years old	2	2.4%
	18-24 years old	50	61%
	24-30 years old	12	14.6%
	30 years old and above	18	22%
Education	High School or below	8	9.8%
	Undergraduates and Specialists	49	59.8%
	Master's degree and above	25	30.5%
Average disposa-	Less than 1000 RMB	7	8.5%

ble income per month	1001-2000 RMB	12	14.6%
	2001-3000 RMB	25	30.5%
	More than 3000 RMB	38	46.3%
Level of knowledge of sports fashion clothing	1 (Never heard of it)	1	1.2%
	2	10	10%
	3	28	34.1%
	4	27	32.9%
	5 (Very clear to understand)	16	19.5%

### 3.3 Testing of measurement models

#### 3.3.1 Reliability test

The Cronbach coefficient was employed as a reliability test indicator in this study to assess the level of consistency of the results of the sample data acquired from the questionnaire. Based on the findings of the sample data reliability analysis, as shown in Table 3, it is assumed that the Kronbach coefficient for each variable in the model exceeds 0.8, suggesting that the sample data is reliable.

Table 3 Reliability test

Latent Variables	Number of Questions	Cronbach $\alpha$
FUN	4	0.826
EXP	5	0.896
AES	5	0.896
ATT	4	0.871
PI	4	0.902

#### 3.4 Validity test

In this study, the KMO measure and the Bartlett's sphericity test were used for validity testing, as shown in Table 4. The overall KMO value was 0.874, the KMO value for each variable was greater than 0.7 and both the overall and each variable passed the Bartlett's test indicating good sample validity and suitability to extract data from.

Table 4 KMO and Bartlett's Test

Items	Values	
KMO	FUN	0.795
	EXP	0.853
	AES	0.788
	ATT	0.783
	PI	0.782
	Total	0.874
Bartlett's Test of Sphericity	Approx. Chi-Square	1459.040
	df	231
	p	0

### 3.5 Discriminant validity test

The average variance extracted (AVE) value and the composite reliability (CR) value were chosen as test degree of convergence indicators in this investigation, and the findings are displayed in Table 5. The sample data analysis results demonstrate that the AVE of each factor is more than 0.5.

Table 5 Pearson Correlation Coefficient and square root of AVE

	AVE	CR	FUN	EXP	AES	ATT	PI
FUN	0.547	0.828	<b>0.739</b>				
EXP	0.634	0.896	0.463	<b>0.796</b>			
AES	0.647	0.900	0.568	0.482	<b>0.804</b>		
ATT	0.635	0.874	0.606	0.761	0.643	<b>0.797</b>	
PI	0.715	0.908	0.543	0.599	0.640	0.765	<b>0.845</b>

\* The black bold text on the diagonal is the square root of AVE value

### 3.6 Hypothesis test

#### 3.6.1 Mediating effect test

The conceptual model was used to test the mediating effect of ATT, as shown in Table 6. ATT was completely mediated by the two latent variables FUN and EXP, and partially mediated by AES, with a 26.104% mediating effect. As a result, the proposed hypothesis H4 is invalid.

Table 6 Mediating effect test

Items	c	a	b	a*b	c'	Conclusion	ratio
FUN=>ATT=>PI	0.200	0.223**	0.585**	0.131	0.069	Full	100%
EXP=>ATT=>PI	0.247*	0.518***	0.585**	0.303	0.043	Full	100%
AES=>ATT=>PI	0.394**	0.258**	0.585**	0.151	0.242*	Partial	38.394%

\* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$

Figure 3 depicts a correction to the hypothetical model.

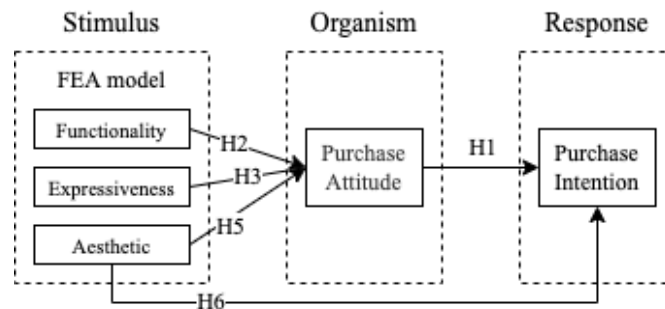


Figure 3. Following the mediating effect test, the conceptual model was modified.



### 3.6.2 Linear regression analysis

Table 7 displays the results of the linear regression with ATT, FUN, EXP, and AES as independent variables.

Table 7 Results of linear regression analysis (dependent variable: ATT)

	Unstandardized Coefficients <i>B</i>	Std. Error	Standardized Coefficients <i>Beta</i>	<i>t</i>	<i>p</i>	VIF	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	<i>F</i>
C	0.057	0.317	-	0.181	0.857	-			
FUN	0.223	0.085	0.205	2.644	0.010**	1.585	0.704	0.693	<i>F</i> (3,78)=61.979, <i>p</i> =0.000
EXP	0.518	0.070	0.537	7.372	0.000**	1.399			
AES	0.258	0.076	0.268	3.414	0.001**	1.622			

D-W: 1.700

\**p*<0.05 \*\**p*<0.01

The model equation is as follows:  $ATT = 0.057 + 0.223 * FUN + 0.518 * EXP + 0.258 * AES$ , the model adjusted *R*<sup>2</sup> value is 0.704, and AES, EXP, FUN can explain 70.4% of the variation in ATT. Because the VIF is between 1.399 and 1.622, there is no multicollinearity. Figure 2 shows a D-W value of 1.7. The D-W value is 1.7, close to 2, indicating that the model is not autocorrelated. According to the coefficients, AES, EXP, and FUN all have a significant positive effect on ATT. In conclusion, the proposed hypotheses H2, H3, and H5 are supported, and the model relationships between antecedent and mediating variables are revised.

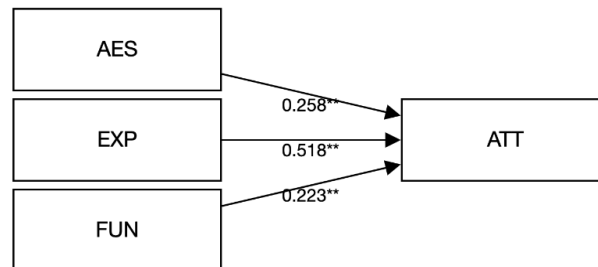


Figure 4. FEA and the Consumer Purchase attitude Model.

Table 8 shows the results of a linear regression with purchase intention PI as the dependent variable and aesthetic AES and purchase attitude ATT as the independent variables.

Table 8 Results of linear regression analysis (dependent variable: PI)

	Unstandardized Coefficients		Standardized Coefficients		<i>t</i>	<i>p</i>	VIF	<i>R</i> <sup>2</sup>	Adjusted <i>R</i> <sup>2</sup>	<i>F</i>
	<i>B</i>	Std. Error	<i>Beta</i>							
C	0.426	0.331	-		1.285	0.203	-			<i>F</i> (2,79)=65.366, <i>p</i> =0.000
ATT	0.646	0.096	0.603		6.694	0.000**	1.704	0.623	0.614	
AES	0.261	0.093	0.252		2.799	0.006**	1.704			

D-W: 2.317

\**p*<0.05 \*\**p*<0.01

The model equation is as follows:  $PI = 0.426 + 0.261 * AES + 0.646 * ATT$ , and the model adjusted *R*<sup>2</sup> value is 0.614, implying that ATT and AES can explain 61.4% of the variation in PI. There is no multicollinearity because the VIF value is 1.704. The D-W value is 2.317, which is close to the number 2, indicating that there is no autocorrelation in the model. According to the coefficients, ATT and AES all have a significant beneficial effect on PI. In conclusion, the proposed hypotheses H1 and H6 are supported, and the model link between the antecedent and mediating variables is changed.

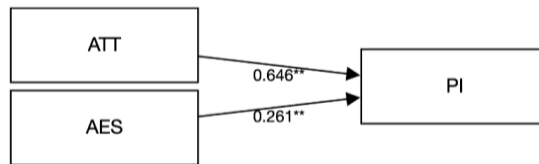


Figure 5. FEA and the Consumer Purchase attitude Model.

In conclusion, based on the foregoing findings, product functionality, expressiveness, and aesthetics all have a favorable effect on consumer purchase attitudes, and consumer buy attitudes have a positive effect on customer purchase intentions. Aesthetics also has a positive impact on consumer willingness to buy. Figure 6 depicts the final modified model.

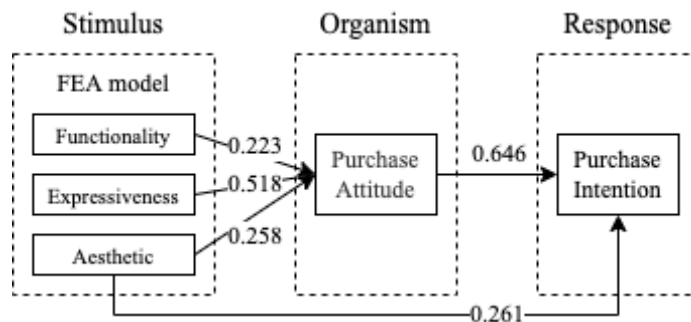


Figure 6. Model Final Modification.

## 4. Conclusions and Recommendations

Based on previous research, this study combines previous research on sports fashion and the change in consumer behavior in the context of the epidemic's normalization and the current situation and employs the stimulus-organism-response (SOR) model combined with the functional clothing design model (FEA) as the theoretical foundation to design a model of consumers' willingness to purchase sports fashion brand clothing, after which the hypotheses are tested using linear regression. The main conclusions are as follows:

- among the product attributes that influence consumers' purchase attitudes, the functionality, expressiveness, and aesthetics of sports fashion clothing can all significantly and positively influence consumers' purchase attitudes;
- among the functionality, aesthetics, and expressiveness of products, the size of the influence on purchase attitudes is in the following order: expressiveness > aesthetics > functionality;
- purchase attitudes are influenced by the functionality, expressiveness, and aesthetics of products.

### 4.1 From the aesthetic standpoint

Aesthetics have a strong and positive influence on purchase attitudes and intentions, indicating that the aesthetics of sportswear design are currently a major factor for customers and that its specific aesthetic expression fits consumer wants. Sports fashion is a new design field that is somewhat independent of fashion, and as the epidemic has become more mainstream, consumers' general aesthetic has evolved to 'sports fashion' rather than 'fashion' in the full sense of the word. Many sports brands have made significant efforts in recent years to court Generation Z, such as transforming sports fashion brands into "trendy" brands with a sports culture background and touting the fashionable nature of their designs, while ignoring the "back to health" nature of sportswear itself.

As a result, sports fashion companies should continue to refine the path of product aesthetic design and balance the three attributes of clothing, as well as consider simplifying or establishing secondary lines for overly fashionable categories, to maintain the competitiveness of product design in the sports fashion market for the main line of products, and even save the company money on fabric costs.

### 4.2 From the expressiveness standpoint

Expressiveness has a strong and favorable influence on consumers' purchase attitudes, and its coefficient is greater than the two most basic functional and aesthetic features of sports fashion clothing, but it has no direct influence on product purchase intentions. This implies that sportswear must fulfill the consumer's expressive demands, but that sportswear does not have to meet the consumer's expressive needs.

Companies must design their products with the psychological comfort of the garment in mind, prioritizing portability and convenience of wear, and sportswear must be able to suit the needs of consumers in a variety of everyday life scenarios. It is possible to reduce garments' professional functionality while increasing consumer demand for expression while maintaining basic functionality and aesthetics, for example, by showing consumers the applicability of garments

in various scenarios, allowing them to better understand the expressiveness of a particular product.

#### **4.3 From the functionality standpoint**

Only functionality has a major and positive influence on consumers' purchase attitudes. Because practicality lies at the heart of the sportswear category, customer demand for it has changed rather than vanished. The comfort of the material and the feel of the skin can be physically and psychologically calming for people under the normalization of epidemic prevention and control as an item that comes into close contact with the body.

Unlike professional sportswear, sports fashion clothing as a sportswear category for consumers, the functional needs of clothing have changed, consumers pursue comfortable, portable, to meet certain sports "light sports" function, so for the company sports fashion brand, functional research and development investment cannot be excessively reduced, can be appropriate targeted adjustment of research and development and must continue to maintain the clothing ergonomics.

### **5. Limitations and Future prospects**

This study still has certain limitations:

- Sports fashion clothing is widely involved, and throughout the history of development, some sportswear enterprises have moved towards the development path of sports fashion, and there are also fashion enterprises that have joined the development path of sports fashion, such as Victoria Sport (a high-end sports brand under Victoria Secret) and H&M Move (a fast fashion sports brand under H&M), so such clothing can also be referred to as "fashion sports brands." This paper examines the overall sports fashion industry products without examining the focus of the companies themselves, and future studies may consider specifically examining the product differences between the two types of clothing in the context of the sports fashion industry.
- The functionality of sports fashion garments varies, and while this paper developed indicators based on previous research, the cost of the garment functionality itself is determined by the manufacturer, and thus does not take the price of sports fashion garments into account.
- Although this paper focuses on Generation Z, the study's sample size is still small, which may have an impact on the sample's representativeness, and future studies will expand the number and scope of the study.

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