

Research on the Risk Perception of Fashion Online Shopping using SDT Evaluation among Female University Students in Guangdong China

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Abstract:

In this paper, the signal detection theory (SDT) is proposed to quantitatively analyze the risk perception on fashion online shopping of female university students in China. It also analyzes the main types and manifestations of the risk perceptions of fashion online shopping. Based on previous studies, the survey questionnaire was formed which tested the 20 female college students from Lingnan Normal University, randomly selected as test subjects. SDT is used to evaluate the sensitivity and reaction tendency. The sensitivity value and reaction tendency value of the risk response were obtained. The results of the study show that the sensitivity value is [-4.65, 0.93], which is generally low with small difference, while the maximum reaction tendency value is 12.2650, and the minimum is 0.7191. The values of this indicator vary widely, and inconsistent with the actual situation, indicating that the SDT proposed in this study can be used to evaluate the risk perception of female college student on fashion online shopping scientifically and accurately.

Keywords: Female College Student, Online Shopping, Risk Perception Ability, SDT Evaluation

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I. INTRODUCTION

With the popularity of the Internet, online shopping has become an important form of e-commerce, which is constantly changing people's consumption awareness and lifestyle. According to the 2018 Development of the Internet report by the China Internet Network Information Center, the number of online shopping in China reached 610 million as of December 2018. The scale of online shopping in China has surpassed the United States, making China the world's largest online consumer market. One of the main reasons why online shopping is popular is that it has a wide variety of products and no time constraint. Consumers can choose freely among nearly 800 million products and 8 million

sellers at anytime and anywhere. Almost every item for sale has more than one merchant at the same time, so consumers can select not only the commodity, but also the seller, which adds more options to online shopping. At present, the online shopping industry has covered many areas of people's daily life. Consumers can purchase not only small necessities, but also large-scale products such as cars and home appliances through online shopping malls, and it has price advantage, time advantage, convenience advantage, etc. Consumers at the online mall are free from salespeople's interference, relying on their own judgment to decide whether to buy. However, it reduces the risk of induction because online shopping induces other potential risks such as unclear commodity

information, unsure logistics time, and computer virus attacks upon online payment.

The potential risks will be more significant through online shopping malls. Clothing is the representative of fashion. People buy clothing to pursue individuality, that is, to match the personal style that requires accurate size and proper wear. However, for the clothing displayed at the online mall, it is difficult to intuitively feel the color, material, details of decoration and so on. In particular, the online mall provides the size of the clothing, but this size is often inappropriate because each manufacturer has different production process standards for the size of clothing.

Chinese female college students are not only the main consumers of fashion online shopping, but also the potential factors for the development of the fashion market. As their online shopping behaviors increase, the number of risk events they encounter also increase. In fact, the occurrence of female college students' online shopping risk events is closely related to their risk perception ability.

Therefore, the research on the quantitative measurement of female college students' risk perception on online shopping needs to be carried out to provide a theory for their risk perception ability and to provide a certain reference value for the security protection of Chinese online shopping environment.

The existing researches mainly focused on the perceived risk concept and influence factors. There are relatively few researches on the risk perception ability of online fashion shopping behavior, especially how to quantitatively evaluate among female college students. Based on the research of the existing online shopping risk types, we combine the specific risk scenarios of online shopping process, sets up the questionnaire, and use the SDT to evaluate the online shopping risk perception ability of Chinese female college students, which will provide reference for the cultivation and promotion of risk perception ability (Hewei Tian and Youngsook Lee, 2019).

II. Theoretical Background

2.1. Status of China's Online Shopping Mall

The online mall is like to the store in the real world. The difference is that the online mall is a virtual store that uses the various means of e-commerce from buying to selling. At present, Chinese online shopping malls can be categorized as B2B (Business To Business), B2C (Business To Customer), C2C (Customer to Customer), O2O (Online To Offline), and G2C (Government To Citizen) (HU Jingjing, 2008).

At present, China's online shopping industry is becoming more mature. Various online shopping malls continue to expand product categories, optimize distribution logistics, and improve service quality. In 2015, China's online shopping mall transaction volume reached 3,900 billion (the increase of 43.1%) and per capita consumption reached 9206.9RMB. The relevant researches on the scale of China's online shopping malls generally predict that China's online shopping malls will continue to develop at a high speed. With the continuous optimization of the shopping environment, people's demand and dependence on online shopping malls will be more obvious (Jeun Sang-taek and Shim Tae Yong, 2018). As of December 2018, the number of online shopping users reached 610 million, which is an increase of 14.4% compared to the end of 2017. In the first half of 2018, the domestic online retail market transaction volume reached 408 billion RMB, a year-on-year increase of 30.1%, accounting for 22% of the total retail sales of consumer products. The types of online shopping are still increasing, expanding to the beauty, service, catering, home, medical and other industries, so online shopping as a new and interesting shopping method will continue to develop (Li Jian et. al., 2017).

Although the rapid development and huge market scale of online shopping malls is obvious in China, there still exists loopholes such as logistics distribution (Kyoung Suk Choi and Chae Hun Song, 2013), personal information outflow and payment

risk (Oi Sul Jeon and Sung Kyu Park, 2009) in spite of bringing convenience to consumers. In the first half of 2018, the China network security center (CNNIC) received a total of 54,190 accident reports, which is the increase of 12.2 percentage points compared to 48,283 in the same period of 2017. In addition, in the first half of 2018, National Internet-connected Report Department received 390.82 million reports in total (117.1% increase from compared to 17.978 million of the same period of 2017. It reveals that China's network mall shopping security situation is not optimistic.

2.2. Perceived Risk

The initial concept of Perceived Risk was extended from psychology by Bauer (1960). He believed that the expected results of purchasing behavior that could get consumers down may not be predicted. Therefore, consumers' purchase decision implies uncertainty about the result, which is the initial concept of risk. Jacoby and Kaplan (1972) divided perceived risk into six types, including money risk, performance risk, physical risk, social risk, psychological risk and time risk that may be associated with product procurement. Simpson and Lakner (1993) believed that among the purchasing environments of online shopping, consumers' perceived risks can be divided into economic risks, social risks, outcome risks, personal risks, consumer privacy risks and so on, just like traditional transactions.

A lot of valuable researches on online shopping risk perception have been conducted by scholars. Gao Xirong and Hu Jiyang (2011) categorized by clustering analysis the types of risk perception of online shopping consumers into psychological risk, performance risk, social risk, time risk, and economic risk. Lee Youngsook (2015) studied risk perception and product variables of Chinese college students online shopping according to the purchasing trend, divided perceived risk into seven types namely wearing risk, quality risk, economic risk, social risk, popular risk, size and coordinating risk, and concluded that the risk of clothing purchase

belongs to one of these types. Jiyong Lee and Jinsook Hwang (2015) studied the risks and purchase intentions of clothing products purchased overseas. The study finds that transportation risk has the largest impact on overseas direct purchase among payment, transportation, exchange and refund. Chang Jo Yoo and Hye Ju Jeong (2016) studied the shopping risk perception of mobile mall, mainly from the perspective of economy and performance, and discussed the impact of perceived risk on mobile shopping and its relationship with consumer values. Youn Kue Na and Byung Sook Hong (2008) studied its influence on the attitude and purchase intention of online clothing products, and showed that perceived risk affects consumers' expected trust in online shopping mall and will generate a certain degree of aversion to online mall. By combining the previous researches with the actual situation of Chinese online shopping malls, the researcher divided the perceived risks of Chinese online shopping malls into five categories namely economic risk, performance risk, social risk, psychological risk and time risk.

2.3. Signal Detection Theory (SDT)

Signal detection theory (SDT) is a basic theory of probability, which can be used to quantitatively diagnose the performance of systems. SDT is first developed in electrical engineering based on the statistical decision which is widely used in decision performance analysis. SDT has been widely applied in military command and control, weather forecasting, medical and personal decisions (Swets and Pickett, 1982). In addition, relevant studies have attempted to use SDT to evaluate the conflict judgment performance of air traffic controllers (Bisseret, 1981) and the accuracy of the conflict judgment system of the old air traffic control system (Parasuraman, 1987).

Nowadays, SDT is also used to evaluate risk perception. Zhang Junfeng and Liu Lan (2014) selected five drivers and applied the fuzzy signal detection theory (FSDT) to scientifically evaluate their risk perception ability. Luo Chen and Niu

Longfei (2014) selected a member of Chengdu railway station and applied SDT to study the fire evacuation fault perception ability of the staff. Ying Lu et. al. (2010) selected nine subway construction workers, applied FSDT to test and judge their risk perception ability, and obtained the specific value of risk perception sensitivity and response tendency of the nine subway construction workers.

SDT assumes two possible states of one situation. One is when there is a signal, called the signal state, and the other is when there is no signal, called the noise state. At the same time, this theory assumes that the distribution of these two states has overlapping parts. Any scenario can occur through these two distributions. The vertical axis of this curve represents the probability of the occurrence, while the horizontal axis represents the variables on which decision makers make decisions, as shown in figure 1.

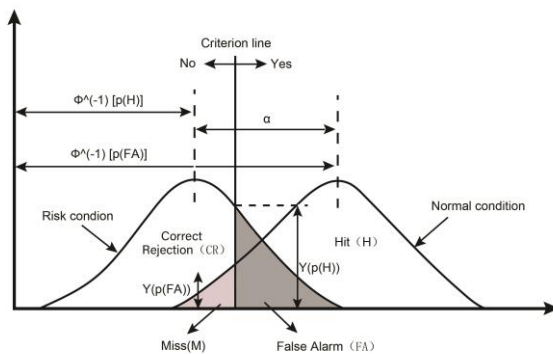


Fig. 1 Signal Detection Theory

At any specific time, when a certain state of the set situation appears, the detection system will make a "yes" or "no" signal. This system indicates whether the received signal appears or disappears. In a given situation, if the value of decision variable is high, decision makers' response is "signal appears". If the value of the decision variables is low, decision makers' response is "noise appears". The "signal appears" value is determined as the standard (as the black line in figure 1). The decision rule is when the value of the variable is greater than the standard, the response is "yes" and, when the value is less than the standard, the response is "no".

Table I. Four kinds of Judgment Results of Signal Detection Theory

Judgment result description	Result definition
The actual state is risky, and the judgment result is risky.	Hit (H)
The actual results are risky and the results are risk free.	Miss (M)
Actual results are risk free and the results are risky	Flase Alarm (FA)
Actual results are risk free and the results are risk free	Correct Rejection (CR)

In SDT, two possible states and two possible reactions of a given scenario can be represented by a truth value for four combinations. When the signal appears, the response is "yes", indicating hit; When the signal appears, the response is "no", indicating miss; When there is no signal, the response is "yes", indicating false alarm; When the signal does not appear, the response is "no", which indicates correct rejection. All of these cases are shown in table 1. Several discriminant results of external stimuli can be obtained by combining the calculation method of SDT and using "1&0", as shown in table 2.

Table II. Truth table for SDT

Situation(q)	Reaction(f)	H	M	FA	CR	\sum (H M FA CR)
0	0	0	0	0	1	1
1	0	0	1	0	0	1
0	1	0	0	1	0	1
1	1	1	0	0	0	1

Parasuranman (2000) proposed an algorithm that can be used to calculate the values of the four results in which the following relations can be satisfied:

$$\left\{ \begin{array}{l} H = \min(q, f) \\ FA = \max(f - q, 0) \\ M = \max(q - f, 0) \\ CR = \min(1 - q, 1 - f) \end{array} \right. (1) \quad \left\{ \begin{array}{l} HR = \frac{\sum H}{\sum q} \\ FAR = \frac{\sum FA}{\sum 1 - q} \end{array} \right. (2)$$

Two important SDT indicators of response sensitivity and response tendency are needed when the SDT is used to analyze female college students' risk perception ability. Sensitivity shows that female college students can correctly identify whether or not they are at risk. The response tendency is the

response preference, which reflects the female college students' judgment tendency to risk and the degree of risk taking. The response sensitivity of female college students can be expressed as the horizontal coordinate of the normal distribution diagram and the distance between the two state distribution functions.

With the definition of HR and FAR as the female college students' perceived risk response sensitivity and reaction tendency respectively, HR and FAR can be calculated by formula 2.

A simple example is given for formula (1) and (2). Two risk states are assumed. The (q,f) value of risk condition 1 is 0.75 and 0.65, and the (q,f) value of risk condition 2 is 0.85 and 0.95. Therefore, the H value of the two risk states should be 0.65 and 0.85, and HR is the sum of all H values (0.65+0.85) divided by the sum of all q values (0.75+0.85), resulting in 0.9375. Calculating FAR by the same method gives the FA distribution of the two risk conditions, that is, 0 and 0.1. M and CM are not used frequently because they provide no new information.

$\alpha = Z(AR) - Z(FAR) = \Phi^{-1}(HR) - \Phi^{-1}(FAR)$ (3)
In general, in SDT, the reaction sensitivity is represented by parameter α and the reaction tendency is represented by parameter β . The method to calculate reaction sensitivity is given in formula(3). In this study, the value of α represents

the sensitivity of female college students to risk conditions. Z(HR) represents the abscissa of the normal distribution HR, while Z(FAR) represents the abscissa of the normal distribution FAR.

The calculation formula of reaction tendency β is shown in formula (4). In this study, β represents the response tendency of female college students to the risk conditions, Y(HR) represents the ordinate of the normal distribution HR, and Y(FAR) represents the ordinate of the normal distribution FAR.

$$\beta = \frac{Y(HR)}{Y(FAR)} = \frac{\exp \frac{-Z(HR)^2}{2}}{\exp \frac{-Z(FAR)^2}{2}} \quad (4)$$

III. Research Methods and Procedures

The questionnaire to understand the types of perceived risk and SDT evaluation of female college students purchasing clothing products on the online mall was studied by Eun Joo Park and Bo Kyung Kim (2018), Yong Sook Kim (2016), Chao Xu and Hye Sun Park (2014), Youn Kue Na and Byung Sook Hong (2008), and Ik Jae Chung and Sowon Ahn (2016). Among them, 13 questions were collected as the basic data of the subjects, and another 12 questions were used for the SDT evaluation, as shown in Table 3.

Table III. The 12 Questions to Represent 12 Causation Scenarios

No.	Risk scenario
1	The quality of clothing purchased by the online mall is better than that of the webpage.
2	The size of the clothing sold in the online mall is very accurate.
3	The color and design of the clothing sold in the online mall is very good.
4	Online malls are very risky to pay when trading.
5	It is wasteful to buy clothing in the online mall.
6	The clothing distribution purchased by the online mall is very punctual.
7	The clothing purchased by the online mall is very well known.
8	Personal information will be leaked after the online store purchases clothing.
9	Online malls will be harassed by merchants after purchasing apparel products.
10	Clothing purchased by the online store will be delivered to the wrong address.
11	The buying in the online mall will be despised by friends around you.
12	Online shopping malls do not match the status of their own clothing.

The data in this study were collected using the survey questionnaire method. The research subjects

were female college students from Lingnan Normal University in Guangdong Province, China.

The survey was conducted in April 2019. Before the implementation of the survey, four experts were invited to assess the risk level or level of the risk scenarios for the twelve questions in Table 3. The four experts include two network security supervisors (China Guangdong Cyber Security Center) and two academic experts (China-Taiwan Special Education Research Institute). According to SDT's first research, because this method is to determine the exact value of risk perception sensitivity and reaction tendency, it is quite sufficient to select 20 female college students for testing. Their answers are summarized and used for analysis and calculation.

The research hypothesis in this study are as follows.

Hypothesis 1. SDT can scientifically and accurately analyze the sensitivity and reaction tendency of female college students' perceived risk perception.

Hypothesis 2. The higher the response sensitivity index of female college students, the higher the risk perception ability; the higher the response tendency index, the higher the risk-taking tendency toward risk.

Hypothesis 3. Female college students have small differences in sensitivity indicators and large differences in response tendency indicators.

IV. Results and Discussion

The survey was conducted among 20 female college students from Lingnan Normal University in Guangdong Province. The survey period was from April 9 to 16, 2019. The general statistics table of the respondents, female students in the second grade accounted for the highest proportion (35%). In the profession, the artistic, physical and sports majors have the highest proportion of professionalism (35%). The monthly disposable pocket money of 1500-2000 yuan accounted for the highest proportion (30%), and the daily browsing time of the apparel products in the online mall, 1-2 hours (35%) accounted for the highest proportion.

According to the data in Table 2, and the formulas (1), (2), (3) and (4), the risk sensitivity and reaction

tendency indicators of the first female college student can be calculated as shown below.

$$HR = \sum H / \sum q = 6.70 / 7.58 = 0.8839$$

$$FAR = \sum FA / \sum (1 - q) = 1.16 / 4.42 = 0.2624$$

$$\alpha = Z(AR) - Z(FAR) = \Phi^{-1}(HR) - \Phi^{-1}(FAR) = -1.19 - 0.94 = -2.13$$

$$\beta = Y(HR) / Y(FAR) = 0.7662$$

Table IV. Statistical Results of the First Student

	q	f	H	M	FA	CR
Q1	0.72	0.63	0.63	0.09	0	0.28
Q2	0.68	0.81	0.68	0	0.13	0.19
Q3	0.85	0.75	0.75	0.10	0	0.15
Q4	0.43	0.64	0.43	0	0.21	0.36
Q5	0.94	0.82	0.82	0.12	0	0.06
Q6	0.37	0.47	0.37	0	0.10	0.53
Q7	0.42	0.73	0.42	0	0.31	0.27
Q8	0.91	0.52	0.52	0.39	0	0.09
Q9	0.79	0.86	0.79	0	0.07	0.14
Q10	0.10	0.31	0.10	0	0.21	0.69
Q11	0.83	0.65	0.65	0.18	0	0.17
Q12	0.54	0.67	0.54	0	0.13	0.33
Sum	7.58		6.70		1.16	

In SDT, the probability of 100% and the probability of 0 (false report) in the risk state are non-existent, so $HR=0.99$ and $FAR=0.01$ are assumed. By using formulas (2) and (3), the maximum value of sensitivity is calculated to be 4.65. When $HR=0.01$ and $FAR=0.99$, the minimum value of sensitivity is calculated as -4.65, so the range of change of is [-4.65, 4.65]. In order to use the parameters to evaluate the risk perception ability of female college students, this study divides the range of parameter α into three intervals. The first interval is below 60%, the second interval is 60%-80%, and the third interval is above 80%. The distribution of these three intervals is [-4.65, 0.93], (0.93, 2.79), (2.79, 4.65]. According to the calculation results of the first female college students' risk perception sensitivity parameter is relatively low. Similarly, the risk sensitivity parameters of the other 19 female college students can be calculated. As shown in Table 5, all the values are at [-4.65, 0.93], so the risk perception sensitivity of 20 female college students is relatively low.

Table V. Perceived Risk Sensitivity and Reaction Tendency Results

Test	HR	FAR	$\Phi^{-1}(HR)$	$\Phi^{-1}(FAR)$	α	Y(HR)	Y(FAR)	β
T1	0.8839	0.1731	-1.19	0.94	-2.13	0.1965	0.2565	0.7662
T2	0.8417	0.1041	-1.00	1.26	-2.26	0.2400	0.1804	1.3415
T3	0.6675	0.0113	-0.43	2.28	-2.71	0.3637	0.0297	12.2650
T4	0.6939	0.0588	-0.50	1.56	-2.06	0.3500	0.1181	2.9796
T5	0.6108	0.0542	-0.28	1.60	-1.88	0.3836	0.1100	3.4584
T6	0.6939	0.0656	-0.51	1.51	-2.02	0.3503	0.1276	2.7456
T7	0.7441	0.0610	-0.66	1.55	-2.21	0.3209	0.1200	2.6737
T8	0.8734	0.2127	-1.14	0.80	-1.94	0.2083	0.2900	0.7191
T9	0.8021	0.0995	-0.85	1.29	-2.14	0.2780	0.1736	1.6013
T10	0.6451	0.0407	-0.38	1.74	-2.12	0.3712	0.0878	4.2275
T11	0.8662	0.1833	-1.11	0.90	-2.01	0.2155	0.2700	0.8097
T12	0.7256	0.0113	-0.06	2.22	-2.82	0.3300	0.0339	9.8178
T13	0.7018	0.0521	-0.54	1.62	-2.16	0.3448	0.1074	3.2104
T14	0.7230	0.1154	-0.61	1.20	-1.81	0.3312	0.1900	1.7057
T15	0.8799	0.0814	-1.17	1.40	-2.57	0.2012	0.1500	1.3439
T16	0.7018	0.0475	-0.53	1.67	-2.20	0.3467	0.0989	3.5043
T17	0.7203	0.0361	-0.58	1.79	-2.37	0.3372	0.0804	4.1948
T18	0.7599	0.0792	-0.71	1.41	-2.12	0.3101	0.1476	2.1001
T19	0.7111	0.0271	-0.55	1.92	-2.47	0.3429	0.0632	5.4301
T20	0.7098	0.0792	-0.55	1.41	-1.96	0.3429	0.1476	2.3229

As shown in Table 5, the results of the reaction tendency of 20 female college students are statistically reflected. The value of the reaction tendency represents the response to the risk scenario. The larger the value, the more conservative the signal response of the testers, that is, the probability of the female college student taking risks is greater. The smaller the value, the more relaxed the standard for the respondent's signal response, that is, the risk judgment of the female college student is very cautious. From the results in Table 5, the minimum value of the 20 female college students tested was 0.7191, and the largest was 12.2650. The difference was obvious, which reflected the difference in risk perception of female college students.

V. Conclusion

The perceived risk of Chinese female college students on online shopping malls can be classified into five categories: economic risk, time risk, performance risk, social risk and psychological risk. These five types of risks are the most common types of risks on Chinese fashion online malls. SDT was used for scientific quantitative measurement of the perceived risk of female college students in purchasing apparel products at online malls. In this study, 20 female college students from Guangdong Province were selected as the survey subjects, and the risk perception sensitivity of 20 female college students was measured. The higher

the value of risk perception sensitivity, the more accurate the female college students' perception of risk scenarios, and the higher the ability to judge whether there is risk or determine the size of risk. The risk perception sensitivity of 20 female college students is distributed between $[-4.65, 0.93]$, indicating that the risk perception sensitivity of female college students is generally low. At the same time, this study also reveals the risk perception response tendency of 20 female college students. The risk perception response tendency of 20 female college students was quite different, and the maximum value was 12.2650, which means that female college students are very easy to make risky behaviors. The minimum value is 0.7191, indicating that the female college students will be cautious when faced with risks, and the large difference between the reaction tendency values also indicates that the risk perception difference among female college students is obvious. This is consistent with the actual situation, which verifies the application feasibility of SDT in scientifically determining the risk perception sensitivity and reaction tendency of female college students.

Research results showed that the difference in risk perception sensitivity of female college students is small, but the risk perception response tendency among individuals is quite different. These findings can provide some theoretical advice for online mall apparel product operators. When selling apparel products to target customers like female college students, attention should be paid to reducing potential economic risks, performance risks, social risks and psychological risk factors. Female college students' group perception sensitivity is generally low, and the risk perception response tendency is quite different. Therefore, when the online mall operators promote, display and sell products, they must ensure that the quality, delivery time and popularity of the products are consistent with the actual situation. In addition, the relevant departments must work together to ensure the environmental security of the online payment of the online mall. Higher education institutions also need to improve

their network risk perception ability by setting up lectures or courses.

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References

- [1] Bauer, R.A. Consumer behavior as risk taking, In R.s. Hancock (Eds.), Dynamic marketing for a changing world, American marketing Association, 1960, pp. 389-398.
- [2] Bisseret, A. "Application of signal detection theory to decision making in supervisory control: the effect of the operator's experience." *Ergonomics* 24 (1981):81-94.
- [3] Yoo, ChangJo, Jeong, HyeJu. "An Effects of Perceived Value and Risk of Mobile Shopping on Mobile Shopping Purchase Intention: Moderating Effect of the Smartphone Usage Level." *Korea Internet Electronic Commerce Association* 6.6 (2016):59-76
- [4] Park, Eun Joo and Kim, Bo Kyung. "Effects of Shopping Orientation, Marketing Stimulus and Perceived Risk on E-impulse Buying of Shoes Markets." *Korean Journal of the science of Emotion & sensibility* 19.1 (2015):71-82.
- [5] Kim Kyungmin et al. "The Influence on The Difference of Purchase Intention of Perceived Risk of Consumer and Temporal Distance Between Purchase and Consumption." *Korea Journal of Business Administration* 22.4 (2009):1915-1935.
- [6] Kim, Jun young, Jeong, Heon soo. "The Influence of an Internet Shopping Mall s Characteristics on the Purchase Intentions." *The Kon-Kuk Journal of Business and Economic Studies* 2 (2016): pp.129-185
- [7] Hu, JingJing. "Analysis of Current Situation and Limitation of Internet Shopping Mall in China:focused in Payment Method." *Chung-Ang University Master's thesis* vol. 32.1 (2008): 78-82.
- [8] Sang-taek, Jeun, Yong, Shim Tae. "A Study on

- the Effect of Shopping Mall Image Continuity on Economic Risk and Shopping Attitude of Internet Customers in China: Focused on Shopping Value Adjustment Effect.” *Journal of Distribution and Management Research* 21.3 (2018):147-159.
- [9] Lee, Jiyong and Hwang, JinSook. “Purchase intention and risk perception in overseas direct purchase according to shopping orientation.” *Korea Society of Design Trend* 1.46 (2015): 205-218.
- [10] Tian, Hewei and Lee, Youngsook. “Research on Risk Perception of Fashion Online Shopping by Chinese Female College Students' in Guangdong.” *International Journal of Business Policy and Strategy Management* 6.1 (2019):23-29.