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Does gender make a difference on college students' online shopping perception in China?

In Partial Fulfillment of the Requirements

for the Bachelor of Science in Accounting

by

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1025905

May, 2020

Does Gender Make a Difference on College Students' Online Shopping Perception in China?

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Abstract: The purpose of this research is to explore the gender difference on college students' online shopping perception in China. The questionnaire, credibility evaluation, and SEM theory are contained. The respondents consist of 251 college students (59% male and 41% female), and they are all from the five regions (north, south, central, west, and east) in China. After the data process and analysis, the correlations between the site quality, trust, perceived usefulness, subjective norms, enjoyment, and continuance intention are clarified. The results show that the males are significantly influenced by the trust and subjective norms, and females would rather focus on the site quality and perceived usefulness. Each independent factor haves direct or indirect effect on consumers' continuance intention, as for men, the subjective norms influence the most. The enjoyment influences the women the best. The site quality is the least factor which influence men, and trust is the least factor which influence women. The conclusion can be used as a guide for e-commerce retailers to do the sales promotion, and also the advice for impulsive student consumers.

Keywords: Site quality; trust; perceived usefulness; subjective norms, enjoyment; continuance intention.

I.   INTRUDUCTION

From the previous research, the main factors which will influence online users' shopping perception have been explored. According to Davis' technology acceptance model (TAM) theory, the perceived usefulness is one of the main factors which will influence the consumers' behavior (Scherer et al. 2019). Moreover, the customers' perceived usefulness of the online shopping can be impacted by the site quality and trust. The site quality refers to the appearance design of the website and its visit fluency. If the website is attractive and fluent for visit, it might be very effective in attracting the visitors (Zeithaml et al. 2002). As for the trust, it refers to the website security. People would not be willing to do the purchase online unless the website is well secured and their personal information is safe (Grabner-Kraeuter 2002). However, the TAM theory can't explain the online users' behaviors independently, the emotions of the buyers are ignored. The ECT in turns helps to do the prediction. The factors of subjective norm and enjoyment are added into the research framework. The subjective norm is the comments from the close friends or families. Their subjective perception of one website or one product will influence the choice of potential consumers directly (Javadi 2012). And the enjoyment is the buyers' own feelings on their online shopping experience (Cai and Xu 2006). These three factors include the perceived usefulness, subjective norm, and enjoyment have direct and indirect impact on online users' continuance intention.

There are some relevant researches in China, the authors tend to combine the influential factors together. For instance, the effect of age, gender, professions, and regions tend to be analyzed together. There is no analysis which focus on only one variable: gender, and do the research systematically. Gender differences generally refer to differences in physical, psychological, and behavioral relationships between men and women, and they are also evident in the field of consumer behavior. The study found that male consumers have the following characteristics: strong purchasing initiative, low purchasing motivation, fast and independent purchase; and female consumption is significantly different, mainly in: strong buying motivation, vulnerability to external environment, and more Focus on intuitive and emotional, strong self-expression psychology and outstanding seeking psychology (Sheng 2016). The gender difference on Chinese college students' online shopping is worthwhile to be analyzed separately, this is the knowledge gap of my research. After reading the previous relevant researches, I proposed two questions:

1. Does gender make a difference on college students' online shopping perception in China?

2. What are the correlations between site quality, trust, perceived usefulness, subjective norms, enjoyment, and continuance intentions in China?

In the context of China, evaluating from the major universities surveyed, the express stations on campus often line up long queues, especially in the e-commerce shopping festivals such as Double Eleven and Double Twelve. It can be seen that e-shopping has become part of the daily life of every college student. The convenience of online shopping is well received by the majority of students, some college students have become addicted to e-shopping due to poor self-control and lack of self-regulation. Most college students' e-shopping time can be within the control range, but this part of the students is very noteworthy (Wu 2019). For both the e-commerce companies and the students lack of self-control, this research is meaningful.

In my research, the methodology is divided into three parts: data collection (questionnaire), credibility evaluation (Cronbach's Alpha value, Composite Reliability value and the Average Variance Extracted value), and Structural Equation Model (SEM) transformation. The definitions and usages of CR, AVE, and SEM will be explained in the results part. The data

analysis is processed in the SPSS and Amos 23.0 software. In the data collection part, I received the feedback from 251 college students. They are undergraduates or postgraduate, from the five different regions in China. My research shows that the correlation between perceived usefulness and continuance intention is not supported. And men's trust on the seller would affect their perceived usefulness, the subjective norms would affect their continuance intention. As for women, the factor which influence their perceived usefulness is the site quality, and the perceived usefulness would affect their enjoyment.

The existing literatures guide me a clear framework for doing this research. In regard of the drawbacks of both the TAM and ECT model, the combination usage of them can bring more findings despite the normal hypothesizes (Premkumar and Bhattacherjee 2008). Then the site quality, trust, perceived usefulness, subjective norms, and enjoyment are enrolled in the research, and their concepts are well-defined in the previous research.

The next section in this paper is the literature review and hypothesizes. The section III is the methodology. Then the result follows as the section IV. The section V is the discussion, and the section VI is the theoretical contribution. The last section is the conclusion.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Literature Review

Relevant Models

The technology acceptance model (TAM) was initially established by Davis in 1985. It has two major research objects. First, it is supposed to improve our knowledge on user's acceptance processes, providing new academic contributions for successful planning and carrying out of information system. Second, TAM should provide a basis for a "user acceptance testing" methodology that allows the designers and implementors to evaluate their new system before the implementation (Davis 1985). Perceived ease of use and perceived usefulness, which are the most important factors in TAM, refer to the degree to which people think technology can be used effortlessly (PEU) and can be used to enhance their work or task performance (PU) (Scherer et al. 2019). Despite TAM's success, one of its disadvantages is that it does not use emotions as an indicator of consumers' attitudes towards new product use and their actual behavior (Bagozzi 2007). In fact, consumer behavior theory provides evidence that utilitarian motivation is not enough to explain consumers' behavior towards products (Childers et al. 2001).

The Expectation-Conformation Theory (ECT) in turns helps to predict the consumers' behavior before, during, and after their purchase behavior (Al-Maghrabi and Dennis 2009). Consumer satisfaction is always considered as an essential factor in the cause-and-effect relationship between the consumers and their upcoming purchase behavior. Oliver's ECT model has suggested two constructs: performance-specific expectation and expectancy disconfirmation (Oliver 1980). To the extent of ECT, once a user has a great impression on a website, this satisfaction will make him have the intention to revisit (Lin et al. 2005). However, ECT ignores underlying changes in initial expectations after the consumption experience and the impact of these expectation changes on following cognition process (Bhattacherjee 2001).

In regard of the drawbacks of both the TAM and ECT model, the combination usage of them can bring more findings despite the normal hypothesizes. A new finding was found in a

relevant research by Premkumar and Bhattacherjee (2008). They did a combination experiment about TAM and EDT models. EDT is the opposite model of ECT, and it's short for Expectation-Disconformation Theory. Their findings confirmed that both models are highly explanatory, and TAM is a better predictor of intention. An integrated model that combines TAM and EDT provides better explanation (Premkumar and Bhattacherjee 2008). Perceived usefulness is the strongest predictor of willingness in TAM indicators. When TAM is combined with ECT, perceived usefulness is still the strongest indicator of sustained willingness higher than satisfaction, and satisfaction is dominant in ECT indicators. For e-shopping, the hedonic structure in TAM may reflect the pleasure users get from online shopping, thereby enhancing ongoing intent (Al-Maghrabi and Dennis 2009).

Background

According to CNNIC's "37th Statistical Report on Internet Development in China", as of December 2015, the number of Internet users in China reached 688 million, and the proportion of college school students in netizens was the highest, at 25.2% (Sheng et al. 2016). The college students have two major factors which drive them to purchase online: 1) the e-shopping consumption method is more avant-garde and meets the psychological characteristics of college students. 2) when the students are busy with school, there will be conflicts between shopping and learning. Online shopping meets their needs and save a lot of time (Li 2019).

The study found that male consumers have the following characteristics: strong purchasing initiative, low purchasing motivation, fast and independent purchase; and female consumption is significantly different, mainly in: strong buying motivation, vulnerability to external environment, and more Focus on intuitive and emotional, strong self-expression psychology and outstanding seeking psychology. College students have living expenses per month and are willing to accept new things. They are the main target customer groups of online merchants (Sheng et al. 2016). Therefore, research on the online shopping behavior of college students' groups has practical significance for the development of marketing strategies such as online shopping platforms and online store businesses.

2.2 Research Concept

i. Site Quality

Despite the global internet users has risen to 7,017,846,922 (http://www.internetworldstats.com/stats.htm), the online transaction is still in its infancy (Kalia et al. 2014). High quality websites have the ability to rise more online users' attention and attract them to do the shopping, and even the revisit (Song and Zinkhan 2003). The high quality of site visit experience is the key to improving a company's competitive force (Kalia et al. 2014). For attracting and retaining the consumers, the companies are required to have a complete understanding of the consumers' needs, and make proper adjustments (Barnes and Vidgen 2003). It was approved that providing adequate service quality through the websites is an important strategy, it might be more effective than the low price and the site existence (Zeithaml et al. 2002).

ii. Trust

The main reason why online consumers are unwilling to go to shopping online is that there is currently a fundamental lack of trust between most businesses and online consumers. Trust is not only a short-term matter, but also the most important long-term obstacle to realizing e-commerce's potential for customers. (Grabner-Kraeuter 2002). The purchase on the Internet

not only brings risks to the transaction process itself, but also brings many risks to consumers (Einwiller et al. 2000). For internet companies, it would be beneficial for them to win the trust of consumers (Grabner-Kraeuter 2002).

iii.   Perceived Usefulness

Usefulness is a major prerequisite for market adoption of technology. (Peterson 1997) The research by Ramayah and Ignatius held the view that that the power to attract online consumers relies in the technology's usability and usefulness (Ramayah and Ignatius 2005). This is same with Davis (1985) who regards the latter as perceived usefulness (PU), and PU is an essential independent variable in Davis' TAM theory (Davis 1985).

iv.   Subjective Norm

Theory of Reasoned Action (TRA) has been successfully applied to explain human behavior (Sarver 1983). The theory claims that human behavior should be preceded by purposes, which is formed based on consumers' attitude towards behavior and perceived subjective norms. Subjective norms catch consumers' perceptions of the impact of other important people (such as family, peers, authority figures, and the media) (Javadi 2012). Subjective norms refer to consumers' perceptions of the usage of online shopping by reference groups such as friends or colleagues (Lin 2007).

v.   Enjoyment

Shopping enjoyment refers to the degree of enjoyment that people think the online store shopping experience itself has, in addition to any performance consequences that can be expected. Shopping enjoyment is not about measuring a person's state of mind during the shopping, but about the pleasure of the store. Process value and enjoyment together correlate to value of shopping in marketing literature (Cai and Xu 2006).

2.3 Theoretical Framework

In this research, I put the five correlated independent factors and the consumers' continuance intention into the framework, try to explore their interactive relationships.

First, the Site Quality plays an important role in the online users' shopping experience. An attractive webpage and fluent surfing experience might be effective in maintaining users. For these reasons, I predict that:
H1.a There is a positive correlation between Perceived Site Quality and Perceived Usefulness.
H1.b. There is a positive correlation between Perceived Site Quality and Customer Trust.

Second, the Trust of online users would also influence their choices. It is essential for the companies to improve their online security system and win the trust from the users. If it's risky for the consumers to shop online, they may not use it. For these reasons, I predict that:
H2.a. There is a positive correlation between Perceived Trust and Perceived Usefulness.

Third, the Perceived Usefulness is a general description about the users' experience. The site quality and trust are the variables which will influence the website's usefulness. Also, after the usage of the webpage, the users would have some comments about their experience. Their purchase experience might also be shared with their close friends and families. Therefore, the perceived usefulness has direct impact on consumers' enjoyment and subjective norm, and also their continuance intention. For these reasons, I predict that:
H3.a. There is a positive correlation between Perceived Usefulness and increasing Subjective

Norm.

H3.b. There is a positive correlation between Perceived Usefulness and increasing customer Enjoyment.

H3.c. There is a positive correlation between Perceived Usefulness and increasing customer Continuance Intention.

Fourth, the subjective norm refers to the comments which heard from the others. Not only from the friends in the daily life, the e-friendship and e-shopping also provide the platforms for the consumers to collect useful information. For these reasons, I predict that:

H4.a. There is a positive correlation between Subjective Norm and increasing customer Enjoyment.

H4.b. There is a positive correlation between Subjective Norm and increasing customer Continuance Intention.

Fifth, the enjoyment illustrates the uses' feeling after their online shopping. This would have a decide that whether they would revisit this website and repurchase the products. For this reason, I predict that:

H5. There is a positive correlation between Perceived Enjoyment and increasing customer Continuance Intention.

III.   RESEARCH METHOLODOGY

Data and sample

To approve the conceptual model and the proposed research hypotheses, I designed an online survey, which is suitable for collecting data from large geographical areas. In addition, compared with traditional surveys, online surveys require lower costs, faster feedback, and less data process effort. I put the questionnaire link on different social platforms, which includes Wechat, Weibo, and Douban. The total number of competed questionnaires is 251. The respondents include both the undergraduates and the postgraduates, and they are from different regions of China. Gender, as a variable in this study, is evenly distributed.

Measures

The measures of the various constructs come from previous literature, adapted to the context of online shopping if necessary. All online survey items use 1–7 Likert scales, on which 1 indicates strongly disagree and 7 is strongly agree. The questions are relevant to site quality, trust, perceived usefulness, subjective norm, enjoyment, and continuance intention. Each factor contains four relevant questions, insignificant questions will be deleted.

Data Analysis

The Table 1 shows the demographic information of the respondents. The respondents are all students whose ages are above 18, they have independent bank account and always engage in online activities. As I list in Table1, the respondents are 251 adult students from different regions of China. It contains 148 (59.0%) men and 103 (41.0%). The majority of them are very young, with 84 (56.8%) men and 42 (40.8%) women in the age group of 18-22. And 39 (26.4%) men and 50 (48.5%) women are between 23-24, the others are greater than or equal to 25. All of them are from the regions of China: 29.5% from the north, 32.7% from the center, 26.7%

from the east, 6.4% from the west, and 4.8% from the south. The 20.3% of the male group spends less than 200 RMB on internet very month, the ratio turns to 26.3% in the female group. 50.7% of male respondents spend 200-500 RMB monthly, and it's 39.8% for the females. As for the people who spend 500-1000 RMB, 25.7% men are in this consumption level, and the figure for women is 28.2%. The remaining people's consumption is above 1000 RMB every month. Because of the student status, the monthly income of most respondents is not high, mainly concentrated in the income levels of 1500-2500 RMB and 2500-3500 RMB.

Table 1

Demographic findings

Question Gender	Male	Female
	148 (59.0%)	103 (41.0%)
Age		
Between 18-22	84 (56.8%)	42 (40.8%)
Between 23-24	39 (26.4%)	50 (48.5%)
Greater than or equal to 25	25 (16.9%)	11 (10.7%)
Monthly Internet spending		
<200RMB	30 (20.3%)	27 (26.3%)
200-500RMB	75 (50.7%)	41 (39.8%)
500-1000RMB	38 (25.7%)	29 (28.2%)
>1000RMB	5 (3.4%)	6 (5.8%)
Income level		
<1500RMB	20 (13.5%)	20 (19.4%)
1500-2500RMB	65 (43.9%)	37 (35.9%)
2500-3500RMB	47 (31.8%)	36 (35.0%)
>3500RMB	11 (7.4%)	7 (6.8%)
Dependent on others	5 (3.4%)	3 (2.9%)
Region		
North China	45 (17.9%)	29 (11.6%)
Central China	51 (20.3%)	31 (12.4%)
East China	37 (14.7%)	30 (12.0%)
West China	10 (4.0%)	6 (2.4%)
South China	5 (2.0%)	7 (2.8%)

The Table 2 shows the students' personal preferences on online shopping and their intentions of surfing the internet. There are 37 (25.0%) male students buy cloth and shoes online, compared with 46 (44.7%) females who also make this choice. Food is essential for daily life and 51 (34.5%) males and 39 (37.9%) females choose to purchase it online. Things life shampoos and tissues are all included in daily necessities, and in the purchase of the daily necessities, 79 (53.4%) men and 55 (53.4%) women choose to get in through the online stores. In the part of make ups and skin care, less male students with the number of 52 (35.1%) would buy it online, compared with the number of females of 57 (55.3%). As for the digital products and the other products, there are less student to have the shopping online, the ratio differences of male and female on these two fields are not significant. As for the respondents' intentions of surfing the internet, there are no great ratio differences with different genders. The majority

of the students use the internet for entertainment, social communication, and searching information. Study and work are also the common reasons for them to surf online. For the students' point of view, there is no remarkable difference on the reliabilities of the local companies and the international companies. And some of them think that these two kinds of companies are both reliable.

Table 2

Online Shopping Preferences and Reason for Using the Internet

Shopping Preference	Male	Percentage (%)	Female	Percentage (%)
Cloth &Shoes	37	25.0%	46	44.7%
Food	51	34.5%	39	37.9%
Daily necessities	79	53.4%	55	53.4%
Make ups &Skin Care	52	35.1%	57	55.3%
Digital product	27	18.2%	19	18.4%
Others	12	8.1%	5	4.9%
Reason for using the Internet				
Info. Search	57	38.5%	39	37.9%
Entertainment	64	43.2%	53	51.5%
Social Communication	60	40.5%	48	46.6%
Work	43	29.1%	26	25.2%
Study	39	26.4%	25	24.3%
Purchasing	30	20.3%	31	30.1%
Banking	11	7.4%	11	10.7%
Types of companies trusted				
Local companies	54	36.5%	40	38.8%
International companies	65	43.9%	39	37.9%
Trust them both the same	29	19.6%	24	23.3%

The Table 3 is about the important issues which are relevant to online shopping. There is no big difference between the males and females. Over 90% of them regard the security, price, quality, and payment as important considerations. And over 70% of the students think that the service and delivery are also important. There nuances show at 93.2% males think that payment is important, and this figure in females is 82.5%. 94.2% females think that the language barriers would influence their online shopping, but only 73% males think so.

Table 3

Important Issues of Online Purchases

Important issues to e-shoppers	Male	Percentage (%)	Female	Percentage (%)
Security	137	92.6%	96	93.2%
Price	140	94.6%	95	92.2%
Service, Delivery	107	72.3%	74	71.8%
Quality	135	91.2%	93	90.3%
Payment	138	93.2%	85	82.5%
Language Barrier	108	73.0%	97	94.2%

IV. RESULTS

Reliability Evaluation

In the evaluation of Cronbach's Alpha, the data can be regarded as reliable data if the value is over 0.7 (Bagozzi and Yi 1988). In addition, I choose the validation factor analysis to obtain the Composite Reliability (CR) value and the Average Variance Extracted (AVE) value as the evaluation criteria of convergence validity. The Convergent validity of the model would be regarded as effective if the CR is greater than 0.7 and the AVE is greater than 0.5 (Blunch 2012).

In Table 4, the Cronbach's Alpha are all greater than the critical value 0.7. And it can be observed from the Table 5 that the AVE value of all variables is significantly greater than its reference threshold value of 0.5, the composite reliability CR value is far greater than the threshold value 0.7. These phenomena prove that the measurement model has high credibility, which shows good stability and reliability, and the measurement model passes the reliability test.

Table 4

Scale Prosperities and Correlations

Model Constructs	Mean	Std Dev.	Cronbach's Alpha	SQ	Trust	PU	SN	Enj	CIU
SQ	4.6155	1.45348	.883	1					
Trust	4.7819	1.44343	.846	.399**	1				
PU	4.8894	1.46184	.855	.443**	.417**	1			
SN	4.8267	1.43626	.862	.168**	.199**	.473**	1		
Enj	4.8735	1.41710	.876	.141*	.203**	.381**	.391**	1	
CIU	4.8496	1.43180	.878	.149*	.209**	.271**	.394**	.366**	1

Table 5

Measurement Model

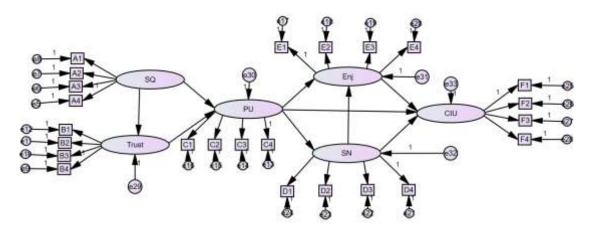| Constructs/Indicators	Items	S. Factor Loading	CR	AVE
	A4	0.815	0.886	0.661
	A3	0.837		
Site Quality	A2	0.748		
	A1	0.847		
	B4	0.758	0.847	0.582
	B3	0.73		
Trust	B2	0.828		
	B1	0.731		
	C4	0.759	0.858	0.602
Perceived	C3	0.801		
Usefulness	C2	0.771		
	C1	0.772		
	E1	0.805	0.877	0.64
	E2	0.791		
Trust	E3	0.791		
	E4	0.812		
	D4	0.794	0.863	0.613
	D3	0.743		
Subjective Norm	D2	0.779		
	D1	0.813		
	F1	0.8	0.878	0.643
Continuance	F2	0.791		
Intention	F3	0.8		
	F4	0.817		

Structural Equation Model (SEM)

The SEM is short for Structural Equation Model. It is wildly used to translate a series of correlated hypothesizes into composite assumptions about statistical dependency patterns (Pugesek et al. 2003). In many studies in social sciences, economics, finance, psychology, and management, there are many potential variables that cannot be directly observed, such as learning motivation, user satisfaction, etc., and traditional statistical methods cannot solve such problems well. However, the SEM has matured in the 1980s and can make up for the shortcomings of traditional calculation methods. In SEM theory, the structure in each factor will take into account other coexisting variables to adjust and change. Not only the relationship between the factors will change, but also the structure within the factor will change. Structural equation models generally include two parts, one is the measurement model, and the other is the structural model, that is, the relationship model between the latent variables (Lin 2008).

The Figure 1 demonstrates the theoretical model and proposed hypothesizes proposed. The relevant fitting degree analysis is performed using AMOS 23.0 software. This figure contains

the five independent variables: site quality, trust, perceived usefulness, subjective norm, and enjoyment. The only dependent variable is the continuance intention. In these six factors, the path of the relationship can be explained by the arrows: the SQ has direct impact on both the Trust and PU, the Trust has direct impact on the PU, the PU has direct impact on SN and Enj, and also the dependent variable- CIU. The SN affects the Enj and CIU directly, and the Enj affect the CIU directly. Each variable is examined by four subdivided relevant questions.

Figure 1

The Diagram of Theoretical Framework

In the AMOS 23.0 software, the calculation of Chi-Square (CMIN), Degree of freedom (DF), CMIN/DF, Standardized Root Mean Square Residual (SRMR), Goodness-of-fit (GFI), Normal fit index (NFI), Incremental fit index (IFI), Transport Layer Interface (TLI), Comparative fit index (CFI), Root mean square error of approximate (RMSEA). At present, the Normal fit index (NFI) and Root mean square error of approximate (RMSEA) are generally accepted. Generally speaking, the NFI is greater than 0.9, and the RMSEA is below 0.05, which means that the model fits well, and it is acceptable between 0.05 and 0.08. Wen Zhonglin, Hou Jietai, and Mash Herbert proposed in 2004 that the critical value of Comparative fit index (CFI) is 0.9 (the larger the better), and the critical value of RMSEA is 0.08 (the smaller the better In addition, for the "ratio of CMIN/DF", the model is better when the value is smaller (Wen et al. 2003, Kline 1998).

In Table 6, the acceptable value and the actual value of each index have been listed. Each fitting index of the SEM model reached the recommended value, the models fits well.

Table 6: Goodness-of-Fit Indices

Goodness-of-fit measure	Acceptable Values	Values
CMIN	——	254.864
DF	——	243

CMIN/DF	<3					1.049
SRMR	<0.05					0.048
GFI	>0.9					0.923
AGFI	>0.9					0.905
NFI	>0.9					0.925
IFI	>0.9					0.996
TLI	>0.9					0.996
CFI	>0.9					0.996
RMSEA	<0.08					0.014

In Table 7, the regression weights and P value of each path are displayed. The majority of the research hypotheses have been verified, except for the H3c. The relationship between SQ and PU ($\beta = 0.34$, P <0.05) is very significant, supporting the hypothesis H1a.The relationship between SQ and Trust ($\beta = 0.456$, P <0.05) is very significant, supporting the hypothesis H1b. The relationship between Trust and PU ($\beta = 0.341$, P <0.05) is very significant, supporting the hypothesis H2. The relationship between PU and SN ($\beta = 0.516$, P <0.05) is very significant, supporting the hypothesis H3a. The relationship between PU and Enj ($\beta = 0.254$, P <0.05) is very significant, so Hypothesis 3b is supported. The relationship between PU and CIU ($\beta = 0.038$, P =0.69) is not significant, it does not support the hypothesis H3c. The relationship between SN and Enj ($\beta = 0.316$, P <0.05) is very significant, supporting the hypothesis H4a. The Hypothesis 4b that the relationship between Enj and CIU is significant, and is supported by the model ($\beta = 0.273$, P <0.05). Assume that the relationship between SN and CIU has reached a significant level ($\beta = 0.324$, P <0.05). Hypothesis 5 is supported.

Table 7

Regression Weights

Paths			Standardized Regression Weights（B）	Unstandardized Regression Weights（B）	S.E.	C.R.	P	Hypotheses Findings
PU	<---	SQ	0.34	0.278	0.062	4.505	***	H1a✓
Trust	<---	SQ	0.456	0.431	0.07	6.171	***	H1b✓
PU	<---	Trust	0.341	0.295	0.067	4.387	***	H2✓
SN	<---	PU	0.516	0.607	0.089	6.856	***	H3a✓
Enj	<---	PU	0.254	0.297	0.095	3.118	0.002	H3b✓
CIU	<---	PU	0.038	0.04	0.095	0.399	0.69	H3c✗
Enj	<---	SN	0.316	0.313	0.082	3.832	***	H4a✓
CIU	<---	Enj	0.273	0.272	0.076	3.581	***	H4b✓

CIU	<---	SN	0.324	0.32	0.077	4.176	***	H5✓

*The acceptable range of P value is equal to or less than 0.05.

Comparison of SEM Path Coefficients for Gender Groups

The Table 8 illustrates the consumers' behavior with different genders. Compared to men, the site quality has a greater influence on women's perception on usefulness with the values that β =0.537，P<0.05. Males' trust towards one website will affect their perception on usefulness significantly with the values of β =0.534，P<0.05. Females will always correlate their perception on usefulness with the enjoyment of shopping, with the values of β=0.413，P<0.05. As for men, the subject norms from others will influence their continuance intensions on shopping greatly, with regression weights β =0.416，and the P value<0.05. There is no significant difference between men and women in other path relationships. Because of the P value on the path form PU to CIU is over 0.05, this hypothesis is not supported, the difference from different genders can't be explored.

Table 8

The Regression Weights Differenced by Genders

Paths			Male Sample			Female Sample		
			Standardized Regression Weights（B）	C.R.	P	Standardized Regression Weights（B）	C.R.	P
PU	<---	SQ	0.200	2.186	0.029	0.537	4.188	***
Trust	<---	SQ	0.45	4.798	***	0.478	3.927	***
PU	<---	Trust	0.535	5.141	***	0.070	0.597	0.551
SN	<---	PU	0.531	5.288	***	0.49	4.314	***
Enj	<---	PU	0.128	1.179	0.238	0.414	3.319	***
CIU	<---	PU	0.037	0.353	0.724	-0.007	-0.05	0.960
Enj	<---	SN	0.369	3.275	0.001	0.247	2.087	0.037
CIU	<---	SN	0.395	3.394	***	0.146	1.323	0.186
CIU	<---	Enj	0.225	2.364	0.018	0.364	2.599	0.009

Direct and Indirect Effect Analysis

The Table 9 contains the direct, indirect, and total impact of each independent variables on CIU. It' s not hard to observe that the total value is the sum of the direct and indirect one. It's because of the Mediating effect. Mediating variable is the link between two variables. In theory, mediating variable means some internal mechanism (MacKinnon 2008). The change of independent variable x causes the change of intermediate variable m, and the change of intermediate variable m causes the change of dependent variable y. The premise of Mediating effect analysis is that there is a clear (theoretical or practical) causal relationship between variables (Baron and Kenny 1986).

Table 9 show the greatest overall effects of direct and indirect effects on CIU come from the SN for male (0.478) and the enjoyment for female (0.361) samples. The second big influences

13

are both from PU for male (0.283) and female (0.275). And the male is also affected by the Enj with the value of 0.225, the female is affected by the SN with the value of 0.256. In conclusion, all these five factors have effect on the consumers' CIU. As for men, the subjective norms influence the most. The enjoyment influences the women the best. The site quality is the least factor which influence men, and trust is the least factor which influence women.

Table 9
Direct and Indirect Influences on CIU

Construct	CIU(Male)			CIU(Female)		
	Direct	Indirect	Total	Direct	Indirect	Total
SQ	0.000	0.141	0.141	0.000	0.157	0.157
Trust	0.000	0.171	0.171	0.000	0.019	0.019
PU	0.037	0.283	0.320	0.000	0.275	0.275
SN	0.395	0.083	0.478	0.167	0.089	0.256
Enj	0.225	0.000	0.225	0.361	0.000	0.361

V.　　DISCUSSION

Problems with the Data Collection

First, it's difficult to verify the respondents' identities as undergraduates or postgraduates. In the design of the questionnaire, I set three different age group: 18-22, 23-24,>=25. In general, Chinese students always start their school life at six-year-old. So, the respondents between 18 to 22 can be regarded as undergraduates, and 23-24, equal to or greater than 25 can be referred as postgraduates. However, this conventional thinking is not suitable for my research. There might be some people who get into school at the age of seven, or they used to be out of school for other reasons. My questionnaire has only 251 respondents, it would have some error if I examine the respondents' identities with their age. Because of such a small number of respondents in my sample, this kind of error is not negligible. However, my research set the genders as the variable, the identities of the respondents are not important. The undergraduates and postgraduates are all adults with the purchasing power, this point is enough for me to continue my research.

Second, the design of the questionnaire brought me a big difficulty. Because of the correlations between each independent variable, the theoretical framework should be brought into practice through the Amos software. After the building of the model, I insert the raw data of the questionnaire. There is no efficient outcome at all. The answers from the internet explained me the reasons: each factor requires at least four related questions, no matter the independent one or dependent one. Then I choose to redesign the questionnaire, and spent extra effort on colleting the new data.

The Figure 2 shows the supported paths after the data analysis. The majority of the hypothesizes are supported by the processed data. The only unsupported one is the hypothesis which claimed that the continuance intention is highly related to perceived usefulness. This is the theoretical framework which is suitable for Chinses consumers.
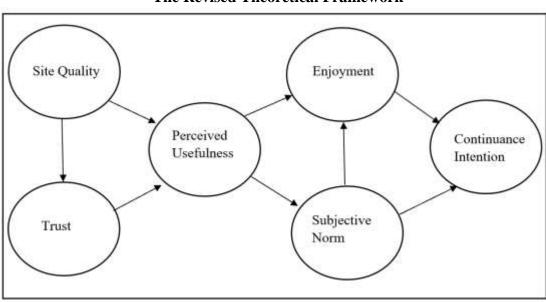

Figure 2

The Revised Theoretical Framework

As for the difference between the male and female, it can be observed from the paths. The men's trust on a website would influence their ideas on perceived usefulness significantly. And the subjective norms from other would affect their continuance intention a lot. Women have different characteristics in this framework. Their perception on site quality would affect the perceived usefulness a lot. And they always relate their own perceived usefulness of a shopping experience with the later enjoyment perception.

Trends

When it comes to the direct or indirect effects of each independent factor on continuance intention, men and women has similar trend. The perceived usefulness influences the continuance intention well, in an indirect way. The subjective norms and enjoyment influence the continuance intention directly.

Difference between My Results with Expected Results

The results are quite different with my expectation. I expected that the males and females would be quite equivalent in the different paths, and the paths from SN to Enj and from SN to CIU would not be supported. The results of my research show that these two paths are supported. However, the path from PU to CIU is not supported. Also, the males of females are quite different in those regression paths. Compared with males, females' perception on site

quality will influence their perceived usefulness, and they tend to correlate the perceived usefulness with the enjoyment of shopping. On the other side, male's trust on a website will influence the perceived usefulness more than the female's. And the subjective norms also influence men's continuance intention much more than the women respondents.

Similarity with the Previous Researches

This research is in the context of China, some of the previous research in China has the similar results within mine. In Sheng's research on "Influencing Factors and Gender Differences of College Students' Online Shopping" in 2016, she claimed that the male students' trust on the website would influence their further behavior better (Sheng 2016). Li did the research on "Gender differences in perceived risk of online shopping", and claimed that women tend to be influenced by the subjective norms, and they are willing to share their online shopping experience on the social platforms. (Li 2010). This research contains more than 300 respondents, the data she collected should be more variable. This is research was done about a decade ago, the advanced information about the online shopping is not contained, and the author's opinion is opposite with my findings. However, my result on this correlation is agreed by Feng's research on "A study on gender differences in college students' irrational online shopping decisions-- based on the anchoring effect theory" in 2019. He claimed that in the group of college students, women tend to have irrational consumption when the products are on sale. At this time, the subjective norms are not important for them, they are attracted by the low price. As for male students, they would be more rational, and refer to the subjective norms from others to confirm that if they really need the product. This behavior decreases the ratio of male students' irrational online shopping (Feng and Zheng 2019).

Possible Explanations for the Unexpected Results

As for the unexpected results, there are some possible explanations. First, my expected results are highly influenced by the previous researches which commonly set the respondents from other countries, includes the US, Europe, Southeast Asia, and Africa. When the research respondents change to Chinese students, the existence of unexpected results is acceptable. Second, the previous researches were finished a few years ago. The computer technology and online retailing strategies has improved a lot during the past few years. My data was collected recently. The shown up of unexpected results is acceptable.

Suggestions

In this case, I suggest the e-commerce companies use different strategies to attract different gender groups. If the target products are mainly used by women, the most important thing is increasing the site quality. Improve the fluency of website and have attractive design, and make sure the website is easy for access. Not only the site quality, but also the products' quality. They would continue their purchase in the occasion that the products meet their expectation. If the products' target buyers are men, the most important part is to show the reliability. Because of the uncertainty towards online shopping, the illustration of the security, good quality, and reputation seems critical. Also, the subjective norms affect a lot. The social platforms are common place for the potential buyers to get comments about the product. Increase of supervision on comments on these platforms will be effective.

VI. THEORATICAL CONTRIBUTION

First, the analysis of the relationship between site quality and trust can rise the Chinese companies' attention on website design and security improvement. E-retailers should recognize their trustworthiness, and advertise for their strong security and strategic measures to increase the confidence of current and potential consumers (Gehrke and Turban 1999) Second, the results support past studies, showing that the perceived usefulness reflects the functional aspect of online shopping, and the perceived enjoyment reflects its hedonic aspect. The results support past studies, showing that the perceived usefulness reflects the functional aspect of online shopping, and the perceived enjoyment reflects its hedonic aspect (Al-Maghrabi and Dennis 2009). In the context of China, few studies focus on the online shopping of college students. The group of college students has a special identity-they are all adults and have few incomes. Exploring their behaviors about online shopping with the differential of gender can provide more hint to the Chinese e-commerce companies and prevent Chinese college students from impulsive consumption.

VII. CONCLUSION

In this research, the correlations of site quality, trust, perceived usefulness, subjective norms, enjoyment, and continuance intention are further explored in the context on China. In the data process, the reliability and validity of the data are convinced by the Cronbach's Alpha value, Composite Reliability (CR) value and the Average Variance Extracted (AVE) value (Table 4 & 5). Then the SEM theory is used to transfer different correlated factors into a combined model. The Goodness of Fit table (Table 6) convinced the suitableness of using this theory in my research. In the regression weights table (Table 7) evaluated the proposed hypotheses. In these nine hypotheses, eight of them are supported, and the other one is not supported. The figure 2 is the revised theoretical framework after deleting the unsupported path.

The gender segregation regression weights table (Table 8) shows the difference between different genders' perception when they are doing the online shopping. The men's trust on a website would influence their ideas on perceived usefulness significantly. And the subjective norms from other would affect their continuance intention a lot. For women, their perception on site quality would affect the perceived usefulness a lot. And they always relate their own perceived usefulness of a shopping experience with the later enjoyment perception. Then Table 9 examines each independent variable's indirect and direct influence on the dependent variable. All these five factors have effect on the consumers' CIU. As for men, the subjective norms influence the most. The enjoyment influences the women the best. The site quality is the least factor which influence men, and trust is the least factor which influence women.

My research explored the different perceptions of male and female college students on online shopping. The result is helpful for the e-commerce companies to design the suitable sale strategies for different target group. In addition, the college students are the main force of online shopping in China, their behaviors are representative. This research outcomes can provide supportive data for other researches. The previous relevant shows that college students' behavior of impulsive buying is higher than the other groups of consumers. (Wu 2019) Hopefully this research can help the public to guide them decrease the percentage of impulsive purchases.

In the consideration of time and data collection, this research is simplified. First, in the

theory, each correlation factors should have equal to or greater than four relevant questions. If the questions are more than four, the less significant one can be deleted. However, if there are so many questions in my questionnaire, I'm afraid the respondents would be impatient. Then the credibility of the collected data would be affected. For this reason, I set only four questions for each correlation factor in the questionnaire. Second, my sample amount is not big. It contains 251 respondents, but China has millions of college students in total. It would be more representative if the respondent amount gets increased.

My research focus on the correlations of gender difference and online shopping intention. I divided China into five regions: north, south, central, west, and east. My respondents are from these five different regions. I think that there might be some difference on the buyers' behavior if they are from different regions. This is also a valuable point for further research. In addition, my sample include both postgraduates and undergraduates. These two group of students may have some difference when they do the online shopping. Especially in the context of Chinese postgraduates tend to have salaries from their tutors.

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Questionnaire:

Investigation on the Online Shopping Intention of Chinese College Students of Different Genders

Research on the Chinese college students' online shopping perception with gender difference.
The online shopping continuance is influenced by five important factors: site quality, trust, perceived usefulness, subjective norms, and enjoyment.
In the context of China, the college students become the main force of online shopping. This questionnaire choose the gender as the variable, try to explore the college students' perception on online shipping.

1. Gender [Multiple Choice] *

 ○ Male

 ○ Female

2. Age [Multiple Choice] *

 ○ 18-22

 ○ 23-24

 ○ >25

3. Monthly online shopping expenditure [Multiple Choice] *

 ○ <200RMB

 ○ 200-500RMB

 ○ 500-1000RMB

 ○ >1000RMB

4. Monthly income level [Multiple Choice] *

 ○ <1500RMB

 ○ 1500-2500RMB

 ○ 2500-3500RMB

 ○ >3500RMB

○Dependent on others

5. Region [Multiple Choice] *

○ North China

○ Central China

○ East China

○ West China

○ South China

6. Shopping Preference [Multiple Choice Questions] *

□ Cloth & Shoes

□ Food

□ Daily necessities

□ Make ups & Skin Care

□ Digital product

□ Others

7. Reason for using the Internet [Multiple Choice Questions] *

□ Info. Search

□ Entertainment

□ Social Communication

□ Work

□ Study

□ Purchasing

□ Banking

8. Types of companies trusted [Multiple Choice] *

○ Local companies

○ International companies

○ Trust them both the same

9. Site Quality [Matrix Scale Question] *

	Extremely unimportant	Very important	Umimportant	Neutral	Important	Very important	Extremely important
Visit Fluency	○	○	○	○	○	○	○
Appearance Design	○	○	○	○	○	○	○
Is there any spam	○	○	○	○	○	○	○
Is there valuable content	○	○	○	○	○	○	○

10. Trust [Matrix Scale Question] *

	Extremely unimportant	Very important	Umimportant	Neutral	Important	Very important	Extremely important
Users information protection	○	○	○	○	○	○	○
Account security	○	○	○	○	○	○	○
Whether the web	○	○	○	○	○	○	○

page carries virus							
Whether the website has a trusted authenticat ion	○	○	○	○	○	○	○

11. Perceived Usefulness [Matrix Scale Question] *

	Extremel y unimport ant	Very unimport ant	Unimpor tant	Neutral	Importan t	Very importan t	Extremel y importan t
If the purchased items useful	○	○	○	○	○	○	○
Product usefulness	○	○	○	○	○	○	○
Is the product genuine	○	○	○	○	○	○	○
Cost performan ce of products	○	○	○	○	○	○	○

12. Subjective norms [Matrix Scale Question] *

	Extremely unimportant	Very unimportant	Unimportant	Neutral	Important	Very important	Extremely important
Comments from past buyers	○	○	○	○	○	○	○
Comments from close friends & families	○	○	○	○	○	○	○
Comments from the other social platforms	○	○	○	○	○	○	○
Description from the sellers	○	○	○	○	○	○	○

13. Enjoyment [Matrix Scale Question] *

	Extremely unimportant	Very unimportant	Unimportant	Neutral	Important	Very important	Extremely important
Enjoyment brought by the purchased items	○	○	○	○	○	○	○

The convenience brought by products purchased in use	○	○	○	○	○	○	○
Satisfaction with the shopping experience	○	○	○	○	○	○	○
Whether the product is good enough to recommend to others	○	○	○	○	○	○	○

14. If the following characteristics important for an online store[Matrix Scale Question] *

	Important	Unimportant
Security	○	○
Price	○	○
Delivery service	○	○
Product quality	○	○
Convenience of payment	○	○

	Language barrier		○				○		

15. Continuance Intension [Matrix Scale Question] *

	Extremely unimportant	Very unimportant	Unimportant	Neutral	Important	Very important	Extremely important
How my previous shopping experience made me feel	○	○	○	○	○	○	○
Is the product I bought worth me repurchase	○	○	○	○	○	○	○
Is it better to buy here than anywhere else	○	○	○	○	○	○	○
Would you like to try other products on this site	○	○	○	○	○	○	○