

Online shopping behavior among Chinese university students

Yunxiao Diao

Liaoning Province Shiyao High School International Department

Abstract- This research investigates the online shopping behavior of Chinese university students, as well as motivations and barriers for online shopping, and its effect on the shopping habits of consumers. Although many surveys have investigated ecommerce's effect on traditional stores, there are almost no resources about the influences on consumers themselves. So this research makes the discussion of effects of online shopping more complete and gives many suggestions to businesses about where to do online shopping and the products they should sell. Paper and online questionnaires (N=862) were used to collect data, and T-tests were done to analyze the significance of findings using PSPP.

Key findings are the favorite products, websites, device and payments of university students, the most important motivations and barriers consumers face when they shop online, and the four main influences on people's shopping habits. It is revealed that university students like to use Taobao/Tmall most, like to buy clothes most, and like to use Alipay most. They see convenience as the biggest advantage and not being able to see products as the biggest disadvantages. Surprisingly, the preferences of university students are slightly different from those of the entire population.

Index Terms- online shopping, behavior, motivations, barriers, influence, China, questionnaires, t-test, PSPP

I. INTRODUCTION

Nowadays, online shopping is becoming more and more important and many people will first think of online shopping when they want to buy something. There are plenty of articles and essays about online shopping, and most of them investigate the trends, behavior, motivation and barriers to customers when they shop online. Some aspects previous surveys examined were people's concern about security online, which product they prefer to buy online, the devices, payment, and delivery methods they prefer, why they shop or do not shop online and the influence of online shopping on traditional stores.

Although there has been much research conducted, and it has included most countries, there have been relatively few studies focusing on only certain groups of people and analyzing their online shopping traits. Moreover, even though many surveys have investigated ecommerce's effect on traditional stores, there are almost no resources about the influences on consumers themselves. Therefore, this study focuses on university students in China and analyzes their shopping behavior, their motivation and barriers to online shopping, and the influence of online shopping on their shopping habits.

II. LITERATURE REVIEW

A. Internet and retail industry in China

After first connecting to the Internet in 1987, China's Internet environment developed rapidly and made huge advances in just about 25 years. By 2013, China had 591 million Internet users, with a new Internet user every 1.6 seconds. Not only that, but in some metropolises such as Beijing and Shanghai, the Internet penetration rate is up above 60 percent. Included in the top 10 activities is online shopping, which is one of the most popular methods people use when they buy something (Go-globe, 2013).

Talking about online shopping, we should first think about the retail industry. Retail, which means selling directly from merchants to consumers, is the most prevalent buying and selling pattern, and in China, retail sales amounted to nearly \$2.1 trillion in 2010, nearly 50% of those in the U.S. Moreover, more than 25 of the world's largest retailers are conducting business in China, which further reveals the huge vitality of the retail industry in China (BRIC, 2011).

B. Online shopping traits

With regard to online shopping, reports indicate that the retail industry has a huge increasing space. Ecommerce, which generated \$231 billion in sales for U.S. retailers in 2013, is expected to reach \$370 billion in sales by 2017 (Indvik, 2013). Research has also revealed there are some similar traits around the world, including the US (Horrigan, 2008), Australia (NSW Fair Trading, 2012), India (Nagra and Gopal Date) and several European countries (Center for Retail Research, 2015). Most online consumers are attracted by the convenience, timesaving and the cheap prices of online shopping, and most of them are concerned about security and not knowing exactly what they are getting. Age, gender, income and occupation are major factors which affect the frequency of online shopping, and ecommerce inevitably has some negative influences on traditional stores (Horrigan, 2008; NSW Fair Trading, 2012; Nagra and Gopal; Center for Retail Research, 2015).

Although most research talks about those aspects, there are also some very astonishing findings about citizens in New South Wales, Australia. Main consumers there prefer to pay by PayPal, but only a few businesses provide PayPal as a payment. Disparity between the motivations of consumers and businesses about online shopping is also revealed. More interestingly, even though these shoppers were also concerned about the security problem, only a small part of them were aware of the related laws (NSW Fair Trading, 2012).

Not only in these mentioned countries, there has also been much comprehensive and valuable research in China. For

similarities, Chinese online shoppers are also driven by convenience, concerned about security, prefer to use credit cards and sometimes debit cards to purchase, and buy three categories of products most often: books, electronic products, and music/movies (Mastercard Worldwide, 2008; Clemes, Gan and Zhang, 2014).

Other than similarities, there are also plenty of different findings. For example, although Internet penetration, which means the segment of the population who use the Internet, is low, online shopping penetration is high, which means that people in China who get access to the Internet are very likely to buy things online. Also, although people like to pay by credit card, almost the same percent of the population uses electronic transfers, which is pretty unusual in other Asian countries. Chinese people also care a lot about the service quality and product variety, which are seldom mentioned in other research done in countries other than China. And finally, concerning which website they use, Chinese consumers tend to use Taobao more than others, probably because it is one of the biggest Network retail businesses in the Asian-Pacific region (Mastercard Worldwide, 2008; Clemes, Gan and Zhang, 2014).

C. Online shopping behavior traits

By most classifications, there are three crucial categories of research about online shopping: shopping behavior of customers, reasons why people shop online and the effect of online shopping. Among these things, the most important and most studied is shopping behaviors. This section will analyze the findings about behavior revealed by previous research.

The first and also the most obvious factor is demographics, which simply include age, gender, income, education and occupation. According to Forrester Research Online Retail Forecast from 2012 to 2017 in the United States, from 25 to 54 year-old individuals make up 65.7% of online shoppers, of which 59.1% are female (Nagra and Gopal, 2013). 57.3% of online shoppers have an annual household income above \$50,000, and 77.9% have an education level of some college or higher (Nagra and Gopal, 2013).

The second behavior characteristic is anxiety about security, mainly about personal information and credit cards. On the basis of telephone interviews conducted by Princeton Survey Research Associates International in 2007, 75% of Internet users are either concerned (39%) or strongly concerned (36%) about giving out their credit card number or personal information online (Horrihan, 2008). Revealed by two 15-minute online surveys done by Australia's NSW Fair Trading, the vast majority (88%) of people who do not shop online cite security concerns as a barrier (NSW Fair Trading, 2012).

Another important part of online shopping behavior is which kinds of products customers tend to buy. Twenty-three percent of shoppers said they liked to purchase cosmetics and personal care items online, according to research about preferred methods for shopping (eMarketer, 2013). Moreover, in a survey done between December 18th and December 28th, 2007 in the Asian Pacific Region, it was indicated that the two favorite types of products people buy online are books (including art) and electronic products, which each have a percentage of respondents above 40% (Mastercard Worldwide, 2008).

Plenty of institutions and scholars have also done studies about payment and delivery preferences. According to NSW Fair Trading, PayPal is the most common online payment method used by Australian consumers (NSW Fair trading, 2012). After investigating 3,128 respondents, it was found that 48% of customers are only willing to wait less than 5 days for most of their purchases' delivery (UPS, 2012).

People also follow various social networks and use different devices to get information and shop online. About half (49%) of online consumers have used mobile phones to search for information, and 34% of them said they will follow some of their favorite brands or retailers, with 52% of them doing this on Facebook and 31% on Google (PWC, 2015).

With regard to commenting and researching about product information online, there was a comprehensive report in Pew Internet & American Life Project. It demonstrated that about 30% of people rate and comment on the products they buy online (Horrihan, 2008). It also shows that up to 78% of Internet users have done research about a product online, but not bought it (Jansen, 2010). The Total Retail Research in 2015 also reveals that there are about 70% of customers who intentionally only do research of product information online (PWC, 2015).

Finally, there is also an interesting report about shopping behavior in holiday seasons. Although low cost plays an even bigger role in driving people to shop online, the huge variety of goods also shares in the accomplishment of drawing people. Many of them also said they care about a good return policy (Vizu, 2007).

D. Motivations and barriers for online shopping

Another important category for analyzing online shopping is the reasons why people shop or do not shop online. As far as the motivations of online shopping, 78% of Internet users consider shopping online a convenience (53% agree and 25% strongly agree) and 68% of Internet users think that online shopping saves them time (47% agree and 21% strongly agree) (Horrihan, 2008). According to another survey conducted in Australia, approximately three in five online consumers said they are also drawn to the low price of products online, and roughly one-third of online shoppers suggested that the availability of products hard to find in real stores is also compelling (NSW Fair Trading, 2012).

On the other hand, there are also some barriers to shopping online. According to a survey with over four thousand participants, security concerns, preference to look at physical products, and the additional delivery charges are the main three barriers to people who want to shop online in the Asian Pacific Region (Mastercard Worldwide, 2008). Also, a global survey, which investigated different retail channels across 19 territories, had some similar findings. It revealed that most people who prefer physical stores to online shopping do so because they are able to see, touch and try merchandise and get the product they buy immediately.

Not only motivations and barriers, some studies even give some advice for online shops to improve. It is reported that merchants can make online shoppers satisfied by providing ease of checkout (83% agree), variety of brands/products (82% agree), and online tracking ability (79% agree) (UPS, 2012).

E. Effect of online shopping

There are many influences caused by the prevalence of online shopping, and the most well studied ones are the effects on traditional, physical stores. The existence of online stores reduces the sales of real stores although shopping in traditional stores still remains the main way of shopping (PWC, 2015). A study conducted in Europe also indicates that by the time that online sales represent 5% or more of domestic retailing, the growth of online retailers will occur at the expense of conventional stores (Center for Retail Research, 2015). Although there have been several studies about the effect of online stores on conventional stores, there are seldom any studies examining the influence of online shopping on the customers of it.

F. Purpose of this survey

Although there has been much research about online shopping behaviors, most of it has focused on the whole population, including all age groups, and most of it does not have a specific group of people on which to do elaborate analysis. Moreover, most of the research does not include the effect of online shopping on the shopping habits of customers. Therefore, this survey's purpose is to focus on one group of people, that is university students in China, to do analysis and include the influence of online shopping on the shopping habits of university student customers to make the general knowledge of online shopping more complete.

III. METHODOLOGY

This section outlines the participants and their basic information as well as the instruments, procedure, data collection method, processing and analysis.

A. Participants and their Basic Information

There were 862 participants from more than 15 provinces in China who filled out the questionnaire during the data collection period, including 388 university students and 474 other people.

B. Instruments

In order to measure the behavior of university students, both paper and online questionnaires were used.

Eleven questions in total are designed to get the basic information of participants and to analyze their behavior, motivations and barriers to online shopping as well as the influence of online shopping on their shopping habits.

The first four questions ask about the basic information, including sex, income, tuition and majors. The next two ranking questions are about the importance of given advantages and disadvantages of online shopping in order to measure motivations and barriers. After that, there are four questions asking about the behavior of online shoppers, including kinds of products or services they often buy and websites, devices, and payments they prefer to use when shopping online. Finally there is one open-ended question about the influence of online shopping on their shopping habits. There are five multiple-choice questions, two ranking questions, one open-ended question and three questions where more than one choice can be checked.

C. Changes made on questionnaires

The questionnaire was carefully translated into Chinese when done in China so that the translation would have almost no influence on the results. There were also some changes made to the questionnaire to make the result more clear and the following will explain the changes and the reasons why they were made.

In the paper questionnaire, the "income" in question 2 was changed into cost of living because in China, people who have income always refers to adults who already have jobs, and this research focused on unemployed university students. In Question 10, there were also English names of some payments from countries other than China such as PayPal because these names are transliterated into Chinese and some people would be confused.

As for the online questionnaire, another question asking about whether the participant was a university student was added. In the online survey, it was not possible to choose the people who would answer the questionnaire, but this research wanted to investigate university students, so this question was added to divide the participants into two groups and analyze the differences of these two groups. The reason why the paper questionnaire did not include this question was that paper questionnaires were distributed on college campuses, and it was ensured that the respondents were all university students. Questions 2 to 4 were also set up in order to make them only visible to university students because these three questions are about cost of living, tuition and major, which can only be answered by students.

In the data analysis part, there were also three changes made to the data. Firstly, the "others" choice in Question 4 was omitted because the answers were too diverse to be categorized and only 8 people out of 862 participants chose this option. Secondly, "-2" in the data of two ranking questions (Questions 5 and 6) was changed to "4", because the website automatically coded the choices that were not selected as "-2". This was a problem because people omitted answers for thinking these answers were not important, but "-2" would make the mean smaller, which means higher rank and more importance, so they were changed to "4" which means the least important. Thirdly, the "mobile phones" and "tablets" choices were combined into one choice named "mobile devices" for the reason that this modification would make the results clearer and most differences are between "computers" and "mobile devices".

D. Procedures

The questionnaire was done in both paper format and online format to get a larger sample and more diverse participants.

The paper questionnaires were handed out mainly in Liaoning University, a comprehensive university, and China Medical University, an academy. The total sample of paper questionnaires was 61.

The online questionnaires were distributed in Wechat Moments and Qzone, the two most popular social media platforms in China. Sojump, an online survey tool, was used to upload the questionnaire to the Internet and transform it into online format. This survey was also sent into several university student groups in Wechat to get more participants. The total sample of online questionnaires was 801. T-tests were done in the data analysis period using PSPP software.

E. Data processing

Table 1: Number of survey participants by each category

University student		Sex		Major					
Yes	No	Male	Female	Science	Arts	Engineering	Business	Medicine	Law
388	474	82	179	53	30	33	18	242	4

Note: Sex and Major are only reported for university students

During the data analysis period, totally 862 responses were used to analyze. Finally, 45% of the participants were university students and 55% were other people. As for gender, 31% of the students were male and 69% were female. By major, 64% were medical students, 14% were science students, 8% were arts students, 9% were engineering students, 5% were business students, and 1% were law students.

IV. FINDINGS AND DISCUSSIONS

In the tables, * indicates significance at 10% level; ** indicates significance at 5% level; *** indicates significance at 1% level. Only difference of greater than 0.05 were analyzed.

A. Findings about online shopping behavior

This section talks about the findings of behavior difference. The difference was evaluated in four aspects: products they often purchase and the websites, devices and payments they often use. Groups were separated based on enrollment status, sex, and cost of living.

a. Findings and discussion about products

The composition of the products university students often buy is shown in Figure 1. It is revealed that the top three most popular products bought online are clothes, group purchases (offers and deals that become cheaper as more people buy them) and books. The bottom three popular products online

are medical products, CDs and Insurance, which don't reach 10% even after combined. This is not surprising because this study focuses on university students whereas those other studies concerned the population at large. Younger people tend to be less concerned with long-term products like medical supplies and insurance, and prefer digital music to CDs.

The difference of preference of university students and others on products is shown in Table 2

Table 2: Purchase of products online based on university students and other people

Whether is university student	Clothes	Food
University Students	0.80	0.56
Other people	0.70	0.46
Difference from university student (T-value)	0.10*** (3.39)	0.10*** (2.78)

Note: N=388 for university students, 474 for other people.

We can see from the table that university students tend to buy more clothes and food online. The percentages of university students who frequently buy these two kinds of products exceed the percentages of other people by 10% in both clothes and food, and both are statistically significant.

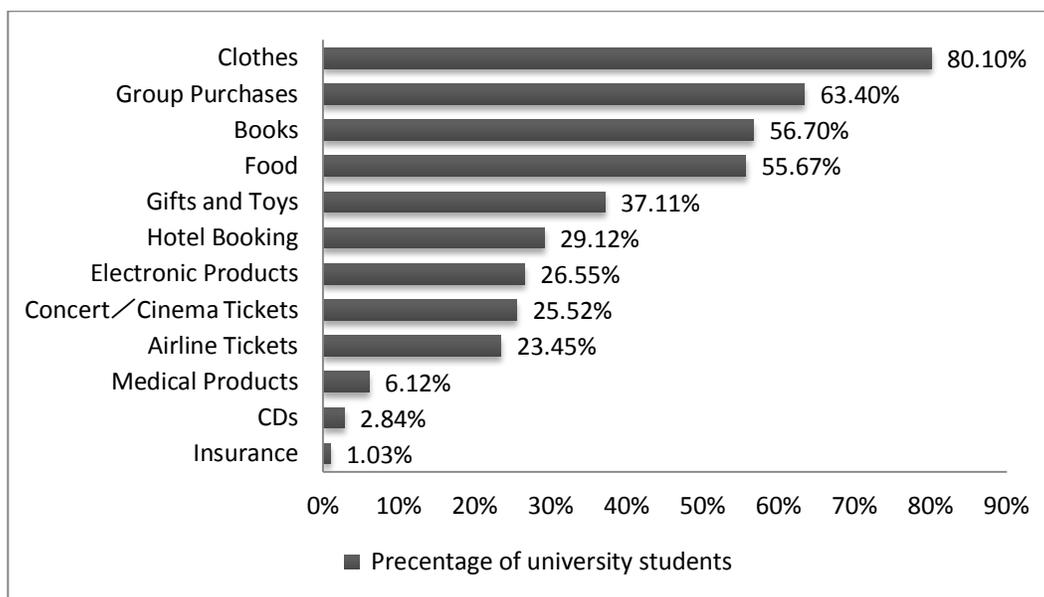


Figure 1. Products Frequently Bought Online

Table 3: Purchase of products online based on genders of university students

Gender	Clothes	Food	Gifts & toys	Electronic products	Cinema/concert tickets
Male	0.65	0.38	0.41	0.38	0.21
Female	0.86	0.62	0.27	0.20	0.31
Difference from male students (T-value)	-0.21*** (-3.62)	-0.24*** (-3.73)	0.14** (2.20)	0.18*** (2.87)	-0.10* (-1.85)

Note: N=82 for male students, 179 for female students.

The finding that university students buy more clothes is consistent with expectations, because young people like students care more about their appearance than other people do. However, the finding that university students buy more food than other people is unexpected. Three possible reasons are: first, students are usually more active than adults and therefore need more food to supply them energy; more importantly, foods online also have some discounts which may be the focus of university students; thirdly, buying food online is more convenient because most college students do not have access to kitchens to cook.

The differences of preference between male and female students for products are shown in Table 3. It is revealed that male students buy gifts, toys, and electronic products more and female students buy clothes, food and cinema/concert tickets more. By percentage, females report buying clothes 21% more often, food 24% more often and cinema/concert tickets 10% more often than males. Males report buying gifts and toys 14% more often and electronic products 18% more often than females.

The findings about clothes, gifts and toys, electronic products and cinema/concert tickets are, again, expected. The causes of these results are in line with the belief that women care more about appearance and tend to buy more clothes, there is a preconception in Chinese people’s minds that boys should give girls presents but not the opposite, men are inherently more interested in electronic things than women, and women may be more sensitive to music and art, so they are more likely to buy cinema/concert tickets. Nevertheless, the food finding is surprising. One possible reason is that women care more about eating good meals and nutrient balance, so they may order some special food online.

The third factor which influences product preference is income. The first information about this is the over all composition of income levels of university students.

Figure 2 reveals that most people who shop online have an income level between ¥10,000 and ¥20,000 (~\$1500-\$2000) per month, but this segment of people is not the most active group considering products they buy.

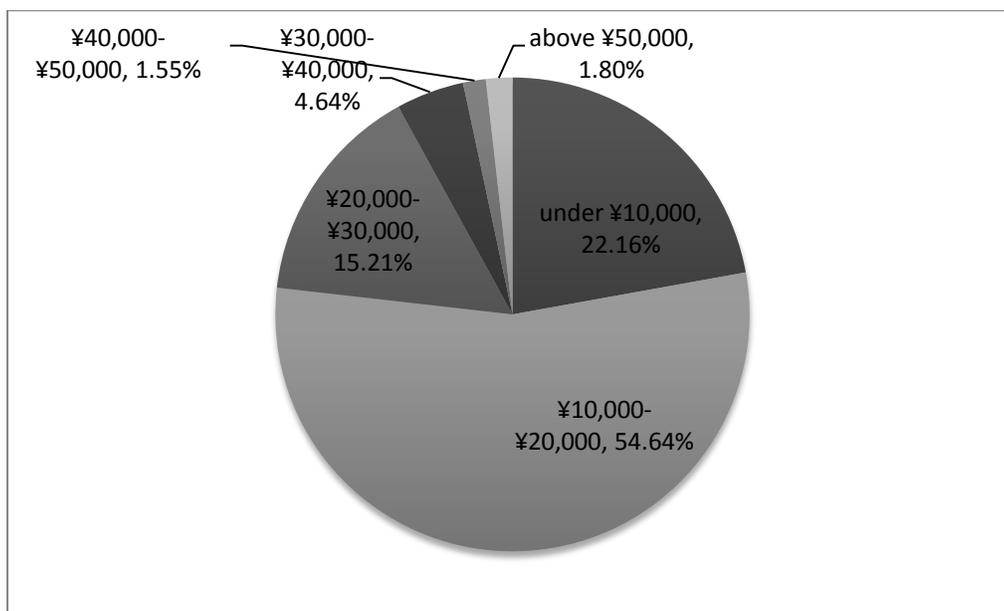


Figure 2. Income Composition of University Students Who Shop Online (per month)

Table 4: Purchase of products online based on income levels of university students

Income level	Clothes	Books	Air tickets	Order Hotels	Electronic products	Cinema/concert tickets
Level that most active	Level 5	Level 6	Level 5	Level 6	Level 6	Level 5
Percent of level that most active	1.00	0.86	0.83	0.71	0.57	0.83
Percent of level 2	0.80	0.55	0.20	0.28	0.24	0.25
Difference from male students (T-value)	0.20*** (7.22)	0.31* (2.08)	0.64*** (3.84)	0.44** (2.52)	0.33** (1.99)	0.58*** (3.25)

Note: N=388 for this table. Level 1 refers to under ¥10,000, level 2 refers to ¥10,000-¥20,000, level 3 refers to ¥20,000-¥30,000, level 4 refers to ¥30,000-¥40,000, level 5 refers to ¥40,000-¥50,000, level 5 refers to above ¥50,000.

Table 4 indicates that in 6 out of 12 aspects, including clothes, books, air tickets, ordering hotels, Electronic products and cinema/concert tickets, the percent of students who are most active in buying certain kinds of product, referring to students in level 5 or level 6, exceeds percent of students in level 2, which is the most prevalent income level of university students. The differences even reach above 50% in 2 aspects.

All of these consequences were expected when the survey was being conducted, and the main reason of this finding should be that students with higher income levels have more free money to spend and therefore tend to buy more products generally. It was also observed that the other 6 aspects also show the same trend, just with difference smaller than 0.05, which also confirm the reason was probable.

b. Findings and discussions about websites

The composition of the websites university students

often use is shown in Figure 3.

It is revealed from the figure that the three most popular online shopping websites are Taobao/Tmall, Jingdong and Group purchase websites, such as Dazhongdianping or Groupon. The three least popular websites are Jumei, Sunning and Gome online, which are used by less than 20% of university students.

The difference in preference of university students and others on websites is shown in Table 5. University students are more likely to use Taobao/Tmall, which surpass the percentage of other people who use this website by 6%. University students are also more like to shop on Jumei and Group purchase websites when they shop online. On the other hand, other people shop more on Jingdong than university students.

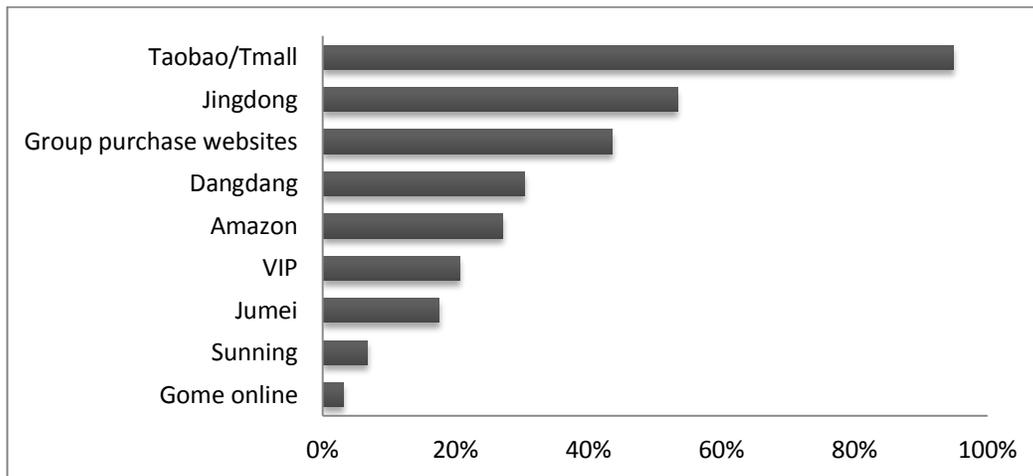


Figure 3. Websites Frequently Used When Shopping Online, Percentage of University Students

Table 5: Using of online shopping websites based on university students and other people

Whether is university student	Taobao/Tmall	Jingdong	Jumei	Group purchase websites
University Students	0.95	0.53	0.18	0.44
Other people	0.89	0.62	0.11	0.38
Difference from university student (T-value)	0.06*** (2.99)	-0.09*** (-2.57)	0.07*** (2.82)	0.06* (1.66)

Note: N=388 for university students, 474 for other people.

The results of Jumei and Group purchase websites are anticipated before, because Jumei has risen only recently, and university students are one of the groups of people that are more open to new things; As for group purchase websites, because university students only have limited allowance and need to organize their own money, group purchases websites which provide some cheap food may be preferred more by students.

The two results about Taobao/Tmall and Jingdong were not expected because, as mentioned above, they are the top two most used online shopping websites in China, which should have a stable usage in each group of people. Although the results may seem startling, there are still some reasons of these two phenomena. As for Taobao/Tmall, it is probably because that website is the most popular online shopping website in China, and some freshmen who first shop online may be more likely to choose this one, therefore a slight difference between usage other people and university students is possible as well. However, there is a better reason that can explain both the result of Taobao/Tmall and Jingdong, which is the care about low price. As shown in the latter findings in 3.2.1 and 3.2.2, university students care more about low price but less about security, so they may be more likely to shop on Taobao, which can provide them many shops and lower prices, and less likely to shop on Jingdong, which have higher costs although is more secure.

The differences of preference of male students and female students are shown in Table 6.

Table 6: Using of online shopping website based on genders of university students

Gender	VIP	Jumei
Male	0.09	0.04
Female	0.23	0.23
Difference from male students (T-value)	-0.14*** (-3.25)	-0.19*** (-5.21)

Note: N=82 for male students, 179 for female students. VIP is website that called VIP.

According to Table 6, more female students often shop on VIP.com and Jumei than male students. In both websites, the percentage of women overruns the percentage of men by about 15%. These phenomena were well forecasted before the data was obtained. The reason was that these two websites mainly sell cosmetics and articles for make up, which women mostly and men seldom buy. One interesting observation is that VIP attracts twice as many men, but the same number of women, suggesting Jumei could do better in reaching out to male students.

c. Findings and discussions about devices

The composition of the devices students often use is shown in Figure 4.

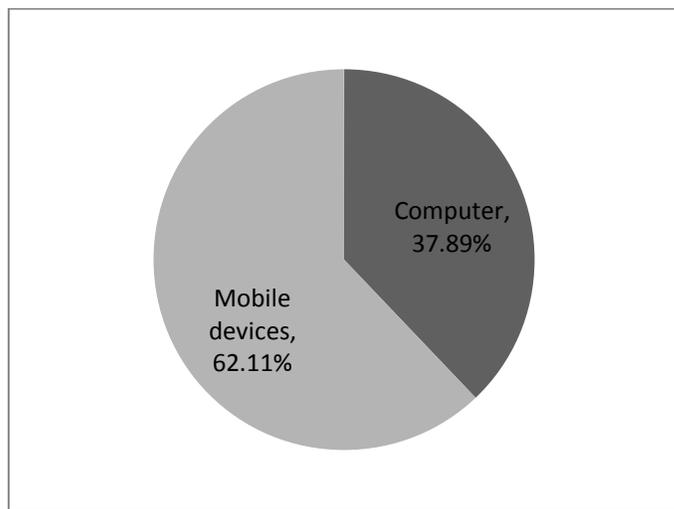


Figure 4. Devices Frequently Used When Online Shopping
Note: Mobile devices refer to mobile phones and tablets

Figure 4 indicates that relatively more people use mobile devices such as mobile phones and tablets when they shop online than computers. Although there is no significant difference in the usage of devices between university students and other people, there is a difference between males and females among university students.

Table 7: Using of devices based on genders of university students

Gender	Devices
Male	1.48
Female	1.71
Difference from male students (T-value)	-0.23*** (-3.59)

Note: N=82 for male students, 179 for female students. Mean of devices: 1 refers to computer and 2 refers to mobile devices, including mobile phone and tablets.

It is demonstrated in Table 7 that female students are more likely to use mobile phones as the device of online shopping than male students, and male students tend to use computers more. This outcome was not anticipated, and the possible cause is that women like to just look at the websites and find if there are things they want, just like window-shopping, but most men shop online only when they already have a target product. Thus, women are more likely to use mobile phone to do online shopping because it is easy to carry and they can shop whenever they have free time, and men use computers more when shopping online because most websites have better arrangement on computer version than on mobile phone version, and using computer may help them to find their target product more quickly.

d. Findings and discussions about payment

The composition of the payments students often use is shown in Figure 5.

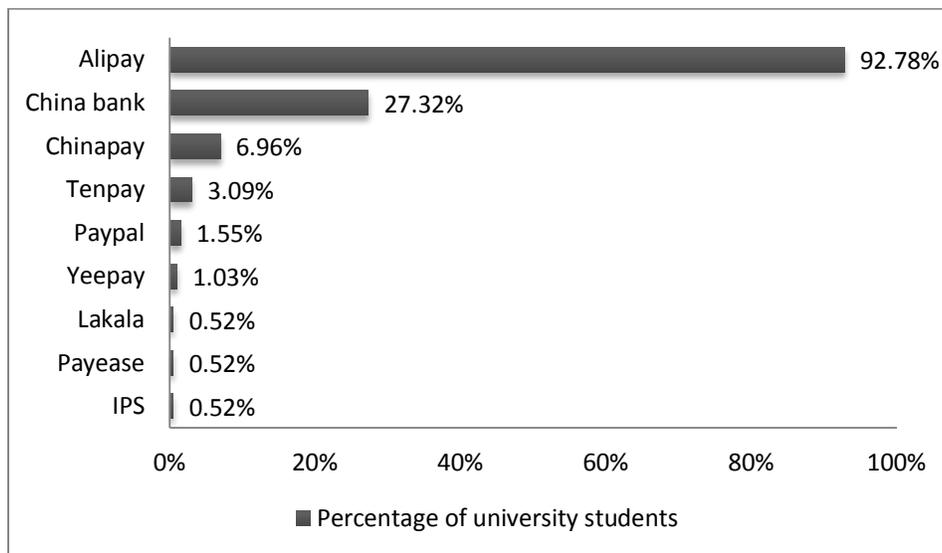


Figure 5. Payment Frequently Used When Online Shopping

Figure 5 shows that although the top three most popular payments online are Alipay, China bank, and Chinapay, Alipay, which 92.78% of online shoppers use, dominates the payment composition. In contrast to the results about devices which only had differences between male and female students, the finding about payments only happens between university students and other people.

Table 8: Use of online shopping payment based on university students and other people

	Alipay
University Students	0.93
Other people	0.86
Difference from university students (T-value)	0.07*** (3.43)

Note: N=388 for university students, 474 for other people.

It is indicated in Table 8 that a slightly larger percentage of university students use Alipay than the percentage of other people, which is, once again, not expected. The most probable reason may be that because recently Alipay introduced a service that can provide users interest when they save money in it, and most university students care more about money as mentioned in the latter finding in 3.2.1, they may choose to use Alipay for the interests. As for other people, because the interest of Alipay is high but only for a short time, compare to the interest of banks, adults may think it is not that secure and therefore do not use it.

B. Findings about motivation and barriers of online shopping

This section will investigate the difference of importance of 4 advantages and 4 disadvantages between university students and other people and between male students and female students.

a. Findings about motivations of online shopping

The overall rank of importance of motivations for online shopping among university students is shown in Table 9.

Table 9: The importance of online shopping advantages ordered by university students

	Convenience	Low price	Saving time	Hard-to-find products
Mean of importance rank	1.56	2.13	2.44	2.86

Note: 1 is the most important and 4 is the least important for mean of importance rank

When people rank the importance of the reason they shop online, convenience is most important, low prices of products are the second most important, that online shopping can save the time of going to the store is third most important and that the Internet has products that are hard to find is the least important.

Although there is no difference between female students and male students, there are differences of importance ranks of motivations between university students and other people.

Table 10: Mean of importance rank of online shopping advantages based on university students and other people

Whether is university student	Low price	Having hard to find products
University Students	2.49	3.23
Other people	2.67	3.10
Difference from university student (T-value)	-0.22** (-2.24)	0.13* (1.75)

Note: N=388 for university students, 474 for other people.

Table 10 reveals that university students care more about the low price of products but care less about online shopping having some things that are hard to find. The phenomenon of low price products is expected because university students only have a fixed amount of allowance and they need to consider more about the price of products. This finding can also explain why students

use Taobao/Tmall and Alipay more than adults, as discussed in 3.1.2 and 3.1.4. Whereas, the phenomenon of having hard to find products is not expected. A possible reason may be that other people, who are mainly adults, have to buy commodities for the family, and some of these trivial commodities are hard to find, so they need to buy more products that are hard to find. In addition, rare products would also be more expensive, so that is another reason why young people do not consider this as a big advantage.

b. Findings about barriers to online shopping

The overall rank of importance for barriers to online shopping among university students is shown in Table 11.

Table 11: The importance of online shopping disadvantage ordered by university students

	Can't see real product	Security	Need time to transport	Freight charge
Mean of importance rank	1.35	2.01	2.68	3.06

Note: 1 is the most important and 4 is the least important about mean of importance rank

When people rank the importance of the concerns they have when shopping online, that they can not see the real product is the most important, security problems about credit card and personal information are the second most important, that online products need time to transport is the third most important and additional freight charge is the least important, which is surprising given that students have appear to care most about cost in the previous areas of inquiry.

Same as findings about advantages of online shopping, there are also only differences between university students and other people but no difference between male and female students.

Table 12: Mean of importance rank of online shopping disadvantages based on university students and other people

Whether is university student	Security	Freight
University Students	2.46	3.47
Other people	2.22	3.66
Difference from university student (T-value)	0.24*** (2.98)	-0.19*** (-3.81)

Note: N=388 for university students, 474 for other people.

It is demonstrated in Table 12 that university students care more about freight but less about security. The result about freight is anticipated at first, because as above mentioned, money is a big problem in university student life, and they may care more about freight because they need to organize their own money and save some if they can. However, that result about security is not anticipated, and the reason may simply be that university students are brash because of their unavoidable youth. The security finding may also account for the result in 3.1.2 that university students use Jingdong less than other people do.

C. Findings about effect of online shopping on shopping habits of customers

This section will analyze the prevalent answers of the last open-ended question, which was about the influence of online shopping on the shopping habits of consumers. It will explain whether customers think that there are influences on them and what they think the influences are.

After analyzing 862 questionnaires of participants, it was found that most people think there are influences on their shopping habits, and respondents can be categorized into four types based on their answers.

The first type reports that online shopping makes people buy more products online, and the second type answers that online shopping makes them less likely to go window-shopping in real stores. The possible reasons of these two types are almost the same. It is that the convenience of online shopping allows them to shop at anytime, and as they shop online, they will feel the convenience of online shopping over and over again. Finally this feeling of shopping easily makes them give up the traditional, tiresome and time consuming window-shopping, and buy more and more products without even being aware.

The third type believes that they are more likely to compare between different shops, but the fourth type thinks just the opposite: they become more impulsive when buying things and thus buy more useless things. Although these two answers seem contradictory and cannot both be the main influence of online shopping on shopping habits, actually each of them has its own cause that makes this influence reasonable. About the increase in comparison, the cause may be that there are more shops and information online, and users can see them all at the same time, so it is more likely for them to automatically compare the different shops. As for the fourth type, the "new and interesting commodities" parts of online shopping websites may be the reason. This is because this part provides customers products similar to the ones they have bought before, and when they do online window-shopping in these parts, they tend to buy more things that they think are good but are actually useless.

V. CONCLUSION

Although online shopping is already a well-studied topic, most of the extant research only focuses on broad areas such as China, the US, Australia or Europe, and most of them also only mention the effect of online shopping on traditional shops but do not mention the effect on shopping habits of customers. This survey focuses specifically on Chinese university students and analyzes the difference of online shopping behavior, motivations, and barriers of online shopping between them and the overall population in China. This survey also includes the influence of online shopping on shopping habits of customers to fill the gap and make the discussion of online shopping effects more complete. Through this research, people can have a better understanding of online shopping customers' traits and even business experts can give more accurate advice to merchants and make more precise forecasts of the overall trend of online shopping.

The overall findings of this research are that students like to buy clothes and food more and like to use Taobao/Tmall and Jumei more as the website of online shopping. Another important

finding is that students care about price far more than older people, drawn from the facts that they consider the low price of commodities online and the additional freight charge as more important than older people do. On the other hand, quality of products, service, and security are more important for other people, though they still care about price most. This observation about the influence of price and quality on different kinds of people could also explain many other results of this research such as the preference of university students for Taobao/Tmall and the preference of other people for Jingdong.

As for the effects of online shopping on customers' shopping habits, most of them answer that they want to buy more online, like window-shopping less, compare more between the shops and sometimes buy more useless things since they began shopping online.

This survey also provides many suggestions for merchants who can use the results to adjust their selling strategies. For businesses which want to appeal to college students, they should do that on Taobao/Tmall or group purchase websites because university students like these two websites more and they should provide Alipay as a payment or other short-term money saving methods because students care more about the low price of products. For businesses that want to attract older buyer groups, they should do that on Jingdong or make the purchase more secure because older people care more about quality. For businesses that produce women-use products, they should make contract with Jumei or VIP and sell their products there because female students are more likely to shop on these two websites. For the kind of websites like Jumei and VIP, which focus on women customers, they should make better mobile phone clients because women students are more likely to do online shopping on mobile devices. There is also much other information in this survey that can provide implication to people who want to sell things and this survey will definitely be useful to many merchants and businesses in the future.

APPENDIX

Questionnaire

1. What is your sex?

- Male
- Female

2. What is your typical income for one year? (Including your salary and allowance)

- under ¥10,000
- ¥30,000-¥40,000
- ¥10,000-¥20,000
- ¥40,000-¥50,000
- ¥20,000-¥30,000
- above ¥50,000

3. What is your typical tuition for one year?

- under ¥5,000
- ¥25,000-¥35,000
- ¥5,000-¥15,000
- ¥35,000-¥45,000
- ¥15,000-¥25,000
- above ¥45,000

4. What is your major?

- Science
- Business
- Art
- Medicine
- Engineering
- Law
- others, please specify _____

5. Please order the importance of following advantages of online shopping. (1 is most important)

- ___ Because it's convenience.
- ___ Because it can save my time for going to real stores.
- ___ Because the products are cheap.
- ___ Because I can find the products that are hard to find.

6. Please order the importance of following disadvantages of online shopping. (1 is most important)

- ___ Because I concern about using my personal and credit card information online.
- ___ Because I can't see the real products and may buy bad-quality products.
- ___ Because there are extra delivery fees.
- ___ Because I can't get the product immediately

7. What kinds of products or services do you often buy online? (Check all that apply)

- Clothes
- Meals
- Gifts and toys
- CDs/DVDs/VCDs
- Books
- Airline tickets
- Medical products
- Hotel Accommodations
- Electronic products
- Cinema/ concert tickets
- Insurance
- Group purchase

8. Which are the websites you use most often when shop online? (Check all that apply)

- Taobao/ Tmall
- Amazon
- DangDang
- JingDong
- VIP.com
- JUMEI.com
- Suning E-go
- Gome online
- Group purchase websites

9. Which device do you prefer when shop online? (Check only one)

- Computers
- Mobile phones
- Tablet

10. What are the payments you use most often when shop online?
(Check all that apply)

- Alipay
- PayPal
- China bank
- IPS
- Tenpay
- Payease
- YeePay
- Chinapay
- Lakala

11. What are the influences of online shopping on your shopping habit?

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AUTHOR

First Author – Yunxiao Diao, junior high school student, Liaoning Province Shiyan High School International Department.

Correspondence Author – Yunxiao Diao, junior high school student, Liaoning Province Shiyan High School International Department.