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ANALYSIS ON ONLINE PAYMENT SYSTEMS OF E-COMMERCE

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ABSTRACT

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With the rapid development of science, computer and network technology, electronic-commerce (e-commerce) has become a routine part of human life because it is convenient for customers, particularly in Business to Customer (B2C) commerce. The customer can place orders at home and thus save time. Online payment systems have a very important role in e-commerce and they are used to complete e-commerce transactions.

The purpose of this thesis is to introduce current state, the challenges and future expectations of online payment systems in China and Europe and especially in Finland. The theoretical background discusses history of e-commerce, the current situation of e-commerce and the methods of online payment systems used in e-commerce in Europe and China. In the research section, various types of customer opinions of online payment are studied by using questionnaire survey.

The results of the research show that nowadays online payment systems are popular. All the respondents have experience on online payments. Debit card (Visa or MasterCard) and Net Bank are the most popular online payment systems, not only in Europe but also in China and other countries. The second one is third-party online payment systems. PayPal is more popular in Europe. By contrast in China, AliPay is the top online payment system. The two main factors contributing to choosing online payment system are convenience and the quickness of transaction. Technical problems and vulnerability to cyber-crime are the main pros of online payment system. Malware attack and financial issue are the main challenges of online payment. Having a secure, reliable and trustworthy online payment environment is important.

Keywords: e-commerce, online payment, payment methods

CONTENTS

1   INTRODUCTION

1.1   Background

With the rapid development of science, computer and network technology, electronic-commerce (e-commerce) has become a routine part of human life. Since it can provide new impetus to develop business in enterprises, it is convenient for customers, especially in Business to customer (B2C) commerce. The customer can order at home and save time for doing more things. There is no need to visit a store or a shop. The customer can visit different stores in the Internet in a very short time and compare the products with different characteristics. Such are price, color and quality.

Furthermore, online payment systems have a very important role in e-commerce. E-commerce enterprises use online payment systems that refer to paperless monetary transactions, which has revolutionized the business processing by reducing paperwork, transaction costs, and labor cost. Being user-friendly and less time consuming than manual processing, electronic commerce helps a business organization expand its market reach expansion. (Yolo, 2015. Cited: 20.11.2017)

In the last decade, the online payment systems have developed and reached a high level of security, privacy, confidentiality and efficiency characters. (Yolo. 2015. Cited: 20.11.2017)

1.2   Aim and Outline

The purpose of this thesis is to introduce current state, the challenges and future expectations of online payment methods in China and Europe especially in Finland. The theoretical background discusses history of e-commerce, the current situation of e-commerce and the method of online payment systems used in e-commerce in Europe and China. In the research section, various types of customer opinions of online payment are studied by using questionnaire survey.

The first chapter discusses the history and current situation of e-commerce in Europe and China. The second chapter introduces what online payment system is about, how e-commerce and online payment systems are connected to each other during transactions and what are the most

common payment transaction platforms that are used online. The chapter provides information on how payment systems work.

The research chapter discusses survey result. It gives answer to understand different customers' opinion of online payment. Questionnaire form was sent to online shopping customers from European countries and China. At the end of research the results and conclusions of the research are given.

2   E-COMMERCE

E-commerce refers to a transaction of buying and selling via the Internet. Dave (2011) refers to different perspectives of e-commerce. The first one is communication part, to transmit information, products, services or payment by electronic means. Secondly, business process perspective is an application of technology towards the automation of business transactions and workflows. The third one is service view, increasing the speed and quality of service delivery when cutting costs at the same time. Finally, there are online perspectives, the transaction of information and product purchase which occur online. (Dave 2011, 10-11.)

2.1   History of E-commerce

E-commerce was introduced 40 years ago. It is still continuing to grow with new technologies, innovations, and thousands of businesses entering the online market every year (Miva 2011, cited 20.09.2017). Development of e-commerce is divided into two time periods: the first period time from 1960s to 1990s, was based on Electronic Data Interchange (EDI), the second period time after 1990 decade, e-commerce was completed by World-Wide-Web.

EDI was generated in the end of 1960s in the United States. EDI was replaced by traditional mailing and faxing of the document with a digital transfer of information from one computer to another. Since EDI could reduce the use of paper, it was called no-paper transaction. Then point of sale (POS), Electronic ordering system (EOS) and management information system (MIS) were used to deliver data to different countries and different enterprises in EDI. These kinds of technologies make data control more and more accurate and effective. According to technical part, EDI was rented to a value added network (VAN) to transfer data individually. (Miva 2011, cited 20.09.2017).

Despite VAN is safe, the cost of using it is high. People tend to pay more attention to use Internet to e-commerce development. If compared to EDI, Internet-based e-commerce is cheaper, and it also has wider coverage, and more functions and more flexible.

Timeline of E-commerce:

1979

An English inventor, called Michael Aldrich comes up with the concept of long-distance shopping to Videotext, credited with developing the predecessor to online shopping (Miva 2011, cited 25.09.2017). Meanwhile, US has the same service called The Source and CompuServe.

1982

Minitel is introduced nationwide in France by FRANCE TELECOM and used for online shopping, stock inquiry, search phone directory and other services, and even online chat. However, the UK also launches but not so successfully.

1990

Tim Berners-Lee writes the first web browser, called WorldWideWeb (WWW), using the NEXT computer.

1992

St.Martin's publishing house publishes a book Future Store written by J.H. Snider and Terra Ziporyn. The book indicate how new technologies will change the future shopping.

1994

Netscape releases Netscape browser and later introduces Secure Sockets Layer (SSL) to protect technology. Pizza Hut begins selling pizza on their website.

In September 1994, Nicholas Negroponte, a professor at MIT writes a book "Digital Survival". He presents the view that "the basic element of the whole society will be changed."

1995

Jeff Bezos launches Amazon.com and establishes. Jeff founded the first 24-hour broadcast of the non-commercial radio station. Radio of Hong Kong and NetRadio is launched. Deli and Cisco and other companies begins to use the Internet to sale.

2002

PayPal launches online payment, which is acquired by eBay for 1.5 billion dollars. CSN stores and NetShops and other online stores are founded and attention is paid to sell the specific products.

2015

E-commerce tends to mature. Amazon.com releases the selling which almost 500 million dollars, that is more than half of all e-commerce growth.

(Wikipedia cited 25.09.2017)

2.2   E-commerce in EU

Today, online retail in EU countries is growing exponentially, particularly in southern Europe. The European B2C e-commerce rose from 530 billion euros in 2016 to 602 billion euros in 2017, growth rate of nearly 14% (Ecommerce Europe 2017, cited 27.09.2017). In Europe there are 50 countries, more than 200 different languages and 28 different currencies. All of these facts make a huge cultural challenge in European e-commerce. (EU Gateway 2017, cited 27.09.2017.)

According to the report of e-commerce in Europe in 2015, there are 220 e-commerce platforms throughout all the EU countries, accounting for 31 percent of the total sales of the world, especially in the UK, Germany, France, the Netherlands, and Switzerland. Although Amazon and eBay are prior choices in e-commerce, there are also 39 e-commerce platforms in Germany, 24 in France and 14 in Italy. The top ten e-commerce platforms in Europe are amazon.de, amazon.co.uk, ebay.de, ebay.co.uk, amazon.fr, amazon.it, allegro.pl, amazon.es, ebay.it, mobile.de. (EU Gateway 2017, cited 27.09.2017.)

A card account is the most popular in Europe, and the second most popular one is a digital wallet. In the UK, approximately four in ten online transactions are paid by credit card. The debit card is used in 35% of online payment method, also PayPal is the third most popular payment method. Germans prefer to use the invoice when paying. In France, the customer uses debit card Carte-Blue, MasterCard, American Express and PayPal. The Dutch prefers to use iDeal and Bancontact and Mister Cash is more popular in Belgium. (Ecommerce News 2017, cited 27.09.2017.)

In Finland, 93% of people use the Internet. 3 million of these Internet users shop online. These online customers spend on average 2,170 euros per year. The Finnish e-commerce sales reached 7 billion euros in 2015. In 2016, the growth was forecasted to reach 8 billion euros. (ecommerce europe, 2017, cited:30.11.2017.)

2.3   E-commerce in China

Over the past twenty years, e-commerce in China has been expanding dramatically, especially after Alibaba Group, Taobao, Jingdong and other B2C e-commerce were established. In 2016, the transaction volume was 2.16 billion RMB. According to China Internet Network Information

Centre report the number of online buyers in China reached above 460 million and is still increasing. The online payment users reached 475 million, with an increase of 14 percent in 2016. Particularly in 2017, using the mobile payment rises more steeply and it reached 469 million. (China ecommerce report 2016, 5, cited 28.09.2017.)

The majority of B2C e-commerce transactions were made with Alibaba's Taobao (57%) and Tmall (37%) and JD.com (25%). Other Platforms like Suning, Vipshop, Dangdang, Amazon.cn and JMei constituted for the remaining market share. And the most popular e-commerce platform is through mobile. Taobao is the most popular, with the 253.2 million users. Others e-commerce platform are called Meituan, JingDong, WeiPin and Tmall (export.gov 2017, cited 28.09.2017). In 2016, the first one of third-party online payment system is UnionPay online payment, which is the largest bank card collection of specialized service agencies. The next one is AliPay that overtook PayPal as the world's largest mobile payment platform. (China ecommerce report 2016, cited 28.09.2017.)

3 ONLINE PAYMENT SYSTEMS

3.1 Payment Systems in E-commerce

Online payment is a form of electronic payment, which is provided by a third party payment interface between banks for real-time payment. Compared with the traditional payment, online payment systems are more convenient, fast, efficient and economical. Users can use their own PC or mobile phone with Internet to complete the entire payment process in a very short time. (Baike 2017, cited 30.09.2017.)

Online banking is a very common way of online payment systems. For example, when users want to shop online. The user must open an online bank account. This payment is directly paid by credit card or even debit card. And now third-party online payment systems such as PayPal are also very popular in e-commerce. Third party payment is an independent organization, which provides the network payment mode for transaction platform between bank and online payment platform. Third party payment mode is like a credit intermediaries to supervise and support between online business and the bank. (Baike 2017, cited 30.09.2017.)

First of all, for the customer third-party online payment companies can provide a variety of online payment systems. Especially for small and medium enterprises. Online payment system provides a convenient payment platform to do trade with customers. For the customer, it does not only give a chance for quick payment after shopping online, but it also avoids the risk of money transfer. Online payment allows the banks to expand their business and allocate the resources on development and maintenance. (Baike 2017, cited 30.09.2017.)

Online payment system also has plenty of risks. Financial risks are possible during the transaction process. There is a plenty of competition which may cause a negative impact on online payment. For example, in China, over 40 electronic payment companies work on third-party online payment, which causes serious homogeneity in the market. The last but not the least there is law and regulation problem. Legislation regarding online payment should be established. (Yu 2015, cited 30.09.2017)

3.2 Types of Online Payment System

3.2.1 Net Bank

Net Bank is a virtual counter of the bank to provide network technology for the customer to complete some traditional services such as opening an account, inquiries, transfer, online securities, investments and financial management. By comparison with traditional bank services, online banking cuts down operating cost. There are no time or location limits, the bank can offer services anytime and anywhere, even anyhow. Furthermore, net bank provides a variety of personalized services, such as insurances, securities and other financial products. (Baike 2017. Cited: 30.09.2017)

3.2.2 PayPal

PayPal allows any business or individual with an email address to transfer money online in a more secure, convenient and efficient way. The network is based on the existing bank account and the credit card to create a real-time payment solution. (PayPal.com 2017, cited: 30.09.2017)

PayPal is the most popular third-party online payment system in the world. It has 8 million transactions every day and has over 137 million PayPal accounts in 193 markets and includes 26 currencies that it can transfer all over the world. (Aki 2015, cited: 30.09.2017)

3.2.3 Google Wallet

Google Wallet is a peer-to-peer payments service produced by Google Company. Google Wallet must link to an existing credit card or bank account in the US. Payment transfer is completed by using an email address or a phone number. The most important revolution is that Google Wallet released real card to connect to user's accounts so customers can use Google wallet at retails businesses. It can also be used like a debit card to withdraw cash at ATM. Unfortunately, Google Wallet card was abolished on June 30, 2016. (Wikipedia 2017, cited: 30.09.2017)

3.2.4 Amazon Payment

Amazon Payment was launched in 2007 by Amazon Company. It is an online payment system which is owned by Amazon.com. The customer does not have to leave the site to complete a transaction. It is safe and fast way to buy products online. (Aki 2015, cited: 30.09.2017.)

3.2.5 Authorize.Net

Authorize.Net provides a payment gateway service. It allows merchants to accept credit payment through their website and over an Internet Protocol connection. Since 1996 there are around 375,000 merchants and more than 88 billion dollars transactions in 2015. (Aki, 2015, cited: 30.09.2017)

3.2.6 Wechat Wallet

In China, Wechat payment is the most widely used payment gateway with the mobile phone, based on Wechat app. By linking your debit cards to Wechat payment is enough to complete transaction. In Wechat Wallet there are plenty of payment methods:

- Quick Pay: Vendors scan the QR code shown by customers on the Quick Pay page to finish transaction.
- QR Code Payment: Vendors create different QR codes for different goods. After users scanning these codes, customers can see related product information and transaction guides on their phone.
- In-App web-based payment: Vendors push product messages to their followers via the official account. With Wechat payment enabled, their followers can purchase products on the shopping page.
- In-App payment: Vendors can integrate Wechat Pay SDK (software development kit) into their apps. When users make payment in other apps, Wechat will be authorized to process the payment. Once the transaction is done, the page will redirect to the other app. (WeChat Wallet User Agreement. Cited: 30.09.2017)

3.2.7 AliPay

In 2013, AliPay overtook PayPal as the world's largest mobile payment system. It is used by more than 5 percent of world's population. Up to now, there are 270 million user accounts. The amount of mobile payment transactions peaked 1.97 million times. Alipay is operated by Ant Financial of China, which is one of the largest FinTech companies in the world. Alipay is a way to pay for goods and services online, but now it is more than that. It is a global lifestyle "super app". (Wikipedia 2017, cited: 06.10.2017)

3.3 Online Payment Systems in Europe

When it comes to paying for the goods the customers ordered online, the shoppers in Europe prefer to pay through third-party payment systems such as PayPal. Visa and MasterCard are also popular followed by domestic credit and debit cards (Ecommerce News 2017. Cited: 27.10.2017).
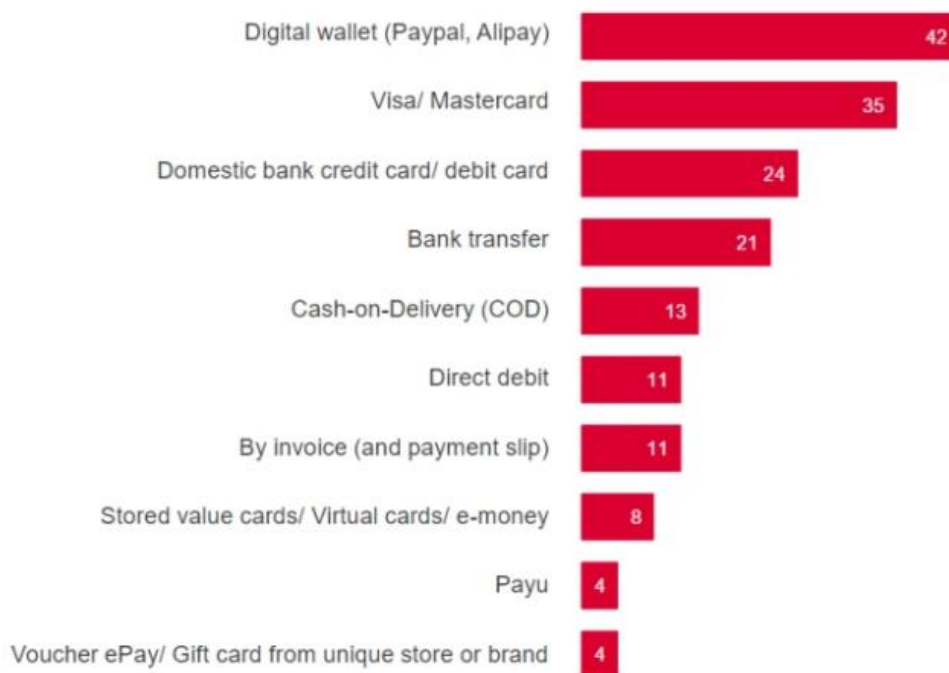

FIGURE 1: Online payment methods in Europe (Ecommerce News 2017. Cited: 27.10.2017)

In Finland from 2013 to 2016, the most popular online payment systems were debit or credit card. 31% of respondents stated that they prefer to use this system of payment for their online

purchases. Second one was direct payment via bank. The third one was invoice with 23% followed by PayPal, Payson or similar at 12%.
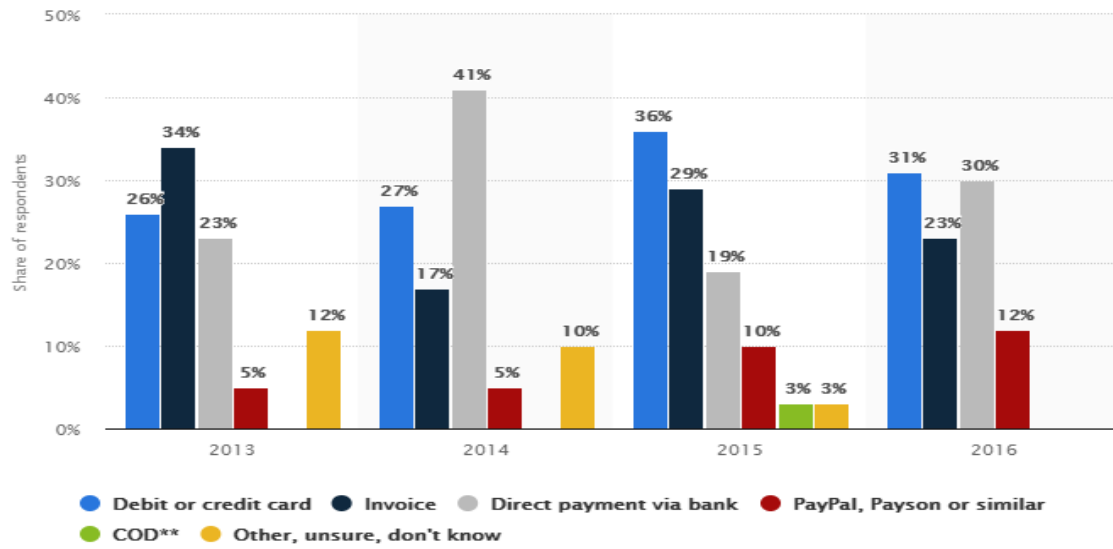

FIGURE 2: Most popular online payment systems in Finland between 2013 and 2016. (Statista.com 2017. Cited: 20.11.2017)
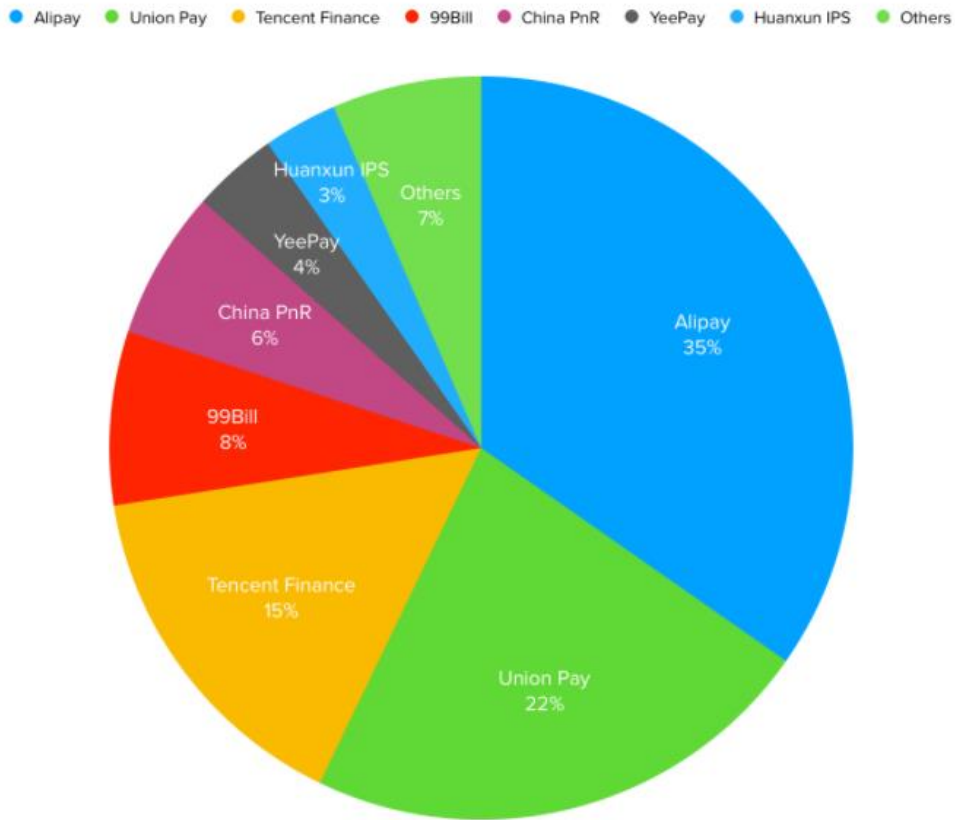
3.4   Online Payment Systems in China

FIGURE 3: Online Payment methods in China (Ryan SEO Shifu Blog. Cited: 27.10.2017)

In 2017, AliPay was the leading third-party payment provider in China with 34.71%, Union Pay ranked next with 22.44%, while Tencent Finance which provides China's largest internet company takes a market share of 15.37%. (Ryan SEO Shifu Blog 21.08.2017. Cited: 27.10.2017)

4 RESEARCH METHODOLOGY

Research is something that people undertake in order to find out things in a systematic way. Research can be seen as the collection and analysis of data from a sample of individual or organization relating to their characteristics, behavior, attitudes, opinions, and possessions. (Jon & Roger 2002. 7)

The quantitative approach is more than just "doing sums", it is about making sense of numbers within a context (Jon & Roger 2002. 7). The emphasis on testing and verification and there is more focus on facts or reasons. Relationship are founded using variables (a characteristic can vary within the problem context), parameters (values fixed for a given problem) and by making assumptions (things accepted as true). The data can be from existing sources called secondary data or may need to be collected for the purpose of the research are primary data. Data can come from a census or from a survey. (Jon & Roger 2002. 7)

The data for this thesis was collected with a questionnaire that is one of the most widely used data collection techniques within the survey strategy. Since each respondent is asked to respond to the same set of questions, it provides an efficient way to collect responses. (Jon & Roger 2002. 10)

Research Design

The data collection method was a questionnaire (Appendix 1). The purpose of this survey is to understand the current state, challenges and future expectations of online payment in China and Europe. The questionnaire was consisted of 11 questions, which have 10 were closed questions and the last one was an open question. At the beginning of the questionnaire there were two personal questions, which defined respondents' nationality and gender.

The populations of the research were the students of Oulu University of Applied Sciences. The population consisted of the students from four-degree programmers: Business Information Technology, International Business, Business Information Systems and Business Economics. The amount of students who received the questionnaire by email was 195. Questionnaire was

also available in China via social media (WeChat). To send questionnaire to my WeChat friend list one by one.

Webropol was used as a tool to build a questionnaire and to collect results.

5   RESULTS

The response rate of this survey was 32%. 71 respondents have answered the survey. 45 respondents were students in Oulu University of Applied Sciences, 26 respondents were answered via the link shared on WeChat. The first question about respondents' nationality. 48% of the respondents were Finnish and Europeans, 37% were Chinese and the rest 15% were from other countries. The Figure 4 below shows the distribution of respondents' nationality.
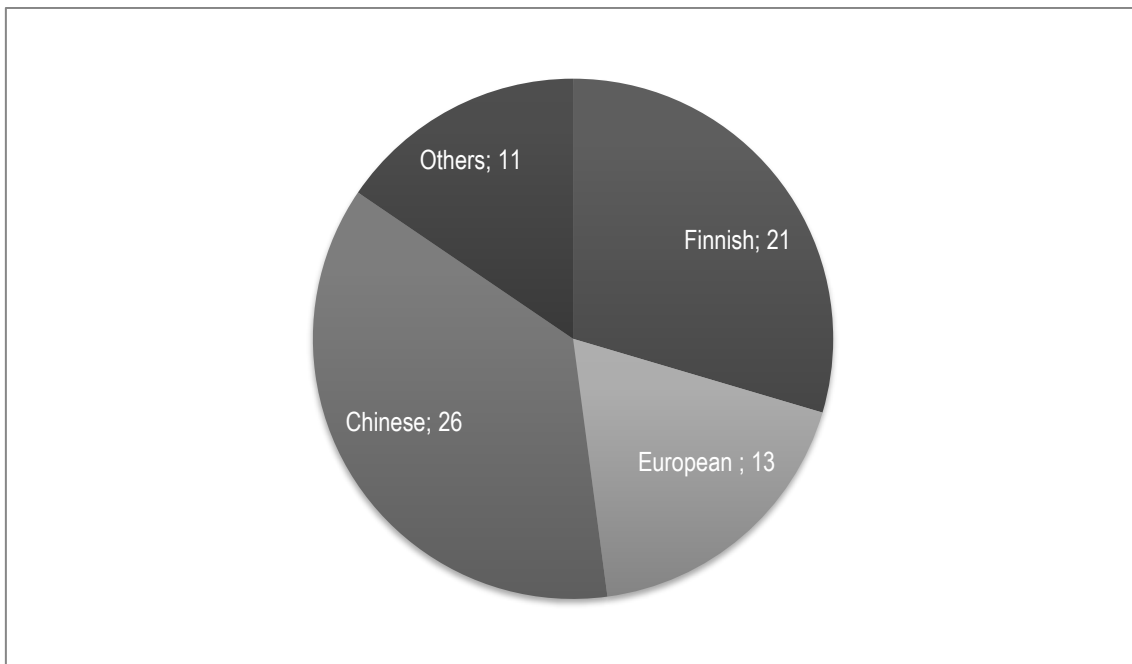

FIGURE 4. Distribution of nationality (n = 71).

Next two questions dealt with the respondents' gender and age. 45% of respondents were male and 54% were female. Most of respondents, i.e. 73%, were between 19 and 25 years old, 23% were between 26 and 35. Only one respondent was under 18, and also between 36 and 45 and between 46 and 59 years old. There were no respondents over 60 years old in this survey. The table 1 below shows the percentage of the respondents' age.

TABLE 1. Respondents' age (n=71).

Age groups	N	Percent
Under 18	1	1.4%
19-25	52	73.2%

26-35	16	22.5%
36-45	1	1.4%
46-59	1	1.4%
Older than 60	0	0%

Fourth question was "Do you use online payment?" The large majority, 99% respondents answered "Yes", 1% answered "No" There was nobody without previous experience in online payment before. The table 2 below shows the percentage of Do you have experience of online payment before.

TABLE 2. Do you have experience of online payment before (n=71)

	Yes	No	I will use later
Do you use online payment before?	98%	0%	1%

The Next question was "Which online payment do you know?". Since this question was a multiple choice question, the respondents were able to choose one or several options. There was also an open option for the respondents to answer if they knew other online payment systems, which were not included in the list. Following online payment systems were mentioned: debit card (Visa or MasterCard), Net bank, PayPal, Google Wallet, Amazon payment, Authorize.Net, WeChat payment and AliPay.

The most popular online payment system respondents knew was Debit card and PayPal with 93% and 85%. 79% of respondents chose Net Banking and 56 % of respondents knew AliPay. 37% of respondents chose WeChat payment method. 30 % knew Amazon payment. Google Wallet was known by 25 % of the respondents and 11 % knew Authorize.Net. Again there was the open question, which gave the respondents opportunity to add some previously not mentioned payment system systems. The answers were: Credit card, Skrill, QIWI, Yandex Money and Steam Wallet. Figure 5 below shows the number of respondents know the online payment.
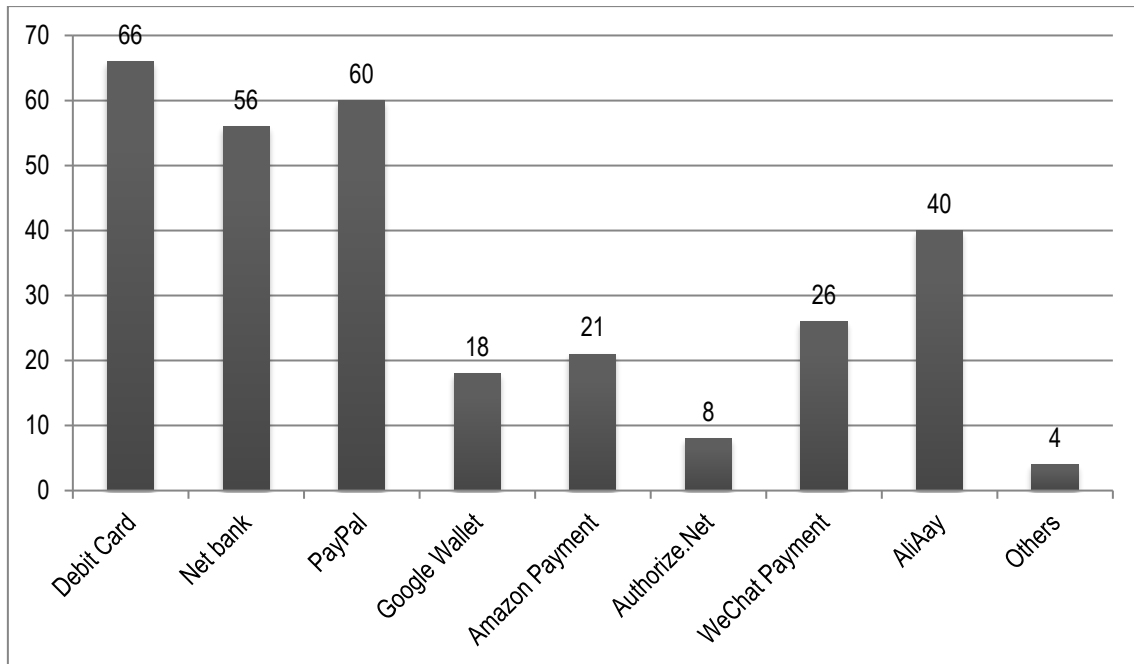
FIGURE 5. Which online payment do respondents know? (n=71, selected answers=299).

In the next question respondents were asked which online payment systems they use most regularly. 35% of respondents used debit card most frequently. PayPal and AliPay ranked second and third, with 24% and 20%. 17% of respondents used net bank and 4% of respondents used WeChat payment most frequently. No one chose Google Wallet, Amazon payment or Authorize.Net. Table 3 below shows the percentage and number of online payment systems respondents' used most regularly.

TABLE 3. Which online payment do you use most regularly? (n=71)

Online Payment	N
Debit card	25
PayPal	17
AliPay	14
Net Bank	12
WeChat Payment	3
Authorize.Net	0
Google Wallet	0
Amazon Payment	0
Others	0
Total	71

Next question sorted out respondents' expenditure by online payment systems. The question was "How much do you spend via online payment monthly (percentage of your monthly expense". 29% of the respondents used less than 10%, 17 used between 11% and 25% on online payment. Use between 26% and 35% and between 36% and 50% were 9 and 10 respondents separately. 6 respondents used more than 50% by online payment. Table 4 below shows the percentage of expenses used monthly via online payment.

TABLE 4. How much do you spend via online payment monthly (percentage of your monthly expenses)

	Percent
Less than 10%	41%
11% - 25%	24%
26% - 35%	13%
36% - 50%	14%
More than 50%	8%

The respondents were also asked the pros and cons of online payment. Both questions were both multiple choice questions. The respondents were able to choose one or many options and also had "others" as an open option if the pros or cons were not in the list. In pros of using online payment there were 6 options in the list: convenience, efficiency, automatic, fast transaction speed, low risks of theft and others. The number of respondents were 71, selected answer were 247.

The most popular pro of online payment was convenience with 93%. 86% of respondents thought fast speed of transaction is a pro of online payment. 77% of respondents selected efficiency. Automatic and Low risk of theft ranked next with 48% and 42%. Only one respondent chose others, the answer was "Source". Figure 6 below shows the number of pros of online payment.
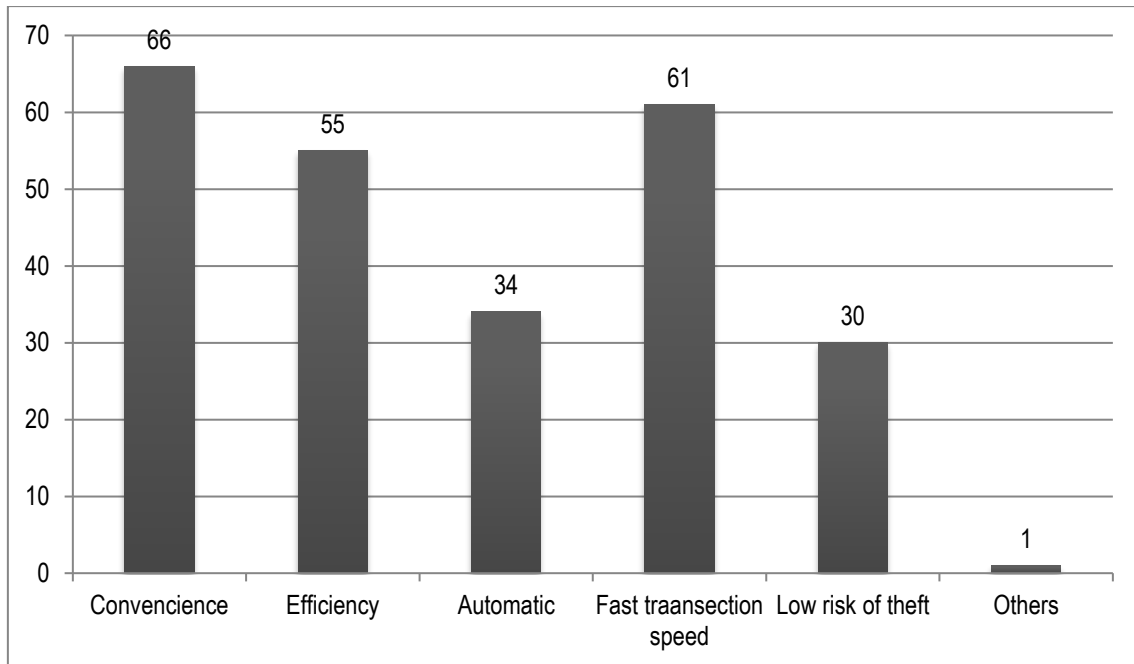
FIGURE 6. Pros of online payment (n=71, selected answers=247).

In the list of cons of using online payment there were 8 options in the list. The options were service fee, inconvenience of offline sales, vulnerability to cybercrime, reliance on telecommunication infrastructure, technical problem, it may take time to get started, learning takes too much time and others. The number of respondents were 71, and there were 157 selected answers.

The most popular con of online payment was technical problem which had 39 respondents chosen. 38 respondents selected vulnerability to cybercrime. 28 of respondents chose service fee and inconvenience of offline sales. Next was reliance on telecommunication infrastructure which 14 respondents selected. 4 respondents thought it may take time to start and learning takes too much time. Two respondents selected "others" option. The answers were: "authorization may be difficult" and "when you return stuff or something goes wrong you pay twice or whatever, the refund process can sometimes be unpleasant". Figure 7 below gives the numbers of online payment cons.
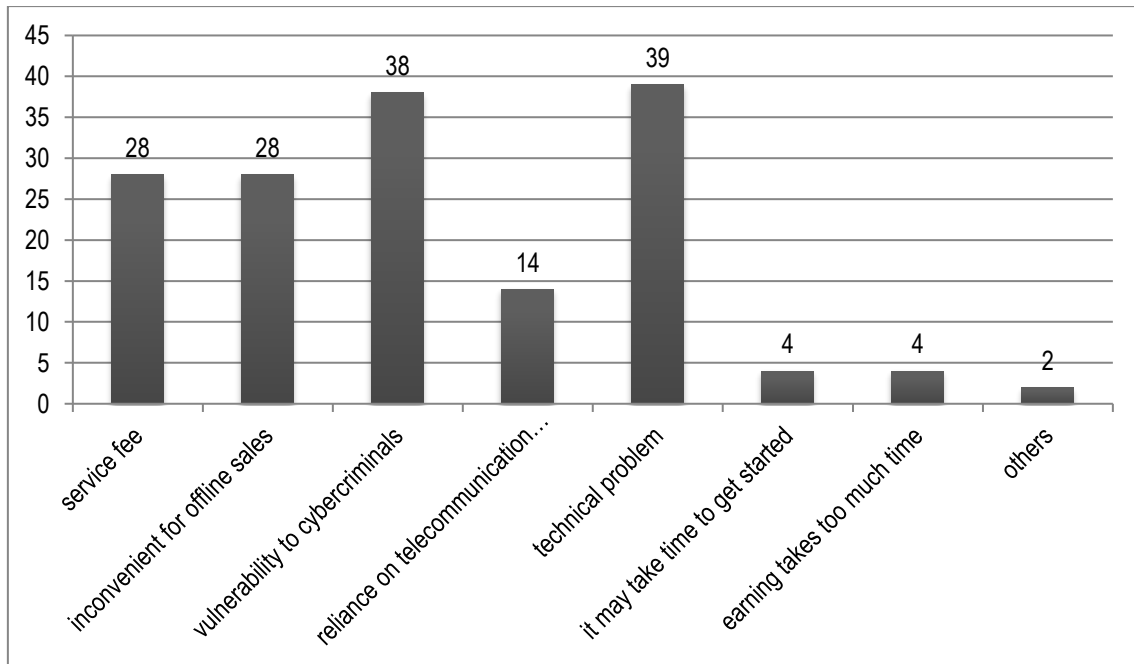
FIGURE 7. Cons of online payment. (n=71, selected answer=157).

After sorting out respondents' user experience, next was asked the challenges the respondents were facing when adopting online payment was assed. This question was also a multiple choice question. The respondents were able to choose one or many options and also had "others" open option if their challenge was not in the list. In the list there were five options: Malware attack, financial issues, market regulation issues, moral issues and others. The number of respondents were 71, selected answers were 118.

53 of respondents chose malware attack, and 29 of respondents selected financial issues. The market regulation issues and moral issues were ranked next, which were 20 respondents and 14 respondents chose. There are 2 of respondents selected others but they did not give the reason. Figure 8 below gives the distribution of challenge respondents facing when adopt online payment.
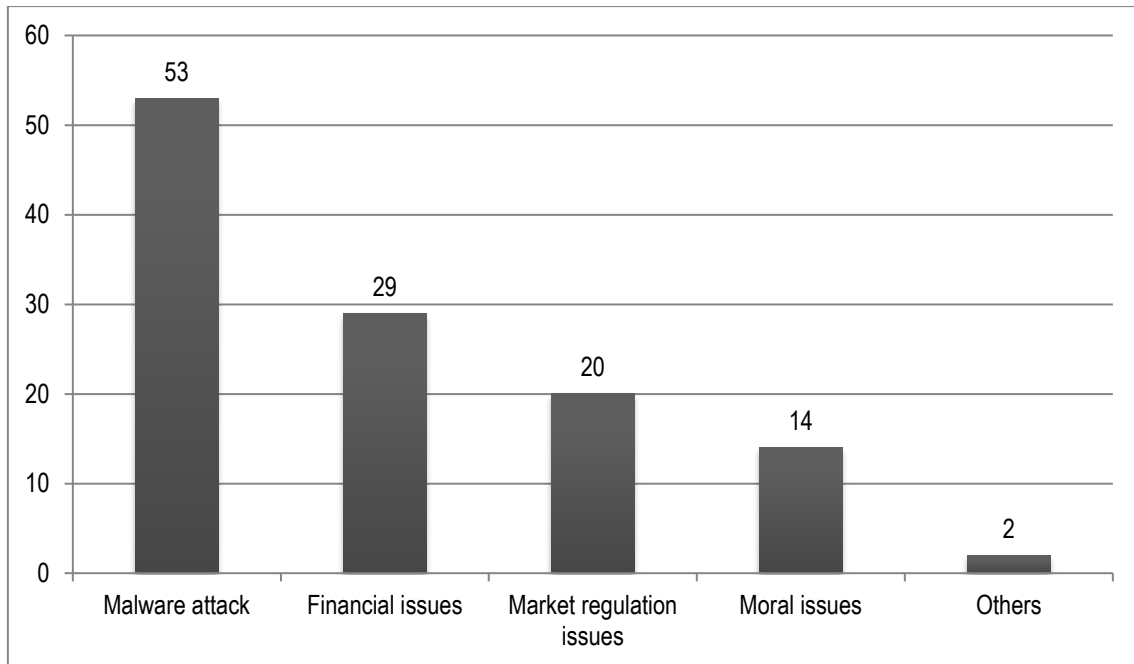
FIGURE 8. Challenge when adopting online payment. (n=71, selected answer=118).

The last question was about what do you think should be done to address these challenges or perspectives mentioned in the previous question concerning online payment? This question was an open question. Respondents could write their own comments about online payment systems. There were 16 answers for this open question. Respondents gave their recommendation to solve the challenges of online payment. Such as announcing online payment law, trying to know the methods and security information before use online payment methods and technical support. Respondents also had a positive expectations of online payment system. The comments are shown below.

"Have a secure, reliable, and trustworthy website. "

"Announce online payment law to become more normative"

"I think people may have prejudices towards online payment and are informed too little about it."

"I have not considered this issue very much but what I'm doing to improve this, is to buy most of my good from local brick-and -mortar shops to ensure money staying here."

"Try to know all the payment method and go through all the security info before start online payment, then everything should be fine"

"Financial risks are a big problem. But in my opinion, QR code pay method will arrive Europe soon."

"Keep updated with security and make your clients understand how your system work, they'll more easily trust you and start to use it.

"I'm not sure if something should be done for example to customs because I understand the will to strengthen homeland sales and such, I just dislike it. Then again I feel that laws setting transaction limits kill small firms which is bad for competition."

"Make it more secure"

"Technical support"

"Literally nothing. Financial issues are mostly because of the differences in salaries so on European online shops prices are usually regulated only by EU market and wage gaps."

"Educate people about online payments and bring awareness about vulnerabilities and cyber-attacks as well as highlight users own responsibility."

"So far good"

"Allowing more block chain into the regular financial markets, simplification of fees, removal of tracking mechanisms allowed by bank secrecy act."

"Enhance network security"

"Install antivirus software, take care of the payment process"

Comparison of the Differences between Europe and China

The total numbers of respondents of this survey was 71. 34 respondents were from Europe, 26 from China and 11 were from other countries. The biggest difference between European countries and China was which online payment they were familiar with. (Figure 9). Respondents from European countries were more familiar with PayPal, Google Wallet, Amazon payment and Authorize.Net. On the contrary, Chinese were more familiar with WeChat payment and AliPay.
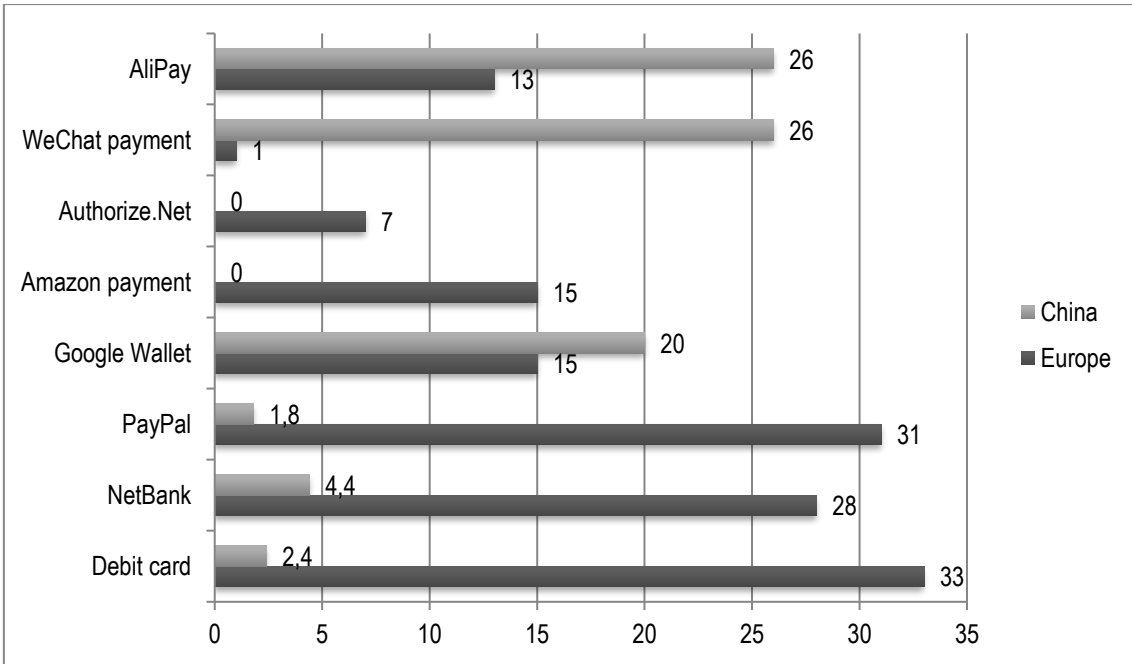
FIGURE 9. Difference between Europe and China of which online payment do they were familiar with.

6 CONCLUSION

The main idea of the survey was to find out current state, the challenges and future expectation of online payment systems in China and Europe. The number of respondents was too small for analysis to be more comprehensive. The response rate of this survey was only 32%.

The result of this survey shows the respondents were familiar with online payment systems. All the respondents had previous experience with online payment before. Large number of respondents (26%) was spending more than 36% (on their total expense) by online payment systems. Respondents give so many useful recommendations and solution to address the challenge of online payment. Respondents gave their recommendations to solve the challenges of online payment. Such are announcing online payment law, trying to know the methods and security information before using online payment methods and the secure of technical support.

Debit card (Visa or MasterCard) and Net Bank were the most popular online payment systems not only in Europe but also in China and other countries. Next is third-party online payment system. PayPal is more popular in Europe. By contrast in China, AliPay is mostly used online payment system.

All respondents think convenience and fast transaction speed are two main factors why respondents choose online payment. Technical problems and vulnerability to cybercriminals are main pros of online payment.

Malware attacks and financial issues are the main challenges of online payment. Having a secure, reliable and trustworthy online payment environment is important.

According to the theory part, online retail is popular nowadays and using online payment systems to transact has become a common behavior in e-commerce environment. In the research, the results have proved that. All the respondents had experience in online payment. Not only are they teenagers, but also older people. Both of them have used online payment systems before. The most popular online payment system in Europe countries is net bank and third-party online payment is PayPal. It is the same result between theory and research result. In China, in theory part, the most popular online payment systems are AliPay and Union Payment. In research part,

the most of respondents use PayPal but another popular online payment system is net bank. It is a little bit different between theory and research result.

7 DISCUSSION

In research part, since the number of respondents was too small for analysis to be more comprehensive. The response rate was only 32%. In future research study I suggest that maybe you can print the questionnaire out and ask respondents to fill the questionnaire face to face. It is a good way to get more answers and analysis your research more exact.

After studying the theory of the online payment, I realized online payment is very popular nowadays. I found out that there are so many online payment systems I had not heard about before. Most of people want to shop online and use online payment to purchase. Since I study abroad, I am familiar with both European and Chinese online payment behavior. It seems that the process is the same both in Europe and China, but in China there are some processes forbid to use by government.

I conducted a quantitative research. This was an interesting experience for me. All the respondents answered the entire questionnaire and provided useful information. For the purpose of this survey is to understand current state, the challenges and future expectation of online payment in China and Europe. I got 71 answers, 34 of respondents were from Europe, 26 were from China and 11 were from other countries. The biggest difference between European countries and China was the use of online payment. In Europe respondents preferred to use PayPal and Net bank. Chinese respondents liked AliPay and also Net bank.

Online payment will become a daily life routine in the future, so I think that a secure and trustworthy environment is very important. The government should establish online payment legislations to protect transaction. In China QR code pay method is very popular. It is a very safe method to purchase by online payment, but it is not a very common way in European countries. I hope it will become more popular in the future. Online payment companies need to educate their customers on how to use the online payment. For example, they should add features to their platforms that first offer a guide to users before customer use online payment.

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Online payment

1. Nationality

○ Finnish
○ Chinese
○ European
○ Others [   ]

2. Gender

○ Male
○ Female

3. Age

○ under 18
○ 19–25
○ 26–35
○ 36–45
○ 46–59
○ older than 60

4. Do you use online payment?

○ Yes
○ No
○ I will use later

5. Which online payment do you know? (Multiple choice)

☐ Debit card (Visa or MasterCard)
☐ NetBank
☐ PayPal
☐ Google Wallet
☐ Amazon payment
☐ Authorize.Net
☐ WeChat Payment
☐ AliPay
☐ Others [   ]

6. Which online payment do you use most regularly?

○ Debit card (Visa or MasterCard)

○ NetBank

○ PayPal

○ Google Wallet

○ Amazon payment

○ Authorize.Net

○ WeChat Payment

○ AliPay

○ Others [   ]

7. How much do you spend via online payment monthly(percentage of your expanse)

○ Less than 10%

○ 11% – 25%

○ 26% – 35%

○ 36% – 50%

○ More than 50%

8. Pros of using online payment? (Multiple Choice)

☐ Convenience

☐ Efficiency

☐ Automatic

☐ Fast transaction speed

☐ Low risk of theft

☐ Others [   ]

9. Cons of using online payment? (Multiple Choice)

☐ Service fee

☐ Inconvenient for offline sales

☐ Vulnerability to cybercriminals

☐ Reliance on telecommunication infrastructure

☐ Technical problem

☐ It may take time to get started

☐ Learning takes too much time

☐ Others [   ]

10. What are the challenges you think people are facing when adopting online payment systems in your country? (Multiple Choice)

☐ Malware attack

☐ Financial issues

☐ Market regulation issues

☐ Moral issue

☐ Others

11. What do you think should be done to address these challenges or perspectives mentioned in the previous question concerning online payment?

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