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**The growth of payment apps like Alipay, Apple Pay, and WeChat Pay in two major markets, the risks and the benefits, and the relations with traditional finance.**

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Table of Contents	Page Number
<b>ABSTRACT.....</b>	<b>1</b>
<b>1. INTRODUCTION.....</b>	<b>2</b>
<b>2. LITERATURE REVIEW .....</b>	<b>2-6</b>
2.1 Similarities and Differences between Apple Pay and Alipay. ....	2-3
2.1.1 Supported Equipment .....	2-3
2.1.2 Payment Process .....	3
2.1.3 Features and Security .....	3
2.2 Main Economic, Cultural, and Political Decisions that Have Affected Whether People in China and the US Choose to Use Mobile Payments. ....	3-5
2.2.1 Economic & Cultural Factors.....	3
2.2.2 Political Factors .....	4-5
2.3 Market Performance of Mobile Payments .....	5-6
2.3.1 The Market of Alipay and WeChat Pay in China .....	5-6
2.3.2 Apple Pay & PayPal .....	6
2.4 Mobile Payments and the Bank Sector Relationship as to Money Management and its Future Trends.....	6-7
<b>3. DATASET &amp; SAMPLE .....</b>	<b>7-8</b>
3.1 Discussion and Explanation of DataSet.....	7-8
3.2 Discussion of Sample.....	8
<b>4. METHODOLOGY &amp; DATA .....</b>	<b>8-10</b>
4.1 Discussion and Explanation of Methodology .....	8
4.2 Discussion and Explanation of Model and Hypotheses .....	9-10
<b>5. ANALYSIS &amp; FINDINGS .....</b>	<b>10-13</b>
<b>6. CONCLUSION .....</b>	<b>13-14</b>
<b>7. REFERENCES .....</b>	<b>15-16</b>
<b>8. TABLES AND FIGURES</b>	
Table 1: Likert Scale	
Table 2: Summary of Null H1	
Table 3: Summary of Null H2	

Table 4: Summary of Null H3

Figure 1: Interpretation of the Size of a Correlation

## **9. APPENDIX**

Appendix A Questionnaire on the use of mobile payment and Internet finance

Appendix B Figure 2: Null H1 Excel Result

Appendix C Figure 3: Null H2 Excel Result

Appendix D Figure 4: Null H3 Excel Result

Appendix E Figure 5: Dataset Screenshot

## **Abstract**

With the advent of electronic commerce in the world, mobile payments are growing fast, a trend to replace traditional payment methods. Mobile payments have multiple giant companies to rival for China and America markets and have objectively promoted the Internet Finance and changed the people's lifestyle. This thesis delves into the effects of mobile payments that change the payment habits of Chinese in transportation, meals, and shopping; attitudes to the whole mobile payments performance now and future; and effects of Internet Finance that change the money management of Chinese. An online survey contributes to collect people's opinions. The finding clearly shows the effect of mobile payments exerts only on meals payment of Chinese; people who are satisfied with the performance of mobile payments now and in the future believe overall aspects of mobile payments performance meet their anticipation, and people who used to invest traditional finance and who did not have investment habits are now likely to invest spare money in Internet Finance in mobile payments applications.

## **1. Introduction**

The growing interest in mobile payments has increased demand in the commercial sector. The growth of mobile payments proves the development of technology in people's daily lives. It is also evolving to meet customer needs, such as convenience and fast trading (Mosig & Sommer, 2014). This new payment method has many advantages over the traditional approach. Fewer people carrying debit cards or physical credit cards to complete payments than before. It seems that mobile payments have made a difference in our daily lives.

Mobile payment, as a new payment method, leads new payment concepts and trends. Its high speed has increased the quantity and quality of mobile services and has had a tremendous impact on credit or debit card payments. It may substitute the traditional payment method because it works on the process of payment more efficiently, especially in China. Mobile payments use smartphones, and people prefer to carry smartphones than physical cards and cash.

In the last five years (2014-2019), the growth of mobile payments applications is skyrocketing, dominating a big part of a market in the world. My thesis questions will explain the growth of mobile payments, similarities and differences between Alipay and Apple Pay, factors that influence whether people in China and the US choose to use mobile payments, market performance of mobile payments in China and the performance of Apple Pay and PayPal, and the relationship between mobile payments and the bank sector as to money management and its future trends.

The next structural arrangement of this thesis is as follows: Section 2 presents the literature review. Section 3 focuses on data and sample discussion. Section 4 offers a dataset and sample discussion. Section 5 encompasses a discussion of methodology and model. Section 6 and 7 illustrate the result and conclusion of the thesis.

## **2. Review of Literature**

The literature review section will firstly discuss similarities and differences and between Apple Pay and Alipay from the perspectives of supported equipment, payment process and features and security. Second, the section will focus on the main economic, cultural, and political decisions that have affected whether people in China and the US choose to use mobile payments. Third, the literature review section will list data regarding the market performance of Alipay and WeChat in China and Apple Pay and PayPal. Fourth, the literature review section will analyze mobile payments and the bank sector relationship as to money management and its future trends.

### **2.1 Similarities and Differences between Apple Pay and Alipay.**

#### 2.1.1. Acceptable Equipment

Apple Pay only supports Apple devices. Alipay works on all smartphones, tablets, and computers. Apple Pay is integrated into the iOS system and does not require any applications. Although Alipay requires a third-party payment request, it is necessary to register and fill in personal information.

#### 2.1.2. Payment Process

Use Apple Pay to take the checkout offline by simply placing a user's iPhone or Watch near a contactless reader and pressing the Home button with one user's finger to fingerprint. It is redundant to open any apps or unlock customers' phones or screens. However, China is a "QR code country" (Tan et al, 2019). Fast payment is one of the QR code traits of Alipay and WeChat, allowing merchants to scan QR codes in transactions. Usually, a larger merchant or retailer scans the user's QR code using a scanner connected to its POS system. For smaller businesses, it is a different situation that users scan a merchant's QR code.

### 2.1.3 Security and Features

Apple Pay can withdraw cash at ATMs. Apple Pay is not involved in financial transactions. At checkout, the money comes directly from the bundled card. Similarly, Apple Pay account information will be encrypted, while other information will be transferred to a specific card attribute without a user fingerprint verification. Apple Pay can be used to withdraw cash directly from bank ATMs with NFC devices (Huang, 2017).

Alipay can manage finances and provide good city services. For mobile payment applications, they can manage funds in an account called "Yu'E Bao", and they can use many features to sustain daily life. For example, opening an account, saving money, and financial management, especially in Internet finance. Furthermore, Checklater is a consumer credit product launched by Ant Financial. After the application is opened, one user will receive a consumption quota ranging from 500 to 50,000 yuan. When the user is spending, he or she can advance the quota of the Checklater and enjoy the shopping experience of "first consumption, post-payment". Besides, Alipay also offers many city services (Huang, 2017). Besides registering for childbirth or marriage, users can also book long-distance transportation through the service, paying traffic fines, taxes, and annual car registration.

## **2.2 Main Economic, Cultural, and Political Decisions that Have Affected Whether People in China and the US Choose to Use Mobile Payments.**

### 2.2.1 Economic & Cultural Factors

One reason why mobile phones can become mobile payment methods is that cash is the only additional payment option in China and is not very attractive. A key point is that technology giants Alibaba Group and Tencent Holdings have been competing for customers' wallets in China, which weakened the bank in the process. Because tech giants deal with merchants and consumers at the same time, consumers do not need a credit card to act as a middleman.

But in the US, a mature US credit card system Mobile payment lacks merchant support. The credit and debit card systems are mature enough to be good for most people. Bank cards are widely accepted in the United States. In some cases, it is more convenient to swipe your credit card, because consumers also need to take out the digital device, unlock it before putting it on their face, then double-click the button and lift it to the front of the monitor to scan the code (Fromgeek, 2019). Arieh Levi, a senior analyst at a market research firm, also believes that the popularity of credit cards is a key reason why mobile payments cannot rise in the United States (Deloitte, 2016). Traditional financial systems, the lack of adoption of other options, and credit card rewards will be a major obstacle to the development of mobile payments in the United States.

In fact, there are many choices for American consumers, such as Apple Payment, Google Payment, Samsung Payment, PayPal, Square Cash, etc. But to use these applications, merchants such as coffee shops and retail stores need to have the NFC terminals ranging from \$300 to \$500, dispensable costs that merchants would not like to spend (Seybold, 2014). Peter Gordon, CEO of payment relationship management company PRM Payments, asserts it is a question of expensive acceptance, which requires merchants to sign up. That is why mobile payments are not generally accepted by merchants (Rooney, 2019). "

### 2.2.2 Political Factors

Regulatory policies that encourage innovation and risk prevention provide a relatively relaxed regulatory environment in China. In the process of China's mobile payment development, China's regulators have not adopted a "one size fits all" ban because of the potential risks of mobile payments. On the contrary, regulators have adopted a more flexible regulatory policy based on ensuring security. Relevant technologies hold a more open attitude, and in some business areas, they also actively guide and utilize mobile payments to help inclusive finance and rural development. Since 2012, the People's Bank of China has successively promulgated a series of policies like "Measures for the Administration of Payment Services for Non-financial Institutions", "Implementation Rules for the Administration of Payment Services for Non-Financial Institutions," etc. (Ba et al, 2017)., clarified the legal status of non-financial payment institutions, improved the payment business management, reserved space for payment innovation, made up for regulatory loopholes, promoted the development of business norms, and enhanced users' confidence in using mobile payments

In China, most places support network signals that can be paid, even if in some small villages, mobile signals exist. China has an almost fully covered mobile communications data network, which is the basis for popular mobile payments in China. Without this, even policy support cannot be popular. Under the requirements of the Ministry of Industry and Information Technology, China Telecom, China Unicom, and China Mobile, three major operators, must provide the need for coverage network construction, even if the region is sparsely populated, unable to recycle construction or even maintenance costs.

However, Operators that deliver signals in the United States are basically private companies. The purpose of these companies is to make money. They only build base stations in densely populated areas where they can make more money. and after leaving the city, no signal exists if drivers leave the road. Hence the US network is not developed enough, especially the lack of developed mobile communication networks is one of the reasons why mobile payments cannot be popularized (Sheng, 2019).

### **2.3 Market Performance of Mobile Payments**

Since Apple Inc. released its mobile payments—Apple Pay in 2014; eBay launched its mobile payments—PayPal; Alipay was first promoted by Alibaba in 2004; WeChat Pay was installed in WeChat applications in 2014, a mobile payment market gradually showed up in the 2010s. According to the estimation of NFC World+, from 2015 to 2018, the total revenue of the global mobile payment market increased from \$450 to \$898 billion. The market is expected to reach a value of \$3695.46 billion by 2024, at a CAGR of 26.93% over the forecast period of 2019 – 2024 (NFC World+,

2019). The stores and services across the world are rapidly adopting and integrating mobile payment applications to accept payments. Owing to changing lifestyles, daily commerce, and rapid growth in online retailing, this trend is expected to continue over for subsequent many years (Kim, 2018).

### 2.3.1 The Market of Alipay and WeChat Pay in China

In China, according to Bigdata-Research Consulting, in 2018, the number of mobile payment users in China reached ¥570 million, a year-on-year growth rate of 13.2%. The scale of third-party mobile payment transactions reached ¥159.8 trillion, a year-on-year increase of 51.6%. In 2018, Alipay and WeChat Pay continued to be a double giant. In terms of market size, Alipay and WeChat Pay accounted for 52.14% and 37.31% respectively. On the number of monthly active users, Alipay's active users in December 2018 were nearly 540 million people (Bigdata-Research Consulting, 2019).

Since the first batch of payment licenses issued by the China central bank in 2011, the trend of third-party payment supervision has become stricter. In 2017, the supervision requirement 100% of the reserve fund is deposited from the central bank's proprietary account to the designated institution without interest, which directly causes the mobile payment institution's reserve interest income to disappear, and loses the bargaining power with the bank, increasing profit pressure on third-party payment institutions in the short term; bar code specification order stipulated QR code payment limit, and more scene needs to be increased (Bigdata-Research Consulting, 2019). Under the stricter supervision, “open source and thrifty” has become the main response strategy of current mobile payment institutions.

The mature application of biometric technology has pushed mobile payment into the era of “biometric identification”, and fingerprint recognition and face recognition have become new trends in payment. According to the State Information Center et al, in 2018, among the various payment methods, users using fingerprint recognition and face recognition accounted for 60.3%. The payment methods of the industry have been constantly evolving and upgrading, and the competition among enterprises has entered a stage of white-hot. It has transitioned from pure product form competition to business model competition and will migrate to ecological construction competition in the future (State Information Center et al, 2019). What is needed for the payment is open sharing, integrating the upstream and downstream of the industry chain and different financial institutions to build their own ecosystem, which is the core competitiveness of third-party payment companies in the future.

Benefiting from the large-scale growth of financial transactions such as Moneycom, meager loans, and the increase in the scale of offline commercial payment transactions, coupled with the continued emergence of WeChat traffic entry, all of which further drive WeChat Pay and the scale of the transaction remained stable (Bansar et al., 2018).

In addition, WeChat Pay continued to expand its payment scenarios, and all of the consumption and payment scenarios in logistics, steel, games, e-commerce, wealth management, airlines, and telecommunications were all opened. At the same time, continuous activities such as shaking red envelopes have been promoted, which has promoted the growth of user behavior (Toon et al.,

2018). Based on the huge user base of WeChat and QQ, Tencent Holdings, the WeChat's parent company, has actively promoted the growth of commercial transactions under WeChat Pay.

### 2.3.2 Apple Pay & PayPal

In the USA, the number of people who use their phones to purchase goods and services through proximity payments is increasing steadily. According to Digital Payments, from 2014 to 2018, the number of U.S. mobile payment users was 16.4 to 55 million (Digital Payments, 2019).

Mobile share of PayPal's total payment volume from 2016 to 2018 ranges 28.5% from 39.3%. PayPal's total payment volume from 2014 to 2019 changes from \$234 billion to \$578 billion (Statista, 2018). Apple Pay's total payment volume from 2017 to 2018 changes from \$368 billion to \$532 billion (Mobile POS Payments, 2019), and transactions totaled 1.8 billion in the first quarter of 2019 (Daly, 2019).

According to Bansal et al, in the United States, by 2022, the compound annual growth rate of personal digital wallets will reach 45%, and the annual flow will reach nearly 400 billion US dollars. Even though most of the development is predicted to be “pass-through” wallets such as Apple Pay, their popularity continues to increase. However, even with these gains, by 2022, digital wallets will only account for less than 10% of US consumers' face-to-face POS payments. Lack of universal merchant acceptance will still be an obstacle, along with no idea how the proportion of users who do not realize how to use their mobile phone to pay at sale points (Bansar et al., 2018).

## **2.4 Mobile Payments and the Bank Sector Relationship as to Money Management and its Future Trends**

In 2022, Statista estimates that nearly one-third of U.S. smartphone users will use near-field communications or other contactless technology to pay, up from 25.3% in 2018. By the end of the first half of 2018, there were a total of 440 million contactless payment global payment users. By the end of 2020, this number is expected to reach 760 million new users (Statista, 2018).

From a systems perspective, mobile payments can increase the efficiency of the banking industry, providing consumers with services and products that are easier and less expensive than currently available, while reducing friction between customers and providers. At the same time, their business model may lead to potential system instability due to existing interactions with the broader financial system and may increase market concentration, thereby damaging consumers in the long run (Agust ń, 2018). Then, it is important to understand how to make rules. The developments are properly structured to avoid negative externalities in the system.

As mentioned before, Alipay can manage money in its account called Yuebao, which offers dynamic interest daily. Therefore, Alipay can accumulate huge wealth and attract more and more Chinese consumers to deposit in Yuebao. On the other hand, the explosive growth of Alibaba in the domestic market has put the bank in a difficult position. Chinese banks must respond to products that are truly competitive to consumers, rather than relying on central banks to provide competitive advantages by restricting competitors (Yu & Shen, 2016).

The Federal Reserve System announced a real-time payment system, FedNow, in April 2019, which almost made the transfer happen in real-time. The Fed states it will go online in 2024, allowing funds to be transferred in real-time and allowing companies, such as entrepreneurs and PayPal, to take advantage of direct, real-time connections between the system and customer accounts. FedNow can also enable Facebook's WhatsApp apps, and even technology giants such as Amazon and Google to launch more bank-like services that are most likely to be rooted in mobile devices (Rooney. 2019). Although these will help non-banking companies enter the payment field, credit cards will continue to exist. People do not always want to pay for shopping immediately and in real-time. The function of borrowing is still valuable, and there are coveted rewards and points which are very attractive in credit cards. Credit cards may look like a "hybrid version" of the old model, packaged in mobile form, and sometimes incorporated into the applications.

### **3. Dataset and Sample**

I propose three hypothesizes and gain a response from the survey because the questions in the survey are factors that highly correlated. Furthermore, regression analysis design is applied in the research. The aim of the multiple regression analysis studies is to examine one or more independent variables that affect a dependent variable.

#### 3.1 Discussion and Explanation of DataSet

I examine three hypothesizes. 1. Mobile payments do not affect the way Chinese pay. 2. The attitudes towards mobile payments at the present and in the future do not impact opinions with the whole aspects of mobile payments. 3. Internet Finance does not affect the money management of the Chinese.

Besides the demographic information such as gender and age, I design the questions from the way respondents choose to pay when they are processing transactions with others, transporting, shopping, and eating outside. Moreover, the questions also involve personal attitudes towards mobile payments' performance nowadays and their future anticipation.

In the second part, I propose questions about Internet Finance in mobile payments. The questions encompass respondents' monthly disposable income, the pros of Internet Finance, investment and financial management habits before Internet Finance.

#### 3.2 Discussion of Sample

I share the Internet link of the questionnaire to the respondents through social media such as QQ and WeChat. Therefore, I gather the data from my survey which is released and collected via Wenjuanxing, a professional website dedicates to online surveys. The expected respondents are around 250, and my main respondents are young college students over 18, plus some workers aged 35-60 and retired people over 60.

### **4. Methodology & Model**

I propose three hypothesizes and gain a response from the survey because the questions in the survey are factors that highly correlated. Furthermore, regression analysis design is applied in the

research. The aim of the multiple regression analysis studies is to examine one or more independent variables that affect a dependent variable.

#### 4.1 Discussion and Explanation of Methodology

I will adopt regression analysis, a five-point Likert scale, and descriptive and inferential analysis in the thesis to illustrate an in-depth understanding of the data. Data Analysis in Excel will be demanded in the thesis to process information and graphs. I will use a regression test to determine whether there are effects that mobile payments change the Chinese payment method and that Internet Finance changes Chinese money management. Additionally, the five-point Likert scale will be exerted in the thesis to help evaluate people’s attitudes toward mobile payment performance. The scale is shown below.

Response Scale	Degree of Intensity	Frequencies of Using Mobile Payments	Mean Interval
5	Strongly Agree	Always	4.2-5.0
4	Agree	Often	3.4-4.19
3	Neutral	Sometimes	2.6-3.39
2	Disagree	Rarely	1.8-2.59
1	Strongly Disagree	Never	1.0-1.79

**Table 1:** Likert Scale

#### 4.2 Discussion and Explanation of Model and Hypotheses

Model 1:

$$y = a_0 + a_1x_1 + a_2x_2 + a_3x_3$$

Y= The Frequency of Usage of Mobile Payments

X1= Frequencies of Using Mobile Payments on Shopping

X2= Frequencies of Using Mobile Payments on Transporting

X3= Frequencies of Using Mobile Payments on Eating

Null H1: Mobile payments do not affect the way Chinese pay.

Model 2:

$$y = a_0 + a_1 x_1 + a_2 x_2$$

Y= The Performance of Mobile Payments in China

X1= Degree of Intensity on Mobile Payments Performance Future

X2= Degree of Intensity on Mobile Payments Performance Now

Null H2: The attitudes towards mobile payments at the present and in the future do not impact opinions with the whole aspects of mobile payments.

Model 3:

$$y = a_0 + a_1 x_1 + a_2 x_2$$

Y= The Money Management of Chinese

X1= Degree of Intensity that People who Choose Internet Finance

X2= Degree of Intensity that People who Choose Internet Finance because of its Pros

Null H3: Internet Finance does not affect the money management of the Chinese.

Besides the demographic information such as gender and age, I design the questions on how often respondents pay with mobile payments when they are processing transactions with others, transporting, shopping, and eating outside, the independents that influence payment habits in China.

Moreover, the questions also involve personal attitudes towards mobile payments' performance nowadays and their future anticipation. The independents are the degree of intensity on mobile payments performance now and in the future and the opinions of the overall performance of mobile payments in China are dependent.

In the third null hypothesis, I propose questions about Internet Finance in mobile payments. The questions encompass respondents' monthly disposable income, the pros of Internet Finance, investment and financial management habits before Internet Finance, and the reasons whether people select to use Internal Finance. I investigate how the independents, the degree of intensity that people who choose Internet Finance and degree of Intensity that people who choose Internet Finance because of its pros, exert an effect on the money management of Chinese.

I adopt both multiple regression analysis and a five-point Likert scale. the p-value of regression is 0.05 aimed to determine the falsification of the null hypothesizes and the size of correlation is dependent on the image below. The final results are to delve into the motives and willingness of people who choose Internet Finance or not.

Size of Correlation	Interpretation
0.90 to 1.0 (-0.90 to -1.0)	Very high positive (negative) correlation
0.70 to 0.90 (-0.70 to -0.90)	High positive (negative) correlation
0.50 to 0.70 (-0.50 to -0.70)	Moderate positive (negative) correlation
0.30 to 0.50 (-0.30 to -0.50)	Low positive (negative) correlation
0.00 to 0.30 (-0.00 to -0.30)	Negligible correlation

**Figure 1:** Interpretation of the Size of a Correlation

## 5. Analysis & Findings

I examine three null hypotheses:

1. Mobile payments do not affect the way Chinese pay.
2. The attitudes towards mobile payments at the present and in the future do not impact opinions with the whole aspects of mobile payments.
3. Internet Finance does not affect the money management of Chinese.

In the first null hypothesis, I divide the way Chinese pay into three aspects: transportation, shopping, and meals. The dependent factor is the frequency of usage of mobile payments. According to multiple regression analysis, the p-value of transactions is 0.21487, 0.325532, and 0.025628, respectively, which are different from confidence p-value 0.05. Therefore, mobile payments do not affect the way Chinese pay in transportation and shopping, whereas mobile payments do affect the way Chinese pay in meals. In other words, Chinese are not likely to use mobile payments frequently in transportation and shopping, but they pay for meals with mobile payments frequently. The final equation is  $Y = -0.057X_1 + 0.056X_2 + 0.135X_3 + 4.189$

Null Hypothesis 1	P-value	Coefficient	T-stats	R square
X1 (usage of mobile payments for transportation)	0.21487037	-0.057388596	-1.243656795	0.343941
X2 (usage of mobile payments in shopping)	0.32553162	0.055857417	0.985224053	0.343941
X3 (usage of mobile payments for meals)	0.02562784	0.13475269	2.24615432	0.343941

meals)				
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**Table 2:** Summary of Null H1

In the second null hypothesis, I design two questions to collect the whole opinions towards mobile payments at the present and in the future. Besides, the dependent factor is comprehensive attitudes towards mobile payments since respondents used it. According to multiple regression analysis, the p-value of transactions is 0.031157 and 0.005434, both of which are lower than standard p-value 0.05. Hence, the attitudes towards mobile payment at the present and in the future do impact opinions with the whole aspects of mobile payments. In other words, people who are satisfied with the performance of mobile payments now and in the future believe overall aspects of mobile payments performance meet their anticipation. The final result is  $Y=0.137X_1+0.187X_2+3.331$ . Reject the second null hypothesis.

Null Hypothesis 2	P-value	Coefficient	T-stats	R Square
X1 (attitudes to the future of mobile payments)	0.031157123	0.137010259	2.168075996	0.714482
X2 (attitudes to the performance of mobile payments now)	0.005433652	0.186798821	2.806175442	0.714482

**Table 3:** Summary of Null H2

In the third null hypothesis, I ask respondents whether they use Internet Finance and they use it because of its advantage. Further, the dependent factor is the existence of investment habits before Internet Finance. According to multiple regression analysis, the p-value of transactions is 0.042857 and 0.002643, both of which are lower than standard p-value 0.05. Consequently, Internet Finance does affect the money management of Chinese. People who used to save money in banks and invest money in insurance, bonds, or stocks and who do not have investment habits are now likely to invest spare money in Internet Finance in mobile payments applications. The final result is  $Y=-0.108X_1+0.187X_2+3.736$ . Reject the third null hypothesis.

Null Hypothesis 3	P-value	Coefficient	T-stats	R Square
X1 (attitudes to a choice of	0.042857106	-0.108090468	-2.036147945	0.408667104

Internet Finance)				
X2 (attitudes to the pros of Internet Finance)	0.002642729	0.187025294	3.038927997	0.408667104

**Table 4:** Summary of Null H3

The first and second null hypotheses connect with my third research question: *what are the main economic, cultural, and political decisions that have affected whether people in China and the US choose to use mobile payments?* I mainly discuss it from the perspectives of culture--- daily life. Even though the culture factor is one aspect, it is clear to show the overall attitudes and habits and frequency of mobile payment usage with my research question. My results are inconsistent with those of Kim (2018) showing that transactional payment significantly impacts the popularity of mobile payments in Chinese daily life. The difference between results may lie in the sample number and sophisticated analysis.

The third null hypothesis correlates with the last research question: *what is the relationship between mobile payments and the bank sector as to money management and its future trends?* I focus on the choice percentage of Internet Finance and its advantages acceptance, two factors that influence money management of Chinese. I expand the range of money management to all investment habits rather than concentrate on bank deposits in my survey, which is inconsistent. Furthermore, my results are consistent with those of Yu & Shen (2016). showing that Internet Finance, such as Yu'E Bao and Wealth, is leading a flexible investment method, which is likely to change the whole structure of investment methods drastically in China in the near future.

## 6. Conclusion

Though mobile payments are growing in the world, they have achieved mature markets and have been growing fast in China, dominated by Alipay and WeChat Pay. However, because of the mature credit card system and habits and the problems of the mobile payments themselves, Americans are not likely to adopt emerging mobile payments. China holds a comprehensive database of mobile payments regarding every aspect of mobile payments, whereas the US has multiple mobile payments moguls to competitive markets and lacks necessary data collection, but concentrates on mobile payments strategies in the future.

Additionally, I focus on the mobile payments that affect Chinese payment habits in daily life and their attitudes towards the whole mobile payment industry now and the future. The results show mobile payments do change the payment habits of Chinese only in meals, while they do not change in transportation and shopping. Further, I also pay attention to the effect of Internet Finance, which may change the money management of Chinese. The result exhibits most people admit the advantages of Internet Finance, trust Internet Finance, and developing the habits of investing in

Internet Finance. It is a trend that shows people gradually accept and follow the popularity of Internet Finance.

My findings, to some extent, can supplement for relative literature. Other literature makes comprehensive survey around China, hence the sample number is more than one hundred million. But my respondents are WKU students, their friends, and relatives. Thus, my conclusion is only limited to WKU range, which is a small but specific sample for research that concentrates on WKU. Therefore, the research paper can be a reference for future research that pinpoints WKU.

The limitation of the thesis is obvious that the sample is not too sufficient to represent the whole group of Chinese. The survey questions are not so comprehensive that they correlate the hypothesis accurately, which is an important part to improve. Also, I do not work out the whole four research questions because the some are deficient in enough data in the US and complication of my research questions is beyond my academic knowledge and statistical skills, which require massive data collection and analysis. Additionally, I do not evaluate how much influence Internet Finance exerts on existing financial institutions because the trend is not mature and relative data is confidential. Moreover, mobile payments, as an emerging industry, are growing rapidly in the world. The problems of mobile payments are not clear to emerge in the public, such as securities of payment, which may occur in the near future. In this serious part, I do not have enough time and materials to discuss.

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## 8. Tables and Figures

**Table 1:** Likert Scale

**Figure 1:** Interpretation of the Size of a Correlation

**Table 2:** Summary of Null H1

**Table 3:** Summary of Null H2

**Table 4:** Summary of Null H3

## 9. Appendix

**Appendix A:**

### 移动支付和互联网金融使用情况调查问卷

#### Questionnaire on the use of mobile payment and Internet finance

移动支付包括支付宝，微信支付，苹果支付等支付方式，通过手机等移动设备。

Mobile payment includes Alipay, WeChat Pay, Apple Pay, and other payment methods, through mobile devices such as mobile phones.

互联网金融是指传统金融机构与互联网企业利用互联网技术和信息通信技术实现资金融通、支付、投资和信息中介服务的新型金融业务模式，比如支付宝里的余额宝，微信里的理财通。

Internet Finance refers to a new financial business model in which traditional financial institutions and Internet enterprises use Internet technology and information communication technology to realize financing, payment, investment and information intermediary services, such as Yu 'E Bao in Alipay and Wealth in WeChat.

1. 性别 gender: [单选题] \*

女 female

男 male

2. 我的年龄段 My age: [单选题] \*

18 岁以下 under 18

18~35

35~50

50~60

60 岁以上 over 60

3. 月均可支配收入? My monthly disposable income? [单选题] \*

1000-3000 RMB

3000-5000 RMB

5000-8000 RMB

8000-10000 RMB

10000 RMB 以上 Over 10000 RMB

4. 我使用移动支付的频率是: How often do I use mobile payments? [单选题] \*

总是 always

经常 often

有时 sometimes

很少 rarely

从不 never

5. 我在交通方面使用移动支付吗? Do I use mobile payments for transportation? [单选题]

总是 always

经常 often

有时 sometimes

很少 rarely

从不 never

6. 我在购物方面使用移动支付吗? Do I use mobile payment in shopping? [单选题] \*

总是 always

经常 often

有时 sometimes

很少 rarely

从不 never

7. 我在饮食方面使用移动支付吗? Do I use mobile payments for meals? [单选题] \*

总是 always

经常 often

有时 sometimes

很少 rarely

从不 never

8. 从使用移动支付至今, 我对它的各方面表现都很满意 Since I used mobile payments, I have been satisfied with them in all aspects. [单选题] \*

很同意 strongly agree

同意 agree

中立 neutral

不同意 disagree

很不同意 strongly disagree

9. 我认为移动支付的未来展望会很好 I believe that the future of mobile payments is good. [单选题] \*

很同意 strongly agree

- 同意 agree
- 中立 neutral
- 不同意 disagree
- 很不同意 strongly disagree

10. 我认为移动支付的表现很好。I believe that the performance of mobile payments is nice [单选题] \*

- 很同意 strongly agree
- 同意 agree
- 中立 neutral
- 不同意 disagree
- 很不同意 strongly disagree

11. 您在移动支付的应用中理财吗？（比如把闲钱放进余额宝，理财通）Do you prefer Internet Finance in mobile payments apps? For example, do you put your spare cash into Yu'E Bao or Wealth? [单选题] \*

- 是的 Yes, strongly agree
- 不是 No, strongly disagree

12. 我认为是互联网金融理财的优点让我选择了它？Do I choose Internet Finance because of its pros? [单选题] \*

- 很同意 strongly agree
- 同意 agree
- 中立 neutral
- 不同意 disagree
- 很不同意 strongly disagree

13. 在互联网金融出现以前，我没有投资理财的方式的习惯? Do I have investment habits before Internet Finance? [单选题] \*

- 很同意 strongly agree
- 同意 agree
- 中立 neutral
- 不同意 disagree
- 很不同意 strongly disagree

## Appendix B

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.185456622							
R Square	0.343941587							
Adjusted R Square	0.420145967							
Standard Error	0.671000411							
Observations	238							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	3	3.752721	1.250907	2.778302	0.04191592			
Residual	234	105.3565	0.450242					
Total	237	109.1092						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	4.188779317	0.273704	15.30405	4.19E-37	3.649540493	4.728018142	3.649540493	4.728018142
X1 (usage of mobile payments for transportation)	-0.057388596	0.046145	-1.24366	0.21487	-0.14830142	0.033524228	-0.14830142	0.033524228
X2 (usage of mobile payments in shopping)	0.055857417	0.056695	0.985224	0.325532	-0.055840722	0.167555557	-0.055840722	0.167555557
X3 (usage of mobile payments for meals)	0.13475269	0.059993	2.246154	0.025628	0.016558005	0.252947376	0.016558005	0.252947376

Figure 2: Null H1 Excel Result

## Appendix C

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.267298135							
R Square	0.714482931							
Adjusted R Square	0.635457253							
Standard Error	0.617776282							
Observations	238							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	2	6.901064541	3.450532271	9.041149	0.000164898			
Residual	235	89.68717075	0.381647535					
Total	237	96.58823529						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.331066364	0.353911683	9.412140147	4.66E-18	2.633821396	4.028311333	2.633821396	4.028311333
X1 (attitudes to the future of mobile payments)	0.137010259	0.063194399	2.168075996	0.031157	0.012510338	0.26151018	0.012510338	0.26151018
X Variable 2 (attitudes to the performance of mobile payments now)	0.186798821	0.06656705	2.806175442	0.005434	0.055654406	0.317943236	0.055654406	0.317943236

Figure 3: Null H2 Excel Result

## Appendix D

SUMMARY OUTPUT								
<b>Regression Statistics</b>								
Multiple R	0.202155164							
R Square	0.408667104							
Adjusted R Square	0.327038739							
Standard Error	1.359225299							
Observations	238							
<b>ANOVA</b>								
	df	SS	MS	F	Significance F			
Regression	2	18.4987114	9.249355701	5.006435004	0.0074264			
Residual	235	434.1609525	1.847493415					
Total	237	452.6596639						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.736250503	0.256967257	14.53979211	1.35983E-34	3.229996724	4.242504283	3.229996724	4.242504283
X1 (attitudes to choice of Internet Finance)	-0.108090468	0.053085763	-2.036147945	0.042857106	-0.212675264	-0.003505671	-0.212675264	-0.003505671
X2 (attitudes to the pros of Internet Finance)	0.187025294	0.061543318	3.038927997	0.002642729	0.065778455	0.308272132	0.065778455	0.308272132

Figure 4: Null H3 Excel Result

## Appendix E

Number	Time to turn in	Time co	Source	Where	IP address							
1	2019/11/8 19:38:19	239秒	微信	N/A	223.104.247.253(浙江-杭州)	211	2019/11/9 15:31:26	39秒	微信	N/A	122.228.184.84(浙江-温州)	
2	2019/11/8 19:53:17	38秒	微信	N/A	122.228.184.83(浙江-温州)	212	2019/11/9 16:00:48	110秒	微信	N/A	194.66.175.89(国外-英国)	
3	2019/11/8 19:55:06	50秒	微信	N/A	112.17.240.168(浙江-杭州)	213	2019/11/9 16:12:18	65秒	微信	N/A	101.206.170.8(四川-成都)	
4	2019/11/8 20:03:33	68秒	微信	N/A	117.136.81.141(湖北-武汉)	214	2019/11/9 16:33:03	40秒	手机提	直接访问	122.246.40.220(浙江-宁波)	
5	2019/11/8 20:11:41	71秒	微信	N/A	223.104.246.124(浙江-杭州)	215	2019/11/9 16:49:07	98秒	微信	N/A	223.104.9.187(四川-成都)	
6	2019/11/8 20:12:19	69秒	微信	N/A	117.176.218.146(四川-成都)	216	2019/11/9 17:07:48	42秒	微信	N/A	117.136.62.34(四川-成都)	
7	2019/11/8 20:12:25	52秒	手机提	直接访问	122.228.184.82(浙江-温州)	217	2019/11/9 17:19:35	153秒	微信	N/A	112.17.247.212(浙江-杭州)	
8	2019/11/8 20:12:36	49秒	微信	N/A	171.92.161.206(四川-达州)	218	2019/11/9 17:50:34	79秒	微信	N/A	119.4.253.33(四川-成都)	
9	2019/11/8 20:13:07	63秒	微信	N/A	171.82.233.222(湖北-武汉)	219	2019/11/9 18:06:49	97秒	手机提	直接访问	117.136.63.76(四川-成都)	
10	2019/11/8 20:13:37	55秒	微信	N/A	117.175.131.44(四川-成都)	220	2019/11/9 19:26:31	30秒	手机提	直接访问	112.17.236.240(浙江-杭州)	
11	2019/11/8 20:14:19	324秒	微信	N/A	211.94.253.241(天津-天津)	221	2019/11/9 19:33:28	58秒	手机提	直接访问	122.228.184.82(浙江-温州)	
12	2019/11/8 20:16:26	45秒	手机提	直接访问	118.114.190.31(四川-成都)	222	2019/11/9 20:23:27	77秒	微信	N/A	122.228.184.83(浙江-温州)	
13	2019/11/8 20:18:53	45秒	微信	N/A	223.104.247.187(浙江-杭州)	223	2019/11/9 20:53:01	107秒	手机提	直接访问	122.228.184.85(浙江-温州)	
14	2019/11/8 20:19:34	38秒	微信	N/A	223.104.247.187(浙江-杭州)	224	2019/11/9 23:01:20	20秒	微信	N/A	49.90.46.22(江苏-南京)	
15	2019/11/8 20:20:00	24秒	微信	N/A	223.104.247.187(浙江-杭州)	225	2019/11/9 23:56:58	33秒	微信	N/A	220.167.42.30(四川-成都)	
16	2019/11/8 20:20:25	130秒	微信	N/A	171.82.148.211(湖北-武汉)	226	2019/11/10 1:37:37	56秒	手机提	直接访问	122.228.184.85(浙江-温州)	
17	2019/11/8 20:20:25	238秒	手机提	直接访问	182.150.141.8(四川-成都)	227	2019/11/10 3:10:37	32秒	微信	N/A	122.228.184.82(浙江-温州)	
18	2019/11/8 20:20:26	23秒	微信	N/A	223.104.247.187(浙江-杭州)	228	2019/11/10 8:13:20	45秒	微信	N/A	165.123.229.254(国外-美国)	
19	2019/11/8 20:21:30	49秒	微信	N/A	223.104.247.187(浙江-杭州)	229	2019/11/10 9:28:48	44秒	微信	N/A	116.232.159.216(上海-上海)	
20	2019/11/8 20:21:52	124秒	微信	N/A	117.136.63.182(四川-成都)	230	2019/11/10 13:05:35	57秒	手机提	直接访问	112.14.73.225(浙江-温州)	
21	2019/11/8 20:27:15	111秒	微信	N/A	117.176.217.157(四川-成都)	231	2019/11/10 13:56:04	142秒	微信	N/A	182.138.156.124(四川-成都)	
22	2019/11/8 20:29:37	79秒	手机提	直接访问	117.136.62.50(四川-成都)	232	2019/11/10 20:15:21	37秒	微信	N/A	122.228.184.84(浙江-温州)	
23	2019/11/8 20:39:30	145秒	微信	N/A	117.136.62.10(四川-成都)	233	2019/11/11 8:59:42	72秒	微信	N/A	223.104.9.190(四川-成都)	
24	2019/11/8 20:41:11	56秒	微信	N/A	36.23.202.216(浙江-杭州)	234	2019/11/11 15:01:18	61秒	手机提	直接访问	118.114.12.146(四川-成都)	
25	2019/11/8 20:41:21	40秒	微信	N/A	100.122.57.55(国外-保留)	235	2019/11/11 15:47:42	89秒	手机提	直接访问	122.228.184.84(浙江-温州)	
26	2019/11/8 20:42:43	29秒	手机提	直接访问	175.167.130.113(辽宁-沈阳)	236	2019/11/11 16:40:29	50秒	微信	N/A	122.228.184.83(浙江-温州)	
27	2019/11/8 20:59:00	16秒	微信	N/A	223.104.247.187(浙江-杭州)	237	2019/11/11 17:26:04	40秒	微信	N/A	112.17.236.138(浙江-杭州)	
28	2019/11/8 20:59:22	57秒	微信	N/A	36.23.203.245(浙江-杭州)	238	2019/11/15 13:44:58	29秒	手机提	直接访问	117.136.92.109(山东-青岛)	
29	2019/11/8 20:59:30	26秒	微信	N/A	223.104.247.187(浙江-杭州)							
30	2019/11/8 21:00:45	173秒	微信	N/A	60.255.85.32(四川-成都)							

Figure 5: Dataset Screenshot