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# Current Situation and Development Trends of Mobile Payment: A Case Study at Chung Yuan Christian University in Taiwan

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**Abstract:** With the development of information technology, more and more people would like to use mobile payment as their first choice, especially in the mainland of China. However, things look different in Taiwan. Through a questionnaire investigation to Taiwan college students, this paper explores the application status of mobile payment in Taiwan and tries to find out the future trends of that. It can be found that there are only small portion of college students are using mobile payment for their daily transactions due to the fact that the hardware and software about mobile payment are lagging behind in Taiwan. However, college students are expected to accept the new payment method and adopt it in the future with the development of the infrastructure and policies of government.

Keywords: mobile payment, Taiwan, college students, situation, trends

## 1. INTRODUCTION

In recent years, with the development of information technology and the promotion of mobile payment service providers, more and more people are beginning to make mobile payment as their main payment method. Compared with traditional cash payment, mobile payment has the advantages of fast and convenient, simplifying payment procedures, reducing transaction costs, cutting down the issuance, transportation and administrative costs of paper currency. People no longer need to carry cash especially scattered coins, while most payment can be done easily with your cell phone.

Recently, China Youth Network conducted a questionnaire survey on 1021 college students in mainland China. The results show that the most commonly adopted payment method for over 90% of that group is mobile payment. Over 70% of that group does not have cash in their daily lives, and over 30% even do not remember the time of the last usage of cash. Over 70% of that group used mobile payment several times a day and over 80% admitted that frequency was increasing. Over 50% of those college students answered that mobile payments have accounted for 75%-99% of their total amount of consumption every month. In comparison, we have investigated undergraduate in Taiwan, and it is rare for students to use mobile payment. The development of mobile payment on both sides of the strait is obviously in a state of non-synchronization. The mobile payment service in the mainland is at a mature stage, while Taiwan is not fully popularized, and there are still very few people choose to use it.

In response to this phenomenon, we hope to know the exact status about the application of mobile payment in Taiwan. We put our emphasis on college students, since this group is a young group with special characteristics who are deeply dependent on mobile phones, accustomed to and willing to use mobile phones to complete a series of activities, and are willing to improve the efficiency of all aspects. Therefore their application status of mobile payment will represent the current situation in Taiwan to a large extent. Therefore, we select Chung Yuan Christian University in Taiwan as an example, distribute questionnaires to investigate the usage of mobile payment, in order to explore the current situation and related reasons of mobile payment for college

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students in Taiwan, and analyze its future development trends.

## **2. LITERATURE REVIEW**

Mobile payment, also known as mobile money transfer, is a service method for paying for goods or services via a mobile device (generally referred to as a mobile phone). Instead of paying with cash, cheque, or credit cards, a consumer can use a mobile phone to pay for a wide range of services and digital or hard goods. It well known that SMS payment, scan code payment, fingerprint payment, sonic payment, etc. are all different types of mobile payment. From the perspective of the development characteristics of China's payment and clearing industry, China payment and clearing association (2017) pointed out in the 2017 industry computing report that mobile payment has become a hot spot, and scanning code payment is gradually standardized. As major mobile phone manufacturers support and promote NFC payment, it will cause a competition with QR code payment and play a great incentive role in accelerating the popularization of mobile payment <sup>[1]</sup>.

In recent years, many scholars have studied mobile payment in the field of college students. Yu analyzed the survey data of college students' mobile payment and conducted a deeper analysis of the relationships by regression analysis method and the cross-analysis method <sup>[2]</sup>. Feng et al analyzed the current situation of mobile payment for college students through a questionnaire survey and tried to find influencing factors by using statistical analysis and Eviews software <sup>[3]</sup>. He and Xu analyzed the application status and security issues of the mobile payment in the group of college students and proposed suggestions and countermeasures <sup>[4]</sup>. Li and Zheng surveyed the characteristics and influencing factors of college students' mobile payment behavior, and provided some relevant suggestions to mobile payment service provider aiming at college students <sup>[5]</sup>. Li conducted an empirical study on the characteristics, usage frequency and related influencing factors of college students' mobile payment behavior <sup>[6]</sup>. Cao et al established discrimination analysis model and provided suggestions for the recommendation of mobile phone service provider <sup>[7]</sup>. Yan summarized the characteristics of mobile payment, analyzed the college students' consumption behavior from the aspect of excessive consumption and the defrauds on the web, and put forward some suggestions for improving the consumption behavior of college students <sup>[8]</sup>.

Although there are many research result about the application of mobile payment for the group of college students, the studies about the application status in Taiwan are still very limit. Therefore, it is necessary to do some research in order to know the exact situation of mobile payment in Taiwan.

## **3. ANALYSIS OF THE APPLICATION STATUS OF MOBILE PAYMENT IN TAIWAN**

In order to understand the current situation of mobile payment for college students in Taiwan, we will distribute questionnaires at Chung Yuan Christian University in Taiwan to investigate the application, influences, possible reasons and development prospects of mobile payment, and finally draw some conclusions through the questionnaires survey.

### **3.1 Questionnaire construction**

The questionnaire consists of four basic parts:

#### **3.1.1 Personal basic information of college students**

This part is about the basic personal information of college students, namely, nationality/territory, gender, and age, so as to study whether the attitudes of college students from different territories, gender or age are relevant with the application of mobile payment.

#### **3.1.2 Usage of mobile payments**

This part is to investigate the usage of mobile payment for college students in Taiwan from perspectives

such as consumer behavior, structure, scale, and patterns. We designed some questions about the payment frequency, the consumption amount and expenditure fields where college students apply mobile payment, which kind of payment platforms they prefer, their attitude toward mobile payment, and so on.

### **3.1.3 Influences of mobile payments**

This part is mainly to inquire the influences mobile payment on college students' life, e.g., with the infiltrating of mobile payments, what positive and negative impacts exist? Will it change our view of money? Do physical stores undergo a shock, or increase their incomes greatly due to the convenience of payment methods? At the same time, because Taiwan's current mobile payment is still not in a state of universal popularity, the government has not issued relevant laws and regulations. Do people worry about the security of mobile payment?

### **3.1.4 Prospects of mobile payments**

Since the popularity of mobile payment in Taiwan is still not enough, and the rate of mobile payment for college students is still very low, what is the development prospect of mobile payment in the eyes of college students? Will mobile payments completely replace cash payments one day in the future? And for college students who have already adopted mobile payment, do they encounter any inconvenience in the process of using mobile payment, will these situations reduce the usage of mobile payment? And how can we change make mobile payment better?

## **3.2 Questionnaire distribution and collection**

This study uses the Google Forms to set up questionnaires and publishes the questionnaire with the title of "Mobile payment usage of college students in Taiwan" on the homepage of Instagram for publicity, as well as the promotion of classes in related courses, and randomly surveys college students on campus. Finally, 104 valid questionnaires were collected in Taiwan, and 0 questionnaires were repeated. Therefore, the final valid questionnaires were 104.

## **3.3 Data analysis**

This investigation is specified to undergraduate students at the Chung Yuan Christian University in Taiwan. The attitudes toward mobile payment are different according to nationality/territory, gender and age. The questionnaire recovery rate was 100%, including 21.2% for boys and 78.8% for girls. The highest rate of participation in this questionnaire was 50% for sophomores and seniors accounted for 40.4%. Students from Taiwan accounted for 90.4%, and other nationalities/territories accounted for 9.6%. There are only very few students are from counties outside China such Malaysia.

### **3.3.1 Usage Behavior**

Only 39.4% of the college students investigated has already applied mobile payment and 39.4% of that group has not use yet. As for the frequency, 23.5% of students are very often, 33.3% are modest, 31.4% are rare, 11.8% are none. In terms of amount of money, 43.1% of them is above NT\$1,000 per month, 43.1% of them is below NT\$500 and 13.7% of them is between NT\$ 500-1000. The payment is mainly for food (66.7%), cosmetics and clothing (47.1%), top-up payment (37.3%), taxi or booking (29.4%), books or journals (19.6%) and others (15.7%). We have also discussed this question with some students from mainland of China and they said they use mobile payments more often even buying vegetables at marketplace while they go back to China. Therefore, there is still some inconvenience for them to use mobile payment in Taiwan.

Most college students in Taiwan admitted that mobile payment is convenient for them in various occasions and the proportions are as following: convenience stores (78.4%), department stores (56.9%), e-commerce shopping platform (52.9%). Form our survey, it can found that, those college students who have already use

mobile payment in Taiwan prefer the app such as line pay (51%), apple pay (31.4), Alipay (29.4) and Wechat payment (25.5).

### 3.3.2 Related Influences

College students considered that mobile payment will have an impact on their daily life with the proportions of 92.2% for its convenience, 51% for its discount coupons, 41.2% for its time-saving, 37.3% for its safety compared with taking cash, etc. After adopting mobile payment, 54.9% of those students reduce the payment by cash, 35.3% of them weaken the concept of money and thus increase consumption and 25.5% of them boost impulse buying.

There are 42.3% of students who believe the development of mobile payment will have an impact on offline physical stores. However 21.2% of students have no idea about this and the remaining 36.5% of students hold a negative attitude and think no affect at all.

Among the group surveyed, 74% of them affirmed that mobile payment will have an impact on the privacy of personal information, 15.4% of them do not think so, and 10.6% of them have no idea about it.

### 3.3.3 Possible reasons

The possible reasons why college students in Taiwan choose mobile payment lie in its convenience and efficiency in occasions that mobile payment available. However, the application areas are still limit at present. While asking why having not adopted mobile payment in Taiwan, college students who are investigated stated the following reasons:

There is no credit card for age reasons and no convenient payment platform. At the same time, a small number of students feel that it is not convenient compared with cash payment, and there are many restrictions for mobile payment in some fields as well. During our interviews, some students even said the reason is because there are many ATM to withdraw cash in Taiwan so they need not to use mobile payment.

- Popularity of ATM

At present, in Taiwan, almost all convenience stores (such as the whole family, 7-11, etc.) have equipped with ATM machines, thus it is very convenient for people to withdraw money. Colleges, schools or other places are the same. Therefore, Taiwan's college students think that using cash is more convenient and no need to use mobile payment at all.

- Counterfeit currency control

Taiwan has very strict control over counterfeit currency and the penalties are very serious. Almost no one can dare to make counterfeit money. Taiwanese college students do not have to turn to other means of payment to avoid receiving counterfeit currency.

- Age limit for credit card

The age range of college students is mainly 18-22 years old. According to Taiwan's laws and regulations, credit cards can only be processed when they are over 20 years old. According to Taiwan's social culture, college students rarely apply for credit cards in the name of their parents after entering university. The mobile payment is reduced by the reason that no card can be bounded to mobile payment system.

- Merchant restrictions

There are not many merchant companies in Taiwan who are willing to accept mobile payment. Most of them only permit Alipay, WeChat payment and specified to mainland tourists.

- Deficiency of government regulations

The government has not formulate relevant laws and regulations about the development of mobile payment, making the mobile payment platform uncontrolled, causing consumers to worry about related security and privacy issues.

- Inadequate mobile payment apps

There are still limit mobile payment apps available in Taiwan. As for the popular apps such as Alipay or Wechat, it is hard for Taiwanese to adopt them since there is no valid bank card to associate with the apps. This is also a restriction for them to adopt mobile payment.

### 3.3.4 Prospects

Most Taiwanese college students are not currently using mobile payments, but they are very optimistic about the development of mobile payments. Indeed, mobile payment is a product of information technology and depend more on its development. It will bring convenience and hidden dangers as well. From our survey, 76% of those students suggest improving the security of transactions via mobile payment, 60.6% of students emphasize the construction of government laws and regulations, 43.3% of that group propose to uniform the payment standard, 31.7% and 19.2% of that group focused on the service functions and quality respectively.

It is no doubt that the future is clear as long as the government, mobile payment providers and consumers work closely together. The development of mobile payments will be even more brilliant.

## 4. CONCLUSION

The application situation of mobile payment is not optimistic in Taiwan at present. From our survey for college students at Chung Yuan Christian University in Taiwan, we can gain more valuable information about the application of mobile payment and understand more about the reasons behind. Some of reasons the students stated out have not reflect the reality yet. The real reasons are mainly because the information technology infrastructure and mobile payment techniques are still limit in Taiwan, and government laws and regulations as well. The consumption concept and behavior habit are also the restriction factors.

Therefore, countermeasures should be taken in order to improve the application of mobile payment in Taiwan. The following suggestions will be helpful:

- Strengthen information technology infrastructure including the hardware and software of mobile payment.
- Improve the construction of government laws and regulations to formulate a safety transaction environment.
- Increase promotional efforts to let people know more about mobile payment system.
- Simplify operational process to save time and energy.
- Improve service quality of mobile payment platforms.
- Enhance security education to make people aware of safety.

It is undoubtedly that mobile payment will become the mainstream payment method in Taiwan. We can foresee that in the near future, the proportion of mobile payment will continue to increase, and the construction of relevant laws and regulations will be more perfect.

## ACKNOWLEDGEMENT

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