

Analysis on the Impact of Mobile Payment on Consumer Behavior

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ABSTRACT

With the increasing popularity of smart phone application services, mobile payment has also developed rapidly as a new type of payment service. Residents' consumption payment methods are changing from traditional cash payments to mobile payments, and mobile payments have had a profound impact on residents' consumption behavior. The article studies the impact of mobile payment on the behavioral economy of Chinese residents from a theoretical mechanism. Research shows that mobile payment has a high usage rate in all age groups, and it plays an important role in stimulating residents' consumption to a certain extent. Besides, it is showed that the small amount of credit loans provided by mobile payments can make people consume irrationally. At last, the paper suggested that the some of people in group aged 18-24 have advanced consumption, and even need to repays the credit fees by borrowing money from credit loans provided by other mobile payment platforms. This paper suggests that they should maintain rational consumption and not excessive consumption.

Keywords: Mobile payment, third party payment, payment method, behavioral economy

1. INTRODUCTION

In 2016, China had 731 million Internet users, which was more than the European Union and the United States combined. Nearly one in five Internet users (20%) in China relies on mobile, compared with 5% in the United States. The share of Internet users in China making mobile digital payments is around 68%, compared with only around 15% in the United States [1]. In 2019, more than half a billion people shops in China paid with their phones in brick-and-mortar shops, cafes and restaurants, according to the Statista Digital Market Outlook. That equals a penetration rate of nearly 35 percent, as shown in Figure 1, the highest in the world. Besides, More than 90% of Chinese mobile payments run through Alipay and WeChat Pay, platforms backed by China's two largest internet conglomerates---Alibaba, the owner of Alipay, and Tencent Holdings [2].



Figure 1. China's Mobile Payment Adoption Beats All Others.

As mobile payment plays an increasingly important role in the lives of Chinese consumers, people cannot do

without mobile payment for food, clothing, housing and transportation. However, What impact does mobile payment have on consumer behavior except the its convenience that benefit the consumers? Whether people will use bank cards and credit cards less because of the surge of mobile payments? If all the impact that mobile payment have on consumers are positive? Does mobile payment promote consumption invisibly? If mobile Why mobile payment have these impact on consumer behavior?

Through literature review and model analysis, this article will explore the impact of mobile payment on consumer behavior through the analysis of various economic theories, specifically. Besides, this paper will research the use of mobile payments by people of all ages.

2. THEORETICAL ANALYSIS OF BEHAVIORAL ECONOMY

2.1. Game Theory between B2C Electronic Platform and Commercial Bank

Existing literature has obtained such results: Third-party payment has a certain conflict of interest for commercial banks. On the other hand, it also stimulates commercial banks to actively cooperate with third-party payment platforms to expand banking business and promote the development of banks.

First of all, third-party payment institutions have a particularly strong ability to control information. They usually conduct effective data acquisition and analysis through a large amount of data in a large number of e-commerce platforms, social networks, and various media. Although it seems to be a simple user's needs in life, it has improved a lot of precious data resources and provided user points to third-party payment platforms. And it is convenient for customers to check payment and transfer records conveniently and quickly. In addition, according to these big data, major e-commerce platforms will match information that better meets customer needs to promote consumption. However, commercial banks do not know the specific capital flow and use of these data, and can only conduct deductions based on instructions and specific amounts given by payment institutions in the traditional sense.

Secondly, from the current market demand situation, non-asset business will be an important source of profit for banks in the future. Third-party platforms currently have lower rates for the same business than commercial banks, and have seized many businesses and customer bases of commercial banks.

However, B2C platforms also have a positive impact on commercial banks. Because the operating characteristics of third-party payment require cooperation with major banks, third-party payment

platforms also promote the business development of commercial banks. The development of online banking requires the addition of third-party payment platforms and makes third-party payment platforms more focused Cooperation with banks for small loans and cross-border payments[3].

Therefore, according to the game theory analysis between B2C platform and commercial bank, the surge of mobile payment has occupied many of the original business and customer base of commercial banks to a certain extent, but the third-party payment platform has also promoted the business development of commercial banks.

2.2. Economic Rationality Assumption

Rational behavior assumes that individuals always make prudent and logical decisions that provide them with the highest amount of personal utility. These decisions provide people with the greatest benefit or satisfaction – given the choices available – and are also in their highest self-interest. Most mainstream academic economics theories are based on rational choice theory [4]. However, psychology research from the last 40 years has produced a growing list of cognitive biases which impact our rationality. Cognitive biases affect all humans and lead to deviations in regarding judgment decision making about people or situations [5].

Because mobile payments have been an emerging utility in recent years, people may make irrational decisions when using mobile payments for consumption, such as impulse spending.

2.3. Theory of mind account

The theory of psychological account is one of the many factors that influence consumers' purchasing decisions, first proposed by Richard Thaler, a famous behavior economist. The so-called psychological account is that people unconsciously assign wealth to different accounts to manage, and different psychological accounts have different accounting methods and psychological rules. This kind of psychological accounting often influences decision-making in unexpected ways, making individual decision-making contrary to the simplest rational economic law [6]. Under the cash payment method, consumers are asked to pay in paper currency and to "pay first and then spend", in which the time interval between consumption and payment is shorter compared with the used consumer credit. Therefore, the consumers bear a stronger sense of pain when using cash payment, and results that the negative effect in mind is greater than the positive effect on mind. In comparison, the "first consumption and then payment" represented by consumer credit has a longer time interval between consumption and payment. As a result, using consumer credit products

allows people to realize deferred payment and feel less painful than using cash payments.

For example, 'Huabei' is a consumer credit product launched by Ant Financial. After applying to open an account, people will receive a consumption amount ranging from 500 to 50,000 yuan. The pain of payment that people feel after they use 'Huabei' to buy goods and services decreases over time because there is a time interval between consumption and payment. As a result, people's unplanned purchases and liabilities will increase. Besides, mobile payments will be completed by the face payment, which means it is only in digital form, eliminating the need for credit card payment to enter passwords and bill signing.

Therefore, consumers are less likely to associate with cash, staying away with the pain of payment and the willingness to pay will be enhanced. Also, the chances of spending will be increased, thereby stimulating consumption.

2.4. Analysis of consumer utility based on liquidity constraints

Liquidity constraint theory, also known as credit theory, says that the financial market is imperfect, when faced with the current low-income situation, consumers often cannot borrow or mortgage to smooth consumption [7]. At this point, consumers will spend less and save more, eventually leading to a significant reduction in consumer spending.

However, consumer loans in mobile payments solve this problem. Credit loans in mobile payments are more convenient and quicker than bank loans, and small loans can be made. Interest-free loans are available if you repay the loan within the prescribed time. Take "Huabei" as an example, it will be based on the third-party payment platform precipitated a large number of customer information and purchase information, for different consumers to give different lines of credit. Unlike traditional credit cards, mobile payments lower the threshold for lending access, and even unsecured students can enjoy their consumer credit facilities, depending on personal credit. Such consumer credit services on mobile payments are much better than traditional credit cards in terms of scope and convenience, and promote the direction of universalization of consumer credit. Borrowers need only a few seconds to simply fill out the information, the borrowed funds can be immediately arrived. Borrowed funds are not limited by the consumption of places, can be either online consumption or offline consumption, consumers can also choose to pay in several installments [8].

Therefore, mobile payment has greatly increased the level of the level of consumer utility it has improved the efficiency of the payment, and results that people's

willingness to use the mobile payment increase and promotes consumption.

2.5. Analysis of consumer surplus based on transaction costs

According to Coase's transaction cost theory, the transaction process requires the parties to invest time, energy, and other expenses, and the above price paid by the exchange is the transaction cost [9]. Both traditional payment methods and mobile payments have transaction costs in the process of completing transactions, but different payment methods have different transaction costs. Consumers will calculate different transaction costs according to the cost-benefit law and make purchasing decisions, and the resulting consumer surplus will be different. This paper compares the three payment methods of cash, credit card, and mobile payment.

The transaction cost is divided into time cost, search cost and payment cost, and the use of mobile payment method can reduce both time cost and search cost and payment cost, so as to reduce the total transaction cost, and ultimately lead to the increase of consumer surplus. The following is a graphic to explain the explanation further.

Figure 2 shows that the reduction in time, search costs and payment costs leads to a decrease in total transaction costs, resulting in a decrease in the actual transaction price, with the result that the consumer's surplus increases. P_0 represents the price that the consumer pre-accepts, and P_1 represents the actual transaction price that the consumer will eventually pay using the mobile payment method. Because on the basis of pre-accepted price P_0 , consumers use mobile payment methods to reduce transaction costs to get the final actual transaction price P_1 , so $P_1 < P_0$. The price drops from P_0 to P_1 , and the consumer surplus increases, and the consumer surplus area after the mobile payment method is eventually used is P_1BAP_0 [8].

It is found that mobile payment has certain transaction cost advantages compared to traditional payment methods, which will greatly reduce time costs, search costs, and payment costs, thereby increasing consumer surplus.

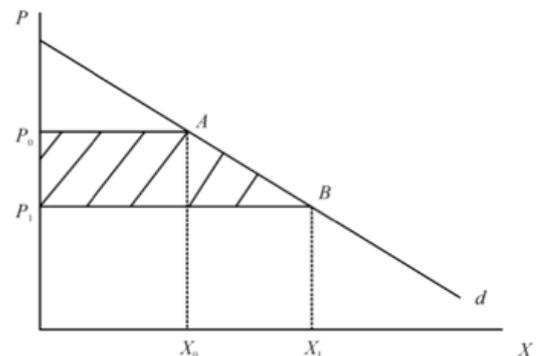


Figure 2. Consumer Surplus Graph.

2.6. Life cycle theory

The proposed life cycle theory proposed by Wells&Gubar points out that different life stages will form different consumption patterns and consumption habits [10]. Therefore, it is necessary to classify the current online users of mobile third-party payment based on the life cycle theory.

According to the "2014 China Mobile Payment User Behavior Survey Report" [11], user groups are mainly distributed between the ages of 18-40. The usage rate of people at age of 18-24, 24-30 and 30-34 are 51.5%, 28.9% and 31.8% (see Figure 3). The first group is 18-24 years old, and the typical representative of this group is college students; the second group is 24-30 years old, and this group has basically entered the working stage; The third category is 30-40 years and this group already has a more stable job.

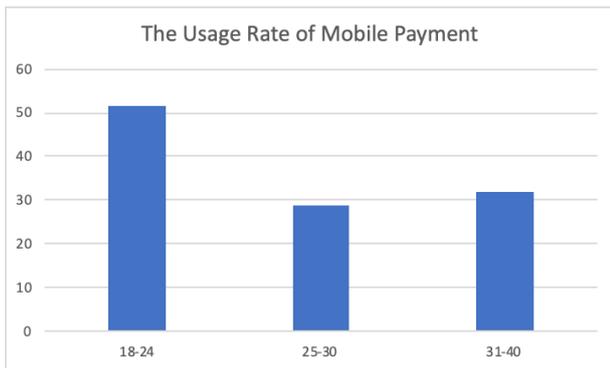


Figure 3. Mobile Payment Usage Rate of People at All Ages.

However, according to the figure 4, an empirical analysis [12] shows that in the 18-24 group, 81.93% of the people repay by saving living expenses, 32.53% are repaying through part-time work, 31.33% are repaying through school scholarships, and a very small number of people use borrowing from others or with the help of other credit consumption repayments, 18.07% used other methods for repayment. This means there is a group of young people who are using the credit loans provided by the mobile payment platform to consume ahead of time.

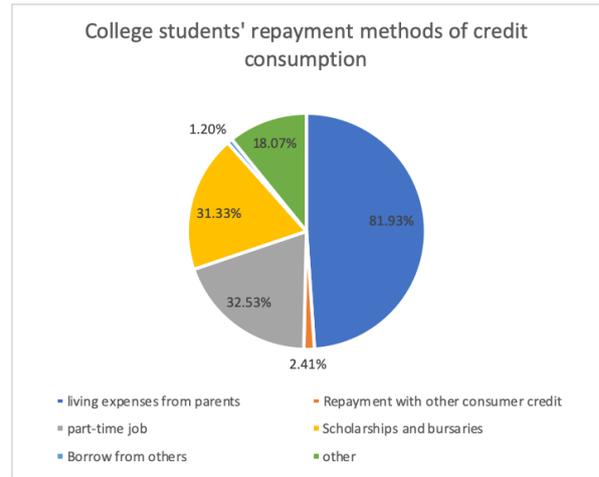


Figure 4. College students' repayment methods of credit consumption.

Therefore, although Chinese young people aged 18-24 account for a large proportion of mobile payment users, due to their limited repayment ability and strong consumption ability, some of them have advanced consumption, and even need to repays the credit fees currently owed through borrowing money from credit loans provided by other mobile payment platforms.

3. CONCLUSION

In general, the advantages of third-party payment are reflected in reducing transaction costs, increasing consumer surplus, and stimulating consumption. Besides, data shows that consumers are gradually and generally more inclined to use third-party payment for consumption activities. At the same time, the consumer credit provided by the third-party payment platform eases the liquidity constraints of consumers in the consumption process to a certain extent; the third-party payment reduces consumers' pain in payment, thereby stimulating the payment. Furthermore, the use of mobile payment methods can not only reduce time costs, but also reduce search costs and payment costs, thereby reducing total transaction costs, and ultimately leading to an increase in consumer surplus. These three characteristics have enhanced consumers' willingness to consume and further enhanced their consumption levels. However, it is showed that 18-24-year-old mobile payment users accounts for a large proportion of mobile payment users and due to their limited repayment ability and strong consumption ability, some of them have advanced consumption, and even need to repays the credit fees by borrowing money from credit loans provided by other mobile payment platforms. This essay suggested that the 18-24 age group should maintain rational consumption, that is, keep consumption that does not exceed their ability to pay.

REFERENCES

[1] Statista Research Department, Statistiken zum Thema Mobile Pyment. 2019.

<https://de.statista.com/themen/2036/mobile-payment/>

- [2] R.B. Sharon. Why China Leads the World in Mobile Payments. 2018. <https://mobilepaymentconference.com/why-china-leads-the-world-in-mobile-payments/>
- [3] M. Liu. Research on the impact of China's third-party B2C payment platform on commercial banks and countermeasures. *Business Culture*, 2020(25): 88-89
- [4] P.J. Hammond. Rationality in Economics. Department of Economics, Stanford University, CA 94305-6072, U.S.A.
- [5] H.E. Korteling, A.M. Brouwer & A. Toet. Neural Network Framework for Cognitive Bias. Sep. 03, 2018. HYPOTHESIS AND THEORY ARTICLE, *Front. Psychol.* <https://doi.org/10.3389/fpsyg.2018.01561>
- [6] M.I. Bozana, M.M. Daum, M. Günter, et al. The Two-Systems Account of Theory of Mind: Testing the Links to Social- Perceptual and Cognitive Abilities. *Front. Hum. Neurosci.* Jan. 31, 2018.
- [7] R.P. Mariger. A Life-Cycle Consumption Model with Liquidity Constraints: Theory and Empirical Results. *Econometrica*, vol. 55, no. 3, 1987, pp. 533 – 557.
- [8] Pei Huiru, Hu Yue. An Empirical Study on the Impact of Mobile Payment on the Consumption of Chinese Residents [J]. *Journal of Xi'an University of Finance and Economics*, 2020, 33(01): 37-44.
- [9] R.H. Coase. Coase on Posner on Coase, *Journal of Institutional, and Theoretical Economics*, 1993, 149(1), 96 – 98.
- [10] M. Flavin. The adjustment of consumption to changing expectations about income. *Journal of Political Economy*, 1981, 89(5), 974 – 1009
- [11] Iresearch, 2014 China Mobile Payment User Report (Brief Edition), http://www.iresearchchina.com/content/details8_19418.html.
- [12] J. Ning, L. Zhang, S. Bi. Investigation on the Credit Consumption Behavior of College Students under the Background of Internet Finance. *Cooperative Economy and Technology*, 2021(06): 74-77.