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How mobile payments in China influence consumers’ behavior.
A case study.

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前言

最近到过中国的人一定会发现越来越多的人使用“移动付款方式”来付款。最常用的就是“微信钱包”和“支付宝”。上个学期在北京留学时（2017年8月至2018年1月期间），我发现在几乎所有的商店排队的时候，都会有两条不同的队伍：一条为使用移动付款方式的人设置，另一条为使用现金、信用卡等别的付款方式的人而设。这件事情引起了我强烈的好奇。

目前，在中国发生的情况是，移动支付有着庞大的“粉丝群”。换句话说，无论是老人还是孩子，大部分人在购物的时候都会用手机“扫一扫”付款（这篇论文的第二部分具体地介绍这种付款方式）。二维码也成为超市、商场、游乐场、菜市场，甚至早点摊的标配。可以说，中国正迎来“无现金社会”中的移动支付时代（People, 2017）。

当今时代被认为是“移动支付”的时代，因为电子和移动的通信器件成为了一种新储存、发送、交付、记录钱的接口。当然，移动网络技术的发展，以及智能手机的普及对这种情况也有着很显著的影响。2014年6月发布的《中国互联网发展状况统计报告》显示，中国网民数量高达6亿，其中手机上网比例为百分之八十五，超越了PC端的百分
之八十。这意味着手机成为了中国网民的第一上网终端（Zhifu Baike, 2016）。此外，手机还深深地改变了电话的地位。换句话说，手机有助于移动商务的功能。手机的数量远远地超过对消费者能推销、销售、生产、送交产品和服务的任何别的器件（Dahlberg et al., 2008）。

在北京留学的那个学期中，我有机会尝试使用了这种付款方式。原因很简单：有的时候，服务提供商接受的唯一付款方式恰恰就是移动付款方式。比如说，在我在留学的大学，如果要用洗衣机来洗衣服的话，一定要用微信来支付。也就是从这个时候起，我也开始用移动付款方式来付款。

住在北京的时候，用移动付款方式来付款的情况越来越多，特别是在“淘宝网”上进行在线购物的时候。但是，我也时常有不太好的感觉：我自己会不会在不知不觉中就超支了呢？具体说说来，就是我常常发现我购买的产品并不是我真正需要的。我冥思苦想了一整天，为什么我买那么多不需要的产品呢？突然我发现，我之所以花那么多钱，就是因为用移动付款方式付款的时候，钱好像不是我自己的，甚至好像不是真的。我不禁疑问：“这种感觉是只有我自己才有，还是大多数消费者也有同样的感觉呢？”这个问题带给了我灵感来写这份关于移动付款方式的毕业论文。

移动付款方式到低是什么呢？为什么在中国这么流行并常用，然而在意大利我却从来没有听说过呢？这种付款方式是不是影响消费者的消费态度？

我毕业论文的目标就是了解移动付款方式是什么，也了解什么样的情况会影响到这种付款方式的普及。最后，我想评估移动付款方式对消费者的消费态度是否会产生很大的影响。
这篇毕业论文将分为三个部分。

第一部分介绍关于信用卡便利消费者超支的参考文献。这个文献作为了解移动付款方式的相似情况的起点。信用卡至少从三个方面影响消费者的消费态度。

第一，“货款挂钩”和“货款形式”影响到支付的“透明度”和“形象度”。如果透明度和形象度很高的话，那“支付的痛苦”很高，并且开销也很低（Raghubir and Srivastava, 2008）。

第二，进行最后购物的付款方式影响今后的购物。具体地说，有一些付款方式（如，信用卡），它们让消费者低估最后开销，因为它们的“排练”和“即时性”不太强烈。从而，它们导致增加额外产品的购买动机（Soman, 2001）。

第三，不同的付款方式让消费者注重不同的产品特点，由此鼓励或者制止开销（Chatterjee and Rose, 2011）。

之所以不同的付款方式对消费者的消费态度和决定有不同的影响，就是因为“心理会计很重要” (Thaler, 1999)，从而，积极地影响到消费者的消费态度和决定。

第二部分介绍新移动付款方式是什么、分别几种类。此外，还介绍它们如何发展到目前、在中国的目前情况。

新移动的付款方式越来越多，尤其是在发展中国家的一些部分：在那儿，手机真的到处可见（Maurer, 2015）。在发展中的国家，在手机普及率越来越高的同时，基层银行业、公共事业、教育的接入还有负众望呢。在这些国家的这种缺失相等于移动手机作为金融工具的提供商，因为缺少的是传统的配送工具（Gardner et al., 2015）。
移动付款方式等别的无现金付款方式在中国发展得如火如荼。它们得益于三方面的发展：一是包括第三方支付在内的移动互联网技术的进步；二是年轻消费群体的移动支付习惯；三则与中国的城市化进程有关。在这个过程中，移动支付提供了很大的便利，同时这也有助于减少出现假钞的情况（Xinhua Net, 2017）。

刚刚过去的2017年，《中国二维码产业发展报告》显示，移动支付进入集中爆发期，仅在第三季度，中国第三方移动支付交易规模约达29.5万亿元。这一年，中国二维码支付有望突破9000亿元市场规模，同比大幅增长226.2%，并且在仅仅一些年前，这一数字还接近于零（People, 2018）。

2014年被称为“支付元年”，因为在这一年中，支付宝和微信钱包分别联合快的打车和嘀嘀打车玩起了“烧钱大战”。这个大战的目标就是在无形中培养用户的移动支付习惯（Zhifu Baike, 2016）。

一段时期后，移动支付大战甚至发展到了中国传统的春节上。2015年和2016年春节最火的话题不是春晚，而是红包。微信和支付宝依靠红包大战让银行卡用户把他们的银行卡绑定于他们自己支付的平台。这样以来，移动支付商家除了抢夺移动支付入口以外，还可以继续培养用户的移动支付习惯（Zhifu Baike, 2016）。

在2015年春节，几乎所有的中国人都使用了移动支付来收发红包。微信红包的收发量高达10亿次，支付宝红包的收发量也接近7亿次（Zhifu Baike, 2016）。

第三部分介绍我自己做的问卷调查、如何进行，也具体地介绍从调查获得的结果。我把这些结果和第一章的文献相比相比，这样，可以证实第一章的资料在移动付款方式中是否真的有效。
在所有的结果的其中，有一些结果表明，大部分在第一部分讨论过的文献在移动付款方式也有效。

首先，用移动付款方式的时候，付款的“透明度”和“形象度”是最低的，由此开销的水平很高。

其次，进行最近一次购物的付款方式影响今后的产品。具体地说，移动付款方式的“排练”和“即时性”不太强烈，从而，它们导致增加额外产品的购买动机。

最后，人们对不同的付款方式有着不同的体验评价。详细地说，在用移动付款方式来付款的情况下，消费者会想到产品的正面特点，如他们很兴奋，因为他们终于能使用他们买的产品，然而在用别的付款方式来付款的情况下，消费者会想到产品的反面特点，如他们会感觉到内疚，因为他们花了钱。

中国消费者喜欢用移动付款方式的原因还有以下三点。

第一点，移动付款方式除了比别的付款方式（尤其是现金）干净、卫生得多以外，还让付款的过程更简单。换句话说，消费者出门的时候随身只带手机就可以了，不需要携带现金和许多银行卡。因此，移动付款方式被认为是很便捷的。

第二点，使用取款机时需要额外做其他的事情，就像需要支付额外的成本一样，这是因为，为了取款，消费者要跑到取款机所在的地方，并且要支付额外的费用。

第三点，消费者随身携带的现金越来越少。出门的时候，他们随身只带手机就足够了。

第二点和第三点表示，流动性约束是由消费者决定的，因为他们倾向于不使用现金，而使用别的付款方式代替，特别是移动付款方式。
这些结果显示，越来越多的人都特别喜欢使用移动付款方式。此外，移动付款方式跟超支的态度似乎有着密切的关系。

可是，移动付款方式好像有着一个问题，也就是说，安全性。消费者真希望移动付款方式的提供商保证他们免于个人信息被泄露等类似的情况。

我对我的这篇论文很满意，因为通过问卷调查，我与中国人加深了联系，也更了解了他们喜欢使用移动付款方式的原因。具体地说，我了解到如果想跟中国人做生意的话，一定要提供机会用移动付款方式，因为这是他们最常用的付款方式。

我认为已经完成的试验帮助我提高了语言的熟练程度、巩固了我在大学学到的知识，并且提升了我的中文交流能力。
CHAPTER 1
DO CREDIT CARDS FACILITATE ECONOMIC EXCHANGES? THE LITERATURE AS A STARTING POINT.

This chapter contains a brief review of the main findings about how credit cards influence consumers’ spending behavior. These findings are often valid in the case of mobile payments as well, as it will be explained in chapter 3.

1.1 Making purchases with credit cards

Being the more widely utilized among all debt instruments (Dunn and Ekici, 2005), nowadays -and since the end of the last century- credit cards are a vital component of business, banking, and personal money management (Clark, 1975 in Feinberg, 1986; Savage, 1970). Since they have become a major vehicle for carrying out and financing consumption (Dunn and Ekici, 2005), it is important to evaluate the impact of this financial instrument on consumers’ behavior and spending decisions, as they are likely to play a vital role in influencing spending.

Typically, consumers can choose among a wide range of alternatives to carry out their purchases: cash, check, credit or debit card (Raghubir and Srivastava, 2008) and, since a few years, due to the rapid development of the Internet and the evolution of technology, they can also choose among the new mobile payment modes (see chapter 2).

The mode of payment is a contextual element of primary importance in any transaction; however, as noted by Raghubir and Srivastava (2008), research on how the payment mode influences consumers’ behavior and spending decisions is (still) relatively poor. Literature investigates whether consumers spend differently when using one payment mode relative to another one and, if they do, why. In particular, literature has investigated differences of spending by comparing credit cards and cash payments and credit cards and checks payments, shedding new light on the fact that consumers tend to spend more
with credit cards than with other payment modes (Feinberg, 1986; Hirschman, 1979; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; Soman and Cheema, 2002; Chatterjee and Rose, 2011).

In the next paragraphs, a brief review of the existing literature about how credit cards influence consumers’ spending behavior and decisions is proposed. More specifically, what will be reported in detail are the findings that might be relevant and valid in the case of mobile payments as well. As will be explained in chapter 3, these findings are at the base of the formulation of the survey used for the elaboration of data in chapter 3.

1.2 Consumer behavior research and the antecedents of purchase: credit cards facilitate spending

Given that alternative systems of payment differ in important economic and social characteristics, it is reasonable to believe that different payment modes may have a different influence on individual consumers’ behavior (Hirschman, 1979) and thus on their spending decisions.

For this reason, consumer behavior research has traditionally tried to understand the antecedents of purchase (Hirschman, 1979), including payment modes influencing the purchase itself.

Since the last decades of the last century, there has been a stream of behavioral studies that prove that future spending can be influenced by the use of credit cards. Consumers will be more likely to spend, spend more, and/or spend more quickly when they choose to carry out transactions with credit cards (Feinberg, 1986; Hirschman, 1979; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; Soman and Cheema, 2002; Chatterjee and Rose, 2011).

More specifically, previous literature finds a positive correlation between the use of credit cards as payment method and increases in consumers’ spending, compared with cash -or check- payments in otherwise identical situations (Feinberg, 1986; Hirschman, 1979; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; Soman and Cheema, 2002; Chatterjee and Rose, 2011). This finding is typically referred to as the “credit card premium”.

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There are many reasons why the correlation between credit card use and increased spending might be true, including that credit card users are different from cash users (Soman, 2001) and from other payment modes users. Moreover, most of the -despite limited- experimental research that has found support for a positive impact of credit card use on spending is vulnerable to the hypothesis that the explanation why cash purchases are smaller than credit card ones is that cash users may have spent less because of liquidity constraints (Hafalir and Loewenstein, 2009).

Further, according to Thaler (1999), another reason why the use of credit card begets further purchases is that when the bill arrives, the single purchase is put together with many others. As readers may have noticed and/or experienced themselves, the impact of paying $50 in cash at the store -immediately- and that of adding a $50 purchase to a hundreds-of-dollars-bill are not the same. In fact, the $50 in the form of cash will appear to be larger when considered alone than in the context of a much larger bill, and especially when the bill contains many items: every single item will lose salience when blended together with many others. This effect even amplifies if the bill is not fully paid immediately. When this is the case, the consumer won’t be able to attribute this balance to any particular purchase (Thaler, 1999). This results in the payment and purchase being decoupled and thus the payment and purchase being decoupled and thus the consumer not experiencing what Zellermayer (1996) has called “the pain of paying” (Zellermayer, 1996; this term is used also by Prelec and Loewenstein, 1998) (see paragraphs 1.3 and 1.4).

However, differences among consumers, liquidity constraints and expenses being mixed together in the credit card bill are not the only explanations for this correlation. In fact, it happens that credit cards are seen as a convenient and relatively painless way of spending (Hirschman, 1979). The implication of this is that the use of credit cards lowers the perceived cost and stimulates additional use (White, 1980 in Feinberg, 1986). Some researchers have supported the idea that different payment mechanisms have different effects on spending decisions because of the decoupling of purchase from the “pain of payment” (Thaler, 1999; Raghubir and Srivastava, 2008). Some others have argued that the spending effects of different payment mechanisms also depend on how accurately consumers remember previous payments and on the immediacy with which wealth is depleted (Soman, 2001). Others, moving from the assumption that
previous research takes for granted that the product the consumer wants to buy is perceived and evaluated the same way across different payment mechanisms, find support for the hypothesis that the evaluation of the product differs across different payment mechanisms (Chatterjee and Rose, 2011). These hypothesis and works are discussed more in detail in the next paragraphs.

1.3 Payment coupling and payment form affect future spending

Raghubir and Srivastava (2008) argue that payment modes differ in at least two ways: payment coupling and payment form.

Payment coupling refers to the temporal association between the purchase itself and the actual parting of money (Loewenstein and Prelec, 1992; Loewenstein and Prelec, 1998; Thaler, 1999). In the case of a cash purchase, there is a strict connection (in other words, coupling) between the purchase and the payment, accentuating the “pain of paying” (Zellermayer, 1996; Prelec and Loewenstein, 1998). On the contrary, in the case of a credit card purchase, the actual parting of money occurs after the purchase decision, leading to the pain of paying as being weaker. This pain of paying is lower when paying with a credit card, in that it is usually underestimated. This leads to consumers spending more when paying with credit cards. This also means that the salience of payments is lower for this kind of payments (Raghubir and Srivastava, 2008).

Payment form refers to those payment modes that differ in physical appearance but are identical in coupling and face value. For instance, let’s take $50 as cash and as a gift card: they are identical in terms of coupling, as well as in terms of the face value of the amount of money they represent (in both cases, it is $50), but they are different in physical appearance and, as a consequence, different in terms of payment form (Raghubir and Srivastava, 2008). In the case of credit cards versus cash, the two payment modes differ both in terms of coupling and in form, while gift cards and cash differ only in terms of form (Raghubir and Srivastava, 2008).

Raghubir and Srivastava (2008) argue that it is reasonable to suppose that the physical form of the payment affects the above-mentioned payment transparency (or vividness with which the outflow of money is felt). In particular,
they believe that if the payment form is very transparent, the salience of parting with money is very high and consumers’ revulsion to paying is the greatest. In this sense, cash is the most transparent form of money: in fact, its status as legal tender makes it salient in both physical form and amount (Soman, 2003). When paying by cash, the feeling of parting with money is very vivid, while with a different payment form (for instance, a credit card or a gift card), the feeling of parting with money may not feel or appear as real as it is with a legal tender. In this case, the salience of parting with “real” money is reduced, and, as such, spending feels like being easier. Assuming that the transparency of the payment makes the parting of money more vivid and, in a sense, real, the pain of paying is likely to be greater when using cash rather than other less transparent payment forms (like credit cards). In other words, we can say that reducing the salience of parting with real money psychologically reduces the hindrance to spend (Raghubir and Srivastava, 2008).

In a series of four experiments, Raghubir and Srivastava (2008) study consumers’ spending decisions as being dependent on the payment mode. Studies 1 and 2 examine whether consumers are willing to spend more when the payment modes differ both in coupling and form (credit card as opposed to cash). Studies 3 and 4 make payment modes differ only in form, examining spending decisions when the same amount is given either in the form of a gift certificate or cash. By investigating the conditions under which payment modes result in differences in spending decisions, Studies 2 and 4 examine if and how the spending differences across payment modes can be eliminated or attenuated by altering the salience of parting with money.

1.3.1 Finding evidence through experiments

In this section, the four experiments leading to Raghubir and Srivastava’s results (2008) are discussed. Understanding the logic of these experiments may be useful to understand the logic concealing behind the questions made in the survey in chapter 3.

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1 When using cash, it is easy to see the money being spent and, since you have to physically count it in order to pay, the amount is quite easy to remember (Soman, 2003).
Study 1 tries to replicate the previous finding that people spend more when using credit cards than they do when using cash (Feinberg, 1986; Hirschman, 1979; Prelec and Loewenstein, 1998; Prelec and Simester, 2001; Soman, 2001; Soman and Cheema, 2002). Following Feinberg’s (1986) finding according to which the presence of a “credit card stimuli” (for instance, credit cards logos) encourages consumers to spend more, Raghubir and Srivastava (2008) try to understand if this is really the case or not.

Participants were randomly assigned to one of the four situations (cash vs. credit card combining with lunch vs. dinner) and were told that a restaurant was planning to open in their city. They had to estimate the price they would be willing to pay for a set of nine menu items (choosing from an open-ended format) either for lunch or for dinner. Moreover, participants were to answer 20 agree-disagree statements intended to measure participants’ attitude towards credit cards and cash.

The results show that when the credit card logo was present, participants were willing to spend more. The authors underline that participants were not explicitly informed about the payment method they had to use, so the mere presence of a credit card logo increased their willingness to pay more. Further, this study has also shown that many participants highly agreed with the statement “I tend to use my credit card without thinking of the amount I am charging to it”. These results are in consistence with the hypothesis that the lower the transparency of the payment mode, the greater the level of spending.

Study 2, besides trying to replicate that people are willing to spend more/estimate spending more when using credit cards rather than cash, also tries to increase the transparency of credit card payments by using a decomposition strategy.

In the first condition, people were asked to estimate the cost of each item in the shopping basket individually. In this case, the authors expected that the salience of parting with money would be higher, since the small costs will seem larger by counting them one by one. Moreover, such a decomposition estimation condition creates a tight coupling, thus reducing the difference between credit card and cash condition.

In the second condition, participants were asked to estimate the total cost of the basket when using either a credit card or cash. In this case, the authors expected
to replicate the previous finding according to which people are more willing to pay with credit cards than they are with cash.

Participants were told they had to estimate the budget for a thanksgiving party either estimating the total amount of the items listed on the paper they were handed or estimating each item singularly and then adding them together (in this case a list of the items was provided as well), depending on the condition they were assigned to.

The results show that estimates of spending were much higher in the credit card condition, but only when consumers had to evaluate the total amount of the basket. In fact, when considering the evaluations in the piecemeal condition (the first condition), the difference in spending between credit card and cash results in being attenuated. This shows that the lower salience of parting with money usually associated with credit cards is curbed when consumers have to make a piecemeal evaluation.

Study 3 examines the differences in consumption when individuals receive an identical amount of money either in the form of a gift card or cash. The gift card is less transparent than money, so the pain of paying with it is expected to be lower, leading to an increased spending.

Participants were randomly assigned to the gift card or cash condition: some were given $50, and some a gift card of the same value. They were instructed to shop for groceries from a shopping list (a typical undergraduate’s shopping basket was created on purpose, since the participants were undergraduate students) and were also informed that change would be given back in cash, regardless of the payment method they were to use. Participants were handed a list of options for products and brands from which they could choose for each of the product categories.

In consistence with the hypothesis that gift card is less transparent than cash, and thus encourages spending, the results show that participants in the gift card condition spent more than those in the cash condition.

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2 They did not know that, at the end of the experiment, they wouldn’t have kept the change. This detail was initially omitted and was revealed only at the end of the experiment in order to record their spending behavior as realistically as possible (Raghubir and Srivastava, 2008).

3 Similar experiments were conducted by Soman (2003), who also found support for the idea that the less transparent the method of payment is, the greater the consumers’ willingness to pay is. More precisely, he argues that this mechanism is true for “flexible” (i.e., treats and luxury) items and not for “inflexible” (i.e., staple grocery products) ones.
Study 4 tries to study the effect of payment form in a real choice context. Participants were given $1 either in the form of a gift certificate or in cash. The gift certificate could be exchanged for cash ($1 bill) or be used to purchase a Starbust candy; the $1 could be kept or used to purchase a Starbust candy. According to the assumption that gift certificates are less transparent and thus treated as play money, participants are expected to be more likely to purchase the Starbust candy when given the gift certificate rather than cash. Following their previous findings, they expected participants to be more likely to buy the Starbust candy when given the gift certificate rather than cash (as the former is less transparent than the latter).

In the experiment, the transparency of the payment method was manipulated in two conditions: in one condition, the difference in physical form was suppressed by asking participants to treat the gift certificate as they would treat money (that is, put it in their wallet). The idea was that when participants were to take it out of their wallet, it would seem to really part with something of value (as it is in the case of cash). The authors did so in order to explore a condition under which the spending difference between a gift certificate and cash would be attenuated. In this case, participants received the $1 (cash or gift card) one hour prior to the choice task. This condition was referred to as the low transparency difference condition.

In another condition, after asking the participants to keep the gift card in their wallet as they would do with the $1 bill, the difference in physical form was made salient again by making a $1 bill visually remarkable at the time of choice. In this way, difference in the transparency would be salient again, and the gift card would be treated as play money and thus be more easily spent. In this case, the authors wanted to show that the previous findings (about the transparency influencing spending) would re-emerge if the difference between the two payments was highlighted again at the time of spending. In this condition, participants were given the $1 bill or gift card one hour prior to the choice task as well. This condition was referred to as the high transparency difference condition.

In the control condition, participants were given the $1 (either in the form of a bill or in the form of a gift certificate) only 5 minutes before making their choice.
It was expected that the spending difference between the gift certificate and cash would be weaker in the low difference in transparency condition and would re-emerge in the high difference in transparency condition.

In the control condition (when the $1 was given just before the purchase decision), 9.5% spent their $1 on Starburst candy when it was given in cash, whereas 47.4% spent it when it was in the form of a gift certificate. However, when participants were given their money one hour before and the $1 bill was not visible (low transparency difference condition), there was no difference in spending behavior as dependent on the payment form: 23.5% of the participants in the gift certificate condition purchased a Starburst candy and almost the same amount of the participants in the cash condition (26.3%) purchased a Starburst candy as well. By contrast, when the $1 bill was visible (high transparency difference condition), even though participants were given their money early, 66.7% of participants in the gift certificate condition purchased a Starburst candy, while in the cash condition did so only 14.8% of participants.

As predicted, there was no difference in spending when the gift certificate was treated like cash (stored in the wallet for an hour), but this difference in spending re-emerged as soon as the difference in transparency between the $1 gift certificate and $1 bill was marked again.

Raghubir and Srivastava (2008) argue that there may be an alternative explanation favoring a major spending of the gift certificates than cash when both were stored in the wallet. They speculate that it was easier for participants in the $1 cash condition to retain their money as they did not have to take the trouble of taking the money out of their wallet. However, participants in the $1 gift certificate condition had to take the certificate out of their wallet both if they were exchanging it for cash or for the Starburst candy. The authors believe that the procedures favored saving cash only in the two conditions where participants were asked to keep their $1 bill in their wallets, but not in the control condition (since participants made a choice almost immediately after receiving the cash or the gift certificate).

They examine this alternative explanation by controlling for payment form and contrasting spending behavior across the three conditions in the following way. In the gift certificate condition, the proportion of participants who purchased a Starburst candy varied across the three conditions. In the control condition, when participants were given the $1 right before to the choice task, 47% chose to
purchase a Starburst candy. This percentage reduced to 23.5% in the low transparency difference condition, while it increased to 67% in the high transparency difference condition, where the $1 bill was intentionally visible. The significant difference in spending behavior across the two conditions where the gift certificate had been stored in the wallet (where the context either made a $1 bill salient or not) suggests that while the difference in form was suppressed in the low transparency difference condition (no $1 bill visible), it was made salient again in the high transparency difference condition ($1 bill visible at the time of making a choice). In the latter condition, the gift certificate was treated as play money and was, thus, more likely to be spent than cash.

In the cash condition, the proportion of participants who purchased a Starburst candy did not vary significantly across the three transparency conditions. In the control condition, 9.5% purchased a Starburst, in the low transparency difference condition this percentage increased to 26.3%, and in the high transparency difference condition only 14.8% of the participants spent their $1 bill. This means that the $1 given to participants was not always spent. The finding that spending behavior did not vary across the three conditions when the $1 was given in the form of cash, the authors admit, is reassuring, because manipulations were meant to alter the relative transparency of the gift certificate only.

Summarizing, the results make clear that when the difference in payment form is suppressed, people do not consider a gift certificate as play money, thus, they will be more reluctant to spend it (they treat it as they treat cash). However, if the difference in payment form is made prominent again, people do consider a gift certificate as play money, thus they will be more likely to spend it (as opposed to how they would treat cash).

Rughubir and Srivastava’s work (2008) helps us understand that different payment forms influence spending behavior in different ways.

Similar results will be discussed for mobile payments as well in chapter 3.

1.4 Decoupling purchase and the actual parting of money: avoid the pain of paying

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4 Raghubir and Srivastava (2008) question whether the results are due to small sample sizes and warn that they should be replicated with larger sample sizes.
At this point, it should be quite evident that one reason why consumers tend to spend more with credit cards rather than with cash is that when using the former payment method, they do not experience the so-called “pain of paying” (Zellermayer, 1996; Prelec and Loewenstein, 1998).

As seen in the previous paragraph, according to Raghubir and Srivastava (2008), payment modes differ in “transparency or the vividness with which individuals can feel the outflow of money”. The authors argue that the more transparent the payment outflow is, the more the consumer will experience the pain of paying.

In such a framework, less transparent payment modes such as credit cards and gift cards (vs. cash) are more easily spent and treated as play or “monopoly money”. It goes without saying that, when using “monopoly money”, it is extremely unlikely that consumers will experience an aversion to spend. On the contrary, it is highly probable that they will be more inclined to spend (Raghubir and Srivastava, 2008).

One of the ways through which the coupling between the purchase and the actual parting of money can be avoided is to use the so-called “decoupling device” (Thaler, 1999), which consists of using credit cards as payment method. At this purpose, Thaler (1999) argues that a credit card can separate (or decouple) the purchase from the payment. In other words, it allows to postpone the payment. This means that the payment occurs later than the purchase, and that the payment is kept separate from the purchase itself. This separation between the purchase and the payment causes the payment to seem less salient (Thaler, 1999). If the payment is less salient, the consumer is more likely to spend and/or to spend more, because she does not experience the full aversive impact the payment generates.

1.5 The role of previous payments on future spending

A rational economic evaluation of a purchase opportunity should be determined by the sum of the utility offered by the product and the disutility of the payment (Prelec and Loewenstein, 1998; Soman, 1998). In other words, when deciding whether to make a purchase or not, consumers might refer to the valence of this “net transaction value” and carry out the purchase only if it is equal to or greater
than zero (Soman, 1998). According to this framework, consumers should only evaluate the characteristics (utility) and the cost (disutility) of the product and choose whether to buy it or not.

However, Soman (2001) states that, in some cases, a consumer may not follow the above reasoning to evaluate the value of a purchase. For instance, she might need to sustain an expense (e.g., car repairs) or be persuaded to make an extra purchase (e.g., for hedonic reasons). When this is the case, the net transaction value may stand for the degree to which the consumer feels that she picked up a good bargain or the degree to which she can exercise self-control over temptation, respectively (Soman, 2001), but it won’t be the reasoning through which the consumer decides to buy the product/service or not. More specifically, Soman (2001) argues that the mechanism used to make past payments influences consumers’ future spending, showing that there are factors other than a rational and economic evaluation of the purchase opportunity that might influence consumers’ spending behavior and decisions.

Soman’s research (2001) focuses on the “moderating effects of the historic usage of payment mechanisms on how past expenses influence pending purchase decisions”. In his work, Soman (2001) centers on two features of the payment mechanisms: rehearsal (writing down the amount paid) and immediacy (the degree of immediacy in depleting the consumer’s wealth as a consequence of spending). He argues that when rehearsal comes into play (in his experiment, when writing a check), consumers are able to recall past expenses more accurately. Further, he argues, the mechanisms that lead to an immediate depletion of wealth (in his experiment, when using cash) will make consumers less willing to spend. His field experiments show that payment mechanisms that involve either rehearsal or immediacy tend to decrease consumers’ future spending.

Note that Soman (2001) states that when the consumer has in process payments (payments in which an expense has been incurred—e.g., charged to a credit card— but the consumer’s wealth has yet to be depleted—e.g., the bill has not yet been paid—, even though she might be able to recall past expenses, the consumer may not experience their full aversive impact.
Soman’s work (2001) shows that the payment mechanism used to carry out past expenses influences the recall and the aversive impact of past payments on future spending. More specifically, certain payment mechanisms (like credit cards) lead consumers to underestimate past expenses, while increasing the purchase intention for additional products.

The author finds support for the proposed framework in two separate experiments. Experiment 1 showed that the likelihood to make an additional purchase of consumers who made past payments by credit card was greater than that of consumers who paid by check. Experiment 2 manipulated two features of the payment mechanism (rehearsal and immediacy of wealth depletion) and showed that they can limit the effect of past payments on future spending.

1.5.1 The “learning and rehearsal” of the price paid

Soman (2001) argues that the extent to which consumers remember the price paid depends on the payment mechanism used to carry out the transaction. When paying by check, consumers need to write down the total amount in words and figures: this repetition increases salience and, as such, makes it easier to remember the amount paid (Hawkins and Hoch, 1992; Soman, 2001). On the contrary, when paying by credit cards, consumers only need to sign a receipt (Soman, 2001) on which the final price paid has already been printed by the credit card machine.

If this assumption is true, consumers that have used payment methods for which they were supposed to put in writing the final amount paid are more likely to better recall past expenses (Soman, 2001).

1.5.2 The immediacy with which wealth is depleted

Soman (2001) also argues that cash payments represent an immediate depletion of the consumer’s wealth, while credit card payments represent a larger temporal delay.

While decision making will be certainly and highly influenced by an immediate depletion of wealth, it won’t be to the same extent in the case of a delayed depletion. This happens because it is probable that consumers may not
experience the impact of a payment until their wealth has actually been depleted (Soman, 2001). Thus, a payment by credit card might be seen more as a simple commitment to pay rather than as an actual payment, and, as a result, it is probable that it has a smaller impact on decision making than an immediate payment (Soman, 2001). Credit card payments allow consumers to isolate and clearly distinguish the price paid for the product and the benefits associated with the product itself, hence reducing the aversive impact of the payment (Soman and Gourville, 2001).

1.5.3 Finding evidence through experiments

In this section, the two experiments leading to Soman's results (2001) are discussed. Understanding the logic of these experiments may be useful to understand the logic concealing behind the questions made in the survey in chapter 3.

In Experiment 1, the author wants to find support for the hypothesis that consumers who have used a credit card to incur past expenses are more likely to buy an additional product with respect to consumers who used cash, *ceteris paribus*.

Participants were handed a questionnaire and a stack of index cards. They had to suppose that they had graduated and had a job and were given the same financial profile (including savings, checking accounts and credit card limit). Participants were asked to imagine that they had finished paying off all of their college loans and wanted to save money in order to buy a condominium. After this introductory phase, subjects were asked to view the stack of 30 index cards one at a time; each card contained details of a particular expense that was incurred on a given day of the month. 12 of these contained test expenses that participants had to pay for before proceeding to the next card. Subjects in the credit card condition paid by signing a credit card receipt, while subjects in the check condition paid for the same 12 expenses by writing a check. Further, each index card for subjects in the feedback condition contained the cumulative spending to date at the bottom, while the cards for subjects in the no-feedback
condition did not have this information\(^6\). After this, participants were told to imagine they were at a mall to make other purchases but saw a box of CD’s they didn’t need but would be great for their CD’s collection. They had to state their willingness to buy it on a scale from 1 to 10 (1= definitely won’t buy it; 10= definitely will buy it).

Results show that purchase intention was much greater in the credit card condition. Plus, in the credit card conditions, the no-feedback condition resulted in a significantly greater purchase intention than in the feedback condition, while there was no difference across the check condition for feedback and no-feedback conditions.

This experiment shows that when credit cards are used to incur past expenses will increase the consumer’s purchase intention.

Experiment 2 was intended to prove that: (a) rehearsal of the final price will improve the memory for past expenses, thus influencing future spending, and (b) immediate depletion of wealth will increase the aversive impact of the past payments, thus influencing future spending as well.

As in experiment 1, participants were provided with some initial information: they were told to suppose they had graduated and had a job; further, they were also provided with information about their financial position (including savings, checking accounts and credit card limit). They were also told that they had access to four payment mechanisms that were generated by crossing two levels of the immediacy factor (immediate depletion of wealth and delayed depletion of wealth) with two levels of the rehearsal factor (whether final amount paid needs to be written or not): debit card, check, charge card, and charge check.

In a second phase, participants were given a booklet containing expenses incurred over a month. Expenses were divided into four categories\(^7\) (food, entertainment, home leisure, and clothes and accessories) and assigned to a specific payment method (those reported above). Subjects had to go through the four categories and make the payments using the specified payment modes.

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\(^6\) The feedback factor was used to test whether differences between the credit card and check conditions could be explained by errors in the booking process and hence to test whether the difference would be reduced by providing feedback about total past expenses (Soman, 2001).

\(^7\) Four different orders were used to present the same four categories (Soman, 2001).
In the third phase, subjects were to answer two questionnaires. The first one had to assess whether they were willing to buy items (from the four categories listed above) considering the expenses they had already incurred in the same category the month before. Then, they were asked how much money they had spent in similar items the month before and to recall as many single items they had bought as possible and to write down their prices. The answers were grouped in the appropriate categories by the experimenter. In the second questionnaire, participants were explicitly explained the four purchase categories used in the experiment and were asked to estimate their total expenditure for each category. In this case, the participants themselves had to divide the recalled expenses into the categories.

Results show that the purchase intention for an additional purchase in a given category was higher in the case previous expenses in that category were paid for by a mechanism that did not allow rehearsal and when payments were still in process (delayed depletion of wealth). Further, the retrospective evaluation of expenses in a given category was more accurate when previous expenses in that category were paid for by a mechanism that involved rehearsal and when wealth was depleted immediately.

Soman’s work (2001) helps us to understand that previous payments affect future spending. They do so through the learning and rehearsal of the price paid and through the immediacy with which wealth is depleted. The greater the rehearsal and the immediacy, the weaker the purchase intention.

Similar results will be discussed for mobile payments as well in chapter 3.

1.6 Consumers’ perception and evaluation of products differ across payment mechanisms

Chatterjee and Rose (2011) argue that consumers’ perception and evaluation of the products under consideration differ across payment mechanisms. Going more into details, they argue that depending on the payment mechanism chosen, consumers will focus on different product features. In particular, when consumers use credit cards as payment method, they will focus on the benefits the product offers, while if they choose another payment method, like cash, they will focus
more on the costs\textsuperscript{8} of the product. In the first case, the consumer will be more likely to spend more, in the second one, she will be more reluctant to do so.

In their paper, Chatterjee and Rose (2011) make four experiments. They find out that consumers exposed to the credit card condition recall benefits aspects of the product better than they do with cost-related aspects of the same product (Soman, 2001 found this as well) (experiment 1), identify more benefits-related words (experiment 2), and respond faster to benefit-related words (experiment 3) than consumers exposed to the cash condition. In a fourth experiment, they show that credit-primed consumers are more likely to choose an option that offers superior benefits, while cash-primed consumers are more likely to choose an option that dominates on costs, even though it offers fewer benefits. In this study, they reverse the payment prime effect by exposing consumers to a choice set decoy that is dominated on either cost or benefit considerations. This manipulation highlights the salience of costs and benefits, respectively.

\textit{1.6.1 Finding evidence through experiments}

In this section, the four experiments leading to Chatterjee and Rose’s results (2011) are discussed. Understanding the logic of these experiments may be useful to understand the logic concealing behind the questions made in the survey in chapter 3.

In experiment 1, participants were randomly assigned to either credit card condition or cash condition. The main objective of this experiment was to assess whether participants exposed to credit card concepts allocate attention to different aspects of the products under consideration compared to participants exposed to cash concepts. If this was true, participants in the credit card condition should direct attention to benefits rather than to costs. The contrary should be valid for consumers in the cash condition. The authors conducted an error analysis: if the proposed framework was true, participants in the credit card condition should make more errors when asked about the costs of the product,

\textsuperscript{8} The cost includes price, delivery time/costs, warranty costs, installation costs, and similar features (Chatterjee and Rose, 2011).
and vice versa for participants in the cash condition (they should make mistakes when asked about benefits).

At some point in the experiment, participants (both in the credit card and in the cash conditions) were shown a picture of a camera and three benefits and three cost features of the camera itself. After this, they were asked questions about the previous benefits and costs of the camera and had to decide whether the proposed statements were true or false. This was useful to the authors in order to assess the error rate about costs and benefits in the two situations.

The results of this experiment provide evidence relevant to the hypothesis that consumers, when evaluating a product, value different product features depending on the payment method they use. Compared to cash prime, credit card prime led to higher recall errors rates with respect to cost attributes. This result suggests that the credit card prime reduced the attention towards the cost aspects of the product relative to the cash prime.

In experiment 2, participants, at some point in the experiment, were asked to type the word they thought they had seen flash on the screen (words flashed on the screen one at the time for 200 milliseconds, followed by series of “###”). A total of twelve words were shown on the screen: four neutral, four related to benefits and four related to costs. The aim of the experiment was to find further evidence for the idea that participants in the credit card condition would recognize more words related to benefits than costs, and vice versa for the participants in the cash condition.

Results showed that people in the credit card condition identified more words related to benefits than those in the cash condition, while those in the cash condition identified more words related to costs than benefits (neutral words did not affect the results, since they were not affected by the payment primes).

In experiment 3, participants were shown a picture of an iPhone and a review about it. The major aim of this experiment was to assess participants’ response latency: words reporting a feature of the item again flashed on the screen in a random order, and participants had to classify them as a cost or a benefit (by pressing “Q” or “P”, respectively) as quickly as possible. The error rates were generally low. It may be possible that if there had been a longer temporal delay between exposure to the product descriptions and the attribute recognition task, there would have been significant differences in the reported results (Chatterjee and Rose, 2011).

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9 Error rates were generally low. It may be possible that if there had been a longer temporal delay between exposure to the product descriptions and the attribute recognition task, there would have been significant differences in the reported results (Chatterjee and Rose, 2011).
hypothesis here was that cash-primed participants should respond faster to the costs of the product being evaluated, and credit-card-primed participants should respond faster to the benefits of the same product. The empirical evidence suggests that credit-primed participants respond faster to benefit words (relative to cost words), whereas the contrary is true for the cash-primed people. This suggests that the credit card prime directed attention to product benefits rather than to costs.

In the previous three studies, Chatterjee and Rose (2011) demonstrated the main differences of priming credit versus cash payment mechanisms. In the next experiment (experiment 4), they try to moderate the relationship between payment primes and subsequent evaluation by using decoys. In experiment 4, the authors support that if the payment prime effects operate by directing attention to either benefits (in the case of credit card prime) or costs (in the case of cash prime) during product evaluation, by introducing decoys, participants’ attention should be shifted away. More specifically, if this laboratory manipulation shifts attention away from benefits (in the credit prime condition) or away from costs (in the cash prime condition), it should also moderate the payment prime effects.

The authors set for three conditions: two that manipulate attention on costs or benefits through the use of decoys, and a third serves as control (it doesn’t have any decoy). Through the use of decoys, the attention on costs should be contrasted by the benefits introduced by a decoy dominated on benefits (the reverse should be true for benefits). They use this property of the decoys to test and attenuate the effect of payment primes explored in the previous three experiments. In the third condition, they expect participants to choose an option that is superior on benefits in the credit card condition, and to choose the option that is superior on costs in the cash condition.

Participants were randomly assigned to one of the 6 conditions (credit card vs. cash combining with one of the three conditions with or without decoys described above). Then, they were provided with reviews of MP3 players and they were told

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10 For instance, if a decoy is dominated on the attribute of quality and not of price, it would shift attention to the quality attribute. At this point, it is clear that it would help the choice share for the option that dominates on quality (Chatterjee and Rose, 2011).

11 One of the decoys was dominated on the products’ costs and the other one on the products’ benefits (Chatterjee and Rose, 2011).
that they had to choose one. Depending on the condition they were assigned to, in the next screen they saw ratings of either two MP3 players (iPod and Zune) or three MP3 players (iPod, Zune and Sansa). On a scale going from 0 to 10 (0= lowest; 10= highest), Apple iPod was shown as having a rating of 8 on cost and 9 on benefits; Microsoft Zune as having 6 on costs and 7 on benefits; Sansa (the decoy), depending on whether it was a decoy dominated on costs or benefits, was shown as having a rating of 7 (both benefits and costs) for the decoy dominated on costs and 8 (both benefits and costs) for the decoy dominated on benefits. In the first case, Sansa MP3 player was inferior to the Zune in costs; in the second case, it was inferior to Apple iPod on benefits.

In the control condition, there were many more people choosing iPod in the credit card condition than those in the cash condition. In the cash-prime condition, there was no great difference in the percent of people choosing iPod across control and decoy dominated on costs, while there was a great difference in the choice of iPod across control and the decoy dominated on benefits. In the credit-card-prime condition, there was a great difference between the control and decoy dominated on costs, but no difference between control and decoy dominated on benefits.

These results show that people choose a product superior on benefits when primed with credit card, and a product superior on costs when primed with cash, extending Chatterjee and Rose’s previous findings to the realm of consumer choice.

These results shed new light on the fact that different payment methods direct attention to different aspects of the product under consideration and, consequently, lead to different product evaluations and choices. They also contribute to understanding the mechanisms at the base of the credit card premium.

Similar results will be discussed for mobile payments as well in chapter 3.

1.7 Mental accounting

The pain of paying described in paragraphs 1.3 (and its sub-paragraph) and 1.4 can undermine the pleasure derived from consumption (Loewenstein and Prelec, 1998). In the same way, thinking about the benefits derived from consumption
(only if the consumer paid for it before the consumption itself) can alleviate the pain associated with payments (Loewenstein and Prelec, 1998). The interactions mentioned above fall outside the scope of traditional economic models, but are important in order to understand consumers’ spending behavior (Loewenstein and Prelec, 1998), in that they play a decisive role. These interactions can be understood by analyzing the so-called “mental accounting”.

Mental accounting “is the set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities” (Thaler, 1999). In other words, in doing so, people try to keep track of and control their own spending.

People establish mental accounts that gather specific purchases to specific payments. When a consumer wants to make a purchase (or, more generally, a financial transaction), she will think of her mental accounts, which can generate pain or pleasure depending on whether accounts are in the red or in the black. For instance, a person who makes a loan to buy a car will not fully enjoy her driving until she won’t pay back the loan in full (Loewenstein and Prelec, 1998). When the loan is fully compensated, her next driving will be freed from payment thoughts (Loewenstein and Prelec, 1998), and the pleasure derived from it will be the greatest.

Loewenstein and Prelec’s model (1998) is a double-entry one, composed of two entries: the utility derived from consumption and the disutility of making payments. The utility derived from consumption is a net utility, in that we have to subtract the disutility of associated payments (“imputed cost”) from it (Loewenstein and Prelec, 1998).

In the same way, the disutility of making payments is a net disutility, in that we have to subtract the utility of associated consumption (“imputed benefit”) from it (Loewenstein and Prelec, 1998).

When consumption and payment are brief and simultaneous (for example, a dinner which costs $75), consumption (the dinner itself) is the only benefit that can be imputed to the payment, and payment ($75) is the only cost that can be imputed to consumption (Loewenstein and Prelec, 1998). However, in reality,

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12 The phrase “in the black” refers to being financially solvent or profitable, or, more generally, just not in debt. On the contrary, the phrase “in the red” means to be in debt, running a deficit, or generally just not making money—being cash negative (Burr Law Office, 2015).
only a few purchases are this simple. For instance, in the earlier example of the car loan, the imputed costs of a driving may be associated with car ownership, like loan payments, insurance, and so on (Loewenstein and Prelec, 1998).

The extent to which payments and consumption are associated depends on the coupling coefficients: α (attenuation) and β (buffering) (Loewenstein and Prelec, 1998). They represent the degree to which payments attenuate the pleasure of consumption and the degree to which consumption alleviates the pain of payments, respectively (Loewenstein and Prelec, 1998). Coupling differs across different payment mechanisms and, nonetheless, across individuals, since they evaluate payments and consumption in different ways (Loewenstein and Prelec, 1998), as we have seen in paragraphs 1.3 and 1.4.

Thaler (1999), in describing acquisition utility and transaction utility, does nothing but describe Loewenstein and Prelec's (1998) coupling coefficients in a different way.

Acquisition utility is “a measure of the value of the good obtained relative to its price”, or “the value the consumer would place on receiving the good as a gift, minus the price paid” (Thaler, 1999).

Transaction utility “measures the perceived value of the ‘deal’”, or “the difference between the amount paid and the ‘reference price’ for the good, that is, the regular price that the consumer expects to pay for this product” (Thaler, 1999).

The following example (from Thaler, 1985) illustrates the role of transaction utility. Two versions of the question were dispensed, one using the phrases in parentheses, the other using the phrases in brackets instead (Thaler, 1985).

“You are lying on the beach on a hot day. All you have to drink is ice water. For the last hour you have been thinking about how much you would enjoy a nice cold bottle of your favorite brand of beer. A companion gets up to go make a phone call and offers to bring back a beer from the only nearby place where beer is sold (a fancy resort hotel) [a small, run-down grocery store]. He says that the beer might be expensive and so asks how much you are willing to pay for the beer. He says that he will buy the beer if it costs as much or less than the price you state. But if it costs more than the price you state he will not buy it. You trust your friend,
and there is no possibility of bargaining with the (bartender) [store owner]. What price do you tell him?"

The average answers were $2.65 for the resort version, and $1.50 for the store version (the price is in 1984 dollars). These results show that people are willing to pay more for the beer from the resort because the reference price in that context is higher (Thaler, 1985).

It has to be noted that, in a standard economic model, where the consumption experience is the same in any case and, precisely because of this, the place of purchase is considered to be irrelevant, such assumption cannot be accepted (Thaler, 1999).

According to Thaler (1999), considering transaction utility while evaluating a purchase leads to two different effects. First, some goods are purchased primarily because they are considered to be especially “good deals”. As proof to this effect, the author makes a simple but effective example about people’s having some rarely worn items in their closets: they bought them because they seemed to be good bargains, but weren’t really necessary. Second, some purchases that would reasonably make the consumer better off may be avoided because it may have been estimated a considerable negative transaction utility. In the above example of the thirsty consumer, the person who would pay $4 for a beer from a resort but only $2 from a grocery store will lose the possibility to enjoy a pleasant and refreshing drinking if faced with a grocery store selling the beer for, let’s say, $2.50.

The mentioned example is also important because it makes us understand that, in a mental account framework, the money spent is not seen as a loss. People may be likely to think that when they buy something the product/service obtained is a gain and the money spent is a loss, but this is not always true. In fact, for instance, a thirsty consumer, in front of a vending machine that sells soda for 75 cents, would rather have a can of soda than one dollar. However, even though the purchase would satisfy her need, she may decide not to buy the drink if the payment was cognitively multiplied by 2.25 (an estimate of the coefficient of loss aversion) (Thaler, 1999).

1.8 Same money, different value: why mental accounting is important
The previous reasoning should have made clearer to the readers that the classical economic framing is limited when it comes to consumers’ spending behavior and choices, in that they are not mere rational, but psychology plays a decisive role when it comes to them.

In this sense, Thaler (1999) argues that understanding mental accounting is essential if one wants to understand the psychology of choice. In fact, accounting decisions such as to which category to assign a purchase, whether to combine an outcome with others in that category, and how often to balance the “books” can have a significant influence on the perceived attractiveness of choices.

Mental accounting violates the economic notion of fungibility\(^{13}\); in other words, money in one mental account is not a perfect substitute for money in another account. Precisely because of this violation of fungibility, “mental accounting matters” (Thaler, 1999) and is decisive in consumers’ spending behavior and choice. In fact, people treat money differently depending on which category it belongs to.

At this point of the work, it should be evident that money is valued differently depending on the use the consumer has to make out of it. As already explained, when people classify income into different mental accounts, spending is driven by the available surplus or deficit in each account. Using Prelec and Loewenstein’s (1998) and Thaler’s (1999) words, at the specific transaction level, a mental account is opened, and the decision to carry out the purchase or not mainly depends on an evaluation of the perceived benefits of consumption and the costs of payment in this account.

In general, we can say that mental accounts are helpful in making financial decisions easier, because supporting the consumer in making cost-opportunity analysis between different types of spending (Raghubir and Srivastava, 2008).

The following example from Thaler (1999) -which he admittedly borrowed from Tversky and Kahneman (1981)- shows that people value money differently depending on what they have to buy with it.

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\(^{13}\) Fungibility is a good or asset's interchangeability with other individual goods or assets of the same type (Investopedia, 2018a).
“Imagine that you are about to purchase a jacket for ($125)[($15]\) and a calculator for ($15)[($125]. The calculator salesman informs you that the calculator you wish to buy is on sale for ($10)[($120] at the other branch of the store, located 20 minutes drive away. Would you make the trip to the other store?”

Thaler (1999) reports that when two versions of this problem are given (one with the figures in parentheses, the other with the figures in brackets), most people say that they would make the trip to the other store to save the $5 when the item costs $15, but not when it costs $125. If people were using a wealth-based analysis, they would be just thinking of whether they are willing to drive 20 minutes to save $5, and would give the same answer in any possible version of the problem.

However, people make decisions piecemeal, influenced by the context of the choice (Thaler, 1999), so their answer will depend on their own mental accounts (and other factors). This is why five dollars seem like a significant saving on a $15 purchase, but they seem not on a $125 purchase.

1.9 The components of mental accounting

Thaler (1999) examines the three components of which mental accounting is composed of.

The first component examines how outcomes are perceived and experienced, and how decisions are made and, subsequently, evaluated. The accounting system provides the tools to do both ex ante and ex post cost-benefit analyses. The consumer's choice can be understood by incorporating the value of the “deal” (the transaction utility illustrated in the earlier paragraph 1.7) into the evaluation of the purchase decision.

A second component of mental accounting consists of the assignment of activities to specific accounts. Expenses are grouped into categories (for instance housing, food, clothing, and so on) and spending is generally curbed by implicit or explicit budgets. Money available for spending is also labeled, both as flows (regular income vs. windfalls) and as stocks (cash on hand, home equity, pension wealth, and so on).
The third component of mental accounting concerns the frequency with which accounts are evaluated. Accounts can be balanced daily, weekly, yearly, and so on, and can be defined narrowly or broadly.

The aim of this chapter was to make clear that payment modes do influence spending. They do so in -at least- three ways. First, payment coupling and payment form affect transparency and vividness with which money is spent. The higher the transparency and the vividness, the greater the pain of paying, the lower the level of spending. Second, the payment mechanism used to make past expenses influences future spending. More specifically, certain payment mechanisms (like credit cards) lead consumers to underestimate past expenses, in that they are weak in rehearsal and immediacy, hence tend to increase the purchase intention for additional products. Third, different payment mechanisms make the consumer focus on different product’s features, hence encouraging or curbing the spending. The reason why different payment modes have different influence on consumers’ behavior and choice is that “mental account matters” and thus plays an active and decisive role in influencing consumers’ spending decisions.
CHAPTER 2

BEYOND CREDIT CARDS. DIGITAL INNOVATION AND THE NEW MOBILE PAYMENT METHODS.

Everyone who has recently been in China has certainly noticed that more and more people are using mobile payments, and especially WeChat Pay and Alipay. The fact that really depicts the growing importance of these new payment methods is that the majority of stores set for different queues depending on the payment mode consumers choose: one for WeChat (or Alipay) payers and another for the others.

This chapter contains a brief review of the development of digital innovation that led to mobile payments, together with a description of what these mobile payments are and how they work. Further, the current state-of-the-art of mobile payments in China will be described.

2.1 Technological innovation and the rise of new payment methods

In the last decades, together with the growth of e-commerce, including mobile commerce, a development of innovative online and mobile payments also came along, which, in turn, resulted in greater consumer confidence and participation in online shopping (OECD, 2012).

In 2013, the global transactions volume of online payments (also called e-payments\(^1\)) was estimated at 28.6 billion and are expected to reach 76.5 billion by 2019 (Capgemini, 2017). On the other hand, the volume of global m-payments\(^2\) was estimated at 24.6 billion in 2013 and is expected to reach 108.8

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\(^{1}\) E-payments are digital payments made over the internet for e-commerce activities (Capgemini, 2017).

\(^{2}\) M-payments are payments where the mobile phone itself is used as a payment method and the payment information flow takes place in real time (Capgemini, 2017) (for a more accurate definition of m-payments, see paragraph 2.4).
billion by 2019 (Capgemini, 2017). Hence, mobile payments are expected to outpace online payments.

Kauffman et al. (2015) made an accurate review of the development of technology that led to the rise of mobile payments by collecting data dating 1997-2014. Such development process has involved many different related technology innovations that occurred at the component, service, and business infrastructure levels. Hence, the modern m-payments are the result of a complex interaction of the above-mentioned fields.

The review proposed below has Kauffman et al.'s work (2015) as major source, unless otherwise specified.

In the 1950s and 1960s, fast economic growth led to an increase in financial activities. The original card networks that eventually became today’s Visa and Mastercard began in 1950s, while magnetic stripe payment cards date back to the early 1970s (Maurer, 2015).

In the 1960s and 1970s, banking products and processes were automated by computers and networks, and since then, electronic payments made through payment card networks and ACH systems have acquired a growing importance. The automated processing of payments resulted in a great innovation in the banking and payments sectors, bringing about a wave of improvements in the efficiency and effectiveness of payments systems themselves.

In 1982, a new phase began, when the computer scientist David Chaum invented a cryptographic protocol for untraceable and secure digital cash (Maurer, 2015). He then commercialized his idea by founding the DigiCash in 1990 (Maurer, 2015).

After the first mobile commerce and mobile banking initiatives using SMS were launched in Finland in the late 1990s, it was clear that customers could use their mobile phones not only to make calls and send SMSs, but also to perform many new financial functions. Hereafter, similar initiatives have been thriving.

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16 News, industry announcements, government reports and surveys, publicly-available historical documents, Internet research tools and interviews with industry practitioners (Kauffman et al., 2015).

17 See also Dahlberg et al. (2008), who also made a review of the early literature dating 1999-2006 about the mobile payments industry.

18 An automated clearing house (ACH) is an electronic funds-transfer system run by the National Automated Clearing House Association (NACHA). This payment system deals with payroll, direct deposit, tax refunds, consumer bills, tax payments and many more payment services (Investopedia, 2018c).
Building on the idea that money transfers could be made on devices, PayPal and digital wallets were introduced in the early 2000s. In 2002, eBay acquired PayPal, so that it could better support the digital exchange of electronic payments in its online auction platform.

In the same years, in China, Alipay’s growth skyrocketed, supporting consumers via Internet banking and e-commerce.

The first generation of electronic money solutions (such as electronic checks by Clifford Neuman’s NetCheque, smart cards by Gemplus and Mondex in Europe, digital coins by David Chaum’s DigiCash, and e-wallets by CyberCash in U.S.) can be said to be the “ancestors” of the modern contactless payments, which are nowadays widely used in public transportation fare collection systems (think of the Oyster electronic ticketing system in London and the Octopus card system in Hong Kong, just to cite but a few). Most of such systems make use of the FeliCa contactless smart card from Sony in Japan, which is considered to be the first de facto standard for electronic money and mobile payments.

Later, MasterCard’s PayPass and VISA’s PayWave global innovations further set standards for contactless payments in point-of-sale (POS) networks. These contactless payments platforms have provided compatible infrastructures for mobile payments solutions using smartphones that have embedded RFID chips19.

Even though consumers perceived the convenience and benefits offered by m-payments, however, most of the mobile financial services offerings of the early 2000s failed to become the prevailing payment solution because of their limited capability for handling data through mobile networks.

By 2006, however, mobile phone manufacturers introduced smartphones, which offered enhanced web browsing and data transfer capabilities. Their capabilities were further enhanced with the arrival of third-generation (3G) and fourth-generation (4G) telecommunication network technologies and the possibility offered by Internet banking of carrying out transactions.

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19 Radio frequency identification (RFID) is a generic term for technologies that use radio waves to automatically identify people or objects. There are several methods of identification, but the most common one is to store a serial number that identifies a person or object (and other information) on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The antenna enables the chip to transmit the identification information to a reader. The reader then converts the radio waves reflected back from the RFID tag into digital information that can be passed on to computers that can make use of it (RFID Journal, 2018).
All these innovations resulted in a growing market demand for more advanced m-payments services, which appeared for the first time in countries in the Global South (Maurer, 2015): in 2004 in the Philippines (Dalinghaus et al., 2016) and in 2007 in Kenya (Maurer, 2015; Kauffman et al., 2015; Dalinghaus et al., 2016). GCASH and Smart Money in the Philippines helped people send money to their relatives on remote islands (Maurer, 2015), while M-Pesa in Kenya first served as a microfinance loan repayment system (Maurer, 2015). These early deployments made clear the potential of the mobile phone to contribute to people’s lives by providing them basic, safe and affordable financial services (Maurer, 2015). Thus, the relative successes of these early mobile payments solutions encouraged the development of more complex financial services and products—such as savings, loans/credit, social welfare benefits, and insurance—to be delivered through the mobile payments channel.

In 2010, Jack Dorsey’s launched Square, a small plastic square containing a magnetic stripe reader that had to be connected to the earphone jack of the mobile phone. It could detect and transmit the data stored on credit and debit card, hence enabling the smartphone to read a bank card and to accept debit/credit card payments (Maurer, 2015). Two years later, Square introduced its Square Wallet application, on which you could save your credit or debit card information. You could use this payment method wherever it was accepted by only saying your name at the register: the clerk would hit a button and the payment was carried out (Maurer, 2015). However, it was a flop (Maurer, 2015).

By 2014, new start-ups (like Level Up and Boku) and other firms (like Google and Mastercard) in the Global North provided smartphones with payment services, Apple launched a new iPhone payment system (Apple Pay), and experiments like bitcoin\(^{20}\) started appearing (Maurer, 2015).

Meanwhile, diverse technology solutions for m-payments emerged. Among these are: NFC contactless technology, cloud-based m-payments and third-party applications and quick response (QR)-codes (they will be discussed in more detail in the section 2.5).

In short, the integration of advances in contactless payments, online and mobile banking, mobile-phones and smartphones, mobile phone-based

\(^{20}\) A digital cryptography based on peer-to-peer payment system (Maurer, 2015).
applications, and the digital convergence of e-commerce and m-commerce led to the rise of m-payments.

2.2 The actors involved in the industry of mobile payments

Providers of traditional payment services include banks (in the case of cards transactions, banks can be divided into the “issuing” bank, which provides the card to the consumer, and the “acquiring” bank, which is used by the merchant), card networks, and payment processors (that are, third parties handling transactions between merchants and acquiring banks) (OECD, 2012).

The framework of new mobile payments is more complex, since there is a wider array of actors involved. In fact, the mobile payments platform providers participate and cooperate in a cross-industry alliance. They do so in order to create a set of common operational, process and technology standards, and to make it possible for related technology innovations to populate the whole industry of mobile payments (Smart Card Alliance, 2007).

The major actors involved in the mobile payment industry are mobile network operators (MNOs), financial institutions, trusted service managers, merchants, consumers, intermediaries/third party processors and online payments service providers, equipment providers, payment card and ACH networks, and regulators (Smart Card Alliance, 2007; Contini et al., 2011; OECD, 2012; Karthikeyan, 2012; Liu, 2015; Miao and Jayakar, 2016).

2.2.1 Mobile Network Operators (MNOs)

A MNO (also known as “carrier service provider”, “mobile phone operator” and “mobile network carrier”) is a telecommunication service provider organization that provides wireless voice and data communication for its subscribed mobile users. It is an independent communication service provider that owns the complete telecommunication infrastructure for hosting and managing mobile communications between the subscribed mobile users with users in the same and external wireless and wired telecommunication networks (Techopedia, 2018). Although the MNOs are new to financial services, they have a rich experience in providing subscriber acquisition and authentication, device provisioning,
customer support and value-added services, all necessary for increasing mobile payments. Additionally, since they control a wide range of subscriber identity models (SIMs), they are a vital enabling technology channel for mobile payments (Contini et al., 2011; Liu, 2015).

### 2.2.2 Financial institutions

In the new framework of mobile payments, financial institutions are mainly playing a defensive role: besides trying to maintain consumers’ trust, they also want to remain at the center of customers’ account relationship. They try to do so by issuing payment credentials and applications on customers’ mobile devices. In other words, what they have to do is adding value to customer depository services with the addition of mobile technology. For instance, they can make the customer pay the loan and remit the money by using their own mobile payment system (Contini et al., 2011; Karthikeyan, 2012).

By exploiting the contactless infrastructure being deployed since -at least- 2007 and adding contactless payment functions to mobile phones, financial institutions are able to offer their cardholders the same trusted payment services already provided by cards (Smart Card Alliance, 2007).

Having a long-time experience in the fields of customer authentication and authorization, and enforcing Know Your Customer (KYC) rules, financial institutions can charge payments to a consumer’s account and use risk management programs that guarantee regulatory compliance for money laundering, consumer protection, and other risks (Contini et al., 2011; Karthikeyan, 2012). Furthermore, financial institutions can make up for MNOs’ limited experience in the field of payments (Contini et al., 2011; Liu, 2015).

### 2.2.3 Trusted Service Managers (TSMs)

A Trusted Service Manager (TSM) is a service platform that connects service providers, such as banks, to Secure Element (SE) issuers, such as mobile operators (for the SE on the SIM) or device manufacturers (for the SE embedded in the mobile device) (Deja Mobile, 2018).
Depending on the size and scope of a TSM, other functions may include provisioning/account set-up, ensuring compliance with security requirements for software, hardware, handsets, chips and applications, fraud and risk management and customer service and support\(^2\) (Contini et al., 2011).

A TSM plays an important role in the world of mobile payments, in that it coordinates technical and business relationships of mobile network operators (MNOs), banks and other service providers (SP) (Slide Share, 2018). TSMs, functioning as intermediaries, allow these stakeholders and service providers to communicate with one another and arrange the delivery and management of applications and services on consumers’ mobile devices (Rambus, 2018).

2.2.4 Merchants

Merchants also play a critical role in the adoption of mobile payments. In fact, without a widespread acceptance of the proper technology from merchants, it would be difficult for NFC mobile payments at POS to become popular among consumers (Contini et al., 2011).

2.2.5 Consumers

Consumers’ demand for and interest in mobile technology must be very high, otherwise the likelihood the technology will gain a foothold will be very limited (Contini et al., 2011).

A possible obstruction that may cause such technology not to become the most utilized one is the fact that consumers have never used mobile phones for making payments before. However, their desire for convenient, inexpensive, secure and quick payments should encourage the adoption of this new type of payments (Contini et al., 2011).

2.2.6 Intermediaries and online payments service providers

\(^2\) Customer support might include handling device/service questions and resolution relating to secure element use, developing and maintaining user documentation for best practices, support and assistance for operating system and mobile application software upgrades and mobile vendor certification, lost/stolen/upgraded phone notification to customers, handling billing questions and reporting fraudulent transactions (Contini et al., 2011).
Intermediaries (or third-party processors) and online payments service providers provide the enabling technology for mobile financial services or function as intermediaries in the payments supply chain (Contini et al., 2011).

These processors and online payment service providers, plus mobile software solution vendors, and application and hardware developers are partnering with financial institutions or MNOs to provide mobile proximity payments (Contini et al., 2011).

2.2.7 Equipment providers

Equipment providers include handset manufacturers, software manufacturers, terminal equipment providers and chip manufacturers (Contini et al., 2011; Liu, 2015; Miao and Jayakar, 2016).

Handset manufacturers’ effort is that of producing smartphones capable of including NFC technology and the related security software (Contini et al., 2011). Software application providers are important in that they produce software that connects different parts of the mobile payment industry (Liu, 2015). The participation of terminal equipment providers and chip manufacturers is also very important in the framework of mobile payments (Miao and Jayakar, 2016).

2.2.8 Payment Card and ACH Networks

Payment Card and ACH Networks all play a key role in the industry of mobile payments. Since they are very popular among customers, the long-term success of mobile payments will be affected by credit and debit card accounts (Contini et al., 2011).

2.2.9 Regulators

Given that the regulatory framework referring to the provision of payment services by MNOs and other third-parties is fragmentary, regulators should participate in the evolution of mobile payment industry as well (Contini et al., 2011).
Further, questions about the legal liabilities and responsibilities of new parties - over which the stakeholders in the value chain should agree - in the payments transaction are arising. For this reason, participants want the new regulatory structure to be clear and want to know how to address consumer protection issues, such as identity management, cyber-security and prepaid mobile accounts (Contini et al., 2011).

At this point, the importance of the cooperation among the above-mentioned actors for the good working of mobile payments should be clear. Mobile network operators (MNOs) and mobile device manufacturers have to equip the smartphones with a secure element and an NFC chip for safe memory and execution operations; banks, other than controlling the payment terminals, have to issue specialized credit, debit or prepaid cards; merchants have to install new NFC enabled POS terminals; trusted service managers have the responsibility of transmitting, processing, and securing the transactions, plus providing additional services to merchants and consumers (de Reuver et al., 2015).

2.3 Business models in the industry of mobile payments

The competition and cooperation among the three major participants - MNOs, banks and third-party payment institutions - determine the operational models for mobile payments. Currently, four main types of operational models have been identified in the industry of mobile payments: mobile operator-led, bank-led, third-party platform-led, and hybrid models22 (OECD, 2012; Miao and Jayakar, 2016).

2.3.1 Mobile operator-led operational model

In this model, mobile transaction charges are collected directly by mobile operators, and banks do not take part in the transaction (Miao and Jayakar, 2016).

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22 Also called: mobile centric model, bank centric model, partial integration model and full collaboration model (OECD, 2012).
In other words, the mobile operator acts independently to deploy mobile payment applications to NFC-enabled devices (OECD, 2012). When making mobile payments, the mobile account connected to the user’s telephone number is usually considered the payment account. Therefore, payments for goods and services carried out by the user are directly billed on the mobile account. In this way, banks gain nothing from the transaction, as they do not participate in it in any way (Miao and Jayakar, 2016).

### 2.3.2 Bank-led operational model

In this model, banks offer mobile payment services independently, without involving mobile operators or mobile phone manufacturers (OECD, 2012). Mobile phones are just (one of) the platforms of payment, and mobile operators’ role is that of providing the information access channel; they are not involved in the operation and management of payment systems (Miao and Jayakar, 2016). In this case, banks are the only responsible for transactions, hence retaining all the profit (Miao and Jayakar, 2016).

### 2.3.3 Third-party payment platform-led operational model

In this model, third-party payment platforms set up a trading support platform - whose role is that of contracting separately with banks- (Miao and Jayakar, 2016), or create a bank subsidiary to handle mobile payments (OECD, 2012). On third-party payment platforms, the buyer can purchase goods and services from the suppliers listed by the platform itself, which are, in turn, informed by the platform for delivery. The platform will transfer the money owed by the buyer from the buyer’s bank account to the seller’s one only once the buyer has received and checked the goods and approved the payment (Miao and Jayakar, 2016). Such model connects consumers, banks and merchants by using the mobile operator as a platform (Miao and Jayakar, 2016).

### 2.3.4 Hybrid operational models
In this model, mobile operators, banks and other payment providers set up a joint-venture in order to provide mobile payment services (OECD, 2012). This business model may be costly to establish, but it is convenient in that it connects the expertise from all parties (and eliminates each other’s shortcomings): mobile operators’ network presence and customer relationships, and banks’ expertise in electronic payment technology, security and credit management fields (OECD, 2012; Miao and Jayakar, 2016).

2.4 What are the so-called “mobile payments”

Mobile payments make it possible for consumers to pay for goods and services right from the place where they are in that moment. This is why they are considered to be the next generation technology (Karthikeyan, 2012). The mobile payment is a payment method where a mobile device is needed for initiating and confirming a payment, thus loses its mere communication function:

“Mobile payments are payments for goods, services, and bills with a mobile device (such as a mobile phone, smart-phone, or personal digital assistant (PDA)) by taking advantage of wireless and other communication technologies. Mobile devices can be used in a variety of payment scenarios, such as payment for digital content (e.g., ring tones, logos, news, music, or games), tickets, parking fees and transport fares, or to access electronic payment services to pay bills and invoices. Payments for physical goods are also possible, both at vending and ticketing machines, and at manned point-of-sale (POS) terminals. A mobile payment is carried out with a mobile payment instrument such a mobile credit card or a mobile wallet.” (Dahlberg et al., 2008)

Typically, the user that decides to make a mobile payment is connected to a server through the mobile device for authentication and authorization, and, once the transaction is carried out, provided with a statement of confirmation (Miao and Jayakar, 2016).

The Organization for Economic Cooperation and Development (OECD), in giving the definition of mobile payments, also states:
“Note that the location of the payer and supporting infrastructure is not important: the payer may be on the move (remote payments) or at a point of sale” (OECD, 2012).

According to the above definition, m-payments can be divided into two categories: proximity m-payments and remote m-payments.

Proximity m-payments are based on contactless NFC (Near Field Communication), giving consumers the possibility to settle payments at the point-of-sale by simply using their mobile phones. In other words, consumers, when carrying out a purchase, place their mobile phones near to the readers, and their relative account (a pre-paid one, mobile one, or bank one) will be charged accordingly (Karthikeyan, 2012; Liu, 2015).

This method of payment is getting more and more appealing among consumers because of its speed: in fact, it prevents people to wait in long queues (Karthikeyan, 2012).

Remote m-payments do not require NFC technology, but exploit mobile phones Short Message Service (SMS) capability instead. This kind of payment deducts directly from the mobile account or makes use of other applications (sometimes exploiting the Internet as well) to make payments through debit cards, credit cards, or third-party payment platforms (such as Alipay or PayPal) (Karthikeyan, 2012; Liu, 2015).

In other words, we can say that an m-payment is a new form of value transfer, similar to other payment instruments that consumers can use, but different from them in that it relies on the advanced features of mobile phones and the “tokenization” of a consumer’s financial credentials (Pandy and Crowe, 2014).

A token is a randomly generated substitute value used to replace sensitive information through a process referred to as tokenization. When used for financial transactions, tokens replace payments credentials, such as bank account and credit or debit card numbers. Removing actual payment credentials from the transaction flow can improve the security of the payment and, as such, is a key benefit of tokenization. The primary goal of tokenization is that of protecting the Primary Account Number (PAN). A PAN is a 13 to 19-digit number stamped in relief on a bank card end encoded on its magnetic strip. The PAN identifies the card issuer (in the Bank Identification Number, or BIN, in the first six digits) and
the individual cardholder account (usually in the final four digits). Plus, it includes a check digit for authentication.

Tokenization makes it possible for merchants not to store the full PAN on their network systems (except for processing or to resolve disputes) (Pandy and Crowe, 2014).

Such tokenization process reduces the risk of data breaches. In other words, the likelihood to be subject of fraud, theft, data compromise, unintended disclosure during disposal and other kinds of disruptions is highly reduced (Pandy and Crowe, 2014; Kauffman et al., 2015).

### 2.5 Types of mobile payments

There are many types of mobile payments, including SMS billing, unstructured supplementary service delivery (USSD), mobile web payments (mobile wallets), contactless near field communication (NFC), QR code and fingerprint.

#### 2.5.1 SMS/direct mobile billing

In SMS-based payments, a simple SMS becomes the means through which a consumer can settle the expenses incurred (Karthikeyan, 2012). This is the most basic type of mobile payments (Zhifu Baike, 2016). In fact, the transaction can be carried out even on basic mobile phones, without any need for using a smartphone (Karthikeyan, 2012): after the SMS payment system purchaser sends a text message to pay for an item or service, such text message is sent to mobile payments providers, which, in turn, clear the transaction between the purchaser and the vendor. The cost of the purchase is added to the monthly phone bill or deducted directly from a pre-paid balance by the mobile phone operator (Mobile Transaction, 2018).

#### 2.5.2 Unstructured supplementary service data (USSD)

USSD is a communication protocol available on every GSM-enabled mobile device (Karthikeyan, 2012; Maurer, 2015). It is a session-based text communication without a store-and-forward mechanism (unlike SMS) that is
practical for interactive communication, such as banking or education. USSD messages can have up to 182 alphanumeric characters: in order to use this method, you should dial the code specified by the service provider on your mobile phone and send it to the center (Shahrtech Company, 2018). For example, after dialing the code *770# on your mobile phone, you enter the options menu. Sending and receiving codes is designed in a way that guides the user to the destination (Shahrtech Company, 2018).

This mode of transaction is very secure, as this system requires the user to initiate a session with a special code; the user’s phone remains connected in a secure channel to the server until she logs out (Maurer, 2015).

This mode of transaction is also very quick: in fact, the time it takes from a request to a response is 2 seconds, so this method is much quicker than an SMS-based system, because it takes 6 seconds for an SMS to reach a mobile phone (Infobip, 2018).

The Wireless Application Protocol (WAP)\textsuperscript{23} supports USSD (Tech Target, 2018).

USSD is believed to be a critical piece of infrastructure used to provide mobile financial services (MFS) on nearly any phone, at low cost, and without requiring access to the user’s SIM card. USSD enables customers to send instructions to the MFS provider along with their personal identification number (PIN) for authentication, and, at the same time, enabling the MFS provider to send responses to clients and confirm transactions (CGAP, 2018).

\textbf{2.5.3 Mobile web payments/mobile wallets}

Mobile web-based payments can be used only after the consumer has downloaded a given application, which will be used to settle payments (Karthikeyan, 2012).

Mobile web-based payments are generally referred to as “mobile wallets”, since payment card information are stored on a mobile device, which becomes a virtual wallet (Investopedia, 2018b).

\textsuperscript{23} WAP is a technical standard protocol developed to transmit the information through a wireless mobile network (Karthikeyan, 2012).
When a purchase is carried out, the amount is deducted from the mobile wallet, which is, as already mentioned, connected to a given credit or debit account (Karthikeyan, 2012). This system exploits the WAP as well (Karthikeyan, 2012).

### 2.5.4 Contactless near field communication (NFC)

Since -at least- 2011, the emerging common standard for POS mobile transactions is near field communication (NFC) (Contini et al., 2011). As the name implies, such technology enables short range communication between compatible devices (Android Authority, 2018).

In this kind of communication, the transaction is carried out by just putting the NFC-enabled mobile phone near the POS terminal (Contini et al., 2011; Karthikeyan, 2012).

In order to use this system to pay, a merchant-specific or provider-specific application must be downloaded so that the amount owed can be loaded on it; the application then has a direct link with the user’s account or credit/debit details (Contini et al., 2011; Karthikeyan, 2012).

Since the distance between the terminal and the mobile phone is shorter than a meter, the transaction proves to be very secure. Further, as the terminal is furnished with a secure element that securely stores information (such as identity credentials and financial value), the data between the two devices are highly encrypted (Contini et al., 2011; Karthikeyan, 2012).

NFC is not a new technology and, as such, works with existing hardware, secure elements and communication protocols (Contini et al., 2011).

### 2.5.5 QR-code

Consumers can make payments by simply scanning a QR-code (Zhifu Baike, 2016). This is not a new technology: it was introduced in the 1990s and first spread over Japan and South Korea (Zhifu Baike, 2016).

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24 NFC-like contactless technologies (e.g. barcodes, stickers, micro SD chips) have been appearing in the market as well (Contini et al., 2011).
Following the development of IT technology, the advances of e-commerce and the spread over of smartphones, QR-code technology has occupied a leading position in mobile consumption (Zhifu Baike, 2016). Researchers believe that, in order to maintain low prices in payment transactions, mobile payments platforms should promote QR-code technology (Zhifu Baike, 2016).

2.5.6 Fingerprint

In Alipay version 8.4 or following, it is possible to pay through fingerprints (Zhifu Baike, 2016). In order to use this function, other than having the most recent Alipay app version, consumers must have at least ios8 system and iPhone 5S model, or an Android smartphone with such function incorporated (Zhifu Baike, 2016).

2.6 The rise of mobile payments in modern world

From a technological perspective, the last ten years have seen the rise of important changes and innovations, resulting in electronic commerce activities proliferating, new business models being introduced and electronic payments being launched (Ruiz-Martínéz, 2015). The use of e-payments based on credit and debit cards has been growing on the Internet over the years, and systems such as PayPal have seen their volume of payments increasing annually (Ruiz-Martínéz, 2015). Even though, at least until recently, the adoption of e-payments hasn’t been but a series of failed initiatives, new payment systems -such as Apple Pay- have continued appearing (Ruiz-Martínéz, 2015).

Mobile market growth has been driven by improvements in network coverage, competition (leading to falling prices), and personal income growth (Gardner et al., 2013). Even though it remains lower in some countries, coverage for basic mobile services (voice and text) and access to electricity to charge the phone has increased to almost universal availability over the last few years (Gardner et al., 2013; Maurer, 2015). However, we must bear in mind that not all the people having access to a mobile phone own it or subscribed to a service themselves.
Further, in 2013, smartphones overtook basic feature phones in worldwide sales (Maurer, 2015).

In mature markets, such as Europe and the United States, the barriers to access to mobile communications - such as political stability, defined and stable state funding regimes, economic growth to drive formation of a middle class and infrastructure rollout - were gradually overcome by the 1980s (Gardner et al., 2013). Further, it is to stress that in the wealthy Northern countries, mobile phone-based money services are not so necessary, because other payment systems are widely used and rather reliable (Maurer, 2015).

By contrast, in the developing world, penetration of mobile phones has increased steadily over the years 2008-2013, with ownership between 40-50% on average (Gardner et al., 2013). In the following years, this percentage increases to over 90% (though considering not only ownership, but access in general) (Dalinghaus et al., 2016). At the same time, access to basic services in banking (and other formal financial institutions), utilities, sanitation, electricity and education continues to fall short (Gardner et al., 2013; Dalinghaus et al., 2016). Further, in the developing world, physical banking or payment infrastructure may be missing (Contini et al., 2011). In countries where bank branches are few and far between, and where they are only within reach of the relatively well-off part of the population, having a phone serving as an access point for basic financial services like savings and money transfer can be really useful, as it helps people store or transfer wealth in a cheaper way than the existing alternatives (Maurer, 2015). Further, mobile phones, working as a platform (as they bring together financial service providers and clients, and provide them with a core functionality they can use to transact, and which can be incorporated into various financial products) can act as an enabler in the absence of traditional delivery modes and as vehicles for poverty alleviation by furnishing poor or historically marginalized populations with tools that can help them to secure, manage, and mobilize their money, both literally and figuratively (Machoka et al., 2011; Gardner et al., 2013; Maurer, 2015; Dalinghaus et al., 2016).

Further, mobile payments make it possible to overcome the limitations of physical transportation and utility systems, thus including individuals and small businesses that are more remote from banks (Contini et al., 2011).
In a concise way, we can simply say that mobile payments in the developing world are filling a need (Maurer, 2015).

Since 2013, technology has become widely accessible to all populations. Because of this, there has been an increased focus on the invaluable role it can play in improving social, economic and environmental development in emerging markets (Gardner et al., 2013). In fact, by having access to mobile technology and the capabilities it provides, the lives of these populations will fundamentally change: in other words, an increase in access to information at a faster pace and from new sources will influence everything (Gardner et al., 2013).

2.7 Mobile payments in China: an overview

As already mentioned in paragraph 2.6, mobile payment systems show different penetration rates in different national markets: while they have been slow to spread out in Europe, the United States and other countries where credit card payments are the dominant ones, they seem to have had a quite good success in Japan, South Korea and China, which were considered to be the three major mobile markets already in 2016 (Miao and Jayakar, 2016).

It took a short time to consumers in Japan and South Korea to embrace the new mobile payment methods, because the consumer banking and credit card systems they have access to are mostly underdeveloped (Miao and Jayakar, 2016).

Compared to Japan and South Korea, mobile payment industry in China started later (Miao and Jayakar, 2016). However, given that the national credit system was relatively undeveloped, and the size of the credit card market was quite small, there has been a noticeable growth in the mobile payment sector in recent years, since it has provided financial support for those who didn't have a bank card or didn’t have access to proper financial services (People, 2015; Xinhua Net, 2017). At the same time, the competition among mobile operators, banks (and bank unions) and third-party payment platforms has stimulated, if not even accelerated, the development of such mobile payments in China (Miao and Jayakar, 2016).

Mobile devices such as smartphones, Personal Digital Assistants (PDAs), tablets, and e-books readers have been gradually taking the place of personal
computers, which have been regarded as the traditional means of accessing the Internet until a few years ago (Miao and Jayakar, 2016). As noted by Miao and Jayakar (2016), this proliferation of mobile devices has created unprecedented opportunities for mobile commerce, causing mobile payments to acquire a growing importance over time.

Mobile payments have also become a major business sector, as an alternative method of payment offered by non-financial institutions. For instance, the average daily trading volume of Alipay has reached 10.6 billion yuan (equal to six percent of China’s national retail sale volume), where a large portion of these payments was made through m-payments (Liu, 2015).

According to China Internet Watch (2017), China’s mobile payment business saw 25.71 billion transactions in 2016, reaching a total amount of 157.55 trillion yuan. It increased by almost 85% from 2015, and it is expected to grow at 68% over the next two years (Capgemini, 2017). According to Walk the Chat (2017), in 2016, mobile payments amount for 74% of all online payments, and 42.4% of in-store purchase was carried out via non-cash payments.

In 2015, China’s mobile payments sector witnessed a great growth of 63.2% due to high increases in credit transfers and cards usage. This unprecedented growth rate is expected to continue at a CAGR (Compound Average Growth Rate) of 36.5% over the next five years. This indicates that the payments habits of users in China are transitioning directly from the use of cash to mobile payments (Capgemini, 2017).

This transition is reflected in high growth rates of both e-commerce and m-payments. Proximity mobile payments were estimated to have grown by 45% in China during 2016 and it has been estimated that more than 50% of smartphone users will adopt proximity mobile payments by 2020. The reason why this is possible is that Chinese shoppers are quite willing to store their payment information on their smartphones and are also willing to experiment with alternative payment methods (Capgemini, 2017). This suggests that mobile payments can’t but keep growing.

Currently, the usage of mobile payments in China is concentrated in large cities. In the coming years, experts expect growth in the urban markets to stabilize, and growth in rural markets to record higher growth rates (Capgemini, 2017).
According to Walk the Chat (2017), in 2016, Alipay and TenPay (WeChat Payment) together made up for 92% of the mobile payment market. Plus, Alipay made up for the majority (61.5%) of business-related transactions.

### 2.7.1 WeChat Pay

WeChat is the most popular instant messaging app in China: it counts 889 million users (China Channel, 2018).

WeChat Pay (微信钱包) is a third-party payment platform introduced by Tencent (Yangguangyao, 2017).

Once WeChat Pay is enabled on users’ mobile phone (i.e., a bank card is bound to WeChat Pay (Yangguangyao, 2017)), they can make payments at anytime and anywhere. In China, WeChat Pay is supported almost everywhere, and it allows to pay for everything, such as ordering taxi, paying at supermarkets, and even in hospitals.

WeChat offers four types of payment methods: Quick Pay, QR-Code Payment, In-App Web-based Payment and In-App Payment.

- With Quick Pay, sellers simply scan the QR-Code shown by customers on the Quick Pay page to carry out transactions.
- With the QR-Code Payment, sellers can create different QR-codes for different goods. When users scan these codes, they are able to see the relative product’s information and transaction guides directly on their phone.
- With In-App Web-based Payment, sellers can send product messages to their followers via an Official Account. With WeChat Pay enabled, their followers can purchase products on the relative shopping page.
- With In-App Payment, sellers can integrate WeChat Pay SDK (Software Development Kit) into their apps. When users make payment using other apps, WeChat will be authorized to process the payment. Once the transaction is completed, the page will redirect to the other app.

### 2.7.2 Alipay

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25 This section has WeChat Pay (2018) as major source, unless otherwise specified.

26 This section has Liu (2015) as major source, unless otherwise specified.
Alipay (支付宝) is the leading non-financial organization in online and mobile payments (Alipay, 2018) (not the leading one by number of users). It counts 520 million users (Alipay, 2018).

Alipay was the first third-party payments provider; it first exploited the huge development strength of Taobao Marketplace and later became an independent platform (Yangguangyao, 2017).

Alipay can be used to carry out free P2P (Person to Person) payments and online purchases, as well as to pay for ordinary expenses such as mobile phone bills, plane/train tickets, and water/electricity bills.

Customers can open a free Alipay account using an email address or a mobile phone number. After downloading the Alipay app onto their mobile phones, customers can enable their bank cards to transfer certain amounts of money to Alipay. Customers input the amount to be transferred, their PIN, and their bank card number so that the specified amount can be transferred.

If there are no savings on the Alipay fund, people can also bind a bank card (debit card only) to their Alipay account in order to carry out purchases.

When paying online, customers will only need to enter a code previously sent by SMS to the registered mobile phone for ordinary payment, or a personal password for quick payment.

At this point, it should be clear that Alipay provides payment services in two ways: on a prepaid model or charging directly from one’s bank card. Alipay acts as a platform service provider in both cases. In the first case, Alipay also provides a fund with interest for storing money; in this sense, Alipay acts as a quasi-financial institution.

In the second model, Alipay only provides platform services for the banks.

2.8 The evolution of the mobile payment industry in China

The first developments of Chinese mobile payments industry date back to 2000, when China Mobile started cooperating with Bank of China (BOC), Industrial and

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This section has Miao and Jayakar’s work (2016) as major source, unless otherwise specified.
Commercial Bank of China (ICBC), and other financial institutions, and introduced the first mobile phone banking service (Haitian Licai, 2015). In 2003, mobile operators hurried up to cooperate with financial institutions. The use of mobile payments services such as mobile banking, digital wallets, digital lottery and so on speeded up (Haitian Licai, 2015).

That same year, China Mobile and China UnionPay entered in partnership, stimulating the development of the Chinese mobile payments industry (Haitian Licai, 2015).

At the same time, the emergence of Alipay as the main third-party payments provider also stimulated the sector (Haitian Licai, 2015).

Since 2007, various mobile payment initiatives were announced by mobile operators, banks, and third-party providers. One of the earliest was the launch of “e-payment at will” by the China Merchants Bank in March 2007.

In 2008, the mobile payments industrial chain (including mobile operators, financial institutions, facilities providers) increased the efforts in spreading and innovating mobile payments (Haitian Licai, 2015).

Since 2009, 3G network coverage increased and the Internet continued getting better. At the same time, the broadband supported more complex mobile payments, enabling consumers to use more convenient and quicker real-time online services (Haitian Licai, 2015).

In April 2009, China Unicom launched new mobile phones with embedded NFC technology (CNII, 2009). In June 2009, China Telecom and Shanghai Bank of Communications made public the launch of new mobile phones with built-in “e-surfing” (天翼) electronic payment products. The only thing users had to do was to buy a special SD card, which enabled them to pay utilities, buy movie tickets and even make hospital appointments through their phone (QQ, 2009). Also in June 2009, the Bank of Communications launched a new type of mobile banking: the “e-mobile bank of communications” (e 动交行).

At the same time, China Mobile released new SIM cards supporting RFID, thus enabling consumers to use mobile payment services by exploiting mobile contactless technology on the phones they already owned.
In September 2009, China Union Pay launched its “Hand Pay” (手付通) product, which allowed for mobile payments to be carried out through POS and 3G wireless networks. China Union Pay and China Mobile, as well as other partnerships among smaller telecommunication companies and commercial banks, have later launched mobile wallet services (Ifeng, 2009). Many of these initiatives were launched by service providers that wanted to take part in the growing market of mobile payments.

Banks entered the market by themselves in order to avoid becoming subsidiaries of mobile operators, and mobile operators tried to exploit their customer relationships in order to create new revenue opportunities.

In May 2010, eighteen Chinese banks, card associations, MNOs, handset manufacturers and industry suppliers gave birth to an alliance aimed at creating standards and a business model for the introduction of a single and open platform to be used by businesses throughout China in order to offer NFC and mobile payments services (OECD, 2012).

In June 2010, the People’s Bank of China (PBC) officially announced the “Procedures for Non-Financial Institution Payment Service” (People’s Bank of China, 2010), that entered into force on September 1, 2010. According to such Procedures, no non-financial institution may engage in payment services without PBC approval. To provide further guidance, in December 2012, China’s Payment and Settlement Association set up the “Mobile Payments Committee” with participation from the major banks, mobile operators and third-party service providers, with the aim of formulating regulations and laws to protect consumers in mobile payment transactions (People, 2012).

2014 is called “the Chinese year zero for mobile payments” (Zhifu Baike, 2016). In fact, in this year, Alipay and WeChat respective “Kuaidi dache” (快的打车) and “Didi dache” (嘀嘀打车) (two mobile services used to call taxi in China) started the so-called “spend lavishly large-scale war”, intended at virtually cultivating consumers’ mobile payments custom (Zhifu Baike, 2016).

In 2015 and 2016, the most popular topic of conversation was the “red pocket” (红包) (Zhifu Baike, 2016). The red pocket is an envelope containing money, usually exchanged among relatives and friends in special occasions. Alipay and
WeChat made it possible to send red pockets through their platforms, gaining new users and keeping cultivating and encouraging consumers using mobile payments (Zhifu Baike, 2016).

In 2017, several banks strategically partnered with Internet firms to accelerate payment layout, such as China Construction Bank (CCB) with Alibaba, Industrial and Commercial Bank of China (ICBC) with JD.com, Agricultural Bank of China (ABC) with Baidu, and Bank of China (BOC) with Tencent (Globe News Wire, 2018).

From a technological point of view, QR-code technology was approved and regulations on barcode payment industry were issued, so it is likely that this type of payment technology will continue to be the leading one (Globe News Wire, 2018). However, biometric applications like fingerprint recognition and face-scanning payment have sprung up as well. With more demanding requests on payment security, NFC, HCE28, Token and biometrics technologies will continue to grow (Globe News Wire, 2018).

Cloud QuickPass products introduced in 2017 accelerated the development of NFC payment (Globe News Wire, 2018). In fact, China UnionPay, jointly with more than 30 commercial banks and payment institutions, launched "Mobile QuickPass" (云闪付) (Cision, 2017). It is a unified app for China's banking industry, which integrates mobile payment functions and benefits offered by multiple players in financial services and related industries (Cision, 2017).

The aim of this chapter was that of exploring the evolution of the technology that resulted in the creation of mobile payments and to describe the different types of mobile payments that exist nowadays. Further, the current state-of-the-art of mobile payment industry in China was described, making clear that nowadays WeChat and Alipay are the most commonly-used mobile payments platforms.

28 HCE stands for Host Card Emulation. It describes on-device technology that allows to perform card emulation on an NFC-enabled device, which doesn’t require being linked to an embedded secure element in the device, nor using a particular SIM card. In fact, the payment transaction is processed over a given app, which functions as a credit card (Sequent, 2018; Wirecard, 2018).
CHAPTER 3
NEW MOBILE PAYMENTS IN CHINA. A CASE STUDY.

In this chapter, the methodology of the research will be explained, and the findings that emerged from the survey itself will be discussed in detail.

3.1 Methodology

In order to realize the survey for this case study research, the first step was that of studying the existing literature about credit cards influencing consumers’ spending, since there is no such literature about new mobile payments (in that it is a still new field).

By studying how credit cards influence consumers’ spending, the major factors leading to differences in purchase decisions have been identified. Such factors have already been discussed in detail in chapter 1.

The research proposed in this chapter builds on the hypothesis that such factors may be at play in the case of mobile payments as well, and the survey tries to assess whether it is really the case or not.29

Once the major findings had been identified, talking to Chinese people to know their perceptions about new mobile payments (this preliminary process is hereinafter referred to as “pre-survey research”) seemed a good opportunity to create the multiple-choice answers for the survey. Since I lived in Beijing at that time, it was quite easy to talk to Chinese people directly. The major aim of this phase was that of understanding whether the findings about credit cards influencing consumers’ spending could really be valid for mobile payments as well. According to this pre-survey research, they can. This “matching” between research about credit cards influencing spending and people’s perceptions about mobile payments was useful in order to create the questions and the related multiple-choice answers for the survey. Further, the

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29 Note that the other questions and possible answers were identified by directly talking to Chinese people about their perceptions about the use of mobile payments.
results from this phase will be used to better explain (or will be compared with) the findings that resulted from the survey, if necessary.

After talking to Chinese people, the survey itself was written. Two versions were prepared: one in English and one in Chinese. The English one was for my supervisor to check and to make comments on, while the Chinese one was the one actually published for data collection. Both the English and the Chinese versions are available for consultation at Appendix A and Appendix B, respectively.

After preparing the Chinese version, a Chinese ex-teacher of mine helped me revise the content, the grammar and the logic of the survey I had drafted. This check-phase was necessary in order to be sure that what I wrote was logical and comprehensive to native Chinese speakers.

After making sure it made sense, the survey was published on Tencent Survey (腾讯问卷), a free Chinese platform for surveys easily accessible to Chinese respondents.

Lastly, when the survey expired (after two weeks since the date of publication) and data collected commented, this chapter was written.

3.1.1 Difficulties

The preparation of the survey was quite challenging for two main reasons.

First of all, typical survey apps or platforms used in Italy or, more in general, in Europe, couldn't be used. In fact, in China they wouldn't be accessible due to the censorship of the Web implemented by the Chinese government. For instance, a widely used platform for on-line surveys in Italy is Google Forms, but in China it wouldn't be accessible because Google is censored.

Further, in Italy, surveys are usually published on Facebook Groups (for instance, the university ones), in order to reach hundreds of people, but, in this case, this would have been of no use at all. In fact, just like Google, Facebook is censored as well, thus Chinese people have no access to it.

Moreover, I don't own any account on Chinese social media sites (except for WeChat, through which the survey was sent to the first respondents), so the survey couldn't be published on them. However, since Chinese people living in
Italy couldn’t help me, because the aim of this research was precisely that of assessing how mobile payments influence consumers’ spending behavior in China, perhaps with hindsight creating an account on any Chinese social media site would have been useful to reach more people. Because of these obstacles, an important stage was that of looking for a commonly-used survey platform among the Chinese. I finally found the mobile platform Tencent Survey, on which the survey was published.

3.2 The survey

The survey consisted of 29 questions. Most of the questions were multiple-choice ones, while others were single answers ones. They all were related to perceptions about and use of new mobile payments. Some final questions were demographic ones, assessing the sex and the age of respondents.

The survey was published on Tencent Survey on March 5th 2018 in Italy, already March 6th in China. It lasted until March 20th 2018, so respondents had two weeks-time to fill it in.

Since the day of the launch I sent the survey to 16 people and asked them to share it among their acquaintances, it is no wonder that the response rate peak was that same day.

In the end, a total of 48 answers were collected.
3.3 Results

48 people participated to my survey. The majority of them were female: the 68.8% was female and the remaining 31.2% male.

Most of them were aged 18-25 years old. This is probably due to the fact that the majority of people that were first contacted was more or less my same age and they, in turn, mainly sent the survey to their peers. The age of respondents is thus a pure chance, it was not my intention to only reach this age-range of respondents (in fact, as it is shown in the diagram below, other age bands were reached as well).

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30 The results are always in line with the pre-survey research, unless otherwise indicated.
46 people out of 48 stated they use mobile payments. In particular, 56.3% uses Alipay, 37.5% WeChat and the remaining affirmed that they use other platforms (however, they did not specify which one).

These results are in line with the information presented in paragraph 2.7 of chapter 2, where it is said that WeChat and Alipay make up for the majority of the mobile payments market.

![Mobile payment providers](chart.png)

### 3.3.1 Why use mobile payments

Question 2 was set to draw an overall picture of why people nowadays use mobile payments.

Most of the respondents specified that they do so because, in this way, they can avoid change-related problems: for instance, receiving wrong change and/or facing the possibility that shops do not have small change to give back to them are perceived as quite annoying facts. Further, these payment methods can lighten the weight of their bag/pockets and there is less possibility to lose money if compared with other payment methods (like cash or credit card).

Other respondents stated that they use mobile payments because shops may have discounts or special offers for users of this kind of payments.

Others supported that this payment method is quite clean and hygienic if compared to cash or coins, so they like to use it.
These answers show that the major reasons why people use mobile payments are their convenience, their support by merchants and their hygiene. Only think of going out only with your mobile phone, with no need of heavy bags and an array of credit/debit cards: isn't it a convenient choice? Doesn't it prevent you from forgetting money or bank cards at home or similar issues? Further, think of how many times you have taken a bill or a coin in your hand and could feel how dirty it was. Mobile payments seem to be able to overcome all of these problems.

3.3.2 When to use mobile payments

Questions 3 to 8 were to assess for which types of purchases consumers would use mobile payments. In three different questions, respondents were asked how they would pay to buy: a) lunch, b) a new mobile phone, and c) new clothes at the mall. In another three questions, they were asked why they chose precisely that payment method in that specific situation. The multiple-choice answers among which respondents could choose from were all identical in all three situations. This process was necessary in order to make results comparable.

The great majority of respondents indicated WeChat (or similar) as the preferred payment method. In particular, respectively: 41 people would use
mobile payments to buy lunch, 32 people would use it to buy a new mobile phone and 39 people would use it to buy new clothes. The main reason why they would use mobile payments in all three situations is that this payment method is quick and convenient. Further, when they go out, they only bring mobile phone with them, hence don’t use/need any cash or credit card.

In the case of buying lunch, another relevant reason to use a mobile payment method is that it is only a small amount of money, so consumers prefer to use this payment method.

In the cases of buying a mobile phone and buying new clothes, on the contrary, people prefer to use mobile payments because they have to pay a large amount of money.

In all three situations, a remarkable percentage of people also indicated that they like to use this payment method because it is safer against thefts.

Why use mobile payments to buy lunch

- Quick and convenient: 40%
- Go out only with mobile phone: 36%
- Small amount of money: 11%
- Big amount of money: 11%
- Safer against thefts: 2%
- Other: 0%
These results show that people are likely to use mobile payments in all circumstances: some to carry out a small-amount-of-money-purchase, others to carry out larger ones. Of course, differences in such a behavior depend on consumers’ preference, habits and many other factors. What we can say is that mobile payments, as it is for now, do not seem to be relegated to a specific purchase sector. In fact, their benefits are perceived in all industries: from the purchase of lunch to the purchase of a mobile phone and to the purchase of a new mobile phone. When I prepared the survey, I chose these three categories in order to have a more expensive item (mobile phone), a cheaper one (lunch), and one in the middle (clothes), in order to assess whether consumers preferred
using one payment method over another depending on the price of the product they were to purchase. However, the results seem to show that such factor is not relevant when choosing the payment method with which to carry out the purchase.

3.3.3 Perception of cash, credit cards and mobile payments

Questions 9 to 11 were to assess what comes to people’s mind when they think of cash, credit cards and mobile payments, respectively. The multiple-choice answers among which respondents could choose from were all identical in all three situations. This process was necessary in order to make results comparable.

**Cash** When asked what they think of cash, the great majority of respondents stated that in this case it is simple to manage one’s finances, hence there is not an overspending attitude. Further, in case of emergency, they have enough money to cover it. They also reported they need to pay further expenses to use this payment method (probably referring to the cost of withdrawing money from an ATM), so they do not use it to carry out transactions. Lastly, a relevant percentage of respondents also indicated that this payment method is quite easy to counterfeit, so they are not likely to use it.
Credit cards  When asked what they think of credit cards, respondents indicated that when they use this kind of payment, it seems they did not spend their own money or real money. Further, they believe that in case of emergency, they have enough money to cover it. Lastly, they stated that they may be charged further expenses when using it, so they are not likely to use this type of payment.

Mobile payments  When asked about their perception about mobile payments, most of the respondents thought of online shopping. Further, they stated that when they use this kind of payment, it seems like they did not spend their own money or real money. Moreover, they stated that with mobile payments it is simple to manage one’s finances, thus there is not an overspending attitude.
According to these results, mobile payments seem to let consumers easily manage their own finances. This result is not fully in compliance with the observations that were collected in the pre-survey research. In fact, in the preliminary phase, all the people I talked to acknowledged that mobile payments methods tend to lead to an overspending attitude, since, when you use them, it seems you are not using real money or your own money, so you tend to continue buying even though you don't really need those things, not taking into consideration the money you actually have in your balance. In such a case, it cannot be said that mobile payments allow an easy management of one’s finances.

However, it may be that respondents have misunderstood the question (it is possible since it was a written survey and not a face-to-face one, in case for which they could have made questions about the questions they had to answer and I, in turn, could have explained the request in another way in order to make them understand which was the focus of the question) and thought of the fact that mobile payment platforms indicate the balance of your account in a specified section. If this is really the case, they thought of the managerial side of the platforms instead of the exact moment in which they carry out purchases. Further support to this hypothesis is provided in the next section, where the majority of respondents stated that, when using a mobile payment method, they can have a clear idea of the money they spent and what is left on their account. It may be that I was not able to convey the message I wanted to assess: the idea was to
assess whether they actually thought of the money they actually had at their disposal or not in the exact moment they made the purchase.

Another point worth mentioning is that people tend to think of online shopping when asked about what comes to their mind when thinking of mobile payments because, nowadays, in China, online shopping platforms (one over the others: Taobao, in Chinese: 淘宝网) are having a great success, to the extent that, if you go to China, you will have the chance to see express delivery couriers (快递) crowding all the streets, especially those in front of universities, waiting for buyers to come over and pick their packages.

In any case, from these results, mobile payments seem to be more convenient of both cash and credit cards, in that people did not mention further expenses to use them (as they did, on the contrary, with cash and credit cards); plus, it seems to spend “fake money” (if compared to cash) when they use mobile payments. If you use fake money, it goes without saying that you tend to spend more, because your valuation of money is distorted.

3.3.4 Making purchases with cash, credit cards and mobile payments and related feeling

Questions 12 to 14 were to assess how people feel after purchasing something with cash, credit cards and mobile payments, respectively. The multiple-choice answers among which respondents could choose from were all identical in all three situations. This process was necessary in order to make results comparable.

Cash When asked how they feel after purchasing something with cash, most of the respondents indicated they feel guilty because they spent money. Further, they can have clear in mind the amount of money they spent, and that they feel they can buy whatever they want whenever they want.
Credit cards  When asked how they feel after purchasing something with a credit card, the majority of respondents said they feel guilty because they spent money. However, they recognize they can have a clear idea of the money left on their account and that they feel they can buy whatever they want whenever they want.

Mobile payments  When asked how they feel after purchasing something with a mobile payment method, most of the respondents indicated they feel excited because they can finally enjoy the product/service they purchased. Further, they
feel they can buy whatever they want whenever they want and they can exactly know the money they spent and the amount left on their account.

According to these results, it seems that people, when paying with cash or credit card, tend to see the cost of the purchase: in fact, they feel guilty because they spent money. On the contrary, they seem to see the benefits of the purchase when paying with mobile payments: in fact, they tend to feel excited because they can finally enjoy the product/service they bought.

These results seem to show that there is a strong correlation between the payment method and the perception of the product: the payment method hence influences how consumers perceive products and services purchased. This is only possible because mental account comes into play.

These results are totally in compliance with Chatteree and Rose’s findings (2011): there is a direct correlation between the payment method chosen and the features of the product that the consumer perceives and evaluate. Further, Thaler’s hypothesis (1999) that mental accounting is important seems to be valid as well: different product evaluation depending on the payment method chosen is only possible if mental accounting enters into play.

3.3.5 Different payment methods, same products?
The aim of question 15 was to assess whether people bought different products or different quantities of the same products depending on the payment method chosen to carry out the transaction. If they recognize they make different choices depending on the payment method they choose, it is legitimate to assume that in one case they tend to overspend with respect to another.

Question 15 asked participants to suppose that they usually made purchases with mobile payments but this time they were forced to use another payment method (like cash or credit card). The question continued by asking how they would react to this change: would they buy different products? Different quantities?

The majority of participants said they would buy the same products and in the same quantity, but many also indicated they would buy less and cheaper products.

These results suggest that, in many cases, mobile payments make consumers spend more and buy more than what they actually need. In fact, many of them recognized that, if they were forced to use a different payment method, they would change the type of products and the quantities they buy. This indicates that consumers, with payment methods other than mobile payments, would spend more time pondering their purchase decisions. This again seems to imply that mobile payments lead to an overspending attitude.
These results are in line with Raghubir and Srivastava's finding (2008), according to which payment coupling and payment form affect the level of transparency and of vividness with which money is spent. In other words, payment coupling and payment form affect the likelihood with which money is spent.

### 3.3.6 The role of previous payments

Questions 16-20 tried to assess whether previous payments affected future spending and, if so, how.

50% of respondents stated they did not remember the approximate amount of their last purchase, the other 50% said they remembered (question 17 asked them to estimate their last purchase, just to assess whether they recalled it or not, but, in this context, I think it is not relevant to report the amounts participants recalled). Even though half of the respondents declared they did not remember the amount of their last purchase, they all remembered the means they used to pay, and the 79.2% of them used a mobile payment method.

33 respondents indicated that remembering the last purchase helps them monitor their expenses and control them. These results are confirmed in the following question, since the majority of them indicated that if they remember exactly the amount of their last purchase they spend more or less the same or spend even
less in the next purchases. So, in this case, there is not a propensity to spend more.

However, 15 people indicated that previous payment do not play a significant role in controlling their expenses.

These results seem to support the fact that previous payments play a decisive role in influencing future spending, in that the majority of respondents declared previous payments do affect future spending.

More precisely, according to the preliminary research made while preparing the survey, it seems that consumers tend not to remember the amount of their last
purchase when they had used mobile payment methods. This suggests that, since they did not write down the amount they paid, they are less able to recall it.

These results are in line with Prelec and Loewenstein (1998) and Soman’s work (1998; 2001), according to which the learning and the rehearsal of the price paid and the immediacy with which wealth is depleted do influence future spending.

3.3.7 The role of cash

Questions 21 to 23 were to assess which is the role of cash in today’s Chinese society: do people bring cash with them? If they do, how much? And what do they use it for?

When asked if they usually bring cash with them (question 21), the 56.3% of respondents said no.

The following question (number 22) asked them: “If you do, how much do you bring?”, and the 33.3% indicated they bring less than ¥ 50 (roughly corresponding to € 6.47). Another 31.3% more than ¥ 200 (roughly corresponding to € 25.87), and the remaining ones bring amounts between the two values.

If they bring cash with them, they usually use it in case of emergency or to pay for small-amount-of-money purchases.
These results show that cash is getting less and less important in today’s Chinese society: China is transitioning towards (if it is not already) a cashless society.

This finding suggests that liquidity constraint is not the only explanation for preferring one payment method over another, as already mentioned in chapter 1. On the contrary, it seems that consumers themselves choose to reduce the use of certain payment methods (in this case, cash) and to prefer other payment methods (in this case, mobile payments).

3.3.8 Does the presence or absence of ATM affect consumers’ payment method decisions?

Questions 24–25 were to assess whether the presence or absence of an ATM could influence consumers’ payment method choice.

62.5% of respondents stated that the presence or absence of an ATM does not have any influence on their payment method decision.

However, when asked if it has and how, the majority of people stated that ATM is seen as an adjunctive cost, since they have to reach it and withdraw the money they need. Further, they declared that, since they have to pay further charges on the withdrawal, they do not use it. Lastly, they reported that they do not easily find an ATM nearby, hence prefer using other payment methods.
Even though the majority of respondents first declared that the presence or absence of an ATM does not affect their payment method decision, however, considerations about ATMs themselves reveal the contrary. In fact, from the answers to question 25, ATM is seen as a cost rather than an opportunity to withdraw money and hence use cash to carry out transactions. Options about the possibility of seeing ATMs as an opportunity to use cash as payment method were given among the choices respondents had to choose from, but clearly did not prevail.

Respondents first stated one thing, but the answer to the following question seem to reveal the contrary.

In brief, we can say that ATMs do affect consumers’ choice of payment method.

This finding suggests that, as already mentioned both in the previous sub-paragraph as well as in chapter 1, liquidity constraint is not the only explanation for preferring one payment method over another. On the contrary, it seems that consumers themselves choose to reduce the use of certain payment methods (in this case, cash) and to prefer other payment methods (in this case, mobile payments).

3.3.9 Further considerations of respondents

Question number 26 (the last one before the demographic questions) was optional and asked for further considerations about advantages and
disadvantages of mobile payments. Almost a third of the respondents completed it.

**Advantages** The majority of respondents declared that mobile payments are very convenient and quick. One person also noted that they are very hygienic and another one also stated that this kind of payment is really convenient because it allows to borrow and lend money.

**Disadvantages** As a disadvantage, some people indicated security issues: they believe that security and anti-theft precautions have to be increased. Presumably, they meant security against anti-identity-theft, which I know exists because a girl in my WeChat contacts was subject to this crime: a person stole her account and asked money to all of her WeChat contacts. One person stated that the main issue with these payment modes is only the possibility to lose your mobile phone. Another disadvantage, one person noted, is that it makes you spend more than the necessary.

Overall, even though respondents did not go into details in their observations, we can say that positive remarks seem to take over the negative ones.

### 3.4 Limits of this research

The results of this research are limited for two reasons.

First of all, the number of respondents is relatively small. In order to have more accurate details and information, it may be useful to make another research on a larger scale.

Second, and most importantly, the collected data is the result of a written survey and not of a direct observation of consumers’ spending behavior. In experiments of this type, it may be possible that participants, knowing that they are taking part in a survey, may be influenced by the context, thus not revealing their real perceptions.
However, despite the improvements that can be made, the data collected seem to be enough and useful to draw a first conclusion that mobile payments do influence consumers’ spending behavior. I hope this research can be a starting point to the study of mobile payments influence on consumers’ spending behavior.
CONCLUSION

In this work, I tried to assess whether and how mobile payments influence consumers’ spending behavior. This research was carried out with the help of a survey, which was prepared on the basis of the existing literature about credit cards influencing consumers’ spending behavior and on the talks I had directly with Chinese people.

According to the results of the survey discussed in chapter 3, the relation between mobile payments methods and increased spending seems to be true.

First of all, besides being much more hygienic than cash (a reason why people like them), mobile payments seem to simplify the whole process of spending: in fact, consumers only need to go out with their mobile phone and they already have all they need to carry out purchases. There is no need to bring cash or a (possibly) wide array of bank cards with them. Precisely for this reason, mobile payments methods seem to be a very quick and convenient way of paying, thus are preferred over other alternatives. Further, mobile payments solutions seem to be convenient in any case: from a small-amount-of-money purchase to a larger one.

Second, people seem to perceive products differently according to the payment method chosen. More specifically, they seem to perceive the benefits of the purchased product/service when paying with mobile payments rather than its costs, as it is, on the contrary, with cash and credit cards. In this sense, mobile payments go beyond credit cards: if in a relatively far away past people perceived the benefits when using credit cards rather than cash, now they see benefits when using mobile payments rather than credit cards. Precisely because people tend to see the benefits of the product/service purchased when using a mobile payment, just after the expenditure of money they feel excited because they can finally enjoy the product/service they bought. This is not the case with cash or credit cards: in fact, in these cases, people tend to feel guilty after the same expenditure of money.

According to these results, Chatterjee and Rose’s (2011) finding that people tend to evaluate products differently across different payment modes (discussed in chapter 1) seem to be valid in the case of mobile payments as well.
Third, people seem to spend less with payment methods other than mobile payments: according to the results of the survey, many people would buy cheaper products and, in many cases, also less quantities. This suggests that, when paying with “play money”, people tend to overspend just because it does not seem to spend their own money or real money. According to these results, Raghubir and Srivastava’s finding (2008) that payment coupling and payment form affect the transparency and the vividness with which money is spent (discussed in chapter 1) seem to be valid for mobile payments as well. More specifically, the higher the transparency and the vividness, the greater the pain of paying, the lower the level of spending. In the case of mobile payments, the transparency and the vividness with which money is spent is the minimum, thus encouraging spending.

Fourth, previous payments seem to have a positive impact on future spending: if one recalls the amount of money he/she spent, he/she is more likely to spend less in the next purchases. This is particularly the case when one pays with cash, in that he/she has a more vivid idea of the money he/she spent. In the case of mobile payments, people are less likely to recall the exact sum of money spent, hence tend to spend more in the future. According to these results, Prelec and Loewenstein (1998) and Soman’s works (1998; 2001) (discussed in chapter 1) seem to find further support: the learning and rehearsal of the price paid and the immediacy with which wealth is depleted play a vital role in influencing future spending in the case of mobile payments as well.

Fifth, the acceptance of mobile payments among consumers is once more highlighted by the fact that people are more and more going out without large amounts of cash in their wallets. In the case they do bring cash with them, they use it for emergencies or only to pay for small-amount-of-money purchases.

Sixth, another factor that leads consumers in preferring mobile payments is that ATMs are seen as a cost: in fact, in order to withdraw cash, you have to walk there and pay further charges on the withdrawal. Since mobile payments are much quicker, consumers do not see ATMs as an opportunity to use cash as a payment method. Living in a society where speed and convenience seem to take over everything, it is much easier and quicker to use mobile payments.
According to the last two points (fifth and sixth), the liquidity constraint mentioned in chapter 1 as one of the possible reasons why people tend to spend more with credit cards rather than cash seem to vanish, or, better, it loses importance because it is consumers themselves that decide not to bring/use cash as payment method.

If these results are valid, it means that, as already mentioned in chapter 1, the classical economic framing is limited when it comes to consumers’ spending behavior and choices, in that they are not mere rational, but rather highly influenced by psychology: nowadays, “mental accounting [still] matters” (Thaler, 1999).

The hypothesis mentioned in chapter 1 according to which credit cards may influence future spending because of the differences among consumers and because in the credit card bill many expenses among consumers and because in the credit card bill many expenses are blended together are not referred to. The former hypothesis holds true in any case: in fact, people choose which products to buy with the payment method they want; the latter is not referred to because mobile payments do not provide for a bill to arrive.

These results suggest that, in the majority of cases, people tend to overspend when using mobile payments solutions. They also show that the findings coupling credit cards use with increased spending (discussed and explained in detail in chapter 1) are valid in the case of mobile payments as well.

Further, these results show that China is transitioning towards (if it hasn’t already entered) a new era: the cashless society era, where mobile payments prevail not only over credit cards, but also, and especially, over cash. This is confirmed by the fact that mobile payment platforms allow to pay truly for everything through them: from the bill at the restaurant to the taxi fee, from the train ticket to the cinema ticket. Recently, it was made possible to pay also subway fare in Beijing through one’s mobile phone (The Beijinger, 2018). By now, it seems that everything can be purchased with one’s mobile phone, no matter whether it is a small-amount-of-money purchase or a larger one.
APPENDIX A – Survey (English version)

New Mobile Payment Methods in China

1) Do you use Wechat Pay (or similar, like Alipay)?
   o Yes
   o no

2) If yes, why? (multiple choice allowed)
   o It can lighten the weight of your bag/pockets
   o If compared with other payment methods (like cash or credit card) there’s less possibility to lose it
   o It can avoid change-related problems (ex.: wrong change, no small change, …)
   o If you use this payment method, stores may have discounts or special offers
   o It is a clean, hygienic payment method
   o other (please specify)

3) Suppose you were to buy your lunch. You prefer to pay through:
   o Wechat Pay (or similar, like Alipay)
   o Cash
   o Credit card
   o other

4) Why? (multiple choice allowed)
   o It’s a small amount of money
   o It’s a big amount of money
   o It’s more convenient and quick
   o You only have your phone with you, you don’t need cash or credit card
   o It is safer from thefts
   o Other (please specify)
5) Suppose you were to buy a new mobile phone. You prefer to pay through:
   o Wechat Pay (or similar, like Alipay)
   o Cash
   o Credit card
   o other

6) Why? (multiple choice allowed)
   o It’s a small amount of money
   o It’s a big amount of money
   o It’s more convenient and quick
   o You only have your phone with you, you don’t need cash or credit card
   o It is safer from thefts
   o Other (please specify)

7) Suppose you were to buy new clothes at the mall. You choose to pay through:
   o Wechat Pay (or similar, like Alipay)
   o Cash
   o Credit card
   o other

8) Why? (multiple choice allowed)
   o It’s a small amount of money
   o It’s a big amount of money
   o It’s more convenient and quick
   o You only have your phone with you, you don’t need cash or credit card
   o It is safer from thefts
   o Other (please specify)

9) If you think of cash payments, what do you think about? (multiple choice allowed)
   o You feel like it’s not like using real money/your own money
   o It is easier to manage your money: no overspending attitude
   o In case of an emergency that requires a (quite) big sum of money you have enough money to cover it
o Additional fees may be asked, so you tend not to use this payment method
o You use it for online purchases
o It is easy to be counterfeited
o Other (please specify)

10) If you think of credit card payments, what do you think about? (multiple choice allowed)
o You feel like it’s not like using real money/your own money
o It is easier to manage your money: no overspending attitude
o In case of an emergency that requires a (quite) big sum of money you have enough money to cover it
o Additional fees may be asked, so you tend not to use this payment method
o You use it for online purchases
o It is easy to be counterfeited
o Other (please specify)

11) If you think of Wechat Pay (or similar, like Alipay) payments, what do you think about? (multiple choice allowed)
o You feel like it’s not like using real money/your own money
o It is easier to manage your money: no overspending attitude
o In case of an emergency that requires a (quite) big sum of money you have enough money to cover it
o Additional fees may be asked, so you tend not to use this payment method
o You use it for online purchases
o It is easy to be counterfeited
o Other (please specify)

12) How do you feel after purchasing something by cash? (multiple choice allowed)
o Guilty because you spent money
o Excited because you can finally enjoy the product you bought
o Ready to make another purchase immediately
o You will wait a little time before buying something else
13) How do you feel after purchasing something by credit card? (multiple choice allowed)
   - Guilty because you spent money
   - Excited because you can finally enjoy the product you bought
   - Ready to make another purchase immediately
   - You will wait a little time before buying something else
   - You have clear in your mind the exact sum of money you spent
   - You have a clear idea of the money left on your account
   - You feel you can buy whatever you want whenever you want
   - Other (please specify)

14) How do you feel after purchasing something by WeChat Pay (or similar, like Alipay)? (multiple choice allowed)
   - Guilty because you spent money
   - Excited because you can finally enjoy the product you bought
   - Ready to make another purchase immediately
   - You will wait a little time before buying something else
   - You have clear in your mind the exact sum of money you spent
   - You have a clear idea of the money left on your account
   - You feel you can buy whatever you want whenever you want
   - Other (please specify)

15) Suppose you usually make your ordinary purchases through WeChat Pay (or similar, like Alipay). If you were forced to use another payment method (ex.: cash, credit card, ...), you would (multiple choice allowed):
   - Buy the same product
   - Look for a similar but cheaper product
   - Look for a similar but more expensive product
   - Buy the same quantity
- Buy smaller quantities
- Buy bigger quantities
- Other (please specify)

16) Do you remember the approximate amount of your last purchase?
- Yes
- No

17) How much was it (approximately)?
- Less than 50 yuan
- 50-100 yuan
- 100-200 yuan
- 200-300 yuan
- More than 300 yuan

18) How did you pay?
- Cash
- Credit Card
- Wechat Pay (or similar, like Alipay)
- You don’t remember

19) The role of previous payments. Previous payments:
- help you monitor your expenses
- help you control your expenses
- don’t help you keep track of your expenses
- don’t help you control your expenses

20) If you remember the exact amount of money you spent, you:
- Are more likely to spend less
- Spend more or less the same
- Are more likely to spend more

21) Do you usually bring cash with you?
- Yes
22) If yes, how much approximately?
   o 0-50 yuan
   o 50-100 yuan
   o 100-200 yuan
   o More than 200 yuan

23) If you do bring cash with you, what do you use it for? (multiple choice allowed)
   o In case of an emergency, you have ready money
   o To buy food and drinks
   o To make large purchases
   o To make small purchases
   o Other (please specify)

24) Does the presence/absence of an ATM affect your payment method choice?
   o Yes
   o no

25) If yes, how? (multiple choice allowed)
   o You see it as an adjunctive cost, because you have to go there and withdraw money
   o You have charges on the withdrawal, so you are less likely to withdraw money from an ATM
   o You usually cannot find ATM nearby, so you cannot withdraw the money you need. As a consequence, you choose other payment methods
   o You see it as an opportunity to withdraw the money you need, so that you can pay by cash
   o You always look for an ATM because it allows you to use cash for your payments
   o Other (please specify)

26) Further considerations on the advantages and/or disadvantages of these new payment methods (optional)
Some final data

Sex
  o  F
  o  M

Age
  o  under 18
  o  18-25
  o  26-35
  o  36-45
  o  Over 45

You usually use:
  o  Wechat Pay
  o  Alipay
  o  Other (please specify)
在中国的新移动付款方式

1) 你用微信（或相似的支付软件，如支付宝）付款吗？
   - 用
   - 不用

2) 如果用的话，为什么呢？
   - 减少你随身带的包或袋的重量
   - 跟别的付款方式相比（如，现金、信用卡、……）丢掉钱的可能性不大
   - 避免找零的问题（如，弄错钱、商店没有小零钱……）
   - 如果你用这种付款方式的话，商店会有给你折扣或特价
   - 这种付款方式很干净、卫生
   - 其他（请说明）

3) 假设你要买你的午餐。为了付款，你很可能用：
   - 微信（或相似的，如支付宝）
   - 现金
   - 信用卡
   - 其他

4) 为什么？（可以多选）
   - 你要付小金额
5) 假设你要买一台新手机。为了付款，你用:
- 微信（或相似的，如支付宝）
- 现金
- 信用卡
- 其他

6) 为什么?（可以多选）
- 你要付小金额
- 你要付大金额
- 这种付款方式更便捷
- 你出门你随身只带手机，不用现金、信用卡
- 更防盗
- 其他（请说明）

7) 假设你要在商场买新衣服。为了付款，你用:
- 微信（或相似的，如支付宝）
- 现金
- 信用卡
8) 为什么？（可以多选）

- 你要付小金额
- 你要付大金额
- 这种付款方式更便捷
- 你出门你随身只带手机，不用现金、信用卡
- 更防盗
- 其他（请说明）

9) 提到现金这种付款方式，你会想到什么？（可以多选）

- 钱好像不是真的/不是你自己的
- 管理你的钱更容易：没有超支的态度
- 需要（比较）多的钱的应急的情况下，你有足够钱
- 需要付额外费用，因此你不用这种付款方式
- 网购
- 造假很容易
- 其他（请说明）

10) 提到信用卡这种付款方式，你会想到什么？（可以多选）

- 钱好像不是真的/不是你自己的
- 管理你的钱更容易：没有超支的态度
- 需要（比较）多的钱的应急的情况下，你有足够钱
- 需要付额外费用，因此你不用这种付款方式
○ 网购
○ 造假很容易
○ 其他（请说明）

11) 提到微信（或相似的，如支付宝）这种付款方式，你会想到什么？（可以多选）
○ 钱好像不是真的/不是你自己的
○ 管理你的钱更容易：没有超支的态度
○ 需要（比较）多的钱的应急的情况下，你有足够钱
○ 需要付额外费用，因此你不用这种付款方式
○ 网购
○ 造假很容易
○ 其他（请说明）

12) 你用现金付款以后，你有什么感觉？（可以多选）
○ 内疚，因为你花了钱
○ 兴奋，因为你终于能使用你买的产品/服务
○ 你会马上买别的东西
○ 你会等一下才买别的东西
○ 你能准确知道你花的钱
○ 你能准确知道在你的账户上余留多少钱
○ 你觉得你能随时买任何东西
○ 其他（请说明）
13) 你用信用卡付款以后，你有什么感觉？（可以多选）
- 内疚，因为你花了钱
- 兴奋，因为你终于能使用你买的产品/服务
- 你会马上买别的东西
- 你会等一下才买别的东西
- 你能准确知道你花的钱
- 你能准确知道在你的账户上余留多少钱
- 你觉得你能随时买任何东西
- 其他（请说明）

14) 你用微信（或相似的，如支付宝）付款以后，你有什么感觉？
（可以多选）
- 内疚，因为你花了钱
- 兴奋，因为你终于能使用你买的产品/服务
- 你会马上买别的东西
- 你会等一下才买别的东西
- 你能准确知道你花的钱
- 你能准确知道在你的账户上余留多少钱
- 你觉得你能随时买任何东西
- 其他（请说明）

15) 假设你一般用微信（或相似的，如支付宝）付款。如果你得选并用别的付款方式（如现金、信用卡……），你会（可以多选）：
- 买一样的产品
○ 买相似的但更便宜的产品
○ 买相似的但更贵的产品
○ 买一样的数量
○ 买更少
○ 买更多
○ 其他（请说明）

16) 你还记得你最后的购物大概花了多少钱？
○ 记得
○ 不记得

17) 大概多少钱？
○ 50 元以下
○ 50 至 100 元
○ 100 至 200 元
○ 200 至 300 元
○ 300 元以上

18) 你用了什么付款方式呢？
○ 现金
○ 信用卡
○ 微信（或相似的，如支付宝）
○ 不记得
19) 最后的购买的角色。最后的购买：
   - 有助于你检测你花的钱
   - 有助于你控制你花的钱
   - 没有有助于你检测你花的钱
   - 没有有助于你控制你花的钱

20) 如果你具体记得你花的钱，你：
   - 很容易多花钱
   - 花差不多一样的钱
   - 很容易少花钱

21) 你一般随身带现金吗？
   - 带
   - 不带

22) 如果带现金的话，大概多少？
   - 50 元以下
   - 50 至 100 元
   - 100 至 200 元
   - 200 元以上

23) 如果带现金的话，你会买什么呢？（可以多选）
   - 在应急的情况下，你有现金
   - 买饮食
○ 要付大金额
○ 要付小金额
○ 其他（请说明）

24) 你附近有没有取款机对你的付款方式的决定有影响吗？
○ 有
○ 没有

25) 如果有的话，如何？（可以多选）
○ 像额外的成本一样，因为我要跑到那儿并且取款
○ 要付额外费用，所以我不愿意取钱
○ 一般附近你找不到取款机，所以你不能取钱。从而，你倾向于别的付款方式
○ 你觉得这是个机会取你需要的钱。这样，你可以用现金付款
○ 你一向找一台取款机，因为这样你会用现金付款
○ 其他（请说明）

26）别的关于移动付款方式的利弊的想法（任选）

最后的信息

性别：
○ 女性
○ 男性
年龄：
○ 18 岁以下
○ 18 岁至 25 岁
○ 26 岁至 35 岁
○ 36 岁至 45 岁
○ 45 岁以上

你一般用：
○ 微信
○ 支付宝
○ 其他（请说明）
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