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Share the happiness

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Sincerely,

Anne Julie Matveyev and Michelle Y. Hippe Alam

Executive summary

Due to the technological developments over the past year's payment methods have advanced significantly. This thesis aims to investigate how different payment methods affect consumers' behaviour. Today, consumers can choose to pay with several different payment methods, where many of these payment methods have been proven to make the consumers increasingly psychologically detached from the event of spending money (Shah, Eisenkraft, Bettman & Chartrand, 2015). The society is moving towards a "cashless economy", and it is therefore of high relevance to understand how different payment methods influence how much we value and feel psychologically connected to what we spend our money on (Shah et al., 2015). In addition to affecting our willingness to share, different forms of payments also impact our prosocial behaviour (e.g., donation amounts). Being prosocial is a personal characteristic in which a person wants to do things for others without expecting something in return (Bradley, Laurence & Ferguson, 2018). Since mobile payments have become an increasingly common way of paying, our research will contribute to understanding how the use of smart technology impacts individuals' prosociality.

In this paper we investigated if prosociality is affected by different payment methods, and if this connection is strengthened by the mediating effect of pain of paying and the perceived value of receiving a gift from e.g., a friend or family. This effect is measured by looking at the amount we are willing to share with others, in the form of a gift. In order to check for other variables that enhance prosociality, we looked at several moderators such as observability of the act, the attitudes towards mobile payments and attitudes towards prosociality. Two studies were conducted to explore if mobile payments make people more generous when treating their friends, distinguishing between mobile payments and gift cards or credit cards. Previous studies have found a clear difference between the use of cash and credit card, while the distinction between credit card and mobile payment has not yet been studied as extensively. In conclusion, our studies find no statistical difference in the levels of prosocial gifting between individuals that use mobile payments relative to gift card and credit card. In addition, the paper gives thorough insights about which mechanisms affect our prosociality.

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1.0 Introduction

Over the past years, technological development has advanced significantly, making the way we live simpler. A part of this development has been to make contactless payment methods that makes purchasing and transferring money more effective. Many new mobile payment applications have appeared over the years, such as Apple Pay, Google Pay, PayPal and even national solutions such as the Norwegian mobile payment called Vipps. In 2019, 3.4 million of the Norwegian population were active users of Vipps, and most likely this number is even higher today (Trumpy, 2019). Almost everyone in Norway has access to a smartphone, and according to SSB (2018) this number is as high as 95%. Despite the increased use of mobiles as a payment method, there has been little research on the topic. With new payment methods it can be expected that consumers will change their behaviour and attitudes towards paying for products or services, in addition to their willingness to share with others. The change from cash to credit card payment has already been studied extensively and shows that there are many psychological and behavioural mechanisms which are affected by the salience of the payment method.

The focus of previous research has mainly been on the difference between cash and card payments. Throughout the years, results of experiments have shown that there is a clear difference between paying by cash than by card. These show that individuals who pay with cash express more psychological connection to the object purchased compared to those paying with plastic cards (Shah et al., 2015). In addition, individuals paying with cash felt more pain when parting with their money than individuals paying with a credit card. As a result of the decreased pain of paying, the focus was changed from the cost of purchasing the product to the benefit of purchasing it (Falk, Kunz, Schepers & Mrozek, 2016). This can be both very risky for consumers, but also positive for shops, as consumers might spend more due to the reduced transparency of the payment method.

In recent years, a trend that has emerged is the gradual reduction of cash payment and the increase of more advanced payment technology, such as mobile or online transactions. Because of the recent development, previous research has focused mostly on the attitudes towards adoption of mobile payment with little focus on the psychological effects of these platforms (Dahlberg, Guo & Ondrus, 2015).

There are many studies concerning the difference between using cash or credit cards. Although there is a clear difference between the payment methods, there is a need for more research on payments when using a smartphone. The number of studies focusing on using mobile payment as a payment method are few, thus it is difficult to draw conclusions based on the studies that are currently available. There are also no studies investigating the effect of different payment methods on interpersonal relations and how it affects our behaviour.

With our study, we wish to extend previous research by looking at how different payment methods affect our interpersonal relations. One outcome that we will be looking closer at is the participants' prosociality by comparing the amount we gift others with depending on the payment method we use. This will be mediated by how painful it is to part with the money and how we perceive the value of the gift. After analysing previous research, we find that there are several reasons why people choose to share with others. Some give in order to get something in return, while others do it to self-signal themselves, showing others that they are good persons (Bodner & Prelec, 2001; Gneezy, Gneezy, Riener & Nelson, 2012). When doing prosocial acts, the giver does not expect something in return, but has intrinsic motivation for doing so (Bradley et al., 2018). Therefore, our research question became as follows: *How will the use of smartphone payment technologies impact individuals' prosociality when gifting a friend?*

In this paper we will research whether or not the behavioural or attitudinal outcome of the amount gifted to other people will be affected by the level of pain of paying, in addition to individuals' perceived value of either a gift or a treat. The behaviour of an individual depends on the choice of payment method. We will therefore look into the behavioural and attitudinal effects of using a gift card versus mobile payment in the first study, and credit card payment versus mobile payment in the second. Both studies will be conducted as experiments, where the participants were divided into two groups. In both studies, the participants will be given a scenario where they will treat their friend using a specific payment method that they are randomly assigned to.

2.0 Literature review

In the literature review, we will look into previous research on how the different payment methods affect the different mechanisms that we will use in our study to investigate the effects on prosociality. The mechanisms that are used in this study are based on what has previously been proved to lead to prosocial behaviour and sharing. The links that we will make is how technology impacts our behaviour, and which attitudinal variables affect this behaviour.

2.1 The impact of payment method on prosocial behaviour (prosociality)

Before looking at how different payment methods impact our behaviour, we must look at what characteristics of these payment methods makes us behave in a certain way. One of the main topics that are discussed in previous research is the transparency of the payment method. In this context it means that if a payment method is transparent, the user is aware of the amount they are spending. The transparency of the payment method used, according to Soman (2003), is given by the three following factors: 1) salience of the payment method, 2) salience of the amount paid and 3) relative timing of transaction and money outflow. The more transparent the payment method is, the higher the pain of paying and the lower the willingness to spend will be (Van der Horst & Matthijsen, 2013). The phenomenon of pain of paying comes from the fact that people do not like to spend money, thus whenever they make a transaction, they experience some form of pain, due to parting with their money (Zellermayer, 1996). Pain of paying is also related to a consumer's self-regulation when it comes to spending money (Prelec & Loewenstein, 1998). Another variable that has been proved to affect our spending is the observability of the act, as people like to self-signal (Bodner & Prelec, 2001; Gneezy et al., 2012). This means depending on the payment method and the level of observability of the act, the willingness to spend will vary, and will therefore affect our prosociality.

2.1.1 Salience of the payment method

There are three different payment methods that are commonly used; 1) cash, 2) credit card and debit card, and 3) mobile payment. Cash is the form of payment that makes it most clear that you are spending “real” money (Van der Horst & Matthijsen, 2013). Typically, in an identical purchase situation people will, according to research, tend to increase the propensity to spend more money when

using credit card as opposed to cash (Chatterjee & Rose, 2011). Although, according to Raghuram and Srivastava (2002), people tend to recall their cash payments better than their credit card expenses, which means that the salience of credit card payments is lower. This implies that the spending behaviour is likely to be reduced if the salience of parting with money is high at the point of purchase.

A study performed in Germany by Kalckreuth, Schmidt and Stix (2014), focused on the implications of payment methods and withdrawal behaviour. They showed that while paying with cash, individuals were more observant and knew the amount they had left. The result of the study showed that the threshold of paying was higher when paying with cash as compared to using a credit card. People relying mostly or solely on paying using cash were shown to be more able to control their spending. The same study also found that some groups of people, especially those who were unable to process abstract information, found it easier to understand what they were spending when using cash (Kalckreuth et al., 2014).

The different types of plastic cards should also be distinguished. In addition to credit and debit cards, there also exist prepaid cards and gift cards, which can also be used to make purchases. All of these cards have a similar physical appearance, only with different usage properties and patterns. Prepaid cards are a type of debit card that is issued by a financial institution or credit card company. Regularly, they are deposited or “loaded” with an amount of money. On the other hand, gift cards are also a type of debit card which is loaded with funds or future discretionary use. This type of card is usually given to a consumer by e.g., friends, family or others, whereas prepaid cards are topped up by the consumer himself or herself. When the amount on the card is used, the gift card can no longer be used. This type of card has an expiration date, which is often much shorter than a prepaid card. When using gift cards, the merchants have already received payment, when using debit and prepaid cards the money is transferred at the point of purchase, while when using a credit card the consumers’ debt is settled at a later date, thus the consumer essentially delays the actual payment (Hands on Banking, 2020). The salience of these two cards is therefore very different as in one of the cases it is the person himself who parts with the money, while in the other case the person has received it as a gift.

Current studies show that payments with smartphones can lead to a better consumer experience (Komulainen & Saraniemi, 2019; De Kerviler, Demoulin & Zidda, 2016). The understanding of how personal devices will be perceived by consumers in a payment context will be increasingly relevant as technologies and the internet of things become ubiquitous. Therefore, more research has to be done in order to understand how consumers change their behaviour when paying with a smartphone versus other types of payment methods.

2.1.2 Salience of the amount

The perceived amount paid will change depending on which payment method is used (Van der Horst & Matthijsen, 2013). When paying with cash, individuals will be more aware of the amount being paid compared to other payment methods. According to Soman (2003), payments through cash are very salient because it is physical, since consumers can easily see how much money they have spent. In addition, individuals will easily know the amount spent as it can be counted, as opposed to using a credit card where you cannot physically see the money spent. Further, when using a credit card, consumers will tend to pay less attention to how much they are being charged for the product or service, which is due to the fact that the salience is lower. Cash have different physical properties than cards and smartphones, which increases the salience of the payment method. According to the authors, Dijkman and Zadeh (2011), of the book *Psychologeld*, consumers focus more on entering their PIN code to make sure no one sees it rather than paying attention to the amount being transferred.

In addition, mobile payments have a salience that is even lower (Soman, 2015). The reason for this is that most mobile payments require little to no physical action in order to transfer the money. The individual paying does not need to write in the security code or authorise the payment (Falk et al., 2016). Although, this depends on the software that one chooses to use. Mobile payments such as Vipps requires you to authorize the payment before transferring the money, although the action still requires less effort than using a credit card, making it still less salient than other options. In addition, smartphones are also used for other purposes not involving making a purchase, meaning that the smartphone is not only associated with payments, but with other functions as calls, messages, games and work. This

makes the smartphone different from credit cards, as these are only used in a payment situation.

2.1.3 Transparency of the payment method

With lower transparency, the pain of paying with a credit card or mobile payment is reduced, which has been proven to increase spending among users. When being exposed to credit card cues, consumers tend to associate it with easy money, and forget the effort behind the money, in turn lowering the perceived value of it (Wong & Lynn, 2017). Soman (2003) found that the major difference between the payment methods, cash, credit card and mobile payment, was its transparency, as shown in *Table 1*. Payments with cash were highly transparent, while using credit cards, were not as transparent. Since mobile payment makes the payment experience even less transparent, one can assume that the importance of the amount is reduced even more. This implies that consumers would care less about the amount spent and in turn spend more money in general.

Table 1. Characteristics of payment methods

	Saliency of form	Saliency of amount	Payment transparency
Cash	High	High	High
Card	Medium	Low	Medium
Mobile	Low	Low-medium	Low

Source: Based on Soman (2003).

According to a recently published study by Boden, Maier and Wilken (2020), one can assume that mobile payments have lower transparency than credit card payments, because smartphones have many distracting functions other than just paying, which will reduce the latter's transparency. They also find that credit cards and mobile payment induce higher willingness to pay compared to cash. In addition, they find that credit card and mobile payments are not significantly different from each other, which is suggested to be caused by the similar low pain of paying for both credit card and mobile payment compared to the pain of paying with cash. The non-effect between credit card and mobile payment might be due to not accounting for adoption of the payment method. They also suggest that the

ability to check banking apps and monitor spending on the smartphone negates some of the reduced transparency that these devices provide.

In addition, when comparing mobile payments with other types of payment methods, one can see that gift cards are the closest one (Soman, 2015). This is due to the salience of the form and the amount being lowest, as shown in *Table 1* and *2*. The amount stored on a gift card is prepaid by someone else, and the card only has to be handed over for the money to be used. It is therefore valuable to see how mobile payments differ psychologically to gift cards as they both have a low salience.

Table 2. The transparency of payment mechanisms

Payment Mechanism (from most transparent to least)	Salience of form	Salience of amount	Relative timing of money outflow and purchase
Cash	Very high	High	Concurrent
Check	High	High	Payment after purchase
Credit Card	Medium	Medium	Payment significantly after purchase
Debit Card	Medium	Medium	Concurrent
Stored Value Card (Gift card)	Low	Low	Payment before purchase
Autopay (Direct debit from bank account)	Very Low	Very Low	Concurrent

Source: Based on Soman (2015).

2.1.4 Behaviour when being observed

Another aspect that can affect the amount shared with others is the observability of the act. Bradley et al. (2018) researched the effect of observability on prosocial behaviour and found that humans do prosocial acts in order to promote their qualities to others, gain a good reputation or in the hope of getting something in return. The effect of observability increases when participants feel they gain something by doing a prosocial act. This concept is often related to the notion of self-signalling, making choices that enhance one’s self-image, for example, by

signalling information to the self (Bodner & Prelec, 2001; Gneezy et al., 2012). Being prosocial in this setting means having a certain behaviour that benefits the welfare of individuals or the society as a whole. Overt observation is most effective on prosocial behaviour and is a form of observation where the observer knows who the person is, and that the individual being observed is aware that their behaviour will be visible to others during or after the decision (Bradley et al., 2018). In other words, this might affect our behaviour differently based on which payment methods we use. If some payment methods appear as more visible to others, then this might lead to more prosocial behaviour.

2.2 The impact of payment method on prosocial attitudes

2.2.1 Exchange vs. communal oriented individuals

Following the conclusions made above, we can see that by changing the payment method, the consumers change their purchase behaviour accordingly. It is therefore safe to assume that their attitudes also change. When exchanging gifts with e.g., a friend, an important attitudinal and behavioural mechanism is reciprocity, which is the expectation of receiving something similar in return after doing someone else a favour (Greco, Whitson, O'Boyle & Wang, 2019). In other words, reciprocal behaviour may remind of people with exchange orientation, with a focus on receiving a similar advantage in return for the favour given. A person that is exchange oriented will find it important to reciprocate immediately with the exact amount in return for the favour (Buuk, Doosje, Jans & Hopstaken, 1993).

The payment method that is chosen might determine how much and how fast the favour is returned. When using gift cards, returning the favour would most likely be next time you would give someone a gift. In this case, it is also very clear what the value of the gift is. On the other hand, if the payment is done through a regular payment method such as credit card or cash, the value of the gift is determined by the perceived value of the gift and not the actual monetary amount. The amount reciprocated when using other payment methods than gift cards will therefore most likely be affected by the receiver's attitudes towards the gift as they do not know the exact amount spent on it.

Reciprocal behaviour is primarily driven by kindness to reduce the inequity between two people (Falk & Fischbacher, 2001). According to Buunk et al. (1993) theorists mean that relationships are, in general, more balanced when there is a perceived reciprocity. The challenge with reciprocity is that in some exchanges there may appear a fear of not being able to repay the debt, which will create an imbalance between the two people in the exchange situation. If an individual gives more than the individual receives, it can create feelings of resentment. On the other hand, when giving less than receiving one can create feelings of guilt and shame (Buunk et al., 1993). Giving a gift card as opposed to treating a friend with a gift using a different payment method, could therefore be more predictable as the receiver knows the exact value.

In some exchange situations, the amount that is reciprocated is more important than others, depending on the orientation of the people giving and receiving. The opposite of exchange orientation is communal orientation, where the giver does not expect something in return for a favour given. The challenge with this orientation is that when doing prosocial acts, the value of the exchange might be ambiguous, which very easily can result in a mismatch in the value reciprocated in return for the favour. For some people caring for others like they care for themselves can be very rewarding. Having a communal orientation can, as a result, lead to prosocial behaviour in individuals as they experience greater satisfaction and joy in their relationships by being prosocial. A common trait people with communal orientation have is that they do not expect anything in return for the favour (Le, Impett, Kogan, Webster & Cheng, 2013; Buunk et al., 1993). Having a communal orientation can therefore have a significant effect on the willingness to share when having the opportunity as it is not dependent on receiving something in return. This personal trait might therefore affect the amount shared with others.

2.2.2 Reciprocity influenced by pain of paying

The expectation of receiving something in return depends on the orientation of an individual. What is expected in return can either be extrinsic or intrinsic, in the form of a physical gift or appraisal. A study by Shah et al. (2015) showed that people who pay with more painful forms of money will be both more psychologically and more behaviourally committed to their chosen alternative. As

a result, one might expect less painful payment methods to lead to lower expectations in return for a favour, making people more prosocial. This means that the expectation to receive something in return when using mobile payment may be lower than if using a credit card to pay for the gift.

Because of the salience of the mobile payments, shoppers become emotionally detached from the money streaming out of their account. Less painful payments have been proven to make the shopper focus more on the benefits of the purchase as opposed to the costs, making them spend more money when using less transparent payment methods such as mobile payments (Falk et al., 2016). Because of this, the consumer might underestimate the cost of purchasing the products, as they do not feel any pain when making the purchase. On the other hand, research shows that the choice of payment method influences the psychological ownership consumers feel towards a product, and that paying with a credit card made the individuals less connected to the product and they felt less ownership compared to individuals paying using cash (Kamleitner & Erki, 2012). The same study also confirmed that using credit cards when paying made the transaction less salient and painful.

As a result, Falk et al. (2016) found that due to this, consumers' perception of the overall store price image was reduced. In addition to reducing the perceived price, another study found that switching from cash to card payment can increase the willingness to pay with over 100 percent (Prelec & Simester, 2001). Again, the effect is said to be due to the transparency of the payment, making the willingness to pay even stronger when using mobile payment (Falk et al., 2016). This is also in line with the study done by Boden et al. (2020), that studied the difference between payments through credit cards and smartphones. In this study, they showed that the convenience of mobile payment is a mediator for willingness to pay, in the case where the user has already adopted the payment method. This implies that the willingness to pay for a product increases when using mobile payments due to the convenience of using this payment method. The difference between our study and previous studies is that previous studies have focused specifically on the effect of purchasing a product, but in our case, we wish to look specifically at interpersonal relations. We want to find out how much individuals

are willing to pay when they are treating their friend and how different payment methods affect their attitude towards treating others.

2.3 The mediating effects on prosociality

2.3.1 Pain of paying

A lot of research in recent years has been done on the psychological aspect of paying, also known as the pain of paying. The pain of paying can vary depending on personal characteristics, as tightwads will perceive payments as more painful than spendthrifts will (Wong & Lynn, 2017). As the different payment methods do not have the same amount of transparency, the pain of paying will also vary. The findings from previous research on the different payment methods are described below.

2.3.1.1 Pain of paying with cash

Cash is perceived to be the most transparent and psychologically proximal form of payment (Shah et al., 2015). Consumers feel that they can easily feel the money that they are spending during a transaction, as cash is one of the most tangible payment methods, thus it is easy to see how much they have spent (Soman, 2001). Paying with cash makes the transaction more transparent, thus the consumer can easily see or be reminded of his or her own wealth depleting when paying. Because of cash transparency and tangibility, Raghurir and Srivastava (2008) argue that cash is the most painful form of payment.

2.3.1.2 Pain of paying with credit and debit cards

Today, most consumers prefer to use either credit or debit cards as their method of payment (TSYS, 2018). Whenever you pay, you perform the same action regardless of the size of the payment, thus people are more divorced from the value they are departing with. These plastic cards are less transparent than cash, thus reducing the pain of paying (Raghurir & Srivastava, 2008). Within the card landscape, there is also a distinction to be made between credit and debit cards. When paying with debit cards, the amount is instantly withdrawn from your account. Paying with a credit card delays the actual payment, thus the pain of paying at that moment is reduced even more.

There is a clear difference between using cash and credit cards (Raghubir & Srivastava, 2008). In the case of cash purchases, there is a strong connection between the consumption and payment which highlights the pain of paying. On the other hand, with credit card purchases the parting of money happens after the consumer has decided to perform the transaction, this makes the pain of paying less intense. Therefore, the observed bias in spending across the use of cash and credit card payments is due to the fact that paying with cash inflicts a higher pain of paying as compared to credit card. In the future, people will be more likely to underestimate the pain of paying due to the salience of the payment methods, and therefore spend more money. Raghubir and Srivastava (2008) argue that payment methods like credit cards and gift cards can be more easily thought of as a form of “*monopoly money*”, due to being less transparent than cash. These payment methods will therefore have lower pain of paying. When comparing the use of a gift card relative to cash, frivolous spending is more likely to occur with a gift card than cash (Raghubir & Srivastava, 2008). The use of credit cards and gift cards is more likely to be associated with free spending and hedonic consumption, while cash, a more transparent payment method, is associated with thriftiness and utilitarian consumption.

2.3.1.3 Pain of paying with smartphones

In recent years, technological developments have allowed people to use their smartphones when making a purchase. This form of payment is even less transparent than credit and debit cards. According to Consumer Reports (2017), Raghubir performed a study where consumers were asked about how similar technologies like Apple Pay and credit cards are to cash. On a 100-point scale, where 100 points represented cash, the average answer by the participants on how similar Apple Pay was to cash was 56 points. Credit cards averaged 72 points. This shows that paying with mobile wallets or mobile payments are perceived differently than cash and credit card payments. In turn, as mobile payments are farther away from cash, the difference in pain of paying between these payment methods should be larger.

2.3.2 Consumers perceived value

When setting a price on a product, an important factor to consider is the perceived value of the product in the eyes of the consumers (Lehmann & Winer, 2005). This

value is based on the perceived benefits of the product and the reference points from the past. In addition to price, quality has a significant effect on the perceived value (Lehmann & Winer, 2005; Sweeney & Soutar, 2001). One could expect that this would be similar to receiving a gift. The perceived value of the gift might be affected by previous gift giving, the perceived quality and benefits. In a study done by Gunasti and Baskin (2018), they showed that luxury gift cards (e.g., from jewellery stores) are valued less than non-luxury gift cards (e.g., kitchen utensils stores) by receivers with the identical amount stored on it, and that luxury gift cards are more likely to be swapped or sold. The study proves that receivers value gift cards that are non-luxury over luxury gift cards as the perceived utility of the gift is higher. Ironically, givers value luxury gift cards more, as they focus more on the cost aspect of the gift.

An earlier study done by Zhang and Epley (2009) shows the same results for gift giving in general, in that the perceived value of the gift in the eyes of the giver and the receiver is based on different moderators. The person giving the gift will often base the value of the gift on the cost of purchasing it, while the person receiving it will base the value of the product on the perceived benefit. When expecting something in return, the previous giver will expect a gift in return that matches the cost of the gift that they gave. The challenge occurs when the perceived value of the gift, in the eyes of the receiver, is lower than the actual cost of the gift. In that case, the receiver might give a gift in return of lower value than the gift that they received. As a result, the person giving back might appear as ungrateful or unfair by the receiver (Zhang & Epley, 2009). Although in our case, if the giver purchases the gift by using mobile payment, the individual will also focus on the benefits of the gift due to the lower pain of paying. In turn, this might result in the giver and the receiver both focusing on the perceived benefits of the gift. The mismatch between the perceptions becomes in other words smaller. This mechanism is in other words strongly associated with reciprocity, as the perceived value is represented in the perceived costs and benefits of the gift, and the expectation to get the same value back.

The perceived value of a gift from a utilitarian perspective can take three different forms; 1) economic value, 2) functional value and 3) social value (Anton, Camarero & Gil, 2014). The economic value of the product is solely the price of

the gift received, while the functional value is how useful the product is to the receiver. The last is the social value, meaning that the receiver gains some form of approval or acceptance by obtaining the item (gift). This again is also connected to the social approval of gift giving. Gifts can also have an expressive value, meaning either a sentimental or emotional value which is subjective to the giver and receiver. The perceived value of a gift has been proven to increase the satisfaction and the intention to give back. Anton, Camarero and Gil (2014) prove in their study that the perceived value has a mediating effect on intention. For gift givers, the perceived value of a luxury gift will often signal luxury, symbolism and desirability, but for the receiver of the gift it might signal impracticality resulting in a reduced intention to reciprocate (Gunasti & Baskin, 2018).

An interesting aspect to look into here would be if the new payment methods affect the perceived value of the gift received. As mentioned earlier, with new payment methods the pain of paying has been reduced, but might this also affect how the receivers of the payment perceive the value? In addition, the cost of time is reduced significantly for the givers when sending money through mobile applications as opposed to meeting the person face to face in order to give them a gift card. For the first study in which we are comparing mobile payments with gift cards, the valuation of a gift card might be different as you to a higher degree are locked to a certain type of product. According to previous studies, receivers' value utilitarian gift cards more, meaning that perceived utility in this case is an important mediator in order to determine the value of the gift received (Gunasti & Baskin, 2018). We therefore provide a second study comparing credit cards and mobile payment to see if there is a difference in the valuation of the gift, as these two payment methods are more similar in this scenario than mobile payment and gift cards are.

2.4 Summary of contributions

As a summary, we have created *Table 3* in order to make it easier to get an overview of the contributions from previous research. The table includes the main concepts that we will use further in this paper.

Table 3. Contributions from previous research

Findings	Effect(s) of payment methods	Sources
Salience		
In an identical purchase situation people will tend to spend more money when using credit card as opposed to cash.	Higher spending with credit card than cash.	(Chatterjee & Rose, 2011)
People tend to recall their cash payments better than their credit card expenses.	Lowest salience for credit cards.	(Raghubir & Srivastava, 2002)
Payments through cash are very salient because it is physical, since consumers can easily see how much money they have spent.	Mobile payment has the lowest salience.	(Soman, 2003)
When comparing mobile payments with other types of payment methods, one can see that gift cards are the closest one. <This is due to the salience of the form and the amount being lowest.	Mobile payment has the lowest salience, followed by gift card, credit card and cash.	(Soman, 2015)
Willingness to spend		
Higher pain of paying leads to lower willingness to pay.	Cash has the highest pain of paying relative to credit card.	(Van der Horst & Matthijsen, 2013)
The threshold of paying is higher when paying with cash as opposed to using a credit card.	Lower threshold to pay with less salient payment methods.	(Kalckreuth, Schmidt & Stix, 2014)
Credit cards and mobile payment induce higher willingness to pay compared to cash.	Higher willingness to pay with less salient payment methods.	(Boden et al., 2020)
In addition to reducing the perceived price, switching from cash to card payment can increase the willingness to pay with over 100 percent.	The effect is due to transparency of the payment.	(Prelec & Simester, 2001; Falk et al., 2016; Boden et al., 2020)
The convenience of mobile payment is a mediator for willingness to pay.	More likely to pay with mobile payment.	(Boden et al., 2020)
Frivolous spending will be more likely to occur with a gift card than cash.	Less salient payment method = less control.	(Raghubir & Srivastava, 2008).
In control when spending		
People paying using cash are more able to control their spending.	More in control by using cash.	(Kalckreuth, Schmidt & Stix, 2014)
The perceived amount paid will change depending on which payment method is used.	Perceived amount paid is higher for less salient payment methods.	(Van der Horst & Matthijsen, 2013)

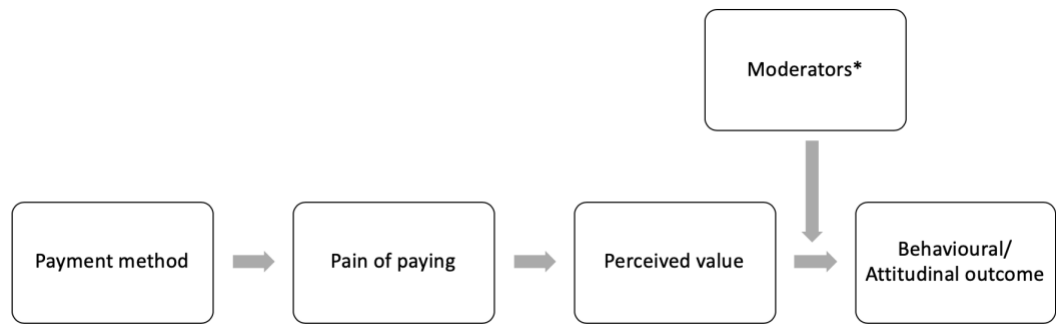
Consumers focus more on entering their PIN code to make sure no one sees it rather than paying attention to the amount being transferred.	Only relevant for credit cards.	(Dijkman and Zadeh, 2011)
With cash individuals were more observant and knew the amount they had left.	Control over money in banks is higher for more salient payment methods.	(Kalckreuth, Schmidt & Stix, 2014)
Consumer experience		
Payments with smartphones can lead to a better consumer experience.	More satisfaction when using mobile payment.	(Komulainen & Saraniemi, 2019; De Kerviler, Demoulin & Zidda, 2016)
Paying with a credit card made the individuals less connected with the product and they felt less ownership as compared to the ones paying using cash.	Less painful payment methods make us less connected to the product.	(Kamleitner & Erki, 2012).
Transparency		
The major difference between the payment methods, cash, credit card and mobile payment, was its transparency.	Highest to lowest: Cash, credit card and mobile payment.	(Soman, 2003; Boden et al., 2020)
Cash is perceived to be the most transparent and psychologically proximal form of payment.	Highest to lowest: Cash, credit card and mobile payment.	(Shah et al., 2015; Raghurir & Srivastava, 2008)
Pain of paying		
People do not like to spend money, thus whenever they make a transaction they experience some form of pain, since they are parting with their money.	Highest to lowest: Cash, credit card and mobile payment.	(Zellermayer, 1996; Raghurir & Srivastava, 2008)
Observability		
Observability of the act affects our spending as people like to self-signal.	More observable payment method, higher spending.	(Bodner & Prelec, 2001; Gneezy et al., 2012; Bradley et al., 2018)
Reciprocity		
People who pay with more painful forms of money will be both more psychologically and more behaviourally committed to their chosen alternative.	Highest to lowest: Cash, credit cards and mobile payment.	(Shah et al, 2015)
Perceived value		

<p>When being exposed to credit card cues, consumers tend to associate it with easy money, and forget the effort behind the money, in turn lowering the perceived value of it.</p>	<p>Higher perceived value with more salient payment methods.</p>	<p>(Wong & Lynn, 2017)</p>
<p>Less painful payments have been proven to make the shopper focus more on the benefits of the purchase as opposed to the costs, making them spend more money when using less transparent payment methods.</p>	<p>Least to most painful: Mobile payment, credit cards and cash.</p>	<p>(Falk et al., 2016)</p>
<p>The person giving the gift will often base the value of the gift on the cost of purchasing it, while the person receiving it will base the value of the product on the perceived benefit.</p>	<p>The valuation between the giver and the receiver might be more similar with less salient payment methods.</p>	<p>(Zhang and Epley, 2009)</p>

3.0 Conceptual framework

Based on our literature review, there are clear gaps in the research about mobile payment technology and how this affects our interpersonal relations. Previous research has focused mostly on the adoption and use of mobile payment technology, while our study looks specifically at the effect of mobile payment on prosocial behaviour, in the form of the amount gifted to friends. To study this, we have used the same structure as Shah et al. (2015) used when comparing credit cards with cash payments. Our additional variables in the model are perceived value and several moderators that are connected to prosocial behaviour. Although the link between pain of paying has already been studied extensively for all payment methods, the behaviour and attitudinal outcome of this has not yet been studied. As a result, we have created the model presented in *Figure 1*, showing the relationship between variables that have been discussed previously in the literature review.

Figure 1. The conceptual model



*Moderators**: 1) I feel like **others know** how much I gifted my friend, 2) it was **fun** thinking about gifting my friend, 3) it was **“easy”** to gift my friend, 4) this was a **convenient** way to gift my friend, 5) I felt **good** thinking about gifting my friend, 6) money is very **important** to me right now, 7) I find it important to have **more money** than friends, 8) I have **control over the money** I have in my bank account, 9) I **feel seen** by others when treating my friend, 10) I feel **connected** to my friend when treating him/her, 11) I feel **obligated** to treat my friend, 12) I have **enough money** to treat my friend.

3.1 Behavioural and attitudinal outcomes of payment methods

Our model tries to fathom if the participants’ behavioural and attitudinal outcome is given by the combination of the type of payment, pain of paying and the perceived value of the gift. The specific behavioural and attitudinal measures that we are evaluating in this study is sharing behaviour in NOK, reciprocity and general attitudes towards mobile payments. Based on the hypotheses we have defined, we would like to find out if consumers share more when they use mobile payment as opposed to other payment methods, which in this case will be either 1) gift cards or 2) credit cards. There are several ways of proving this connection, but in this study, we have decided to use reciprocity and amount gifted, as these are outcomes that have been investigated previously and represent the prosociality of the participants.

3.2 The moderators of prosociality

In addition, our model captures several moderators in order to check for the variables also tested in previous studies. From previous research, we found that there is a difference between the payment methods with regards to how convenient it is to use them, and how observed the participants feel. Previous studies have also looked at how in control participants felt when spending their money when comparing cash and mobile payment, making it relevant to see if this

could have a different effect on mobile payment. Furthermore, since we are looking specifically into the effect on prosociality, we have decided to use several variables as proxies for this. The variables that we will examine are 1) how connected they feel while giving 2) if the participants feel obligated to give, 3) if it feels good to give 4) if the participants feel that they have enough money to give, 5) if it is important to have more money than their friends and 6) money is very important to me right now. We also wanted to see if the variables 7) fun and 8) easy made it more likely to gift a friend due to the characteristics of the different payment methods.

3.3 Pain of paying and perceived value as mediators

Our studies have two mediators within the conceptual framework, pain of paying and perceived value, as outlined in *Figure 1* above. The reason why these variables are set as mediators is to

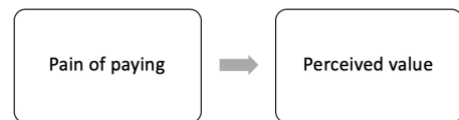


Figure 2. Pain of paying as a mediator for perceived value

measure them the same way as previous studies have done it in order to compare the results (Shah et al., 2015). Beginning with the first mediator, we use pain of paying as a mediator for perceived value (*Figure 2*), as research has shown that with higher pain of paying the perceived value of a gift will be higher. From the literature review, we found that when using a less salient payment method such as mobile payment, the perceived value changed from focusing on the cost to the benefits of the product or service. This is because mobile payment is less associated with parting with money. As backed up by research, the model implies that the payment method affects the pain of paying and not the other way around, meaning the degree of pain is given by the payment method.

In addition, the second mediator being used was the perceived value of the gift as a mediator for behavioural and attitudinal outcomes (*Figure 3*). The behavioural outcome that we will look at is the amount that we are willing to gift others, and the

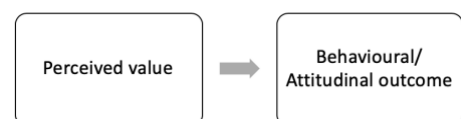


Figure 3. The effect of perceived value on behavioural and attitudinal outcomes

attitudinal outcome is how much our friend should reciprocate. The behavioural outcome has never been studied before, while attitudinal outcome is based on

previous research, proving that the perceived value of a gift has a direct effect on how much someone would treat their friend in return. Both variables will be tested in NOK and represent prosociality.

3.4 Impact of different payment methods on prosociality

In the two studies that we have conducted, we explored the impact that payment methods with different levels of transparency have on behavioural and attitudinal outcomes. In the first study, we have compared the impact of mobile payments versus gift cards (as a physical equivalent to the digital gifting of money). Since gift cards may be perceived differently from a traditional payment method, in the second study we compared the impact of mobile payments versus credit card payments. Therefore, in both contexts we analysed the impact of mobile payments versus traditional payment options on the willingness to gift (treat) a friend.

The goal of the study was to investigate whether there was a distinction between these payment methods, as previous studies have found that there is a significantly higher pain of paying when paying with cash as opposed to credit card. Previous studies have not investigated extensively the use of mobile payments, and we therefore wanted to compare this with a payment method that was more similar to mobile payments when sharing with others, that would serve as a control variable for a credit card.

4.0 Method

Based on the findings in the literature review, we have formulated several hypotheses that we will test in this paper. The hypotheses are based on our research question and conceptual model, and by answering and testing these, we will be able to form a conclusion on the following: *How will the use of smartphone payment technologies impact individuals' prosociality when gifting a friend?* Prosociality is the outcome that we are looking for and will be measured in the amount we are willing to gift others. This will be dependent on the payment method used, as we will be looking for differences across these.

The first hypothesis that we have defined is based on previous research which states that there is a different level of pain of paying depending on the payment

method used (Van der Horst & Matthijsen, 2013; Soman, 2003). The first connection that we will test in our study is therefore the following:

- **H1:** The pain of gifting a friend with mobile payment is significantly lower than for non-mobile payment.

The second and third hypotheses that we are going to test are connected to our conceptual model. Here, we want to test if pain of paying and perceived value has a mediating effect on the amount we gift others. Our study will therefore extend this research to see if it might be applied when spending money on other people, as opposed to spending money on yourself. We have therefore split the model into two different hypotheses in order to check the mediating effect of the two variables, pain of paying and perceived value, separately. The second hypothesis goes as follows:

- **H2:** There is a mediating effect of pain of paying on the amount gifted, with lower amounts gifted for higher pain of paying.

The connection between payment method and pain of paying has already been researched extensively, but the connection to perceived value is still very new. As less painful payments have been proven to make the shopper focus more on the benefits of the purchase as opposed to the costs, this makes them spend more money when using less transparent payment methods (Falk et al., 2016). The results we are looking for is if this is also the case when gifting others and if we expect more in return. Our third hypothesis has therefore been formulated as follows:

- **H3:** The pain of gifting has a mediating effect between the payment method and reciprocity, with lower expected reciprocity for mobile payments as opposed to non-mobile payments.

To check if prosociality has an effect on how generous we are, we wanted to test the relationship between prosocial characteristics and the amount we gift others. Furthermore, we also wanted to test if there is a significant difference when taking the different payment methods into consideration. In the literature review, it was discussed what types of characteristics prosocial individuals have, and we therefore hypothesise the following:

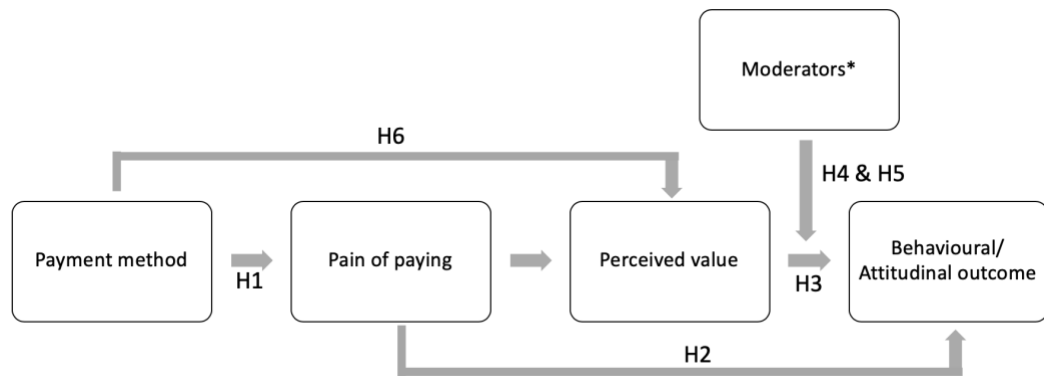
- **H4:** People gift more with mobile payment due to significant relationships with more characteristics of prosociality than with non-mobile payments.

The last hypothesis that we formulated was based on the fact that when doing prosocial acts, people often do it to self-signal themselves. This means that the mere presence of someone else might affect people’s prosocial behaviour. The study will therefore test if there is a significant difference between the payment methods with regards to observability and if this in turn results in higher amounts gifted to others. The fifth hypothesis is formulated as follows:

- **H5:** Participants gift more with mobile payments due to being significantly more observable than other payment methods.

Based on these hypotheses, we have added the hypotheses to the conceptual model (Figure 1), where Figure 4 shows the connections that we want to investigate in this paper.

Figure 4. The conceptual model with hypotheses



*Moderators**. 1) I feel like **others know** how much I gifted my friend, 2) it was **fun** thinking about gifting my friend, 3) it was **“easy”** to gift my friend, 4) this was a **convenient** way to gift my friend, 5) I felt **good** thinking about gifting my friend, 6) money is very **important** to me right now, 7) I find it important to have **more money** than friends, 8) I have **control over the money** I have in my bank account, 9) I **feel seen** by others when treating my friend, 10) I feel **connected** to my friend when treating him/her, 11) I feel **obligated** to treat my friend, 12) I have **enough money** to treat my friend.

4.1 Study 1: Gift card vs. mobile payment

In this study, we conducted a laboratory experiment with a one-way between subjects design in a controlled environment. This means that the participants were isolated in separate rooms without the possibility to communicate with others. The

method was used in order to expose the participants to only one of the two treatment conditions, in addition to hinder them from learning and transfer knowledge across the conditions (Keren, 2014). The participants were given a scenario where they are going to treat their friend and make him or her feel good. The questions in the experiment are therefore all connected to this given scenario.

The data from this study is analysed primarily using Andrew F. Hayes Bootstrapping method to look at the mediating effects of the pain of paying and the perceived value on the behavioural and other attitudinal outcomes (*Figure 4*). We use this method to check the reliability of our conceptual model and if the new variables in the model have a significant effect on the amount gifted to others. In addition, we also decided to run a regression analysis to see which of the variables in the study correlated with the amount spent on treating or gifting a friend. Several connections were also made using an independent samples T-test and ANOVA to check if there was a significant difference between the payment methods when accounting for different attitudinal variables.

4.1.1 Design of the experiment

Pre-test

A pre-test of the survey was conducted in order to check whether or not the questions were understandable, the length was suitable and to make sure that there were no variables missing from the survey. From the feedback, it was decided that we should include a part regarding participant's demographics in order to check that we received a representative sample. In addition, it was decided that open answer questions were limited to 300-400 characters in order to avoid participants dropping out of the study before completing it.

Participants

The experiment was posted on BI's Sonas Systems website, an online recruitment location mostly targeting BI students and faculty members, in addition to other people who have created an account on the website. In total, 217 signed up for the experiment at a given time slot, however, only 179 showed up and participated during the week of the experiment. From these participants, 47 of the participants failed the attention checks, meaning that these participants were excluded from the experiment. The remaining group of participants consisted of 99 full-time

students, 26 studying and working part-time and 7 working professionals, as shown in *Appendix 1*. As a result, we received a total of 132 participants, whose results were valid and could be used in the analysis. The participants were evenly split and randomly assigned to one of the two conditions in the experiment. The group who were in the gift card condition consisted of 74 participants, while the smartphone condition consisted of 58 participants. All participants were given 100 NOK for their participation after they had completed the experiment.

Procedure

The participants were only instructed to take part in a survey, thus being unaware that they were a part of an experiment. They were informed that the study would last for approximately 20-30 minutes and were given the opportunity to ask for help if anything was unclear. Every member of the BI Sona System received a notification by email regarding our experiment, where everyone who wanted to participate could sign up. They were expected to meet at a given time, chosen by them during the sign-up process. During each session, there were a maximum of ten participants that could take part in the experiment at once due to the laboratory only having ten rooms. When arriving, all participants were asked to lock up their clothes, bags and phones, in a locker, thus controlling for exogenous variables during the experiment and to make sure that we identified the true cause and effect of the study. Next, all participants were randomly assigned a small room where they were instructed to answer the survey on a computer. During the experiment, the participants only had access to a computer with a connected keyboard and mouse. Upon completion, all participants were instructed to show that they had delivered the survey, ensuring that we received results from all participants.

4.1.2 Data collection

To prepare the dataset for the analysis, there were several procedures that we needed to go through in order to remove all the missing and extreme values, as well as other corrections. When removing the extreme values, the values that were two standard deviations away from the mean were erased. This was because we only wanted values that had a 95% confidence interval in order to make sure that the mean falls within the range of the population. The next step was to remove participants who had failed the attention checks. These were specifically added in

order to make it easier to pick out the participants who were not paying attention. The first attention check was placed at the start of the study. At this attention check only a few participants were removed. The next attention check was placed at the end of the study. Here, the participants were asked which payment method they were given in the beginning of the study. At this stage, a substantial number of participants failed to recall their given payment method, which made us exclude them from the experiment. Removing these participants was done to ensure that we had high reliability on the data analysed. As a result, we ended up with 132 participants.

4.1.3 Reliability and validity

In this study, we decided that a laboratory experiment would be most suitable, as we wished to avoid exogenous variables from atmospherics. Since we decided to have a laboratory experiment, we were able to measure causality of pain of paying and perceived value in a controlled environment, avoiding external factors from tampering with our results. Examples of variables that potentially could affect the results would be the perceived value of the specific gift as opposed to gifts in general or the other characteristics of a smartphone apart from the payment. In other words, it would weaken the external validity, as we would not be able to generalise for other types of gifts. Although, in general, using a laboratory experiment reduces the external validity, meaning that our study will most likely not be possible to generalise. This means that the results might have been different when external factors are included, either enhancing or weakening the effect.

In addition, we needed to take into account that most of the participants were students, as shown in *Appendix 1*. Since the experiment was distributed through BI's Sonas Systems website, where most of the members were students from BI, we would easily get a selection bias. This weakens our results, as the results can only be generalisable to a specific demographic segment, and as a result reduced our external validity. Another factor we had to consider in this experiment was that we paid participants for participating. This could possibly have had a negative effect on the results, as more people are willing to take the test, but due to the low payment, the effort was accordingly. This has also been proven in social studies conducted by Ariely (2008), showing that no payment in many cases gives better results than a low payment. This was solved by reminding the participants of the

importance of taking the experiment seriously, and also encouraging them to ask for help if they did not understand the questions asked.

Another challenge that we needed to consider in our study was that when asking people about topics such as reciprocity, they might have been tempted to answer in a socially acceptable manner. This is called the social desirability bias, which weakens the reliability of the results (Nederhof, 1985). In order to correct for this, we stressed the importance of honest answers before starting the study.

4.1.4 Results

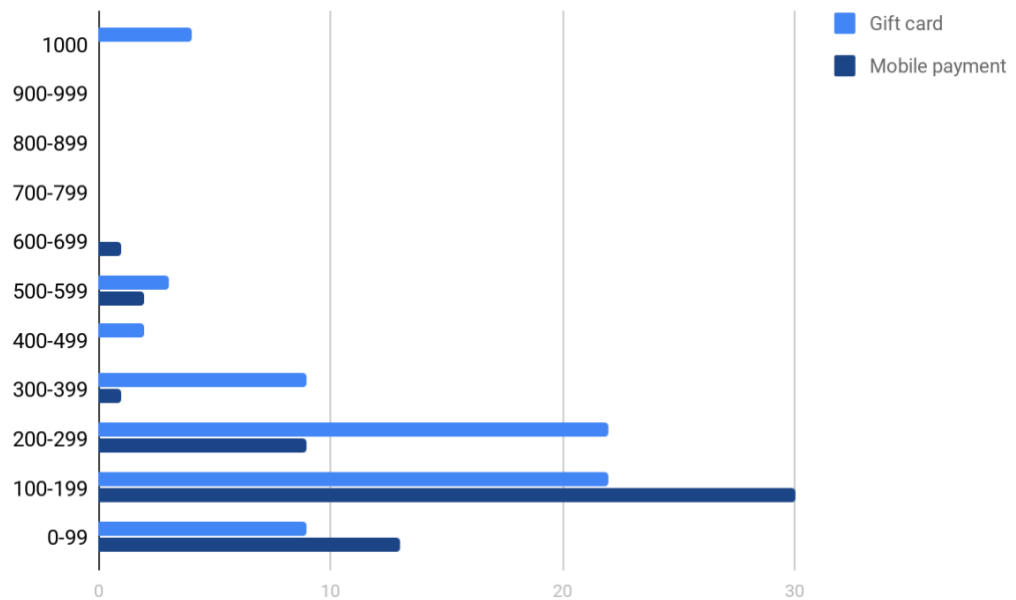
The scenario

When conducting the experiment, the participants were all given a scenario to think about when answering the questions. The scenario was as follows: *“You have decided to treat a close friend with a small gift to make your friend “feel good”. It is a regular day. It is not your friend’s birthday. There is no other obligation. You simply do it as a treat to make your friend feel good. For this purpose, you decide to send money to your friend through a gift card/ your phone”* (Appendix 2). In the study, the participants were asked to rank several statements on a scale from 1-7, while other questions required them to specify the amount they would gift their friends based on the given scenario.

The difference between the payment methods

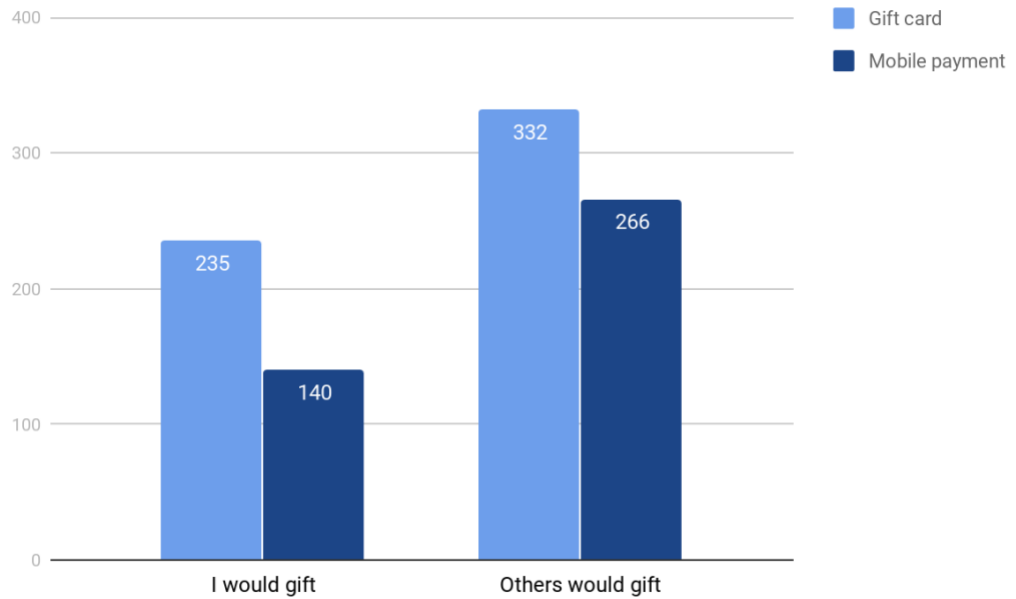
Before running any analyses, we ran some descriptive statistics to look at the data we received. From *Figure 5* below, we can see that the data is skewed, as the majority would gift their friend smaller amounts compared to the minority gifting higher amounts. This was not surprising as it was not specified what kind of gift the participant would hypothetically share with their friend.

Figure 5. The amount gifted according to the payment method (in NOK)



To better understand the data, we ran an analysis to check if there was a significant difference between the amount gifted and the payment method. From this, we saw that the variation in the model was significant and that the participants in the gift card condition gifted a higher amount on average ($M = 235$ NOK) than the participants in the mobile payment condition ($M = 140$ NOK). These results show the opposite of what we expected. We would expect that since the salience for mobile payment has been proven to be lower, then people would spend more with mobile payment as opposed to a gift card. Another interesting result that we found was that when comparing how much the participants would gift their friend and how much they expected others to gift their friend, they expected others to give more. The results show that the participants in the gift card condition expected others to give more ($M = 332$ NOK) compared to the ones in the mobile payment condition ($M = 266$ NOK) as seen in *Figure 6*.

Figure 6. How much participants would gift vs. how much they expected other to gift (in NOK)



Furthermore, we wanted to see how many people had purchased a gift card before, to check if the participants could relate to this type of payment. The results

showed that only 63% of the participants had previously purchased a gift card, meaning that the remaining 37% had no prior experience with gift cards, as seen in *Figure 7*. This was something that we had to take in consideration when analysing the data, as the results might have been somewhat different in real life. When checking

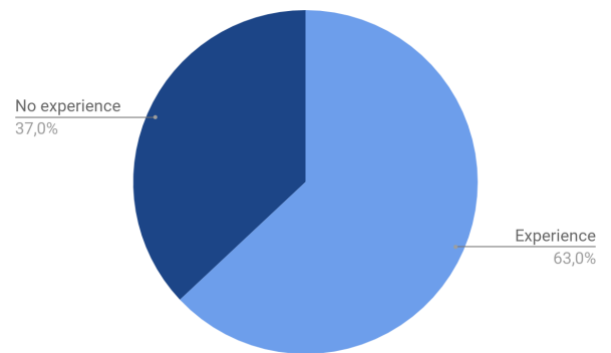


Figure 7. Prior experience with gift cards

for how many owned a smartphone, on the other hand, the results showed that all participants owned one. In other words, this was a payment method that everyone was familiar with.

Attitudes towards mobile payments

In this part, we are looking at the connection between mobile payments (IV), and the attitudes towards it (DV), as shown in *Figure 8*. To better understand which attitudes people have towards mobile payments, we asked the participants to rate

several statements regarding their use of mobile payments on a scale from 1-7, which is shown in *Figure 9* (see *Appendix 2*). Where 1 represents “completely disagree” and 7 represents “completely agree”.

To check if there was a difference in the means between the payment methods, we ran an ANOVA. From *Figure 9*, we can see that there are small differences between the payment methods, with the participants in the mobile payment condition being slightly higher in most of the statements. The only statements that there was a considerable difference was if the smartphone is a reflection of who they are (M = 3.28 vs. M= 2.94) and if people think that others always know where they are when using the mobile phone (M= 2.55 vs. M= 3.07). Although, despite the means being different, the values still represent the same opinion on a scale from 1-7.

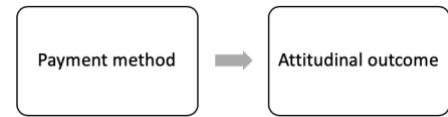
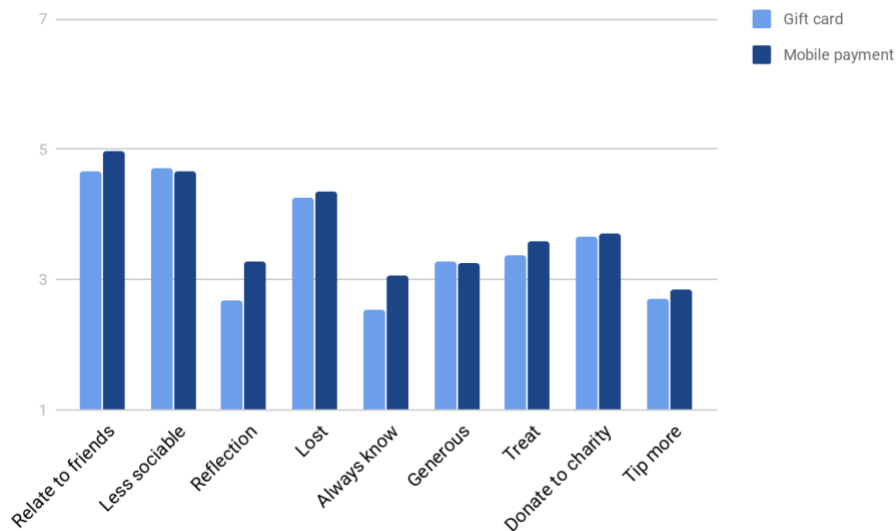


Figure 8. The effect of payment methods on attitudinal outcome

Figure 9. Attitudes towards mobile payment according to payment method



*Statements: 1) Smartphones **relate us to friends**, 2) smartphones makes us **less sociable**, 3) the smartphone is a **reflection** of who I am, 4) I feel **lost** without my smartphone, 5) people **always know** what I do when I use my smartphone, 6) I am more **generous** when I use my smartphone, 7) I am more likely to **treat** my friend with a smartphone, 8) I am more likely to **donate to charity** when using my smartphone and 9) I **tip more** when I use my smartphone as opposed to a credit card.*

Since we found no major differences between the means for the two payment method conditions, we still wanted to investigate the general attitudes towards

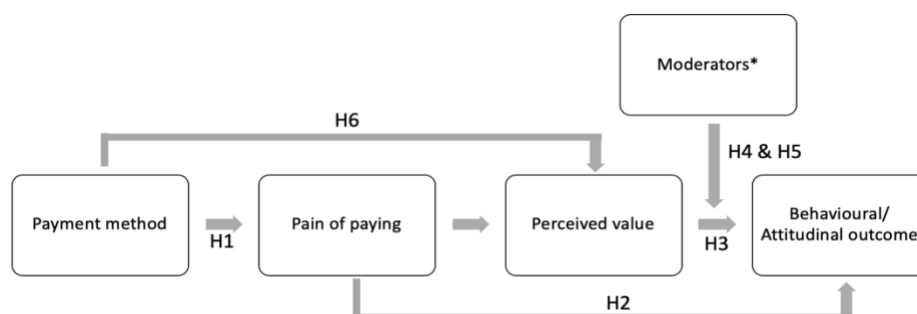
mobile payment. We therefore decided to take the average of the two statements, in order to see where everyone would be on the scale from 1-7. The statements that the participants somewhat agreed with was that smartphones relate us to friends ($M = 4.8$) and smartphones make us less sociable ($M = 4.7$). This indicates that there might be some polarization with strong opinions for both sides. On the other hand, the statements that they neither agreed or disagreed on were that they felt lost without their smartphone ($M = 4.3$) and that the participants would be likely to donate to charity when using their smartphone ($M = 3.73$). This means that the participants did not have a clear opinion about the statements.

Further, the statements that the participants rated as “somewhat disagree” was that they would be more likely to treat their friend with a smartphone ($M = 3.47$), they were more generous when using mobile payment ($M = 3.25$), the smartphone was a reflection of who they are ($M = 2.94$), that their friends always knew what they did when they used a smartphone ($M = 2.78$) and the participants would tip more when using mobile payment as opposed to credit card ($M = 2.71$). This indicates that the participants did not agree that they were more likely to do something when using a smartphone as opposed to a credit card. In addition, the participants would either have the same behaviour regardless of the payment method, or in some cases even do the opposite.

Payment methods and the difference in pain of paying

Before checking for the mediating effect of pain of paying, we wanted to see if there was a significant difference between the two payment methods in our study when considering pain of paying, as shown in *Figure 10*. This tests the results for **H1**: The pain of gifting a friend with a mobile payment is significantly lower than for non-mobile payment.

Figure 10. The main model testing all hypotheses, except H6



In the experiment, the participants were asked to rank the statement on a scale from 1-7 how painful it was to pay with the payment method they were given in their condition. To check for the difference between the two payment methods, we ran an independent samples T-test. Here, we found significant results ($p = .003$), with higher perceived pain of paying when using mobile payment ($M = 4.10$) as opposed to gift card ($M = 2.85$) (*Appendix 3*). We therefore needed keep the alternative hypothesis, as we found higher perceived pain of paying for mobile payment as opposed to gift cards.

The mediating effect of pain of paying on the amount gifted

The next step in the analysis was to test for the mediating effect of pain of paying on the amount gifted as a measure of prosociality, as shown in *Figure 10*. Testing **H2**: There is a mediating effect of pain of paying on the amount gifted, with lower amounts gifted for higher pain of paying. To analyse this, we will use the bootstrapping extension called Process to look at the mediating effect. When running this test, we looked specifically on the mediation between payment method and the amount gifted to friends. Our mediator in this study was the pain of paying, as used in previous studies. The results showed that the direct effects of the payment method (X) on amount gifted was significant ($p = .0116$) with a negative effect of $c = -84.69$ on the amount gifted (*Table 4*). This means that the amount gifted decreases when using mobile payment.

Table 4. The direct effects of the payment method (X) on the amount gifted (Y)

Effect size	se	p	95% Bias-Corrected Bootstrap CI
-84.6919	33.0506	.0116	-150.1083 to -19.2754

Although, looking at the p-value for pain of paying, we found no significant effect on the amount gifted ($p = .1624$), as seen in *Table 5*. This means that although the payment method has a direct effect on the pain of paying and the amount gifted, the pain of paying does not mediate this effect. As a result, pain of paying might enhance our prosociality, but not by using different payment methods. This means that we have to keep the null hypothesis, stating that there is no mediating effect of pain of paying on the amount gifted.

Table 5. The total effect of pain of paying (M) on amount gifted (Y) when gifting a friend (X)

	Coeff	se	p	95% Bias-Corrected Bootstrap CI
Condition	-84.6919	33.0506	.0116	-150.1083 to -19.2754
Painful	-9.0617	6.4473	.1624	-21.8227 to 3.6993

The mediating effect of pain of paying on reciprocity

Another measure we wanted to test as a form of prosociality was the amount we expect in return, as shown in *Figure 10*. Testing **H3**: The pain of gifting has a mediating effect between the payment method and reciprocity, with lower expected reciprocity for mobile payments as opposed to non-mobile payments. The way we tested this in our experiment was that we asked participants how much they expected in return for the gift that they were told about in the given scenario, as seen in *Figure 11*. The figure shows how the question was formulated in the questionnaire.

Figure 11. The expectation of being treated back

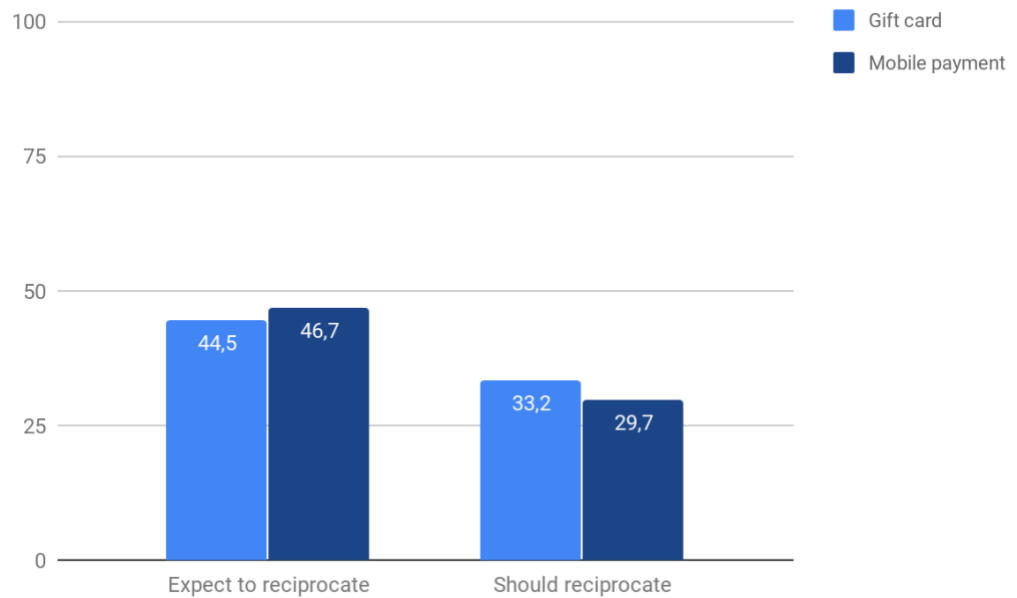
Please indicate the extent to which you expect your friend **will** gift you in the same way in return (i.e., reciprocate through phone).

Below is a percentage indicator where 0% means you do not expect your friend will reciprocate any amount and 100% means you expect your friend will reciprocate 100% of your gift.



The results we found was that on a scale from 0-100 people expected on average to get the gift returned 45.6%, with no significant difference between the two payment methods. Furthermore, when asking participants to what extent their friend should reciprocate, the percentage was even lower (M = 31.5%). This indicates that the expectation of getting the gift in return is not that high in general, regardless of the payment method. *Figure 12* shows the difference between the two payment methods, indicating that the participants in the different conditions expected the same.

Figure 12. Expect to reciprocate vs. should reciprocate (in percentage)



Since we anticipated that higher pain of paying (mediator) would decrease the degree we wish others to reciprocate, we wanted to look at the mediating effect of pain of paying on the extent to which you expect your friend to reciprocate. We therefore ran a bootstrapping to look closer at the effect. Here we found no direct mediating effect of pain of paying between the payment method and the amount expected in return ($p = .8346$), as seen in *Table 6*. This is similar to what we found when analysing sharing with others. Again, the effect of pain of paying might only have a moderating effect, meaning that we again need to keep the null hypothesis stating that there is no mediating effect.

Table 6. The direct effect of pain of paying (M) on reciprocity (Y) when gifting a friend (X)

Effect size	se	p	95% Bias-Corrected Bootstrap CI
1.3134	6.2782	.8346	-11.1082 to 12.7351

Payment methods and the moderators of prosociality

The last step of the analysis was to check if there were any variables that moderated the effect of payment method on prosociality, as shown in *Figure 10*.

Testing **H4**: People gift more with mobile payment due to significant relationships with more characteristics of prosociality than with non-mobile payments and **H5**: Participants gift more with mobile payments due to being significantly more observable than other payment methods. In addition, we have added *Figure 13* in order to show the specific

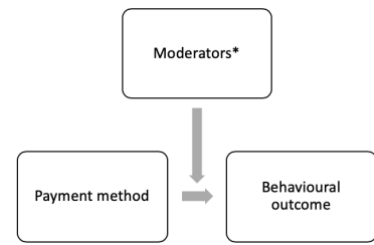


Figure 13. The moderation effect on behavioural outcome

relationships that we wanted to measure in this part. The results showed that every variable tested had a significant model, with a $p < .05$, as shown in *Table 7*. As a result, we found that the variables that have a moderating effect on the amount gifted are 1) feel good, 2) connected, 3) have control and 4) felt seen.

Furthermore, the condition (mobile payment vs. gift card) was not significant in any of the models, except from the variable called obligated, meaning that there is no difference between the two payment methods on the amount gifted to others.

Although, we can reject the null hypothesis for both H4 and H5 as we found that there is a significant effect of the observability of the act, other prosocial characteristics and the amount shared with others ($p = .0180$).

Table 7. Results from the bootstrapping analysis, showing the moderators

Variables	Significance of the model	R ²	Significance of variable	LLCI/ULCI	Significance of interaction
I felt good thinking about gifting my friend	$p = .0040$	.1022	$p = .0276$	4.6442/ 78.2675	$p = .2739$
I felt connected while gifting my friend	$p = .0046$	.1002	$p = .0363$	2.0608/ 61.3961	$p = .5713$
I feel like others know how much I gifted my friend	$p = .0340$	.0678	$p = .7555$	-13.0108/ 17.8805	$p = .1944$
It was fun thinking about gifting my friend	$p = .0173$	.0790	$p = .2017$	-8.9773/ 42.1058	$p = .8053$
It was “ easy ” to gift my friend	$p = .0251$	.0728	$p = .5661$	-19.1802/ 34.8929	$p = .3011$

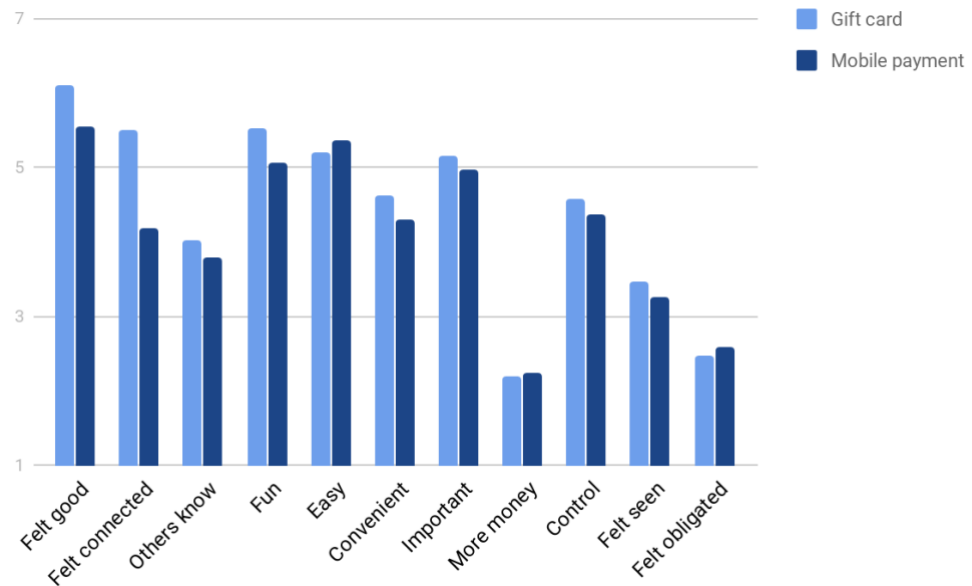
This was a convenient way to gift my friend	$p = .0179$	.0784	$p = .2029$	-7.4559/ 34.7486	$p = .7805$
Money is very important to me right now	$p = .0301$	.0698	$p = .4897$	-16.9359/ 35.1750	$p = .7464$
I find it important to have more money than my friends	$p = .0381$	.0659	$p = .9938$	-28.2271/ 28.0053	$p = .1017$
I felt in control while gifting my friend	$p = .0027$	.1084	$p = .0216$	4.1078/ 50.8089	$p = .4200$
I felt seen while gifting my friend	$p = .0025$	.1092	$p = .0164$	5.4731/ 53.1052	$p = .8062$
I felt obligated to gift my friend	$p = .0180$	.0783	$p = .5844$	-18.1129/ 31.8870	$p = .0381$

After testing the effect on the amount gifted, we wished to see if there were any significant differences in the means of the two payment methods and the statements, as these were not significant as seen in *Table 7*. We therefore decided to run an independent sample T-test for all the variables. The variables in this study were again measured on a scale from 1-7, with 1 representing “completely disagree” and 7 representing “completely agree”. The results show that there is no significant difference in means between the payment methods, and thus explaining why they were not significant in *Table 7*.

In *Figure 14*, we have visualised all the moderators that we wanted to test if it had an effect on prosociality. Although, we found that there are a few variables that were significant. The variables that were significant were 1) I felt good thinking about gifting my friend ($p = .010$, $M = 6.11$, $M = 5.55$) and 2) I felt connected while gifting my friend ($p = .000$, $M = 5.49$, $M = 4.19$), which is in line with the moderators we found. This implies that people feel better and more connected to

their friends when they pay by using a gift card as opposed to a mobile payment application, but that this has no effect on the amount gifted to others.

Figure 14. The moderators of prosociality according to the payment method



Statements: 1) I **felt good** thinking about gifting my friend, 2) I **felt connected** while gifting my friend, 3) I feel like **others know** how much I gifted my friend, 4) it was **fun** thinking about gifting my friend, 5) it was “**easy**” to gift my friend, 6) this was a **convenient** way to gift my friend, 7) money is very **important** to me right now, 8) I find it important to have **more money** than my friends, 9) I have **control over the money** I have in my bank account, 10) I **feel seen** by others when treating my friend and 11) I **feel obligated** to treat my friend.

4.2 Study 2: Credit card vs. mobile payment

In our second study, we wished to look at the difference between mobile payment and credit card as these are more frequently used. For this study, we wanted to have a stronger focus on our independent variables, specific mechanisms and dependent variables. We therefore had to specify a new hypothesis to look deeper into the perceived value of the gift, as previous studies have found that when changing payment methods from cash to credit cards, which are less transparent, the individual purchasing a product would focus more on the benefits as opposed to the costs (Falk et al., 2016). It has also been found that receivers of gifts value the gift based on the benefits. It would therefore be of interest to see if the participant would value the gift equally when giving and receiving when using mobile payment. In turn, this would mean that if both focus on the benefit, the gift would be reciprocated equally. As a result, we hypothesise the following:

- **H6:** $PM \neq PC$. Mobile payments (M) and credit cards (C) do not have the same effect on the perceived value of the gift (P).

In this study, we also conducted an experiment with a one-way between subjects design, but this time it was distributed online. Since we did not have the possibility to conduct the new experiment in a laboratory, we decided that it would be the best to use a type of convenience sampling called snowball sampling by posting the survey on Facebook. The participants were encouraged to share the survey on their profiles. Again, the participants were randomly assigned to a specific condition. Further, the data from this study was analysed by using the same methods as the previous study by again mainly using Andrew F. Hayes Bootstrapping method, as we were testing the same variables as last time.

4.2.1 Design of the experiment

Pre-test

A pre-test was also conducted for this study, in order to check that the new questions were understandable, the length was suitable and especially that we had included all the variables that were missing from the first study. This round we also did an extra check-up with our professor and supervisor, Matilda Dorotic, to make sure that she also agreed with the new questions and variables that we added to the new study. In addition, we asked several people to take our study and give us feedback on what they thought we should change so that the survey got easier to understand. From all the feedback, it was decided to simplify the given scenario for the experiment, so that every participant was able to understand what they were supposed to keep in mind while answering.

Participants

From the online experiment, we received a total of 176 participants. From these participants, 61 of the participants did not finish the survey, and they were removed from the study. Nine more participants were removed due to the attention check. In total, 70 participants were excluded from the study, and we had 106 participants left in the study, as shown in *Appendix 4*. The participants consisted of 24 full-time students, 26 full-time students that worked besides, six part-time students that also worked, 47 working professional and three participants were unemployed. In total, after cleaning the dataset, we had 63

participants in the credit card condition, and 43 participants in the mobile payment condition. In this study, we did not have the possibility to give our participants money for participation or control that they had completed the survey.

Procedure

The participants were instructed to take part in the survey, but they did not know that this was an experiment containing two different conditions. They were told that the survey would take 5-10 minutes to complete. During this study, the participants were not given the opportunity to ask for help from us, as in the previous study, since the experiment was distributed and conducted online.

People that either followed or were friends with us on Facebook could participate in the study. In addition, we used several Facebook-groups where other students distributed their surveys, in which students helped each other to recruit more participants. Due to the study being online, we could not control for the influence of other individuals, resulting in a weaker internal validity.

4.2.2 Data collection

To prepare the dataset for the analysis, there were again, as in study 1, several procedures that we had to go through in order to remove all the missing values, extreme values and written words behind amounts. The study was configured in a way that forced people to answer all given questions before handing in their answers. Although, participants who did not complete the survey were also added when downloading the dataset. Therefore, we needed to go through every participant that had started the questionnaire, in order to see whether they had finished it or not. As a result, we had to remove 61 participants from the study, due to stale survey-answers.

When it came to the extreme values, we did not have any extremities after cleaning the dataset from participants that did not complete the survey or pass the attention check. Before making the survey available for participants, we restricted the form to only accept numbers to questions that asked for the amount that they would be willing to spend, based on the scenario they were given. This was to make it easier for us, as we did not need to clean the dataset by removing the denomination “NOK” from every answer.

4.2.3 Reliability and validity

In this study, we did not have the opportunity to run the new experiment in a laboratory and therefore distributed the experiment through Facebook. This can have weakened the internal validity due to the fact that the participants could communicate with others while answering the survey. People taking the survey were either connections on Facebook or individuals who were members of specific Facebook groups, which could have reduced the randomness in the selection as friends are likely to be in a similar life situation, and people in survey-related groups are often of a specific demographic with regards to age. During this study, we received more answers from older people compared to study 1, which might have been due to us being friends with family members and older friends (*Appendix 4*). In addition, it is easier for them to participate in a study online compared to showing up at a laboratory at BI. With regards to the external validity, the second experiment had a reduced selection bias, due to a broader spectre of participants.

Even though people got the opportunity to take the survey online, they were not given the information that the survey had two different versions, containing either questions regarding mobile payments or credit cards. Participants were randomly given a condition, which increased the internal validity as there was no systematic bias between the two groups. Participants were also asked if they would treat a friend at a café, if their friend had a bad day. After presenting a more realistic scenario, the participant received questions related to this. Participants were not aware of the actual goal of the experiment. Telling them this cover story, increased the psychological realism, making the participants experience the given event as more realistic (Flanagan, 2009).

4.2.4 Results

The scenario

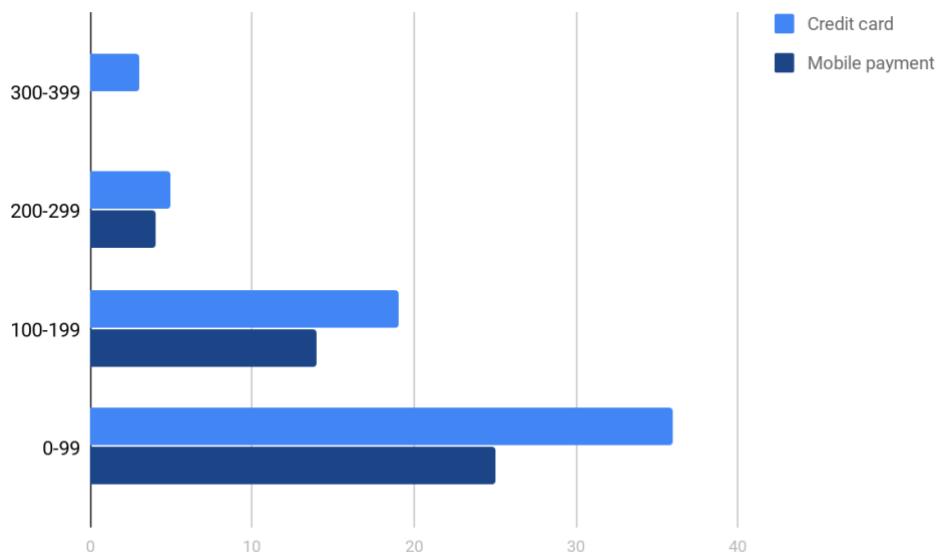
In our second study, we had a similar scenario as in the first, only this time the two conditions were mobile payment vs. credit card. The scenario they were presented with was as follows: *“A friend of yours is having a hard day. You went together for lunch and on the way back you decide to go to a coffee shop to buy coffee and sweets/snacks for the afternoon! You will pay for your purchase with your credit card/mobile phone”* (*Appendix 5*). In this scenario, we decided to

specify the gift more in order to avoid large variation. Further, the participants were then asked how likely it was for them to treat their friend by buying something with their credit card/mobile phone (depending on the given condition) on a scale from 0-100%. From the results that we found, participants would on average treat their friend 61.5% out of 100%. This means that the probability of treating a friend is higher than the probability of not treating. In addition, we added two new questions about perceived value in order to measure it more specifically compared to the previous study.

The difference between the payment methods

The first step we did was to check if the different payment methods had a significant effect on the amount gifted by using a linear regression. As in the previous study, we wanted to look at the trends in the data by creating a new bar chart. From this we see that the average amount the participants were willing to treat others with, in this study, was much lower than in the previous study when looking at *Figure 15*. In addition, the variation in the amount gifted is also much smaller compared to study 1.

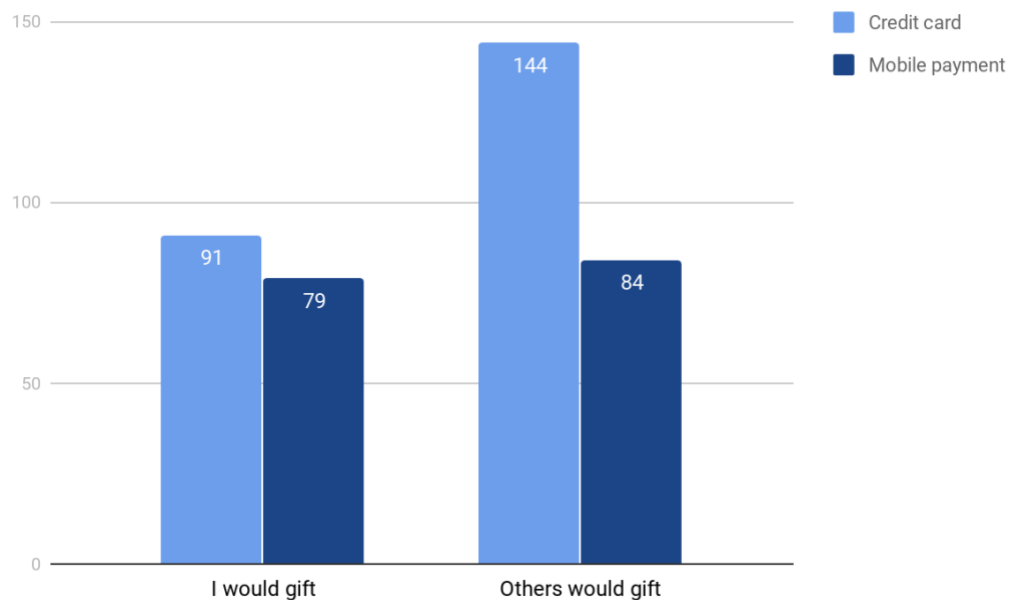
Figure 15. The amount gifted according to payment method



Furthermore, we wanted to test the difference between the payment methods on the amount gifted. The results showed that there is no significant difference between the payment method and amount gifted, as seen in the first study. Although when comparing the average amount of money gifted in the two

payment methods, we found that the average in the credit card condition ($M = 91$ NOK) was higher than in the mobile payment condition ($M = 79$ NOK). When testing for the difference between how much the participants were willing to gift their friends with versus how much they think others gift their friends with, we found similar results as in our first study. Here we found a significant difference between the payment methods ($p = .059$), with higher average gifting in the credit card condition ($M = 144$ NOK) as opposed to the mobile payment condition ($M = 84$ NOK). These differences have been visualised in *Figure 16*, showing that the participants would both gift and think that others would gift more when using a credit card compared to when using mobile payment.

Figure 16. How much the participants would gift vs. how much they expect others to gift (in NOK)



Payment methods and the difference in pain of paying

Before testing the mediating effects of the different variables in the model, we had to check if there was a significant difference in the pain of paying with a smartphone as opposed to a credit card, see *Figure 10*. Testing **H1**: The pain of gifting a friend with a mobile payment is significantly lower than for non-mobile payment. When conducting an ANOVA, we found no significant results ($p = .541$), meaning that there is no significant difference in the perceived pain of paying between the two payment methods. Although, when looking at the mean for the two payment methods, we can see that the mean for credit card ($M = 2.65$)

is slightly higher than for mobile payment ($M = 2.44$) (*Appendix 6*). This means that we need to keep the null hypothesis, stating that there is no significant difference between the payment methods. With these results, the next variable that needs to be tested is the mediating effect of perceived pain of paying on the amount gifted.

The mediating effect of pain of paying on the amount gifted

In our second study, we included the same variables as in the first study and conducted a new bootstrapping in order to examine the mediating effect of pain of paying on the amount with which a person would gift his or her friend as a measure of prosociality (see *Figure 10*). Testing **H2**: There is a mediating effect of pain of paying on the amount gifted, with lower amounts gifted for higher pain of paying. From the results, we find no significant effect of the payment methods ($p = .2181$) meaning that there is no direct mediating effect between the payment method and the amount gifted (see *Table 8*). As a result, we have to keep the null hypothesis stating that there is no effect.

Table 8. The direct effect of pain of paying (M) on amount gifted (Y) when gifting a friend (X)

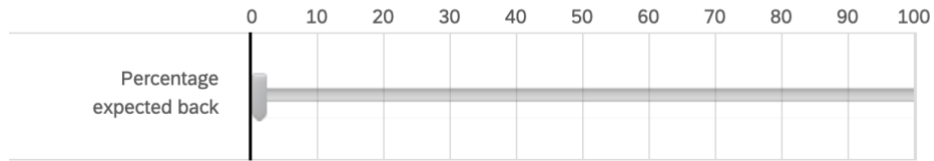
Effect size	se	<i>p</i>	95% Bias-Corrected Bootstrap CI
-15.5063	12.5142	.2181	-40.3253 to 9.3126

The mediating effect of pain of paying on reciprocity

For this study, we also wanted to check if there was a significant difference between the payment methods and to what extent we expect others to reciprocate (see *Figure 10*). Testing **H3**: The pain of gifting has a mediating effect between the payment method and reciprocity, with lower expected reciprocity for mobile payments as opposed to non-mobile payments. *Figure 17* shows one of the questions that we asked regarding reciprocity, making it possible for the participants to indicate their expectations.

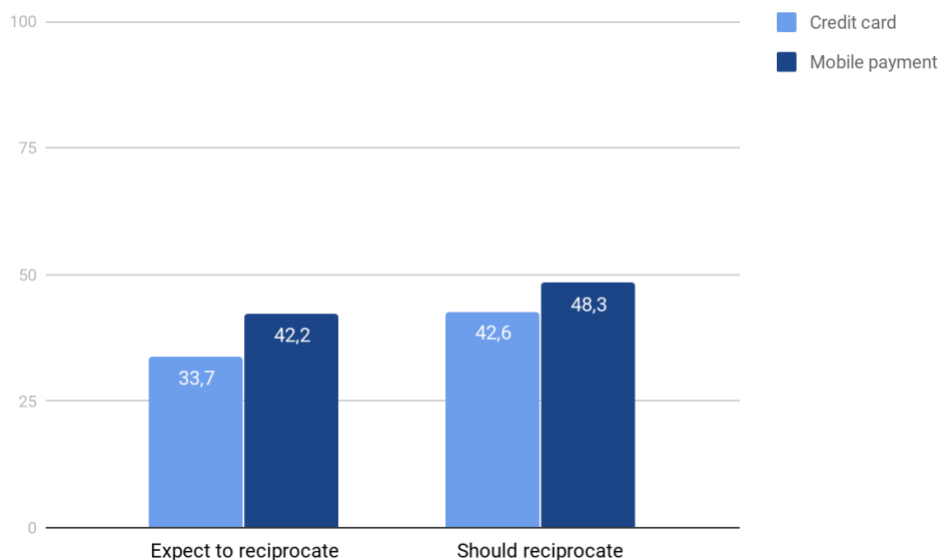
Figure 17. The expectation of being treated back

Please indicate the extent to which you expect your friend to treat you in return at a later point in time. Below is a percentage indicator where 0% means you do not expect your friend to treat you back and 100% means you expect your friend to treat you 100% in return.



When running an ANOVA, we found no significant difference between the payment methods, both when testing if the participant expects the gift to be reciprocated ($p = .402$) and if the friend should reciprocate ($p = .179$). Although, when looking at the average in the two payment conditions, we found that participants in the mobile payment condition expected more in return ($M = 42.2\%$) than participants in the credit card condition ($M = 33.7\%$) when being asked if they expected to get something in return. In total, the participants expected to be treated 37% in return. While when analysing the statement about if the friend should reciprocate, we found even smaller differences with participants in the mobile payment condition expecting more in return ($M = 48.3\%$), than the participants in the credit card condition ($M = 42.6\%$). Then, they would on average expect that their friends should reciprocate 44.8% back. Figure 18 shows the results of the analysis.

Figure 18. Expect to reciprocate vs. should reciprocate (in percentage)



As in our previous study, we wanted to see if there was a significant mediating effect of pain of paying between the payment method and reciprocity. We therefore conducted a new bootstrapping. As seen in the previous study, we found no mediating effect between the payment method and reciprocity with the bootstrap confidence interval crossing 0 (-5.2706 to 19.7814), as seen in *Table 9*. The effects that we found in the analysis were therefore based on the significant relationship between pain of paying and reciprocity ($p = .0001$), see *Table 10*.

Table 9. The direct effects of the payment method (X) on reciprocity (Y)

Effect size	se	p	95% Bias-Corrected Bootstrap CI
7.1554	6.3158	.2533	-5.2706 to 19.7814

Furthermore, compared to study 1, the pain of paying did not have a direct mediating effect between payment method and amount expected in return ($p = .2533$), see *Table 9*. We therefore have to keep the null hypothesis, stating that there is no mediation effect. This means that the payment method itself does not affect how much we expect in return from others, but with increased pain of paying, we expect more in return. We therefore had to explore other factors that may affect the relationship between the payment method and the amount gifted.

Table 10. The total effect of the payment method (X) on reciprocity (Y)

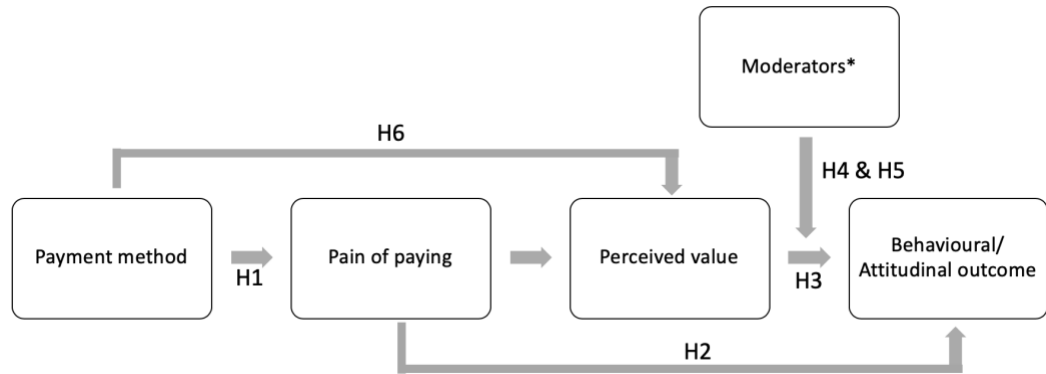
	Coeff	se	p	95% Bias-Corrected Bootstrap CI
Condition	7.2554	6.3158	.2533	-5.2706 to 19.7814
Painful	7.4432	1.8133	.0001	3.8469 to 11.0395

The mediating effect of perceived value on prosociality

The only variable missing in our model is perceived value which was tested separately using **H6**: PM ≠ PC. Mobile payments (M) and credit cards (C) do not have the same effect on the perceived value of the gift (P). The variables being measured are shown in *Figure 19*. The reason for this is that the perceived value variable is dichotomous, meaning that we cannot use it when conducting a bootstrapping analysis. We therefore needed to look at the mediating effect of this variable separately. A solution to check the mediating effect of perceived value is to check the significance of the relationship between the variables in the model. If

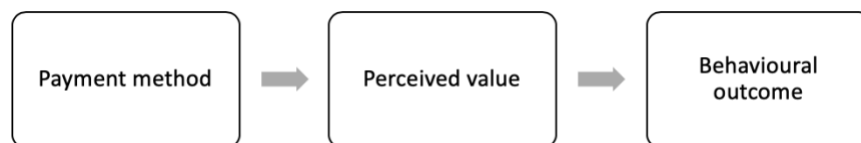
all the relationships are significant then we can assume mediation. Although, the problem with this type of test is that you might run into type 1 error (Gripsrud, Olsson & Silkoset, 2016).

Figure 19. The conceptual model with focus on hypothesis 6



The next step in the model was therefore to look at the mediating effect of perceived value on the amount we expect to receive in return, distinguishing between the different payment methods, as shown in *Figure 20*. Here, we conducted an independent samples T-test to check for the perceived value. This analysis was not done independently in the first study, as we used different variables to test for the perceived value. In this study, the participants were asked to indicate what they focused on when both giving and receiving a gift. The two alternatives they could choose from was either the cost or the benefit of the gift. As explained in the literature review, we hypothesised that if the pain of paying goes down, the perceived value of the gift will change. In other words, both the giver and the receiver will focus on the benefit of the gift as opposed to the cost of it. In turn, this will affect the amount you would want to be reciprocated.

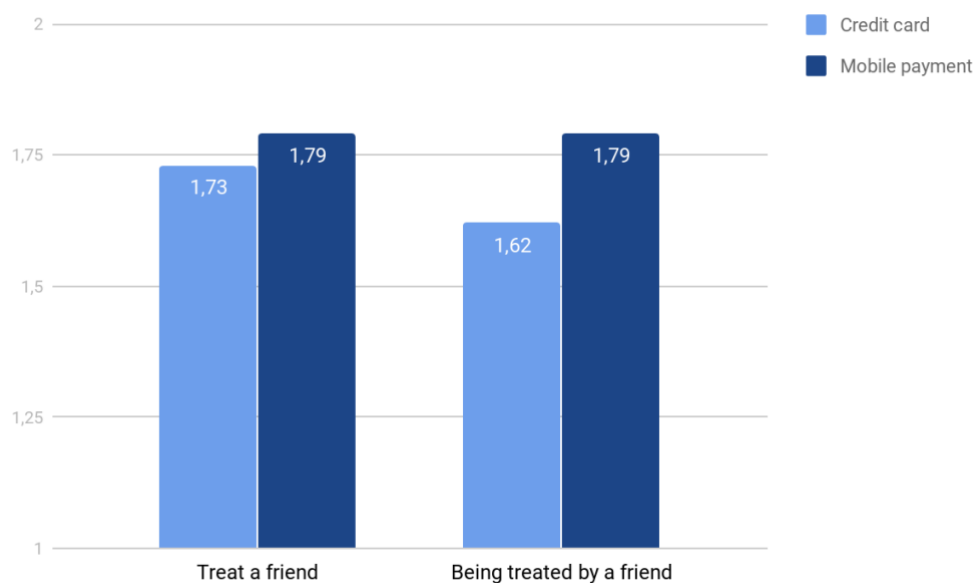
Figure 20. The mediating effect of perceived value on prosociality



The result we received showed that there were no significant differences between credit card and mobile payment when treating a friend ($p = .150$), while when being treated by a friend, we found a significant difference ($p = .000$). Although

the mean was still closer to focus on benefit in both the mobile payment condition ($M = 1.79$) and the credit card condition ($M = 1.62$). In this question, the cost was represented as the value 1 and the benefit as 2. This means that the effect of the payment conditions were similar since both conditions were closer to the value 2 (benefit) when being treated by a friend, as seen in *Figure 21*. As a conclusion we can say that since the results when being treated by a friend was significant, the perceived value of a gift will have a mediating effect on reciprocity. While it does not have a mediating effect when treating a friend. This means that we can reject the null hypothesis in the scenarios when you are being treated by a friend as the effect is not equal for the two payment methods.

Figure 21. The difference between credit card and mobile payment when treating and being treated by a friend



Payment methods and the moderators of prosociality

The last step in the model was to check if there were any variables that moderated the effect on prosociality, as shown in *Table 11*. Testing **H4**: People gift more with mobile payment due to significant relationships with more characteristics of prosociality than with non-mobile payments and **H5**: Participants gift more with mobile payments due to being significantly more observable than other payment methods. As opposed to the first study, only the models 1) good, 2) easy, 3) convenient and 4) connected were significant. Meaning that these variables had a moderation effect on the amount gifted. Again, the condition was not significant

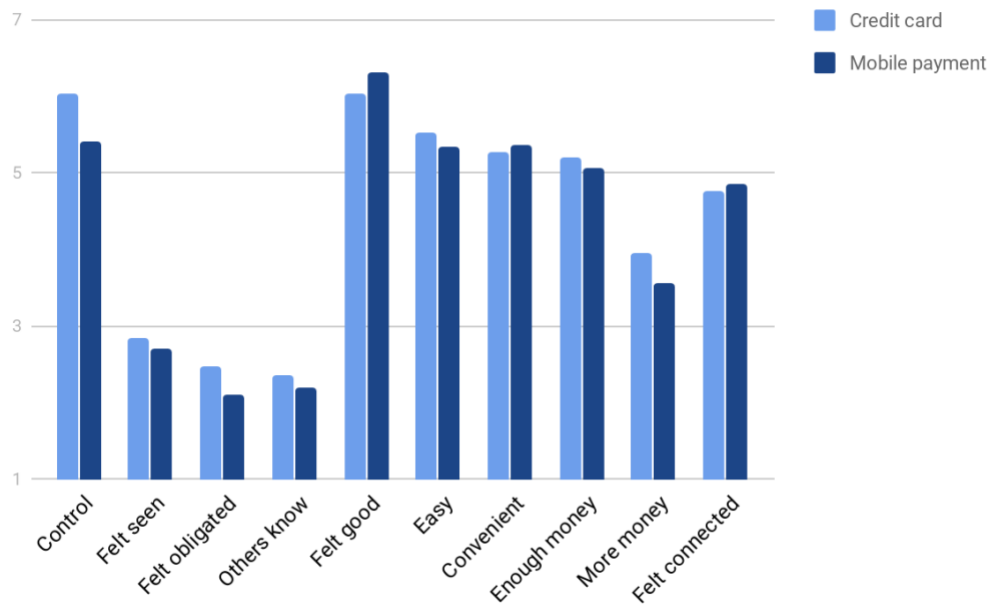
in any of the models, meaning that there is no significant difference between the payment methods on the effect. As a conclusion, we find several characteristics of prosociality that have a significant effect on the amount gifted, and we therefore need to reject the null hypothesis. On the other hand, the variables for observability were not significant, meaning that we have to keep the null hypothesis stating that observability does not have a significant effect on the amount gifted.

Table 11. Results from the bootstrapping analysis, showing the moderators

Variables	Significance of the model	R ²	Significance of variable	LLCI/ULCI	Significance of condition
I have control over the money that I have in my bank account	p = .7815	.0105	p = .7152	-11.0424/ 16.0384	p = .9057
I feel seen by others when treating my friend	p = .0678	.0672	p = .0140	2.5616/ 22.2196	p = .2695
I feel obligated to treat my friend	p = .7471	.0119	p = .5568	-7.7839/ 14.3690	p = .8565
I feel like people know how much I treated my friend with	p = .3760	.0298	p = .1478	-3.0235/ 19.8264	p = .9876
I feel good when treating my friend	p = .0052	.1171	p = .0021	6.5522/ 28.6214	p = .8909
If it was “ easy ” to treat a friend	p = .0002	.1722	p = .0028	5.4092/ 25.2859	p = .4038
The convenience of the payment method	p = .0044	.1203	p = .0583	-.3381/ 19.2376	p = .1711
If the participant had enough money to treat a friend	p = .1491	.0507	p = .3829	-5.3196/ 13.7399	p = .2305
If they felt that they had more money than their friends	p = .2232	.0418	p = .0774	-18.8260/ .9985	p = .0676
If they felt connected to their friend while treating	p = .0111	.1029	p = .0015	7.2742/ 29.6519	p = .1007

As a result of the insignificant effect of the two payment conditions, we again conducted an ANOVA with the variables to see the difference in the mean. All the variables measured in this part, mentioned below, were on a scale from 1-7, where 1 represents “completely disagree” and 7 represents “completely agree”, as shown in *Figure 22*.

Figure 22. The moderators of prosociality according to the payment method



Statements: 1) I have **control over the money** I have in my bank account, 2) I **feel seen** by others when treating my friend, 3) I feel **obligated** to treat my friend, 4) I feel like **others know** how much I gifted my friend, 5) I felt **good** thinking about gifting my friend, 6) it was “**easy**” to gift my friend, 7) this was a **convenient** way to gift my friend, 8) I have **enough money** to treat my friend, 9) I find it important to have **more money** than friends, 10) I **feel connected** to my friend when treating him/her.

The significant variables were 1) I have control over the money that I have in my bank account ($p = .040$, $M = 6.02$, $M = 5.40$), 2) I feel seen by others when treating my friend ($p = .047$, $M = 2.83$, $M = 2.70$), 3) I feel obligated to treat my friend ($p = .003$, $M = 2.48$, $M = 2.09$), 4) I feel like people know how much I treated my friend with ($p = .045$, $M = 2.35$, $M = 2.19$) and 5) I feel good when treating my friend ($p = .031$, $M = 6.02$, $M = 6.30$). In this study, we find a larger difference between the credit card and mobile payment condition, when asking the participants about whether they have control over the money that they have in their bank account. The results indicate that individuals paying by using a credit card ($M = 6.02$), have more control over their bank account than mobile payment ($M = 5.40$) users. For the other variables the mean was very similar, showing that the differences between the payment methods are small.

5.0 Discussion

The differences between the payment methods

In the first part of the analysis, we wanted to check if there was a significant difference in the amount we gift our friend based on the payment method. In the first study, we found that there was a significant difference between the amount we gift others and the payment method, while we found no significant results in the second. The results that we received in the first study was that participants in general were willing to share more in the gift card condition than in the mobile payment condition. As mobile payment in theory should have lower transparency than gift cards, the results should have been the opposite according to previous research. There could be several explanations for this, but one possible explanation could be the common use of mobile payment for smaller transactions. In addition, people who receive gift cards often receive a fixed sum that can cover the expenses of a proper gift, often starting at 100 NOK. While when using mobile payment, the amount can be very low as the payment is done in the moment. In addition, gift cards are commonly used for gifting, while the same cannot be said for mobile payment. We found similar results in the second study, with a higher mean for credit card than mobile payment, only this time the difference in average was smaller. This can be due to the fact that the participants were given a scenario at a café in the second study as opposed to something unspecified in the first study. People often have some associations to how much they would spend when going to a café.

Another finding in both studies was that the participants would on average gift less to their friends than they expected others on average to share with their friends. In the first study, we thought that this result could be due to the participants being students, but we found the same results in the second study too, where a large number of the participants were non-students. This could also be due to modesty, and more according to the social norms in Norway. From these results, we cannot state that smartphone technology makes us more prosocial, and we therefore need to look deeper into the mechanisms that can reveal this connection.

Attitudes towards mobile payments

In order to better understand the associations that the participants had towards mobile payments compared to credit card payment, we asked them to rate several statements in study 1. The most interesting outcome from these statements was that the participants did not feel more generous when using either of the payment methods, mobile payment or credit card. This means that despite participants gifting more on average with credit cards, they did not associate this payment method with being more prosocial.

On the other hand, the statements that the participants agreed with was that smartphones relate us to friends and that smartphones make us less sociable. These statements are polarised, meaning that there is not a clear opinion among the two conditions about what effect mobile phones have on us when being social. As a result, the statements that they agreed with in this part did not show a difference between the payment methods with regards to how generous we are with others. The participants rated the payment methods as equal in this regard, with mobile payment only having a slightly higher mean in almost all aspects (see *Figure 9*). This means that people do not associate mobile payment with being more generous with others.

Payment methods and the difference in pain of paying

Van der Horst and Matthijsen (2013) stated that the more transparent the payment method is, the higher the pain of paying. Before analysing the data of our studies, we assumed that both credit card and gift card would be more transparent than mobile payment based on previous research. A study performed by Boden et al. (2020) said that mobile payments have lower transparency due to its many distractions as it has other functions than just paying, which a credit card and gift card do not have. Although, the results from the first study showed significant results, with the participants feeling higher perceived pain of paying when using mobile payment as opposed to a gift card. This is the opposite of what was expected when considering previous research (Boden, Maier & Wilken, 2020). The reason for this might both be the associations we have towards the two payment methods, but also because the mechanisms behind giving gift cards is different than other payment methods. For the second study, we therefore ran the same analysis, where we found no significant difference in pain of paying with a

smartphone than a credit card. On the other hand, we saw that the mean for credit cards was slightly higher, which is in line with what Soman (2003) found in his research, with higher pain of paying with a credit card. Another reason why these results might not be significant is because the transparency for both credit cards and mobile payment is so low that the difference between the two is harder to find. The next step was therefore to see if pain of paying could have a mediating effect on the amount we end up gifting others.

The mediating effect of pain of paying on the amount gifted

Consumers tend to pay less attention to the amount being paid when using a credit card compared to cash (Soman, 2003), as they would easily be able to count the money spent when using cash. Further, mobile payments have a salience that is even lower compared to both credit cards and cash, which in turn leads to higher willingness to share (Soman, 2015). We therefore imagined a higher amount gifted when using mobile payments than with a gift card. In the bootstrap analysis from the first study, we found no mediating effect of pain of paying on the amount shared with others. Although, we found a negative effect of mobile payment on amount shared, which was the opposite of what we expected to happen. The reasoning behind this might be that a gift card is money that has already been spent, while when using mobile payments, the money is spent in the moment. An explanation for this is that people might not usually associate gift cards with money that is theirs and therefore the pain of paying with gift cards is lower. It was therefore relevant to make a new study, where we used a more regular payment method as opposed to using gift cards which are not as frequently used.

For the second study we again found no mediating effect of pain of paying between the payment method and the amount gifted. This means that pain of paying might only have a moderating effect on how much we share and not a necessary variable to explain how much we share with others. The pain of paying should therefore not be an important moderator, as we see small effects when considering prosociality. The results of the second study were similar to the first study, however, in the second study we found that for every unit increase in pain of paying, there was a decrease in the amount gifted to others. Again, there was no mediation of pain of paying on the amount gifted. This was as expected, as

previous studies did not find large differences between mobile payment and credit cards and the pain of paying (Soman, 2003).

The mediating effect of pain of paying on reciprocity

According to Buuk et al. (1993) a person that is exchange oriented will feel the need to reciprocate a gift immediately with the exact same amount in return. On the other hand, a communal oriented person will not expect anything in return for a favour, which in turn will affect their willingness to share with others (Le et al., 2013; Buuk et al., 1993). Our studies investigated how many percent the participants expected in return. Neither studies found a significant difference between the payment methods in the percentage that they would expect in return from their friends. In study 1, we found that on a scale from 0-100% the participants expected to get the gift in return approximately 45.6% on average for both conditions. This means that for most participants it was not very important to receive a gift in return for their favour. This means that most of the participants in the study were closer to communal orientation, as opposed to exchange orientation where they would expect closer to 100% to get the gift in return. Furthermore, when asking participants about to what extent their friend “should” reciprocate, the percentage was as low as 31.5%. This means that it was less important for the participants to receive something in return for the favour they had given their friend.

For study 2 we found slightly different results, with participants expecting 37% in return, and they meant that their friend should reciprocate 44.8% out of 100%. This means that the participants in the second study expected less in return but had a general view that it was more important to reciprocate, making them more exchange oriented. We also found a larger difference in the means between the payment methods, with participants in the mobile payment condition expecting more in return. This goes against our general assumption that with less painful payment methods, the participants would expect less in return. In general, for both studies, the participants were more communal oriented, but due to no significant results between the payment methods, we cannot conclude that the payment methods make us more prosocial with regards to reciprocity.

The aim of our study was to see if people become more generous when using mobile payment as opposed to other payment methods. It was therefore logical to

explore if the pain of paying had a mediating effect on what we expect in return for a favour. People who are communal oriented will usually not expect something in return, but could someone with exchange orientation expect less in return based on the payment method and the perceived pain of paying? The results that we found were that pain of paying did not have a mediating effect on reciprocity in both studies. What we found was that there was a significant effect between the payment methods and the pain of paying, but that this did not mediate the effect on reciprocity. This means that pain of paying might moderate the effect but is not necessary in order for us to expect something in return.

The mediating effect of perceived value on prosociality

In the first study, we did not get to evaluate perceived value properly, which made us take that variable more into consideration in the second study. A study performed by Zhang and Epley (2009) shows that the perceived value of a gift in the eyes of the giver and the receiver is based differently. The giver will often base the value of the gift on the cost of purchasing it, while the receiver will base the value on the benefits that the product will give that individual. Although, we predicted that if the giver purchases the gift when using mobile payment, the individual will focus more on the benefits due to the lower pain of paying, as discussed in Falk et al. (2016). This would result in both the giver and receiver focusing on the perceived benefits of the gift. Our study showed that there was no significant difference between credit card and mobile payment when treating a friend, while when being treated we found a significant difference. Both payment methods made people focus on the benefit rather than the cost. This is in accordance with what previous studies have found (Falk et al., 2016). In this case, how the giver and the receiver perceive the gift is similar, avoiding situations where the gift that is reciprocated is of lower value. Furthermore, when the giver and the receiver perceive the value of the gift equally, the value of the gift will be perceived as lower according to the transparency of the payment method. In other words, gifts received through a mobile payment should be perceived as cheaper for both the giver and the receiver. In turn, making it less likely that the giver will expect something in return, making them more prosocial.

Payment methods and the moderators of prosociality

The last step in our model was to see if there were any variables that moderated the effect of prosociality in the form of the amount gifted to others. In the first study, all the models were significant, but the payment methods were not significant. This means that there were several variables in the model that moderated the amount we gift others, but that there was no significant difference between the payment methods. The variables that had a significant moderating effect on the amount gifted were 1) felt good, 2) connected, 3) have control and 4) felt seen. This shows that gifting others had a positive effect on the giver, which is in line with previous research on prosociality. We also found that the participants in the gift card condition had a slightly higher mean for feeling good and connected, meaning that gift card might be closer associated with prosociality. This means that the amount we are willing to share with others is connected to prosocial behaviour but is not affected by the payment method used.

For the second study, we found similar results as in study 1 with the payment methods not having an effect on the amount gifted. The variables that had a moderating effect on the amount gifted were 1) good, 2) easy, 3) convenient and 4) connected. Again, we see that the reason for gifting is closely connected to the characteristics of prosociality. Since we did not find any significant effect of the payment methods, we therefore ran an ANOVA to test the differences in the means for the two conditions. Here, we found that the variables that were significantly different between the two payment methods were 1) I have control over the money that I have in my bank account, 2) I feel seen by others when treating my friend, 3) I feel obligated to treat my friend, 4) I feel like people know how much I treated my friend with and 5) I feel good when treating my friend. These variables are similar to the ones that had a moderating effect on the amount gifted. Although, the only variable where we found a larger difference was how much control the participant felt they had over their bank account, where the ones in the credit card condition had more control compared to the ones in the mobile payment condition. As a conclusion, we found small differences between the payment methods, but there is a clear connection between gifting and characteristics of prosociality.

Another variable that has previously shown to affect these results of gifting is the observability of the act. When people use mobile payment, credit card or gift card while paying, they might get the feeling of being observed. Bradley et al. (2018) found that people do prosocial acts to promote their qualities to others in hope of getting something in return. In both studies, we tested for the variance in observability for the different payment methods, with different final results. The statements that we based observability on were 1) I feel seen by others when treating my friend and 2) I feel like others know how much I treated my friend with. The first study did not find significant results between the payment methods, while the second did. Although, both studies found that the variance of the observability were equal. Therefore, it cannot be stated that mobile payment leads to more prosocial acts because of observability. On the other hand, we found that there was a significant effect of observability on the amount shared. This means that although there is no difference between the payment methods, observability does have an effect on our prosociality.

6.0 Conclusion

The goal of the study was to see if the use of smartphone payment technologies had an impact on individuals' prosociality when gifting a friend. From the results we found some indications that mobile payment can have a positive effect on prosociality. We found that when using payment methods with lower transparency, such as mobile payment, participants focus more on the benefit of the gift as opposed to the cost. In turn, this has an effect when being treated by others, as both the giver and the receiver will focus on the benefit of the gift. We expect that since we share smaller values with mobile payments, the perceived value of the gift will be lower, and as a result it will make us expect less in return. Other tendencies that pointed in the same direction were the variables that moderated the effect of the amount we gift others. Here, we found that the participants felt better and more connected to their friends when gifting, although, this effect was equal for all payment methods. This means that we find traits of prosociality as moderators of how much we gift others, but that there is no significant difference in the effect between the payment methods. Although, in line with previous research, we found the connection between the convenience of the payment method and the amount we are willing to share with others. Meaning that although we might not become more prosocial, the fact that the payment

method is more convenient makes it easier to share with others. It can therefore not be claimed that there is a significant difference in how payment methods affect people's prosociality.

7.0 Theoretical implications and further research

As in all studies, there are limitations. The biggest challenge when conducting this research was the fact that we used a survey and not a physical experiment where the participants were asked to use different payment methods. The reason why this is an implication is because when thinking about the different payment methods, the participants might not have felt any difference in the pain of paying. The results of the study could potentially have been very different when testing it in real life. This is both connected to the social desirability bias, but also the fact that in a field experiment there are external factors that also affect the amount we share with others. In an experiment, it is not possible to include all variables that cause the effect and therefore limits the opportunity to generalise. Furthermore, as previous studies have proved, the effect is so small between credit card and mobile payment if using a field experiment, we might not have found a significant effect (Soman, 2003; Soman, 2015).

Another challenge with our research was that study 1 showed that only 63% of the participants had previously purchased a gift card. This meant that 37% of the participants could not relate to paying with a gift card, as opposed to mobile payment which 100% of the participants could relate to. In turn, this might make those answers invalid, as it would be unlikely that these participants would have the possibility to relate to this type of situation. Accordingly, we might have had to exclude these participants from the survey, in order to make it more valid, due to it weakening the external validity.

A further limitation was that we asked the participants how much they would expect in return for a treat. In these situations, we might experience a social desirability bias as it is not desirable to appear as greedy. A suggestion for future studies would be to look at actual behaviour, as apps such as Vipps store historical data and to whom the money was shared with. An example would be to look at the data between friends and family. In addition, it would be interesting to look

deeper into the differences between genders, and if potentially men share more due to their interest in technology.

The last limitation in the study was that we compared mobile payment with gift cards without finding a good enough measure to control for the lowest value that you would put on a gift card. With mobile payment it is common to give gift values down to 10 NOK while gift cards often start at 100 NOK. This is something that needs to be taken into consideration in further research to avoid mistakes.

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9.0 Appendix

Study 1

Appendix 1. Demographics of participants in study 1

Life situation	Female	Male	Sum
18-21	25	10	35
Full-time student	23	6	29
Studying + working (part-time student)	2	4	6
22-25	37	18	55
Full-time student	30	15	45
Studying + working (part-time student)	7	3	10
26-30	24	3	27
Full-time student	16	1	17
Studying + working (part-time student)	5	2	7
Working professional	3	0	3
31-40	8	6	14
Full-time student	5	3	8
Studying + working (part-time student)	2	1	3
Working professional	1	2	3
41-50	0	1	1
Working professional	0	1	1
Sum	94	38	132

Appendix 2. Survey from study 1

Default Question Block

Informed Consent Form

In this study you will take part in a set of unrelated tasks regarding your consumption experiences and interpersonal relationships. None of the collected information would ask for any personally identifiable information or sensitive data.

You have to answer all the questions. The entire study will take up to 20 minutes.

All data obtained will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones).

Participation in this research study is completely voluntary. If you desire to withdraw, please close your internet browser.

If you have any questions about this research, you can send an email to Matilda Dorotic at matilda.dorotic@bi.no.

I have read and understood the above consent form and I desire of my own free will to participate in this study.

Yes

No

Scenario + Dv PHONE Condition

Please read the following scenario and tell us what you would do if you were in this situation.

Please take a moment to really imagine the situation. You will not be able to proceed to the next part for about 5 seconds.

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

You have decided to treat a close friend with a small gift to make your friend "feel good". It is a regular day. It is not your friend's birthday. There is no other obligation. You simply do it as a treat to make your friend feel good.

For this purpose you decide to send money to your friend through your phone (e.g. by Vipps or similar mobile payment app, e.g. ApplePay, GooglePay, PayPal, etc.).

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds

Last Click: 0 seconds

Page Submit: 0 seconds

Click Count: 0 clicks

How much would you send to your friend through your phone (write down the amount in NOK that you would use). Note: numbers only, not text.

How painful would it be for you to gift your friend through the phone?

Not at all painful Very painful

I feel like somehow others will know how much I gifted my friend.

Completely disagree Completely agree

Please indicate how the scenario you just considered made you feel using the scale provided.

	1 = Completely Disagree	2	3	4	5	6	7 = Completely Agree
I felt obligated to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt seen while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt in control while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was fun thinking about gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Money is very important for me right now, at this moment in time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This was convenient way to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is "easy" to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt good thinking about gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it important to have more money than my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is an attention check, please mark 2 as your answer. Thank you for paying attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt connected while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These page timer metrics will not be displayed to the recipient.

First Click: 0 seconds
 Last Click: 0 seconds
 Page Submit: 0 seconds
 Click Count: 0 clicks

Please indicate the extent to which you expect your friend will gift you in the same way in return (i.e., reciprocate through phone).

Below is a percentage indicator where 0% means you do not expect your friend will reciprocate any amount and 100% means you expect your friend will reciprocate 100% of your gift.

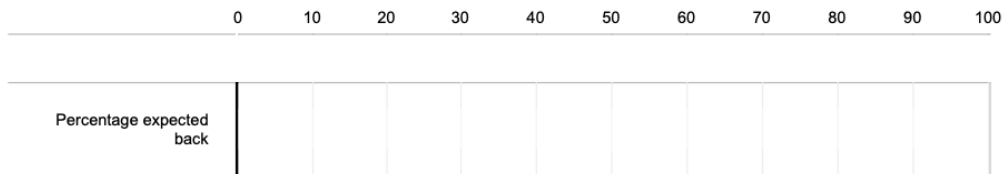
	0	10	20	30	40	50	60	70	80	90	100
Percentage expected back											

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*
Last Click: *0 seconds*
Page Submit: *0 seconds*
Click Count: *0 clicks*

Please indicate the extent to which your friend should reciprocate your small gift?

Below is a percentage indicator where 0% means your friend should not reciprocate at all and 100% means your friend should reciprocate 100% of your gift.



**How much do you think people on average send with the phone?
(amount in NOK, not text)**

Scenario and DVs gift-card

Please read the following scenario and tell us what you would do if you were in this situation.

Please take a moment to really imagine the situation. You will not be able to proceed to the next part for about 5 seconds.

These page timer metrics will not be displayed to the recipient.

First Click: *0 seconds*
Last Click: *0 seconds*
Page Submit: *0 seconds*
Click Count: *0 clicks*

You have decided to treat a close friend with a small gift to make your friend "feel good". It is a regular day. It is not your friend's birthday. There is no other obligation. You simply do it as a treat to make your friend feel good.

For this purpose you decide to send a gift-card* to your friend (*a card with some amount that receiver can use to purchase with).

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How much would you send to your friend through the gift-card (write down the amount in NOK that you would use). Note: numbers only, not text.

How painful would it be for you to gift your friend with a gift-card?

Not at all painful

Very painful

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

I feel like somehow others will know how much I gifted my friend.

Completely disagree

Completely agree

○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Please indicate how the scenario you just considered made you feel using the scale provided.

	1 = Completely Disagree	2	3	4	5	6	7 = Completely Agree
This was convenient way to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt connected while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is an attention check, please mark 2 as your answer. Thank you for paying attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt in control while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Money is very important for me right now, at this moment in time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt obligated to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was fun thinking about gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt good thinking about gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt seen while gifting my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is "easy" to gift my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find it important to have more money than my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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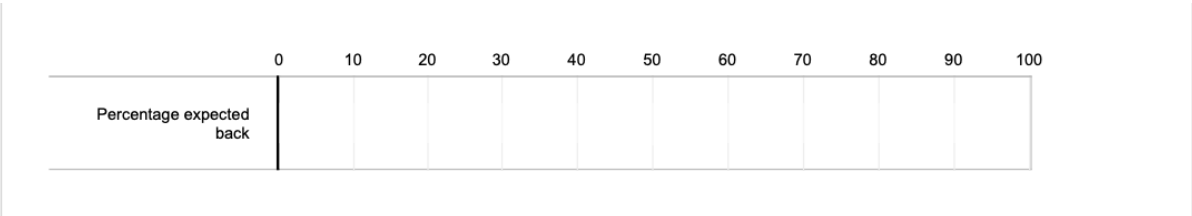
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Please indicate the extent to which you expect your friend will gift you in the same way in return (i.e., reciprocate with a gift-card).

Below is a percentage indicator where 0% means you do not expect your friend will reciprocate any amount and 100% means you expect your friend will reciprocate 100% of your gift.

0 10 20 30 40 50 60 70 80 90 100



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How much do you think people on average put on a gift card?
 (amount in NOK, not text)

Feeling and perceptions of respondents

Please indicate how the scenario you just considered made you feel.

	1 = Completely Disagree	2	3	4	5	6	7 = Completely Agree
Smartphones relate us to friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends always know what I am doing if I have my smartphone with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am lost without my smartphone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smartphones make us less sociable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My smartphone is a reflection of who I am.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am more likely to donate to charity when paying with the phone than with a credit card.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I feel I am more likely to treat a friend when paying with the phone than with credit card.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I am likely to be more generous when paying with phone then when paying with credit card.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to tip more when I pay with phone than with credit card.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Manipulation Check

Think back to the scenario at the beginning of the study. What did you give your friend?

Cash
 Gift-card
 Money via mobile phone
 Check
 Cup of coffee
 Book
 Hug

Do you have a smartphone?

Yes
 No

Have you ever purchase a gift-card that stores an amount of money that the receiver can use for a purchase?

Yes No

To you, what is the value of a gift card without any money on it (write amount in NOK ranging from 0 to some amount).

Demographics

Gender

Male
 Female
 Other

Are you full time studying or working?

Full-time student
 Studying + working (or part-time student)
 Working professional
 Retired



What is your age?

- 18-21
- 22-25
- 26-30
- 31-40
- 41-50
- 50+

Are you an international (exchange) student or a BI student?

- BI student
- Exchange student from another school
- Double-degree student
- Not a student

Attention Check

According to your honest evaluation, how much attention were you paying in this study?

Not at all attentive | | Highly attentive

In your opinion, what was the purpose of this study?

Block 7

Before you go, we are interested in your perceptions on how technology influences our relationships with others. Some examples of technology are: Internet, social media, artificial intelligence, Internet of things, smart city initiatives, etc.

Please write down what do you think about how technology impacts your social relationships and how it may affect your relationships in the future (e.g. friendships, romantic relationships, family relationships, interactions with service providers, etc). (Note: minimum 300 characters/few sentences).

Appendix 3. T-test pain of paying study 1

Group statistics

	Condition	N	Mean	Std. Deviation	Std. Error Mean
Painful	Gift-card	74	2.85	2.111	.245
	Phone	58	4.10	2.820	.370

Independent samples test

	Condition	F	Sig.	t	df
Painful	Equal variances assumed	9.262	.003	-2.917	130
	Equal variances not assumed			-2.818	102.609

95% confidence interval of the difference

	Condition	Sig. (2-tailed)	Mean differences	Std. Error difference	Lower	Upper
Painful	Equal variances assumed	.004	-1.252	.429	-2.101	-.403
	Equal variances not assumed	.006	-1.252	.444	-2.133	-.371

Study 2***Appendix 4. Demographics of participants in study 2.***

Occupation	Female	Male	Sum
18-21	5	1	6
Full-time student	4	1	5
Full-time student + working	1	0	1
22-25	35	21	56
Full-time student	12	6	18
Full-time student + working	14	7	21
Part-time student + working	0	2	2
Unemployed	2	0	2
Working professional	7	6	13
26-30	5	7	12
Full-time student	1	0	1
Full-time student + working	0	2	2
Part-time student + working	2	0	2
Working professional	2	5	7
31-40	6	6	12
Full-time student + working	1	1	2
Working professional	5	5	10
41-50	11	2	13
Part-time student + working	1	0	1
Unemployed	1	0	1
Working professional	9	2	11
50+	4	3	7
Part-time student + working	0	1	1
Working professional	4	2	6
Sum	66	40	106

Appendix 5. Survey from study 2

Default Question Block

Informed Consent Form

In this study you will take part in a set of unrelated tasks regarding your consumption experiences and interpersonal relationships. None of the collected information would ask for any personally identifiable information or sensitive data.

You have to answer all the questions. The entire study will take up to 5 minutes.

All data obtained will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones).

Participation in this research study is completely voluntary. If you desire to withdraw, please close your internet browser.

If you have any questions about this research, you can send an email to Michelle Alam (michellealam96@gmail.com) or Anne Julie Matveyev (anne.j.matveyev@hotmail.com)

I have read and understood the above consent form and I desire of my own free will to participate in this study.

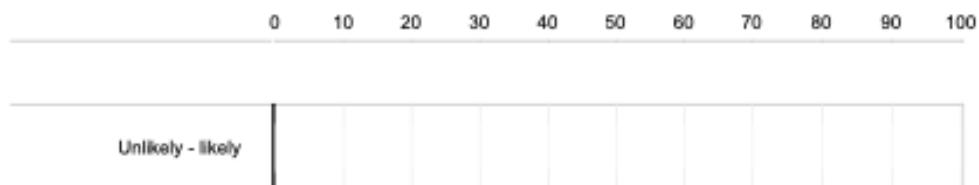
- Yes
- No

Please read the following scenario and tell us what you would do if you were in this situation.

Please take a moment to really imagine the situation. You will not be able to proceed to the next part for about 5 seconds.

A friend of yours is having a hard day. You went together for lunch and on the way back you decide to go to a coffee shop to buy coffee and sweets/snacks for the afternoon! You will pay for your purchase with your phone (e.g. via ApplePay, GooglePay or similar).

How likely are you to treat your friend at the coffee shop by buying something for him/her while you are paying for your purchases with your phone?

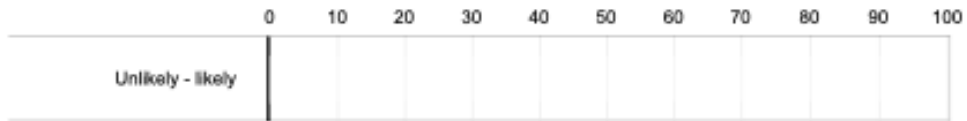


Please read the following scenario and tell us what you would do if you were in this situation.

Please take a moment to really imagine the situation. You will not be able to proceed to the next part for about 5 seconds.

A friend of yours is having a hard day. You went together for lunch and on the way back you decide to go to a coffee shop to buy coffee and sweets/snacks for the afternoon. You will pay for your purchase with your bank card (e.g. credit card).

How likely are you to treat your friend at the coffee shop by buying something for him/her while you are paying for your purchases with your credit card?



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Click Count: 0 clicks

How much would you spend on treating your friend while paying with your phone (write down the amount in NOK that you have in mind using numbers).

How much would you spend on treating your friend while paying with your credit card (write down the amount in NOK that you have in mind using numbers).

**How painful would it be for you to treat your friend by using a mobile payment application?
*Definition of painful: How much it bothers you to spend money.**

Not at all painful | ○ ○ ○ ○ ○ ○ ○ ○ | Very painful

**How painful would it be for you to treat your friend by using a credit card?
 *Definition of painful: How much it bothers you to spend money.**

Not at all painful | | Very painful

When you treat a friend, what would you focus mostly on?

- The cost for me
- The benefit for my friend

Please indicate how the scenario you just considered made you feel using the scale provided:

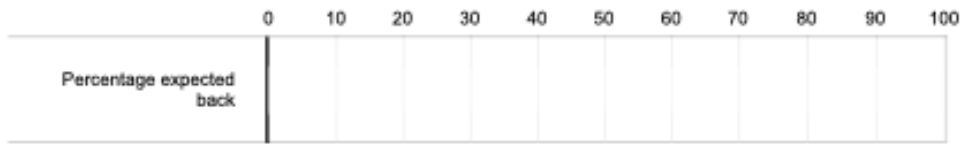
	1 Completely dissagree	2	3	4	5	6	7 Completely agree
I feel good when treating my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is "easy" to treat my friend in this way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is a convenient way to treat my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I have enough money to treat my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have control over the amount of money that I have on my bank account.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have more money than my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel seen (by others) when treating my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This is an attention check. Please mark 2 as your answer. Thank you for paying attention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel connected to my friend while treating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I had (obligated) to treat my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like people know how much I treated my friend with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When you are being treated by a friend, what would you focus mostly on?

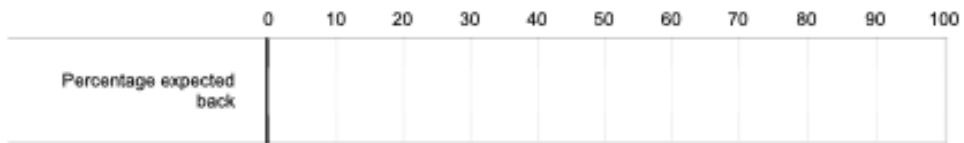
- The price of the treat
- The benefit of the treat

Please indicate the extent to which you expect your friend to treat you in return at a later point in time. Below is a percentage indicator where 0% means you do not expect your friend to treat

you back and 100% means you expect your friend to treat you 100% in return.



Please indicate the percentage that your friend should treat you in return? Below is a percentage indicator, where 0% means that your friend would not treat you back and 100% means your friend would treat you 100% in return.



How much do you think people on average treat their friends with when using mobile phone applications? (amount in NOK, not text).

How much do you think people on average treat their friends with when using a credit card? (amount in NOK, not text).

According to your honest evaluation, how much attention were you paying in this study?

Not at all attentive | | Highly attentive

How old are you? Note: Only numbers, not text.

Gender

- Female
- Male
- Other

What is your occupation?

- Full-time student
- Full-time student + working
- Part-time student + working
- Working professional
- Unemployed
- Retired

Have you lived in Norway for more than 2 years?

- Yes
- No

Appendix 6. T-test study 2 treating a friend

Group statistics

	Condition	N	Mean	Std. Deviation	Std. Error Mean
Treat a friend	Credit card	63	1.73	.447	.056
	Mobile payment	43	1.79	.412	.063
Being treated by a friend	Credit card	63	1.62	.490	.062
	Mobile payment	43	1.79	.412	.063

Independent samples test

	Condition	F	Sig.	t	df
Treat a friend	Equal variances assumed	2.099	.150	-.706	104
	Equal variances not assumed			-.718	95.142
Being treated by a friend	Equal variances assumed	16.193	.000	-1.888	104
	Equal variances not assumed			-1.951	99.448

95% confidence interval of the difference

	Condition	Sig. (2-tailed)	Mean differences	Std. Error difference	Lower	Upper
Treat a friend	Equal variances assumed	.482	-.061	-.086	-.231	-.109
	Equal variances not assumed	.475	-.061	-.084	-.228	-.107
Being treated by a friend	Equal variances assumed	.062	-.172	.091	-.352	.009
	Equal variances not assumed	.054	-.172	.088	-.346	.003