

# Erasmus School of Economics

## Thesis

To obtain the academic degree of Master of Science in  
Economics & Business

Major in Marketing

**“Examining the antecedents and consequences of switching costs  
in the telecom industry”**

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## Abstract

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Due to a high penetration of mobile subscriptions in the telecommunication market in the Western part of the world, it becomes harder for telecom companies to acquire new customers. New business needs to be achieved by taking away customers from competing telecom providers. This creates a strong incentive for firms to learn more as to what drives or prevents customers from switching between providers.

Until now, non-switching behavior is explained with rational considerations and inertia. Possibly other behavioral phenomenon exists. Diverse scientific theories demonstrate that evoked emotions influence customers' decision making. It might lead to decisions someone otherwise, in a rational mindset, would not make.

In the telecommunication industry price discrimination is applied in a number of countries, where-by different prices are set for the same service. Users within the same network pay next to nothing to call each other. Calling numbers outside the network is more expensive. A switch to another provider could be financially beneficial for a person, but uneconomic for his or her friends. The thought of possibly being called less by friends, because of the higher price they have to pay to call you after the switch, could evoke a lot of emotion. In markets exposed to the network effect, like the telecommunication market, loss aversion applied to an exaggerated belief about the social loss of a switch, could lead to a behaviorally amplified lock-in effect. Which means that an individual exhibits non-switching behavior.

To the best of my knowledge, this topic has not been explored in the marketing literature. Therefore, there is a need for empirical evidence to support or refute this behavioral hypothesis. In this thesis, my goal is to test this hypothesis empirically. I will investigate whether social related losses, as a form of non-rational switching costs, elicited by emotion cause non-switching behavior in the telecommunication industry.

I ran an experimental survey amongst 210 individuals. Subjects were allocated to the 'Valuation by Feeling' and 'Valuation by Calculation' condition. The 'Valuation by Feeling' condition evokes an emotional mindset and the 'Valuation by Calculation' condition evokes a more rational mindset. I find that that individuals with a rational mindset make other decisions regarding switching telecom providers than individuals with an emotional mindset. The higher the level of perceived pain of switching, the less probability that a person will switch. Emotional persons face higher levels of perceived pain of switching and therefore switch less frequently than rational individuals. It is not the social loss, the expected loss in calling minutes, that appears to explain the difference in switching decision making between the two mindset conditions, but the fact that individuals in the 'Valuation by Feeling' condition care more about the consequences that the switch has for their friends.

These results have important implications for firms in the telecom industry, which I will explore in the discussion section of this thesis.

**Keywords:** Switching costs; switching decisions; network effect; inertia; valuation by feeling; valuation by emotion; social losses; telecom provider.

## Acknowledgement

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This thesis is the ‘final product’ of my school career. I studied with a lot of pleasure at the Erasmus University. It was just one year, but I learned a lot, improved my English skills and had a lot of fun with my fellow students. After an amazing time at Hogeschool Rotterdam and this year at the Erasmus University, it is now time to actually start my career. Obviously, I first have to thank a few people for their support and advice during my study time.

Firstly of all I want to thank my supervisor Nuno Camacho for his dedication and useful advice. When I had questions he always replied fast and extensively. Secondly, I want to thank my parents, sister and boyfriend for their support. I was not always very cheerful, especially in times when it did not work out the way that I wanted. They were always there for me, supported me and cheered me up.

Lastly, I wanted to end with a quote from Pablo Picasso: ‘*Action is the foundational key to all success*’. Despite of all the setbacks you may encounter never give up. If you stop to undertake action, you will never achieve your goal and you will never reach the level of success you were looking for. So, action, action, action!!

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# 1. Introduction

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*In this chapter the thesis subject will be introduced. Paragraph 1.1 starts with the introduction of the research topic. This is followed by the problem definition and research objective in §1.2. Then, the scientific and managerial relevance are discussed in §1.3. Last, §1.4 displays the structure of the thesis.*

## 1.1 Introduction

Telecommunication, who can live without it? According to the World Bank<sup>1</sup> three quarters of the world population has a mobile phone and approximately 96% of the world population has a mobile subscription<sup>2</sup>. It is not surprising, that a wide range of telecom providers exist. Especially in the West the mobile subscription penetration is very high. In a few countries under which the Netherlands, Germany, Portugal, Norway, Sweden, Italy and Greece<sup>3</sup> the penetration is higher than 100%, which means that some individuals have multiple telecom subscriptions. The consequence of this high penetration is that companies need to focus more and more on acquiring customers from competitors instead of expanding primary demand. Klemperer (2007) states that getting new unattached customers might be easy, but attracting attached customers is hard. Therefore knowledge about the drivers of switching and the lack of switching, also referred to as inertia, become crucial for companies.

The strong network effects in the telecommunication markets are asymmetrically affecting the smaller players in the market. ‘The network effect is an increase in utility when the number of users increase’ (Tellis, 2010). Small companies have less users than large companies, so the utility of being a customer of a small firm will be lower. Companies in the telecommunication market are using price discrimination (e.g. in Portugal<sup>4</sup>). Users within the same network pay next to nothing to call each other, but calling someone outside of the network is more expensive. In short, the more individuals have the same network, the higher the utility of making use of the service.

Research on the drivers of switching is done by, amongst others Keaveney (1995) by giving insight into service switching from a consumer perspective. Keaveney (1995) developed eight general categories for people switching services: pricing, inconvenience, core service failure, service encounter failure, response to service failure, competition, ethical problems and

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<sup>1</sup> Please refer to <http://www.worldbank.org/en/news/press-release/2012/07/17/mobile-phone-access-reaches-three-quarters-planets-population>

<sup>2</sup> Please refer to estimation of The International Telecommunication Union (ITU) , February 2013, Key 2006-2013 ICT data for the world, by geographic regions and by level of development, Mobile-cellular subscriptions. Reference; <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> The ITU is the United Nation specialized agency for information and communication technologies.

<sup>3</sup> Please refer to the estimation of the ITU, Time Series by Countries, Mobile-cellular Subscriptions, see footnote 2 for the link to source.

Penetration mobile subscriptions per 100 habitants: Nederland 117,97 , Germany 111,59, Portugal 116,11, Norway 116,68, Sweden 124,57, Italy 159,76, Greece 120,4

<sup>4</sup> Please refer to <http://www.optimus.pt/particulares/movel/tarifarios/tag/tag/> for an example of this principle.

involuntary switching. In other research the switching decisions are related to the quality perceptions (Rust et. al., 1993) and overall dissatisfaction (Crosby and Stephens, 1987).

In an attempt to retain customers, firms create switching costs. Klemperer (1987) indicates: "Switching costs make each individual firm's demand more inelastic". Herewith the competition will be decreased. This research is focused on non-switching behavior, amongst others caused by switching costs. Most of the switching cost are explained with rational considerations. In other words, "Action is instrumentally rational when the end, the means, and the secondary results are all taken rationally into account and weighted" (Weber, 1978). Switching costs can be classified, according to Burnham, Frels and Mahajan (2003) into three types of switching costs: procedural, financial and relational switching costs. Also the network effect is one of the switching costs based on rational considerations. In addition switching costs can be based on non-rational grounds as well. This phenomenon is called inertia, a form of psychological switching costs (Dubé, Hitsch and Rossi, 2009). Inertia is a phenomenon letting individuals refrain from change due to laziness.

The current literature on switching costs focuses on switching decision making explained with rational considerations and inertia (Lee and Neale, 2012, Dubé and Hitsch, 2009, Klemperer, 1987 and Burnham et. al., 2003). Possibly, a third behavioral phenomenon exists based on exaggeration, elicited by emotion, of the switching costs in switching decision making. Research reveals that people act differently in situations directed by emotions, Valuation by Feeling, than in situations directed by rationality, Valuation by Calculation, (Hsee and Rottenstreich, 2004). Furthermore, research of Loewenstein (2005) pointed out that individuals have difficulties with predicting how they will "feel" (cold-to-hot empathy gap) or "behave" (hot-to-cold empathy gap) in different situations. Especially in an affective-rich context. In another research Loewenstein (2000) concludes that visceral factors, or in other words negative emotions, are underrated, while being essential for human behavior. So, it could be possible that people, when facing a high level of emotion in a certain situation, exaggerate and make a decision they otherwise would not have made.

The main hypothesis of this thesis is that, in markets exposed to network effects, like the telecommunication market, loss aversion<sup>5</sup> applied to an exaggerated belief about the social loss of a switch leads to a behaviorally amplified "lock-in" effect. The desire of minimizing

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<sup>5</sup> Please refer to Kahneman, Daniel and Amos Tversky (1984). "Choices, Values and Frames".



direct costs and the inability to foresee the impact of the switching costs in the future are driving such lock-in effect. In the decision making consumers focus rather on the short term than long term consequences of their decision. Therefore individuals tend to select an option that is easily accessible (Zauberman, 2003). The ‘lock-in’ effect makes it difficult for starting and smaller companies to compete with the larger companies. This can be explained by the assumption that the lock-in ensures that leaving the larger providers lead to stronger perceived social loss. Giving up social benefits outweighs the advantages of switching, at least in their perception.

## **1.2 Research question and research objective**

This research will answer the following research question:

To what extent is the consumer mindset, rational versus emotional, influencing the perceived pain of switching and therewith the switching decision regarding telecom subscriptions?

The theory clarifies that switching costs can be explained with rational considerations. Non-rational considerations will be at the heart of this research, but rational considerations are also part of the ‘perceived switching costs’, so it is essential to elucidate these. The following sub-question should be answered:

- What is understood by ‘rational switching costs’?

To examine if individuals experience a different level of ‘perceived pain’ when having a rational or emotional mindset the following sub-questions should be answered:

- What is the influence of an emotional mindset on the ‘perceived pain of switching’?
- What is the influence of a rational mindset on the ‘perceived pain of switching’?

Lastly, it is essential to know that if there is a difference between the ‘perceived pain of switching’ when having an emotional or rational mindset, will it also lead to another switching decision? The final sub-question is:

- To what extent is the ‘perceived pain of switching’ influencing the potential switching decision of the customer?

The objective of the study is to examine and explore whether there is an additional behavioral phenomenon which lead people to exaggerate (in their minds) the switching costs of

switching to another brand by having incorrect beliefs about the scope of a particular type of loss: social or network related losses ('socially-charged losses').

### **1.3 Scientific and managerial relevance**

#### 1.3.1 Scientific relevance

Switching decision making is nowadays only explained with rational considerations and inertia. An example of research based on rational considerations is Zauberman (2003). This research examines how changes in information cost structure, existing of a trade-off between initial setup costs and persistent usage costs, and time preference affect switching behavior and lead to lock-in (non-switching behavior). Burnham, Frels and Mahajan (2003) did research on the types of switching behavior and the antecedents and consequences of switching costs. However, this research focuses on the customers' intentions to stay with the current provider. One of the types of switching cost that the authors cite are relational costs. It seems research has already been done in the field of social related losses, but in the research of Burnham et. al. (2003) the focus is on the personal relationship loss costs regarding relations with employees of the firm and the brand relationship. Keaveney (1995) investigated the reasons for switching services and classified them in eight general categories. Farrell and Klemperer (2007) explain non-switching behavior with the inertia phenomenon. Likewise research of Dubé and Hitsch (2009) uses this explanation for non-switching behavior.

This thesis proposes a new behavioral phenomenon by combing existing literature and various theories with regard to: network effect and 'Valuation by Feeling' or 'Valuation by Calculation', to explore a new additional behavioral phenomenon in switching decision making: social and network related losses.

#### 1.3.2 Managerial relevance

If the described non-rational phenomenon will be detected, there is a third explanation for non-switching behavior. In this research I suggest that this new phenomenon is an essential driver of inertia. If the phenomenon exists, the social-related losses result in non-switching behavior. This has consequences for the (smaller) companies and their customer acquisition policies, since the penetration of mobile subscriptions in the Western part of the world is high and telecom providers therefore need to acquire customers from the competition. A follow-up study would be necessary to check out if the phenomenon can be reduced and if so how. After obtaining this knowledge, companies may be able to change their policy to persuade individuals to switch brands. This research could also be applicable to other markets: sport club membership (e.g. soccer, gym, baseball), courses (e.g. cooking, languages, craftwork)

and apps (Whatsapp vs. Telegram). In all these examples the network effect might be present. Then the value of having friends at the same sport club or cooking club has higher utility than the alternatives and lock the customer in. Since there is question of a social context in all examples people might face social and network related losses when switching supplier. In short, if the social related behavioral phenomenon exists this would be the area for further research.

**1.4 Thesis structure**

Figure 1. displays the thesis structure. The first part of the thesis is introductory and gives insight into the field of study, problem definition, research objective and the contribution and relevance. In the second section existing literature will be reviewed and on the basis of this literary hypotheses have been prepared. The third part gives insight into the study design and measurements. The fourth section focuses on the data analysis and the arising results. In the last part of this thesis, section 5, the conclusion will be given. Furthermore the limitations of the research and suggestions for further research will be discussed in part 5.



*Figure 1. Structure of the thesis*

## 2. Theoretical Background

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*The second chapter consists of a review on findings from existing and current scientific literature. At first persistence in consumer choices will be discussed in §2.1. Then in §2.2, the rational drivers of persistence under which switching costs and the network effect will be reviewed. Subsequently the emotional influences in switching decisions will be explained in §2.3. Then, the phenomenon inertia will be discussed in §2.4. Lastly, the conceptual framework will display the possible relations. In the theoretical parts the hypotheses will be determined.*

### 2.1 Persistence in consumer choices

Persistence can be defined as: ‘‘A low propensity of customers to switch’’ (Dubé and Hitsch, 2009). This low propensity to switch can be caused by firms who create switching costs by making it hard for customers to leave. Farrell and Klemperer (2006) give insight in the meaning of switching costs and the network effect, a form of rational switching costs. Zauberan (2003) conducted research on the influence of dynamic change in information cost structure and time preference on the switching behavior of consumers and their way of search. Burnham, Frels and Mahajan (2003) developed in their research a typology for three defined types of switching costs created by companies. Dagger and David (2012) and Lee, Lee and Feick (2001) examined amongst others, if switching costs make customers more loyal and satisfied. Inertia, causing non-switching behavior is also widely explored in various researches. Dubé and Hitsch (2009) elucidate the drivers of inertia. Lee and Neale (2012) examined the inferences and interplay of switching costs and inertia. Seetharaman, Ainslie and Chintagunta (1999) discuss the influence on elapsed time inertia.

In short, extended research has been done to clarify the reasons why customers are unwilling to switch brands. The non-switching behavior is nowadays construed as a consequence of rational considerations (switching costs) and ‘‘cognitive laziness’’ (inertia). Until now, no attention has been given to the possibility that probability weighting driven by an affect-rich mindset can also lead to non-switching behavior.

#### *Homogeneity*

The discussion in this research applies to homogeneous products. The focus will be on calling and calling is, apart from price, a ‘‘commodity’’. All providers supply the same; telephone communication between two people. At one time, differences in network coverage or calling quality differences among brands were present. Logically, this created preference and loyalty towards the ‘‘better performers’’ in the telecom world. In this research it is suggested that

nowadays the differences in coverage and quality are negligible or at least in the Western part of the world, meaning that the telecom industry is currently homogeneous. In the Netherlands, for example, all providers<sup>6</sup> cover 95% to 99,5% of the Dutch population with their GSM (Global System for Mobile communication), LTE (Long Term Evaluation) and UMTS (Universal Mobile Telecommunication System) network (see figure 2). So, this means that all Dutch providers, have almost a full network coverage within the Netherlands. Furthermore, the network reach, indoor and outdoor, is almost equal as well for all providers (see figure 3). Based on the network coverage and network reach in the Netherlands, I assume in this research that quality differences between telecom providers are negligible.

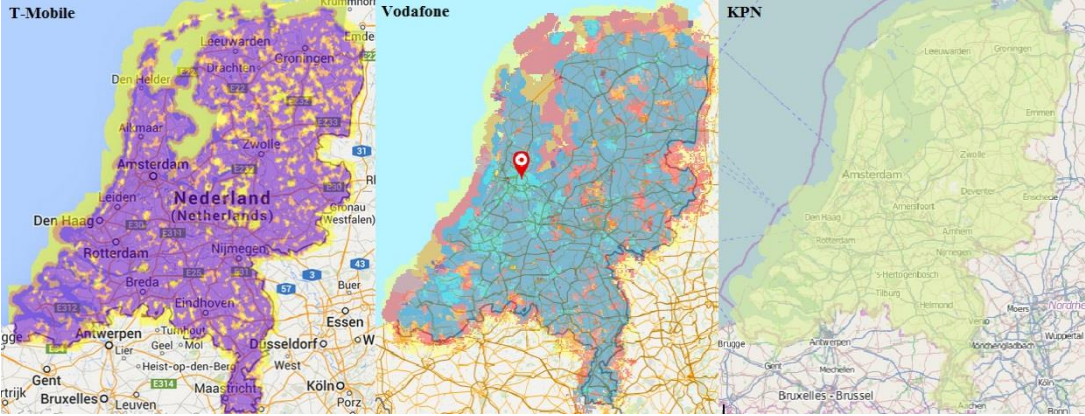


Figure 2. Network coverage (2G network - voice) Netherlands 2014  
Reference: Bestemobieleproviders.nl

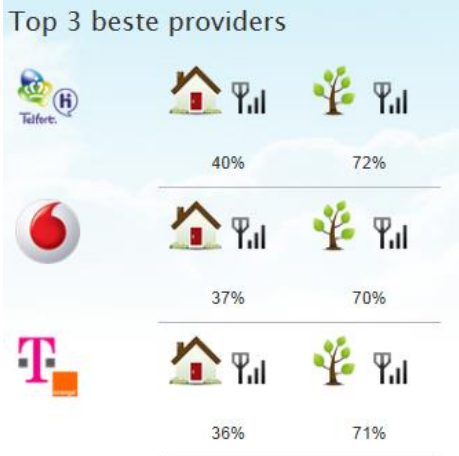


Figure 3. Network reach Netherlands 2014  
Reference: mobiele dekking.nl

*Ruling out loyalty, taste and quality differences*

Since the research applies to homogeneous products, reasons like taste, quality differences and loyalty are not taken into account for explaining non-switching behavior. In many researches and articles, amongst others of Tucker (1964), Ratchford (2001) and Aaker (1992, 2013) loyalty is linked to brands. According to Kotler (1997, p.443) brands exist to identify products and services and to differentiate from competitors.

Homogeneous products do not differ from each other, or at least not significantly and are therefore not distinctive. Companies selling homogeneous products can only compete on price or availability. In the previous section I concluded that telecom is homogeneous, herewith the ‘love for a brand’ and therefore loyalty, taste and

<sup>6</sup> Please refer to T-Mobile, Vodafone and KPN. Other providers are subsidiaries which make use of the networks of these three providers.  
Reference: <http://www.unitedconsumers.com/gsm/mobiele-dekking-nederland/index.jsp>

quality differences are excluded. Only rational or non-rational considerations will be discussed.

**2.2 Rational drivers of persistence**

The current literature (e.g. Lee and Neale, 2012, Burnham et. al., 2003, Shy, 2002) discusses the rational drivers of persistence, which means non-switching behavior, due to rational considerations derived from logical reasoning.

2.2.1 Switching costs

In many of the conducted researches regarding service providers and switching costs, switching costs are circumscribed as punishments and inconveniences that entangle the customer (Lee and Neale, 2012). According to the theories, the switching costs deter the preference of switching provider in a preference to stay. Mainly as the costs offset the benefits of changing, individuals will remain with their current service provider (Burnham et al., 2003 and Beatty et. al., 2007). Before making a decision, customers perceive the future switching costs. Only when a customer decides to switch, the switching costs will be realized (Carlsson and Löfgren, 2004). Shy (2002) developed a simple model for estimating switching costs and subsequent behavior<sup>7</sup>.

For understanding the model, please imagine that there are two companies, A and B. Each company provides a certain utility for the customer. The height of the utility determines the choice of a rational customer. The utility depends on the price to pay (P<sub>A</sub> and P<sub>B</sub>) and the switching costs (S<sub>A</sub> and S<sub>B</sub>). So, when being rational, a customer would always choose the firm that provides the highest utility. In the formula of Shy (2002) the choice is expressed in the number of customers next period (N<sub>A</sub> and N<sub>B</sub>).

$U_A = \begin{cases} -p_A & \text{if the individual continues to buy from A} \\ -p_B - S_A & \text{if the individual switches to firm B} \end{cases}$ $n_A = \begin{cases} 0 & \text{if } p_A > p_B + S_A \\ N_A & \text{if } p_B - S_B < p_A < p_B + S_A \\ N_A + N_B & \text{if } p_A < p_B - S_B \end{cases}$ $n_B = \begin{cases} 0 & \text{if } p_B > p_A + S_B \\ N_B & \text{if } p_A - S_A < p_B < p_A + S_B \\ N_A + N_B & \text{if } p_B < p_A - S_A \end{cases}$	<p><b><u>SYMBOLS</u></b></p> <p>U<sub>A</sub> = Utility for a person who currently uses the service of provider A  N<sub>A</sub> = Customers of company A next period  N<sub>B</sub> = Customers of company B next period  S<sub>A</sub> = Switching costs of company A  S<sub>B</sub> = Switching costs of company B  P<sub>A</sub> = Price to pay for A  P<sub>B</sub> = Price to pay for B</p> <p><i>Figure 4. Formula switching costs  Reference: Shy, 2002</i></p>
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<sup>7</sup> Please refer to figure 4, formula switching costs.

According to Klemperer (1987) there are various types of switching costs under which: transaction costs, learning costs and contractual costs. Burnham (2003) has another, but a comparable classification for the switching costs: procedural costs, financial costs and relational costs. Additionally search costs, time and effort to search for alternatives, can be considered as switching costs.

However, it should be noticed that non-switching behavior cannot always be declared as rational switching costs. Psychological switching costs, inertia (further explained in §2.4) and the new proposed behavioral phenomenon, might play a role in this behavior as well.

On the basis of the theories just reviewed, it can be argued that time, money and the effort that people have to undergo to invest in making a switch, decrease utility, because of the perceived pain of switching. The perceived pain of switching is defined as: ‘‘the costs that consumers perceive associated to their switching decision.’’ When people are rational, people perceive the costs of switching and the firm which provides the highest utility will be the one of the customers’ choice. Therefore, I hypothesize that:

**H1a. Rational switching costs have a direct influence on a consumers’ decision to switch or not to switch to a new telecommunication network provider**

**H1b. Rational switching costs enhance the perceived pain of switching to a new telecommunication network provider**

### 2.2.2 Network effect

The network effect has been discussed in several papers. The network effect can be indirect and direct according to Stremersch et. al. (2007). ‘‘A direct network effect is the increase in utility of a product as the number of users increase’’(Tellis, 2010). In this research the direct network effect is applicable, since the focus is on switching decisions in the telecommunication branch and the possible social and network related losses when switching provider. Clark and Chatterjee (1999) state that the network effect may cause rise in dominant market shares, depending on the characteristics of the decision making process of the consumer in a specific market. The network effect can make a firm powerful by locking-in their current customers. The more individuals that are members of a certain network, the higher the cost of switching will be for someone. Farrell (2007) is confirming this: ‘‘Lock-in

hinders customers from changing suppliers in response to changes in efficiency, and gives vendors lucrative ex post market power – over the same buyer in case of switching costs, or over others with network effects’’. The author argues that network effects and switching costs are interrelated and let people refrain from switching. Individuals avoid the costs of switching by buying products and services from the same firm and by keeping the same provider or supplier (Farrell, 2007). The network effect can be seen as a driver of rational switching costs, due to the fact that people evaluate a decision through the level of utility they gain by making a switch. When the generic choice rule<sup>8</sup> is applied to the switching decision making it states that an alternative is only chosen when the utility of the potential option is higher than the current option. Switching costs, or gains, can be expressed in a formula:

*Costs or gains = utility current supplier – utility potential (new) supplier*

Research of Zauberan (2003) indicates that switching behavior is also influenced by a lock-in created through information cost structure and time preference. Two drivers of this form of lock-in are the desire of the customer to diminish indirect costs and the inability to foresee future switching costs. The non-switching behavior caused by these determinants seems to be based rather on inertia than rational considerations, since the peers in this research have a low tendency to switch because of an initial investment in the past. With as a consequence choosing the most accessible option.

In a few countries, under which Portugal, individuals call for free or against extremely low tariffs to friends and relatives with the same provider. The more friends a person has with the same network provider the higher the utility of being client of this provider. When someone chooses to switch provider, this advantage disappears and the costs per call will increase. In short, when individuals switch provider, the utility derived from the telecom provider will drop if friends and relatives will not switch. Therefore the following hypothesis is set:

**H1c. The more friends someone has in the same network, the higher the perceived pain of switching provider.**

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<sup>8</sup> Generic choice rule:  $P(j) = P(U_j > U_{other})$   
 $= P(V_j + \epsilon_j > V_{other} + \epsilon_{other})$



### 2.3 Emotional influences in switching decisions

Individuals have the tendency to exaggerate small probability occurrences and underestimate large probability occurrences, that is how the probability weighting function can be described (Brandstätter, 2002) . Figure 5 depicts the probability weighting function graphically.

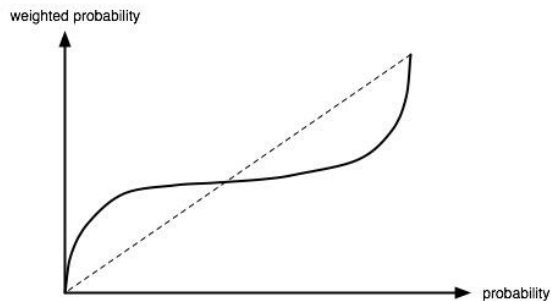


Figure 5. Probability Weighting Function

Hsee and Rottenstreich's (2001) research, based on an affective approach, has shown that the preferences of individuals are subject to the affective reactions which are in connection with the possible consequences of risky choice. Another finding of these authors is that when monetary values are controlled affective-rich and affective-poor outcomes exist. They conclude: "Consistent with an account emphasizing hope and fear, this formulation indicates that greater affect yields larger jumps on both the left- and the right-hand sides of probability scale. "

Another research of Hsee and Rottenstreich (2004) elaborate the theory of probability weighting. The authors find in their research that people react differently when valued by feeling (emotion) rather than valued by calculation (rational). Hsee and Rottenstreich (2004) state that individuals are more sensitive to the scope of a stimulus when being emotional than being rational. This means rationality leads to more constant sensitivity to the scope than irrationality. An example of one of their experiments can elucidate this principle: *Individuals were asked how much they would pay to save a panda. To evoke 'Valuation by Feeling' a map was displayed with panda heads to designate the area where the pandas are killed. To evoke 'Valuation by Calculation' the panda heads were replaced by dots. For saving one panda the picture led to higher donations than the dots. When saving four pandas the dots yielded a slightly higher (not significant) donation.* In short, in certain circumstances, in this research scope vs. valuation, individuals react on affective circumstances.

Mellers et al. (1999) also state that emotions are powerful in affecting choices. The authors make a difference in their research between experienced emotions and anticipated emotions and state that the cognitive process will be affected by the experienced emotions. Another

differentiation can be made between a good and a bad mood. Johnson and Tversky (1983) suggest that when individuals are in a bad mood they assign too high value to the probability something unfavorable will happen. Beside the likelihood to elicit negative events increases (Bower, 1981). When in a good mood people are more risk seeking, better in solving problems and more optimistic (Mellers, 1999). Again, it seems that emotion is highly influential in decision making.

The study of Zajonc (1980) discusses the interaction of affect and cognition. The author states that separately and partly independent systems control affect and cognition. The research schematizes five facts that are related to this interaction: stimulus duration, sensory process, affective reaction, recognition, feature identification.

Lastly, the Somatic Marker Hypothesis (SMH) of Damasio (1994) indicates that emotion (affect) might influence cognition and the preferences that consumers have and the decisions they make. In summary the hypothesis encompasses the following: Proven is, that emotion and feeling are influencing the decision making. According to the SMH theory cognitive and emotional processes are used to assess the value of the potential choices. As soon as the complex and conflicting choices should be made the cognitive processes cannot only be used to decide. The cognitive processes can then become overburdened and be incapable to assist in making decisions. If this happens, somatic markers occur to support the decision making. Somatic markers are defined as follows: "Somatic markers are associations between reinforcing stimuli that induce an associated physiological affective state." Damasio (1994). A fact is that the associations can bias the cognitive processing. Thus it can influence the way of acting of an individual for example in decision making. This process of influencing the decision-making can occur both consciously and unconsciously.

In the telecom industry people might face social and network related losses when assessing the costs and benefits of switching telecom provider. Especially when tariffs plans are beneficial when using the same provider as friends and other relatives (network effect), a conflicting choice situation can occur. Should you keep the high utility of having the same network as your friends and call against very low tariffs to each other? Or should you switch provider and have an overall cost advantage yourself and make your friends pay more to call you? According to the theory of Damasio (1994) in this situation somatic markers occur and might bias the cognitive processing. Research shows that emotions interfere with the decision

to switch or not to switch. Switching telecom provider and, as a consequence, *facing fear* of being called less by friends or *feeling guilty* of imposing extra costs on your friends is a highly emotionally charged situation. The specified evoked emotions are in this case generally negative. Individuals start to evaluate by emotion rather than by calculation. According to the paper of Hsee and Rottenstreich (2004) people react differently in a situation evaluated by feeling rather than calculation. The theory of negativity bias discussed in the paper of Baumeister et. al. (2001) shows, that negative emotions have a stronger impact than positive emotions. Loewenstein (2000) also shows that emotions, especially negative ones, have a strong and sometimes visceral influence on decision making. The bad mood, caused by the negative emotions lead to assigning too high value to the probability that something unfavorable will happen, in other words individuals start exaggerating (Johnson, 1983). So, when ‘Valuation by Feeling’ is applied to switching decision making in the telecom industry it is assumed that people in an emotional mindset exaggerate the perceived switching costs, and people with a rational mindset (‘Valuation by Calculation’) will be more realistic or anyway they exaggerate less. Since, switching costs might lock-in customers, the thought is that the higher the perceived pain of switching, the lower the chance that a person will switch provider. The following hypotheses are set:

**H2. Individuals in an emotional mindset expect a greater loss of calls (in minutes) from friends after switching provider than people with a rational mindset**

**H3. The perceived pain of switching will be higher when having an emotional mindset compared to having a rational mindset.**

**H4. The higher the perceived pain of switching the less likely it is that an individual will switch.**

## **2.4 Inertia**

The phenomenon of inertia is a frequently studied subject in heterogeneous markets. Dubé and Hitsch (2009) state that inertia is a form of persistence. When choosing brands the phenomenon enhances the probability that individuals again choose a product they have bought previously. In fact it is “cognitive laziness”. Dubé and Hitsch (2009) conclude in their research that inertia in consumer choices is driven by structural state dependence. Products bought in the past, have a low uncertainty in quality evaluation, switching brand

gives a higher uncertainty. So, people refrain from switching. The authors also suggest that people do not take into account the influence of the purchase decision on the future utility. Lastly, they infer that the driving force of inertia in the economic implications of loyalty is. There are also high-inertia customers who do not switch because of contentment with the product or service or because of liking the service provider (Lee and Neale, 2012 and Yanamandram and White, 2006). Another explanation given by Yanamandram and White (2009) is that customers are indifferent between the service of their current provider and other service providers, so therefore the customer chooses to remain with the current provider. A study of Seetharaman, Ainslie and Chintagunta (1999), found that for households the brand choice inertia diminishes the longer it has been since the last purchase. Other researchers who studied the subject of inertia are Heckman (1981) and Keane (1997). In this research inertia should be controlled, otherwise it cannot be proven that social-related losses exist and influence switching behavior. Inertia would then be a confounder and unintentionally influence the results. In the section of research design, paragraph 3.1.4, is explained how it will be controlled.

**2.5 Conceptual model**

Based on theoretical background and the formulated hypotheses the following conceptual model, see figure 6, is established:

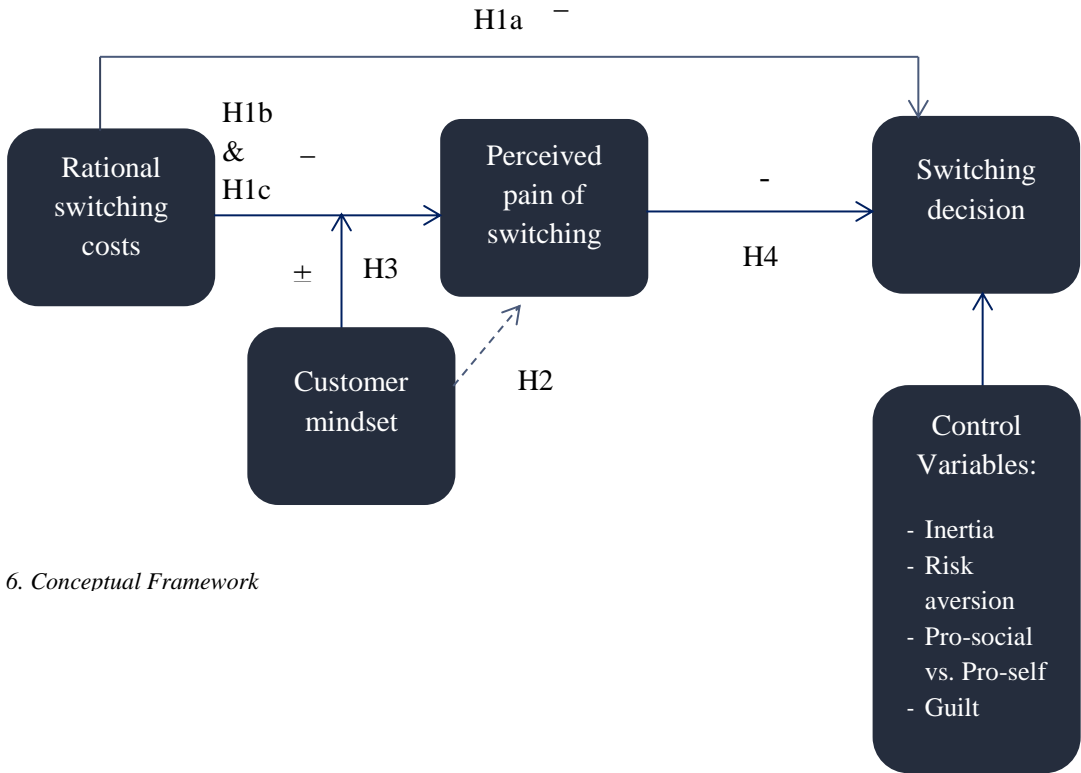


Figure 6. Conceptual Framework

### 3. Methodology and data description

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*The third chapter describes the methodology and data description. In §3.1 the research design will be clarified. In short, it will be explained how the data is collected, who the participants are and what the procedure is. Also the control variables and the statistical tests will be discussed.*

#### 3.1 Research design

To investigate whether an additional behavioral phenomenon exists in switching decision making, I use a survey experiment. In this experiment I expose participants to a hypothetical situation regarding their relationship with a telecommunication provider (using a vignette) and then manipulate participants' mindset (Valuation by Feeling versus Valuation by Calculation) before asking them whether or not they would be willing to switch to another provider.

##### 3.1.1 Data collection

The data was collected through an online survey. The Qualtrics survey technology program was used for setting up the survey. The survey was available in the Dutch and English language. The data was gathered by spreading the survey on the internet by e-mail, LinkedIn and Facebook. Additionally, the survey was also shared by others on social media and by e-mail to reach connections outside the researchers own network. The data for this research was collected in the last two weeks of May and in the beginning of July.

##### *Pre-test*

Before the questionnaire was launched, the survey was pre-tested by a separate group of 25 students and adults. Modifications and improvements were therefore possible. After viewing the pre-test results, a few changes were implemented to be sure that the posed questions were clear and that the length of the questionnaire was acceptable.

##### *Data cleaning*

A total of 349 respondents filled out the survey. However, not all responses could be used for the analysis. First of all, 121 of the 349 surveys were started, but were incomplete. Secondly, in 14 cases the respondents gave extremely unrealistic values (e.g. 12345). Also four respondents who did not fill out the priming questions seriously were deleted. The unusable

surveys, 39,83% of the initial responses, were deleted so that the results would not be invalid. A total of 210 were usable for data analysis.

### 3.1.2 Participants and design

Individuals, between 18 and 73 years old<sup>9</sup>, (N=210)<sup>10</sup> were recruited, 106 of these respondents are female (M<sub>age</sub>= 30.98, SD=12.973) and 104 of these respondents are male (M<sub>age</sub>= 33.72, SD=14.310)<sup>11</sup>. A requisite to participate in this research is that participants call at least once a week with a mobile phone, since the focus in this research is on calling. The participants are randomly assigned to one of the six between-subjects conditions: 2 (*Mindset treatment*) x 3 (*Number of friends treatment*). The ‘mindset treatment’ consist of ‘Valuation by Feeling’ or ‘Valuation by Calculation’<sup>12</sup>. The divisions of valuation are based on research of Hsee and Rottenstreich (2004). A total of 102 participants completed the survey with the ‘Valuation by Feeling’ condition and 106 participants completed the version based on ‘Valuation by Calculation’<sup>13</sup>. The ‘number of friends treatment’ consist of 1, 5 or 10 friends within network A. Before the start of the study a separate group (N=21) was asked how many friends they call frequently. This resulted in a range from 1 to 10 friends. Based on these responses the number of friends were chosen. The friends condition was added to the research, because having different numbers of friends in the same network could possibly give different outcomes in switch decision. The vignette approach is used to create a hypothetical environment, based on a short story about a fictional scenario<sup>14</sup>. The respondents were not told what the objective was of the research. The objective was clarified after the experiment, by a debriefing. Explaining the objective before participation could influence the experiment and therewith the results.

Friends	Rational		Emotional			Total
	Men	Women	Men	Women		
	51	51	53	55		210
<b>1 friend</b>	32,7%		32,7%		32,70%	69
<b>5 friends</b>	33,8%		34,9%		34,35%	71
<b>10 friends</b>	33,5%		32,4%		32,95%	70

Table 1. Sample descriptives

<sup>9</sup> Please refer to graph 1

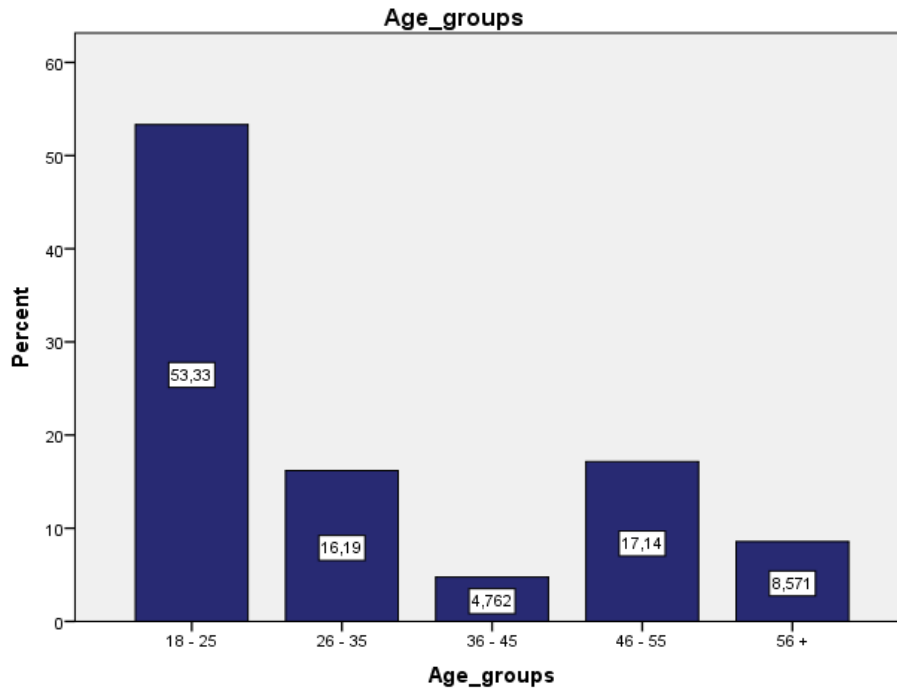
<sup>10</sup> Please refer to van Belle (2002), Statistical Rules of Thumb. According to this rule 180 respondents are enough to conduct a proper examination.

<sup>11</sup> Please refer to appendix 3A, Descriptive statistics and table 1.

<sup>12</sup> ‘Valuation by Feeling’ and emotional mindset are used interchangeably in this research as well as ‘Valuation by Calculation’ and rational mindset.

<sup>13</sup> Please refer to appendix 3D, Descriptive statistics

<sup>14</sup> Please refer to O’dell, Crafter, de Abreu and Cline (2012), Quantitative Research



Graph 1. Age groups

### 3.1.3 Procedure

#### *Mindset treatment*

To evoke emotion, individuals in the ‘Valuation by Feeling’ condition were told that they should think for a few seconds of three friends they call frequently and were asked to write down the names of these three friends. Further they were asked to write down what their predominant feeling was when they heard three emotion evoking words: ‘‘family’’, ‘‘love’’ and ‘‘friends’’. At the same time the subjects saw a picture of three laughing friends making a selfie<sup>15</sup> with a telephone, see image 1. Two of these three questions were based on earlier research of Hsee and Rottenstreich (2004). Participants in the ‘Valuation by Calculation’ condition should have a rational mindset and therefore participants saw a picture of a phone bill, see image 2. They were asked to think for a few seconds of their calling behavior. Further the individuals were asked to make three calculations, and were asked what aspects they take into account by the choice of telecom provider. Again, two of the three questions were based on earlier research of Hsee and Rottenstreich (2004).



Image 1. Priming ‘Valuation by Feeling’



Image 2. Priming ‘Valuation by Calculation’

<sup>15</sup> A selfie is a self-portrait made with a camera or mobile phone by the one who is visible on the picture

### *Number of friends treatment*

To investigate whether the number of friends (1, 5 or 10), that someone has within the same network, is affecting the consumers' decision to switch or not to switch 'the number of friends treatment' was added to the research. No specific questions were prepared in the survey with regard to the number of friends someone has within the same network. 'The number of friends treatment' contains specific information, that is part of the six vignette situation outlines, provided to the participants during the survey (see vignette and decision task).

### *Vignette and decision task*

Then, all the students read a brief description. The subject (Person Z) had to imagine that (s)he moved 6 months ago to a new country to remove all branding effects and avoid them thinking of their own, current provider. Since Person Z had moved (s)he is using a mobile network (Network A), that offers a pricing plan with different prices for calls to numbers within and outside of the network. Person Z is considering whether or not to switch to telecom Provider B, which offers the same price to make calls to all networks. Then, six different situations were displayed:

Situation	Price to call from A > A	Price to call from A > B	Friends
1	€0,00	€0,15	1 / 5/ 10 friend(s)
2	€0,00	€0,18	
3	€0,02	€0,15	
4	€0,02	€0,18	
5	€0,05	€0,15	
6	€0,05	€0,18	

Table 2. Situation outline survey

Based on these situations the participants had to decide whether to switch or not, they had to determine the height of the perceived pain of switching and had to imagine how many minutes they thought they would be called if they were to switch to provider B .

### *Context setting and assumptions*

In the survey only two networks were mentioned A and B. In the real world there are more networks, but having more networks would bias the purpose of the research. Finally, the subjects had to take four assumptions into account:

- 1) The monthly fixed subscription costs do not differ between Plan A and B; otherwise a confounding effect can occur.



- 2) Both network providers have the same quality with regard to network reach and network connection.
- 3) They make monthly calls: 120 minutes with someone within network A and 180 minutes with someone outside of network A. Regardless of the provider they have.
- 4) They receive monthly calls: 90 minutes from friends within the same network A.

Assumption 1) and 2) were added to make the price per minute to call someone, the only thing that differs between network A and network B. Assumption 3) was added to allow respondents to make calculations to see what is best for them. In two of the six scenarios it is, based on calculations of the calling costs, best to stay with network A in the other four scenarios it is best to switch. Assumption 4) was added to express the perceived loss, in the number of minutes that a person is called less.

No brand names were used to exclude the ‘love for a brand’. The price that has to be paid to call or be called in Plan A and B and the number of friends in network A were adjusted during the experiment. In the end, I examine if the two different mindsets lead to different switching decisions. Further, I investigate whether having more friends in the same network, network A, enhances the perceived pain. The combinations of pricing plans and friends were created through a fractional factorial design in SPSS.

#### 3.1.4 Measurements and variables

##### *Descriptive measures*

At the start of the experiment the subjects had to complete a few general questions with regard to: gender, age and nationality to acquire descriptive data.

##### *Dependent measures*

The first dependent measure is the perceived pain. The participants were asked after each time they assessed a price plan combination: ‘How appealing do you think it is to switch provider?’. The subjects had to decide on a 7-point scale ranging from 1 (*not appealing at all*) to 7 (*extremely appealing*). The second dependent measure of the study is the switching decision, so whether to switch or not to switch. The subjects were asked: ‘If I had to make a decision regarding switching provider, I would choose to: stick with network provider A / switch to network provider B.

### *Independent measures*

To see where the perceived pain is coming from, the participants were asked to weight several factors and their influence on their switching decision by giving a rating from 1 (*not important at all*) to 7 (*extremely important*). Furthermore the subject had to answer a question with regard to the perceived loss in received calling minutes from friends in network A.

### *Manipulation check*

To test if the hypothetical situations genuinely created a more emotional mindset in the ‘Valuation by Feeling’ condition compared to the ‘Valuation by Calculation’ condition a manipulation check question was added to the questionnaire. The participants had to answer a question, just like in the research of Hsee and Rottenstreich (2004), on a 5-point scale. Specifically: “How much emotion is evoked when you look at the picture?” With 1 being little emotion and 5 being a lot of emotion. The mean responses were 2,15 for the ‘Valuation by Calculation’ condition and 3,31 for the ‘Valuation by Feeling’ condition,  $p=0,000$ <sup>16</sup>. A significant difference in the level of emotion evoked is identified between the two mindset groups.

### *Control variables*

#### **Inertia**

Inertia was measured, on a 7-point scale, on the basis of the three statements used in the research of Lee and Neale (2012). The participants were asked to what extent they agreed ( $1=Strongly\ disagree, 7=Strongly\ agree$ ). For example: “I would not think about switching to another provider”. The results indicate whether an individual actively considers to switch and whether they search for attractive alternatives, when they have the opportunity to switch.

#### **Risk Aversion**

To test if the individuals are risk averse, four questions based on research of Donkers, Melenberg and van Soest (2001), were added to the questionnaire as a control for this aspect. People with a high tendency to avoid risk, will probably not change. The subjects had to make a choice between a risky option and a safe option. For example: ‘A coin is tossed once. You can choose one of the following two options: 1) I receive €1000, with either heads or tails or 2) With heads you receive €1200, with tails you don’t receive anything at all.’

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<sup>16</sup> Please refer to appendix 5, Emotion vs. rationality

## Guilt

A consequence of the subjects switching decision might be that their friends have to pay more to call them if the subject decides to switch. In this research there might be a possibility that people do not switch because of feeling guilt towards friends. The decomposed game, also used by de Cremer and van Lange (2001) and van Lange and Kuhlman (1994), was used to measure the level of pro-self and pro-social. Liebrand and van Run (1985) demonstrate the high internal consistency of this decomposed game measurement technique. The questions and answer response options of this research were based on van Lange and Kuhlman (1994). Instead of using points, money was used to divide. The value of money is easier to understand and imagine, than the value of points. An example of the question was: ‘Which of the following two options would you choose?’, a) You will receive €100 and your friend will receive €30 or b) You will receive €85 and your friend will receive €85. Option A was an example of being pro-self and Option B was an example of being pro-social. Subjects were classified if they had at least three of the four choices consistent.

### *Cronbach’s Alpha*

To be able to measure the internal consistency and determine whether multiple items may constitute one scale Cronbach’s alpha has been used<sup>17</sup>. Table 3 shows the values of the Cronbach’s alpha of the multi-item constructs, the questions and number of items and the source of the constructs.

Items	Cronbach’s alpha	Questions <sup>18</sup>	Source
Switching costs	0,877	Part III, switching costs, 1 – 3	Lee & Neale, 2012
Inertia	0,813	Part III, inertia, 1 – 3	Lee & Neale, 2012

Table 3. Cronbach’s Alpha

Since the threshold of the Cronbach’s alpha values is 0,6 and the values are above 0,8, so the multi-items may constitute one scale.

### 3.1.5 Statistical tests

The SPSS program has been used to analyze the data. First a table of all the descriptives was constructed to analyze the data through descriptive statistics. A Mann Whitney U test is performed in order to determine if the priming had the desired effect. Second, a reliability test, Cronbach’s Alpha, is used to measure the internal consistency of a number of scales. After this the inertia variables are merged and an Independent Samples T-Test is performed to

<sup>17</sup> Please refer to appendix 4, Cronbach’s Alpha

<sup>18</sup> Please refer to appendix 1, Constructs and Measures [Source]

test whether there are differences between the mindset treatments. This also applies to the switching costs variables. For the other control variables guilt and risk aversion a number of Chi-Square tests are used. A linear regression is conducted to see what the influence is of the rational variables displayed in the situation outline of the survey on the perceived pain of switching. Per situation (pricing plan<sup>19</sup>) Independent Samples T-Tests are conducted to see whether a difference exists, between the mindset treatments, in perceived pain after being exposed to the pricing plans. In addition a One-Way ANOVA test is used to test whether there is a difference between the number of friends that someone has within the same network and the perceived pain of switching. Also Independent Samples T-Tests are performed to check whether there are differences in the importance of different switching factors. Another Independent Samples T-Test is used to test whether significant differences exist, between participants in the emotional/rational mindset (*mindset treatment*) and the number of minutes respondents think they would be called by friends after the respondents themselves switched to provider B. A Chi-square test is conducted to see whether significant difference are present between the emotional/rational mindset (*mindset treatment*) and switching decision. Two binary logistic regressions are conducted. The relation between the rational switching factors and the perceived pain of switching could be determined on basis of odds and probability distribution. The same applies to perceived pain and the switching decision.

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<sup>19</sup> Please refer to appendix 2 – Pricing plan - Survey

## 4. Results

In the fourth chapter, in §4.1, the descriptive statistics will be discussed. Then, in §4.2 the test results of the research will be analyzed and discussed. In §4.3 will be indicated whether the hypotheses are supported or rejected.

### 4.1 Descriptives

#### Sample descriptives

In this research I first analyze the descriptive statistics. Since the mindset treatment is an important aspect in this research, a distinction is made in table 4 between ‘Valuation by Feeling’ and ‘Valuation by Calculation’.

Construct	N	Min.	Max.	Mean	Std. Dev.					
Gender*	210	0	1	0,50	0,501					
Age	210	18	73	32,24	13,68					
Nationality*	210	0	1	0,09	0,288					
	Valuation by Calculation <i>Rational</i>					Valuation by Feeling <i>Emotional</i>				
Construct	N	Min.	Max.	Mean	Std. Dev.	N	Min.	Max.	Mean	Std. Dev.
Emotion evoked**	102	1	4	2,15	1,019	108	1	5	3,31	1,019
Switching decision* **	612 <sup>20</sup>	0	1	0,53	0,499	648	0	1	0,40	0,490
Perceived pain of switching**	612	1	7	3,79	1,499	648	1	7	4,13	1,494
Loss in calling minutes**	612	10	90	69,10	23,37	648	8	90	61,81	26,284
Switching costs	102	1	7	4,25	1,480	108	1	7	4,38	1,595
Inertia	102	1	6	3,98	0,858	108	1	6	3,85	0,812
Risk aversion	102	1	2	1,37	0,243	108	1	2	1,38	0,238
Guilt	102	1	2	1,63	0,344	108	1	2	1,62	0,353

\* Gender: 0= Male and 1= Female, Nationality: 0= Dutch and 1=Other nationality, Switching decision: 0=Stick with A and 1=Switch to B

\*\*A significant difference is present between the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition.

Table 4. Descriptive statistics

From the statistics I can derive that participants in the ‘Valuation by Calculation’ condition choose significantly ( $p=0,000$ )<sup>21</sup> more often to switch provider (mean= 0,53) than respondents in the ‘Valuation by Feeling’ condition (mean= 0,40). A mean rank of one means always switching provider, so the closer the mean is to one the more a group decides to switch provider. In line with **H2** and **H3**, participants in the ‘Valuation by Feeling’ condition face a higher perceived pain of switching ( $p=0,000$ )<sup>22</sup> and expect a greater loss of calling minutes from friends ( $p=0,000$ )<sup>23</sup> than the respondents in the other condition. When comparing the control variables no huge differences have been found between the groups. Which probably

<sup>20</sup> Every participant had to make six times a forecast of the expectation of loss of calling minutes after switching provider (6x102=612)

<sup>21</sup> Please refer to appendix 7, Chi-Square test

<sup>22</sup> Please refer to appendix 6A, Independent Samples T Test

<sup>23</sup> Please refer to appendix 6C, Independent Samples T Test

means that the differences are not attributable to inertia, switching costs, guilt or risk aversion. However, this can only be confirmed after testing in SPSS (see §4.2 results).

Notable is that participants in the ‘Valuation by Calculation’ condition score a bit higher on inertia (mean= 3,98) than in the ‘Valuation by Feeling’ condition (mean= 3,85). Inertia stands for cognitive laziness to switch and earlier I mentioned that in the ‘Valuation by Calculation’ condition the participants switched more than in the ‘Valuation by Feeling’ group. So despite the fact that this group has a higher tendency to yield to cognitive laziness, they switch more.

### *Switching factors*

Table 5 provides a descriptive summary of the switching factors that played a role in the choice of the participants whether to switch or not to switch telecom provider. The table has been split in ‘Valuation by Feeling’ and ‘Valuation by Emotion’.

Statement		Valuation by Calculation		Valuation by Feeling		Asymp. Sig.
		Mean	SD	Mean	SD	
Consequences for friends	Feeling uncomfortable for making my friends pay more to call me	3,48	1,609	4,29	1,686	0,000*
	The price my friends have to pay per minute to call me	3,58	1,445	4,30	1,578	0,001*
Own consequences – calling	Feeling concerned that my friends may call me less frequently, because of the price they have to pay	3,46	1,559	3,81	1,677	0,125
	The number of minutes I think that friends from network A will call me if I switch to network B	3,54	1,272	3,85	1,446	0,097
Own consequences – pricing	The price I have to pay per minute to call my friends in network A	4,97	1,338	4,85	1,446	0,537
	The price I have to pay per minute to call to other networks	5,09	1,203	4,77	1,316	0,067
Same network	The number of friends that were in the same network	4,39	1,672	4,34	1,395	0,815

\*A significant difference is present between the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition.

*Table 5. Descriptive statistics, switching factors*

The descriptives show that the participants in the ‘Valuation by Feeling’ condition attach great value to the consequences for friends when they consider to switch provider compared to the participants in the ‘Valuation by Calculation’ condition. The ‘Valuation by Feeling’ group feels more uncomfortable for making friends pay more (mean= 4,29,  $p=0,000$ ) and care about the price friends have to pay to call them (mean= 4,30,  $p=0,001$ ). Noteworthy is also that both groups attach in general a high value to the price they have to pay themselves to call others (mean above 4,8). A remarkable difference is that in the ‘Valuation by Feeling’ condition they care more about the price they have to pay to call friends in the same network

and in the ‘Valuation by Calculation’ condition they care more about the price they have to pay to call to all networks. Both groups do not take into account in their switching decision the number of minutes friends will call after switching provider, and the more concerned feeling that friends would possibly call them less after switching provider, since the mean is below 4. Please refer to appendix 12 for the full SPSS analysis.

## 4.2 The results

### *The influence of rational factors on the perceived pain of switching*

In this research I conduct a linear regression<sup>24</sup> to find out what the influence is of the factors: 1) *number of friends treatment*, 2) *the price to call from network A to another person in network A*, 3) *the price to call from network A to network B* and 4) *the mindset treatment* on the perceived pain of switching. All used variables are part of the pricing plans presented to the respondents in the survey. An exception is the mindset treatment. The price per calling minute in plan B could not be included in the analysis, because this is a constant factor of €0,10 per minute. The mindset treatment is in this analysis a dummy variable, whereby rational = 0 and emotional = 1.

The first step is a test of the meaningfulness of the regression model. Apparent from the ANOVA test result is that the model is meaningful and further interpretation of the test is allowed ( $p=0,000$ ). All four factors in the analysis, see table 6, differ significantly from zero ( $p=0,000$ ).

	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
(Constant)	6,451	0,451		0,000
Number of friends	0,047	0,011	0,115	0,000
Price to call A > A	-18,295	1,949	-0.250	0,000
Price to call A > B	-15,075	2,670	-0.150	0,000
Mindset treatment*	0,341	0,080	0,113	0,000
R Square	0,112			
Adjusted R Square	0,109			
F-value	39,477			
Sig. F	0,000			

Table 6. The influences of various factors on the perceived pain of switching

\* 0= rational and 1 = emotional

<sup>24</sup> Please refer to appendix 10, Linear regression

From the test I obtain the following regression model<sup>25</sup> :

$$\text{Perceived pain of switching} = 6,451 + 0,047 \times (\text{number of friends}) - 0,18295 \times (\text{price to call from A to A}) - 0,15075 \times (\text{price to call from A to B}) + 0,341 \times (\text{mindset treatment})$$

In short, this means that when the number of friends in network A increases by one the perceived pain rises with 0,047 (on a 7-point Likert scale). Further, when the price to call from network A to a friend in network A increases with €0,01, the perceived pain of switching decreases with 0,18295. The same applies to the price per minute to call from A to B. When this price increases with €0,01 the perceived pain of switching decreases with 0,15075. Lastly, when participants have an emotional mindset ('Valuation by Feeling') the perceived pain of switching increases with 0,341. The standardized beta coefficients show that the price to call from network A to others in network A is the most important driver of the perceived pain of switching. The mindset treatment is the least important driver of the perceived pain of switching.

I can conclude that **H1b** is supported. It has been found that 10,9% of the variance of the perceived pain of switching can be explained with the rational switching costs and the mindset of the customer. This leaves 89,1% of the variation in the dependent variable unexplained. The (rational) switching costs have only a small proportion of the level of perceived pain, but it is clear that all included independent variables, number of friends in the same network, the price to call friend (A > A and A>B) and the customers mindset, have an effect. The lower the price of your current provider to call friends and relatives, the higher the perceived pain of switching provider. Further the more friends someone has in the same network, the higher the perceived pain of switching.

### ***The influence of the number of friends in the same network on the perceived pain***

By using the One-Way Anova<sup>26</sup>, I test whether the average 'perceived pain of switching' of the respondents is equal for one, five and ten friends in the same network. The results of the ANOVA test shows that not all means are equal ( $p=0,000$ ). So, this means that a difference in the average level of 'perceived pain of switching' between having one, five or ten friends in the same network is present. However, it is still unclear if just one mean deviates or all. Therefore I conduct, in addition, a multi comparison test, Bonferroni. This test demonstrates that there are no significant differences between one and five friends ( $p=0,187$ ) and just no

<sup>25</sup> The SPSS output in appendix 10 and table 6 show a decrease of perceived pain of switching of 18,295 when the price to call from A > A increases with €1. Since this is no realistic increase in price in the telecom branch I simplified it to an increase in price of €0,01 to be more reasonable. The amount of the price to call from A > A and from A > B should be entered in eurocent in the regression model.

<sup>26</sup> Please refer to appendix 9, One-Way Anova test



significant difference for five and ten friends ( $p=0,051$ ). A significant difference is found between one and ten friends ( $p=0,000$ ). This means that the average perceived pain of switching differs significantly between having one friend or ten friends in the same network A. The average perceived pain of switching, indicated by the participants on a scale from 1 – 7<sup>27</sup>, was 4,19 for having ten friends in the same network and 3,75 for one friend. The perceived pain of switching is obviously lower when just having one friend in the same network than having ten friends in the same network. It is possible that the influence of the number of friends in the same network on the perceived pain is only significant for very social people (versus less social people).

Friends (I)	Mean	Friends (J)	Mean differences	Std. Error	Sig
1	3,75	5	-,19203	0,10299	0,187
		10	-,43792	0,10407	0,000*
5	3,95	1	,19203	0,10299	0,187
		10	-,24589	0,10279	0,051
10	4,19	1	,43792	0,10407	0,000*
		5	,24589	0,10279	0,051
<i>Anova</i>					
F	8,902				
Sig	0,000				

\*A significant difference is present between the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition  
 Table 7. The influence of the number of friends on the perceived pain of switching

Based on the test results, I can conclude that **H1c** is (partly) supported. The SPSS test results indicate that only a significant difference is present in the perceived pain of switching when having one or ten friends in the same network. The difference in the average perceived pain between five and ten friends is nearly significant ( $p=0,051$ ). Overall, the average perceived pain increases when the number of friends increases.

### ***The influence of customer mindset on the perceived pain of switching***

By using the Independent Samples T-Test<sup>28</sup>, I test whether the mindset treatment has an influence on the perceived pain. In other words, is there a difference, between rational and emotional thinkers, in the perceived pain of switching telecom provider.

In my research, the respondents viewed six pricing plan conditions (also referred to as ‘situations’). In two of the six situations it is not rational, in calculative terms, to switch from provider A to provider B. This is in situation one and three, where the prices are €0,00 to call from A>A and €0,15 to call from A>B in situation one and €0,02 to call from A>A and €0,15 to call from A>B in situation three. In these situations individuals have higher calling costs

<sup>27</sup> 1= low perceived pain, 7= high perceived pain

<sup>28</sup> Please refer to appendix 6A, Independent Samples T-Test

when they are customers of provider B than when they are customers of provider A<sup>29</sup>. So in these situations it is based on costs, more advantageous to remain with network provider A.

Situation	Prices network A	Prices network B	Assumption	Calling Costs
1	Price A > A €0,00	€0,10 to call to all networks	The respondents make monthly calls:	Network A €27,0*
	Price A > B €0,15			Network B €30,0
2	Price A > A €0,00			- 120 minutes with someone within network A
	Price A > B €0,18		Network B €30,0*	
3	Price A > A €0,02		- 180 minutes with someone outside of network A.	Network A €29,4*
	Price A > B €0,15			Network B €30,0
4	Price A > A €0,02	Regardless of the provider they have.	Network A €34,8	
	Price A > B €0,18		Network B €30,0*	
5	Price A > A €0,05		Network A €33,0	
	Price A > B €0,15		Network B €30,0*	
6	Price A > A €0,05		Network A €38,4	
	Price A > B €0,18		Network B €30,0*	

\*Based on the costs of both pricing plans this is the most beneficial option to choose for the respondents

Table 8. The most cost beneficial pricing plan in each situation (displayed to the respondents of this research)

In my research, I find that in the first three pricing plan conditions<sup>30</sup> no significant differences occur. The respondents in both mindset conditions have an approximately equivalent level of perceived pain of switching in situation one, two and three. In these situations **H3** is invalid.

Situation	Asymp. Sig.	Std. Error	Mean
1	0,082	0,18375	Rational 4,95
			Emotional 4,62
2	0,076	0,20399	Rational 3,79
			Emotional 4,15
3	0,331	0,18601	Rational 4,23
			Emotional 4,41
4	0,014*	0,20248	Rational 3,50
			Emotional 4,00
5	0,001*	0,19072	Rational 3,12
			Emotional 3,79
6	0,001*	0,19974	Rational 3,08
			Emotional 3,73

\*A significant difference is present between the 'Valuation by Feeling' and 'Valuation by Calculation' condition

Table 9. Influence of the customer mindset on the perceived pain

The reason why no differences occur in situation one and three is that it is, based on costs, not beneficial to switch. Emotional individuals have in all situations a higher perceived pain of switching and have the tendency to stick longer with network A, unless it becomes really expensive for themselves. Only in situation five and six the majority of the emotional groups switches<sup>31</sup>, the prices are then €0,05 to call from A>A and €0,15/€0,18 to call from A>B. The perceived pain of switching then decreases a bit. Rational individuals probably calculated what was best (based on costs) and therefore choose remain with A and had a higher

<sup>29</sup> Please refer to table 8

<sup>30</sup> Please refer to table 8 and appendix 2, Pricing plan – Survey

<sup>31</sup> Please refer to page 37, The influence of the mindset treatment on the consumers' switching decision

perceived pain of switching in situation one and three, because it was more beneficial to remain with A. Because both groups had a high perceived pain in situation one and three, probably because of different reasons: low tendency to switch and higher costs after switching, no significant differences occur between the groups. It is unclear why no significant differences occur in situation two. The perceived pain of switching is still high ( $>4$ ) for the people in the 'Valuation by Feeling' condition. For the 'Valuation by Calculation' condition the perceived pain of switching is lower ( $<4$ ), but not significantly lower.

In the last three situations, four, five and six, a significant difference occurs (4:  $p=0,014$ , 5:  $p=0,001$ , 6:  $p=0,001$ ), thus **H3** is valid for these cases. In these situations (where the prices are €0,02/€0,05 to call from A>A and €0,15/€0,18 to call from A>B), rational people understand it is best to switch, again based on costs. It is appealing to switch, therefore the perceived pain of switching decreases. Emotional individuals still have the tendency to stick with A, but now it becomes more expensive for them to remain with network provider A. The perceived pain of switching therefore decreases a bit, but not as much as the decrease of perceived pain of the rational group. When the different situations are left a side and only the general average of perceived pain versus the mindset conditions are analyzed, a significant difference occurs ( $p=0,000$ ). In general the 'perceived pain of switching' is higher for emotional minded individuals (mean= 4,13) than for rational minded individuals (mean=3,79).

Based on the test results, I conclude that **H3** is partly supported. In the first three situations no significant differences occur. In the last three situations a significant difference is present. While it becomes clearly more appealing for the rational minded group to switch provider as the prices in the pricing plan of the current provider increase, this is not the case for the emotional minded group. The perceived pain of switching is still high for the emotional minded group, despite the high prices. Only in situation five and six when it becomes really expensive (€0,05 to call from A>A and €0,15/€0,18 to call from A>B) emotional people behave as calculative, rational people. When looking at the differences in level of 'perceived pain of switching' between the mindset conditions, separate from the different specific situations, I find that there is a significant difference in level of perceived pain between the mindset conditions.

### ***Influence of perceived pain on the customers' switching decision***

The crosstabs<sup>32</sup> show that the higher the perceived pain of switching the less likely it is that a person will switch. When the respondents indicate a high perceived pain (>4), nearly everyone choose to remain with network provider A (97,6%). Remarkably is that when the perceived pain of switching is neither high nor low the majority (72,5%) chose to remain with network provider A. Probably, because there are no sufficient advantages and reasons to change. Yanamadram and White (2009) give a similar explanation in their research for non-switching behavior (see §1.4). When the perceived pain of switching is low (<4), almost everyone chose to switch to provider B (95,1%).

Additionally a binary logistic regression<sup>33</sup> determines on the basis of odds and probability distribution, the relation between the perceived pain of switching and switch decision. The logistic model differs significantly from the zero-model. The Nagelkerke R Square (0,759) indicates a pretty strong relation between the perceived pain of switching and the switching decision. Table 10 with the estimated parameters show that the regression coefficient perceived pain is significant ( $p=0,000$ ) and shows that the logistic regression equations is as follows:

$$\text{Logit} = 9,444 - 2,524 x (\text{perceived pain})$$

	B	S.E.	Wald	Sig.
Constant	9,444	0,531	327,772	0,000
Perceived Pain	-2,524	0,139	316,718	0,000
Nagelkerke R Square	0,759			
Cox & Snell R Square	0,568			

Table 10. The influence of the perceived pain of switching on the customers' switching decision

The regression coefficient 'perceived pain' is negative, this implies that when the perceived pain of switching increases by 1 (on a 7-point Likert scale), the logit decreases and thus the probability that a person will switch to network provider B decreases.

To calculate the probability that a person will switch from network A to network B, the following formula is used:

$$P = \frac{1}{1+e^{-x}}$$

<sup>32</sup> Please refer to appendix 2I, Descriptive statistics

<sup>33</sup> Please refer to appendix 11A, Regression Binary Logistic

Perceived Pain	Logit	Probability switch A>B
7	-8.227	0,027%
6	-5.703	0,33%
5	-3.179	4,0%
4	-0.655	34,2%
3	1.869	86,6%
2	4.393	98,8%
1	6.917	99,9%

Table 11. The probability that a person will switch from A > B

It becomes clear that when the perceived pain of switching is high (>4) the probability that an individual will switch is extremely low, between the 0,027% and 4%. As mentioned before, this changes from the moment that the perceived pain is neither high nor low, but still the majority sticks with provider A. When the perceived pain is low (<4) the probability that a person will switch is high to extremely high, between 86% and 99%.

I can conclude that **H4** is supported. A strong cohesion was found between the perceived pain of switching and the switching decision, Nagelkerke R Square= 0.759. The higher the perceived pain of switching, the lower the probability that an individual will switch provider. In short, when the perceived pain decreases the probability to switch to another provider rises.

#### ***The direct influence of the rational switching costs on the switching decision***

Again I conduct a binary logistic regression<sup>34</sup>, to determine on the basis of odds and probability distribution, the relation between the rational switching costs and the perceived pain. The logistic model differs significantly from the zero-model. The Nagelkerke R Square (0,182) indicates a moderate relation between the ‘rational switching costs’ variables and the switching decision. Table 12 with the estimated parameters show that the regression coefficients are all significant ( $p=0,000$ ). The mindset treatment is in this analysis a dummy variable, whereby rational = 0 and emotional = 1. The logistic regression equations is as follows<sup>35</sup>:

$$\text{Logit} = -4.356 - 0.083 \times (\text{number of friends}) + .29207 \times (\text{Price A} > \text{A}) + .25890 \times (\text{Price A} > \text{B}) - .633 \times (\text{mindset treatment})$$

<sup>34</sup> Please refer to appendix 11B, Regression Binary Logistic

<sup>35</sup> The SPSS output in appendix 11B and table 12 show an increase of the logit of 29,207 when the price to call from A > A increases with €1. Since this is no realistic increase in price in the telecom branch I simplified it to an increase in price of €0,01 to be more reasonable. The amount of the price to call from A>A and from A> B should be entered in eurocent in the regression equation.

	B	S.E.	Wald	Sig.
Constant	-4,356	,691	39,782	0,000
Number of friends	-,083	,017	24,348	0,000
Price to call A > A	29,207	3,033	92,721	0,000
Price to call A > B	25,890	4,089	40,088	0,000
Mindset treatment	-,633	,122	26,716	0,000
Nagelkerke R Square	0,182			
Cox & Snell R Square	0,136			

Table 12. Influence rational switching costs on the customers' switching decision

The regression coefficients of the prices are positive, this implies that when the price to call in network A increases, the logit increases and thus the probability that a person will switch to network provider B increases. An increase in costs in the current pricing plan of the respondents, lowers the perceived pain of switching when other providers offer more beneficial pricing plans, therefore the probability of switching provider increases. The opposite is true for the number of friends in the same network. When the number of friends in the same network increases, the probability that an individual will switch decreases. More friends within the same network lead to a higher utility (network effect), because of the low price tariffs to call within the same network.

To calculate the probability that a person will switch from network A to network B, the following formula is used:

$$P = \frac{1}{1+e^{-x}}$$

Situation	Friends	Price A > A	Price A > B	Mindset	Logit	Probability switch A>B
1	1	0,00	0,15	Rational Emotional	-0,5555 -1,1885	36,47% 23,35%
	5	0,00	0,15	Rational Emotional	-0,8875 -1,5205	29,16% 17,93%
	10	0,00	0,15	Rational Emotional	-1,3025 -1,9355	21,37% 12,61%
2	1	0,00	0,18	Rational Emotional	0,2212 -0,4118	55,51% 39,85%
	5	0,00	0,18	Rational Emotional	-0,1108 -0,7438	47,23% 32,21%
	10	0,00	0,18	Rational Emotional	-0,5258 -1,1588	37,15% 23,88%
3	1	0,02	0,15	Rational Emotional	0,02864 -0,60436	50,72% 35,33%
	5	0,02	0,15	Rational Emotional	-0,30336 -0,93636	42,66% 28,16%
	10	0,02	0,15	Rational Emotional	-0,71836 -1,35136	32,78% 20,56%
4	1	0,02	0,18	Rational Emotional	0,80534 0,17234	69,11% 54,30%
	5	0,02	0,18	Rational Emotional	0,47334 -0,15966	61,61% 46,01%
	10	0,02	0,18	Rational Emotional	0,05834 -0,57466	51,46% 36,02%

Situation	Friends	Price A > A	Price A > B	Mindset	Logit	Probability switch A>B
5	1	0,05	0,15	Rational Emotional	0.90485 0.27185	71,19% 56,75%
	5	0,05	0,15	Rational Emotional	0.57285 -0.06015	63,94% 48,49%
	10	0,05	0,15	Rational Emotional	0.15785 -0.47515	53,93% 38,34%
6	1	0,05	0,18	Rational Emotional	1.68155 1.04855	84,31% 74,05%
	5	0,05	0,18	Rational Emotional	1.34955 0.71655	79,40% 67,18%
	10	0,05	0,18	Rational Emotional	0.93455 0.30155	71,80% 57,48%

Table 13. Switching probability

The probability that someone will switch provider is the highest, 84,31%<sup>36</sup>, when being in the ‘Valuation by Calculation’ condition, having just one friend in the same network and when the costs are €0,05 to call within the network and €0,18 to call outside of the network. The probability that a person will switch is considerably lower when being in the same mindset treatment and having the same prices, but now having ten friends in the same network (71,80%). It is the least likely that someone will switch (12,61%) when being in the ‘Valuation by Feeling’ condition, having ten friends in the same network and a price of €0,00 to call within the network and €0,15 to call outside of the network.

Table 13 shows that the prices for calls from network A to numbers within or outside of network A, in every pricing plan presented to the respondents rise slowly. This means that in the first pricing plan presented to the respondents the prices are the lowest: €0,00 to call to friends within the same network A and €0,15 to call to others in network B. In situation six, the last pricing plan, the prices are the highest: €0,05 to call to friends within the same network A and €0,18 to call to others within network B. Consequently as the price rises, the probability that an individual will switch from network rises. An exception is situation three, where the price is €0,02 to call within the same network A and the price is €0,15 to call outside of network A, the probability of switching provider decreases a little compared to situation two. This can be explained by the fact that only in situation one and three it is, based on costs<sup>37</sup>, more advantageous to stick with the current network provider A. Despite the ostensibly higher prices in situation three (€0,02 to call from A>A and €0,15 to call from A>B) compared to situation two (€0,00 to call from A>A and €0,18 to call from A>B), it is only more beneficial to stick with provider A in situation three, while it is in situation two economically better to switch to network B. Therefore the probability that someone will switch decreases a bit in situation three compared to situation two.

<sup>36</sup> See table 13

<sup>37</sup> Please refer to table 8

Remarkable is that the probability that someone will switch decreases a lot when the number of friends in the same network rises. In scenario one, with 1 friend in the same network, a price of €0,00 to call from A>A, a price of €0,15 to call from A>B and the ‘Valuation by Calculation’ condition there is 36,47% probability that an individual will switch from network A to network B. The probability that someone will switch decreases with 20,438% (to 29,16%) when having the same scenario one, but then with 5 friends. Another decrease of 26,71% in probability that a person will switch provider is manifest between having 5 and 10 friends in the same network. The declines in probability are even greater for the ‘Valuation by Feeling’ condition in the same scenario one, when the number of friends increases (see table 14 for an overview).

Friends	A>A	A>B	Probability Switch A > B Rational	Probability Switch A > B Emotional	% change in probability ‘Valuation by Calculation’ Rational		% change in probability ‘Valuation by Feeling’ Emotional	
1	€0,00	€0,15	36,47%	23,35%				
5	€0,00	€0,15	29,16%	17,93%	(1→5 friends)	20,44%	(1→5 friends)	23,21%
10	€0,00	€0,15	21,37%	12,61%	(5→10 friends)	26,71%	(5→10 friends)	29,67%

Table 14. Probability changes

**H1a** is supported. However, the relation between the independent variables and the dependent variable is moderate. The lower the number of friends in the same network and the more expensive the price plan of the current network, the higher the probability that someone will switch. So, it has a direct influence on the switching decision.

### ***The influence of the mindset treatment on the consumers’ switching decision***

I also test if the different mindset conditions lead to different switching decisions. The results of the tests<sup>38</sup> confirm that individuals in an emotional and a rational mindset make other decisions except in two cases. In the first and in the third situation no significant differences were extant. In these situations both emotional and rational individuals remain in the majority of the cases with network provider A<sup>39</sup>. This corresponds to the thoughts of having a more calculative mindset as a rational person. The majority of the rational minded group only switches when it is based on the costs to be incurred, more advantageous<sup>40</sup>. Generally, individuals in the emotional condition remain with provider A, but when their own costs increase to €0,05 per minute to call friends in network A and €0,15/€0,18 to call to other

<sup>38</sup> Please refer to appendix 7, Chi-Square test

<sup>39</sup> Please refer to table 15 to the percentages of individuals switching from network A to network B

<sup>40</sup> Please refer to table 13



networks a small majority choose to change provider. It seems that selfishness takes over and lower costs are preferable over taking into account the consequences of the switch for friends.

Situation	Asymp. Sig.	Percentage A → B <sup>41</sup>
1.	0,711	Rational 15,7% Emotional 17,6%
2.	0,009*	Rational 55,9% Emotional 38,0%
3.	0,380	Rational 36,3% Emotional 30,6%
4.	0,008*	Rational 62,7% Emotional 44,4%
5.	0,000*	Rational 76,5% Emotional 50,9%
6.	0,006*	Rational 74,5% Emotional 56,5%

\*A significant difference is present between the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition  
*Table 15. The influence of the mindset treatment on the switching decision*

### **Loss of call minutes**

By using an Independent Samples T-Test<sup>42</sup> I also test whether there is a difference in the expected loss of calling minutes from friends, between people in the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition. The situation outlined in the survey states that the participants are called 90 minutes by friends when having the same provider A. The respondents had to imagine what would happen if they themselves switch from provider A to B. By viewing the mean in every situation presented<sup>43</sup>, it becomes clear that individuals in the ‘Valuation by Calculation’ condition expect less loss in calling minutes than people in the ‘Valuation by Feeling’ condition. When having a rational mindset respondents expect that friends will call  $\pm 19/20$  minutes less, while when having an emotional mindset a loss of  $\pm 27/29$  minutes is expected. The results of the tests indicate that there is a significant difference in expected loss between individuals with a rational and emotional mindset, except for situation 5. Also in general, when the situations are disregarded, a significant difference occurs between the mindset conditions and the expected loss of calling minutes from friends ( $p=0,000$ ). On average individuals in the rational mindset expect that they will be called 69,10 minutes and people in the emotional mindset expect they will be called 61,81 minutes per month by friends.

I can conclude that **H2** is (partly) supported. The SPSS test results show that in general the perceived pain of switching differs significantly between individuals in the rational and emotion mindset condition. When monitoring the differences for every situation (pricing

<sup>41</sup> Please refer to appendix 3G, Descriptive statistics

<sup>42</sup> Please refer to appendix 6C, Independent Samples T-Test

<sup>43</sup> Please refer to table 16

plan), five out of the six situations show a significant difference. Individuals in the emotional mindset experience a greater loss of calls (in minutes) than persons in the rational mindset.

Situation	Call from A → A	Call from A → B	Mean (in minutes)	Asymp. Sig.
1	Friends in network A pay €0,00 p/m to call the respondent in network A	Friends in network A pay €0,15 p/m to call the respondent in network B	Rational 70,87 Emotional 63,13	0,022*
2	Friends in network A pay €0,00 p/m to call the respondent in network A	Friends in network A pay €0,18 p/m to call the respondent in network B	Rational 68,44 Emotional 61,41	0,044*
3	Friends in network A pay €0,02 p/m to call the respondent in network A	Friends in network A pay €0,15 p/m to call the respondent in network B	Rational 70,77 Emotional 63,46	0,032*
4	Friends in network A pay €0,02 p/m to call the respondent in network A	Friends in network A pay €0,18 p/m to call the respondent in network B	Rational 70,33 Emotional 61,03	0,007*
5	Friends in network A pay €0,05 p/m to call the respondent in network A	Friends in network A pay €0,15 p/m to call the respondent in network B	Rational 67,61 Emotional 61,89	0,097
6	Friends in network A pay €0,05 p/m to call the respondent in network A	Friends in network A pay €0,18 p/m to call the respondent in network B	Rational 66,95 Emotional 59,37	0,038*

\* A significant difference is present between the 'Valuation by Feeling' and 'Valuation by Calculation' condition

Table 16. Loss of calling minutes

### ***Control variables***

To test if the control variables inertia and switching costs do not bias the results, I conduct an Independent Samples T-Test<sup>44</sup>. The two mindset conditions are compared with the level of inertia and the extent to which switching costs play a role. The results indicate that there are no differences in the level of inertia ( $p=0,267$ ) or in the extent to which switching costs ( $p=0,568$ ) play a role in the decision making between the two groups. This means that the differences found in the research are not a result of inertia or facing a high level of switching costs. The mean of the inertia scale ( $M_{\text{rational}}= 3.98$ ,  $M_{\text{emotional}}=3.85$ ) suggests that both groups do not have the tendency to resist change. With regard to the switching costs, the participants neither agree nor disagree that they face switching costs in switching decision making ( $M_{\text{rational}}= 4.25$ ,  $M_{\text{emotional}}=4.38$ ).

Another control variable is the factor guilt. Per 'guilt' question a Chi-Square test<sup>45</sup> is performed. The results show that there are no significant differences in feeling guilty with respect to friends, between respondents in the 'Valuation by Feeling' and 'Valuation by Calculation' condition. In general the respondents are quite pro-social. In three of the four

<sup>44</sup> Please refer to appendix 8, Testing the control variables

<sup>45</sup> Please refer to appendix 8, Testing the control variables

cases, both groups, choose a pro-social answer<sup>46</sup>. The majority of the rational participants chooses at every turn for the pro-social option. This implies that most participants choose to share an equal amount of money with their friends instead of receiving more money themselves. Remarkably the tendency to be pro-self is higher when it concerns a high amount of money or when the respondent and friend were both better off.

Choice	Rational	Emotional	Pearson Chi-Square
• I receive €100, friend €30 • I receive €85, friend €85	11,8% 88,2%	13,0% 87,0%	0,792 > 0,005
• I receive €150, friend €150 • I receive €235, friend €110	51,0% 49,0%	51,9% 48,1%	0,900 > 0,005
• I receive €50, friend €12 • I receive €20, friend €20	39,2% 60,8%	35,2% 64,8%	0,570 > 0,005
• I receive €2, friend €2 • I receive €10, friend €2,50	52,9% 47,1%	44,4% 55,6%	0,269 > 0,005

Table 17. Mindset versus Guilt

The last control variable of the research is risk aversion. Again a Chi-Square test<sup>47</sup> is conducted. The results show that there are no significant differences in the level of risk aversion, between respondents in the rational and emotional mindset condition. When the participants had to choose between certainly win a certain sum of money and playing the lottery with the risk to win nothing, the majority chooses for the certainty. When no certainty option is available to choose, so when both options include a probability percentage, individuals choose the more risky option.

<sup>46</sup> Please refer to table 17

<sup>47</sup> Please refer to appendix 8, Testing the control variables

### 4.3 Assessing the hypotheses

In the previous paragraph the results are described. In short, this research supports three of the six hypotheses fully and three of the six partly:

Hypothesis	Supported/Rejected
<b>H1a</b> <i>Rational switching costs have a direct influence on a consumers' decision to switch or not to switch to a new telecommunication network provider</i>	Supported
<b>H1b</b> <i>Rational switching costs enhance the perceived pain of switching to a new telecommunication network provider</i>	Supported
<b>H1c</b> <i>The more friends someone has in the same network, the higher the perceived pain of switching provider.</i>	(partly) supported
<b>H2</b> <i>Individuals in an emotional mindset expect a greater loss of calls (in minutes) from friends after switching provider than people with a rational mindset</i>	(partly) supported
<b>H3</b> <i>The perceived pain of switching will be higher when having an emotional mindset compared to having a rational mindset.</i>	(partly) supported
<b>H4</b> <i>The higher the perceived pain of switching the less likely it is that an individual will switch.</i>	Supported

Table 18. Summary hypotheses

## 5. Conclusions and future research

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*In chapter 5 the conclusion will be given. Paragraph 5.1 covers the general discussion. This will be followed by the academic contribution in §5.2 and the managerial contribution in §5.3. Lastly, the limitations of this research and directions for further research will be discussed in §5.4.*

### 5.1 General discussion

The perceived pain of switching is moderately influenced by rational switching costs (switching costs derived from logical reasoning) as the price to call within the same network, the price to call outside of the network and the number of friends in the same network. The lower the prices of the current pricing plan and the higher the number of friends in the same network, the higher the perceived pain of switching. Also the mindset of a person matters. Having an emotional mindset ('Valuation by Feeling'), leads to a higher level of perceived pain than a rational mindset ('Valuation by Calculation'). However, of all these factors the customer mindset is the least important driver of the perceived pain of switching.

Obvious is that the height of the perceived pain of switching influences the switching decision. The results show that the higher the perceived pain, the more likely it is that a person will not switch. When the pain and/or the gains of switching provider are not evident, then the majority will remain with the current provider. The results reveal that the perceived pain of switching is, in general, higher for the participants in the emotional condition. Thus, individuals who are led by emotions will switch less frequently or less likely than people who are led by rationality. This is consistent with the research results, whereby the majority of the rational group only switches when it is financially most advantageous and a slight majority of the emotional group switches only when their own costs increase enormously. In general the emotional group has the tendency to remain more often with the current network provider A. While the majority of the rational group directly switches to network provider B, when the switch results in a financial benefit.

The differences in switching outcome are definitely not attributable to the factors guilt, risk aversion, inertia or the level of switching costs that both groups experienced. The research controls for all these factors result in no significant differences between the rational and emotional mindset condition.

In this research a significant difference in expected loss of calling minutes is present between the participants in the 'Valuation by Feeling' and 'Valuation by Calculation' condition. Individuals in an emotional mindset expect a loss of 29 minutes while people in a rational

mindset expect a loss of 19 minutes. So, a large gap between the expectations of the two groups exists. It seems that in the 'Valuation by Feeling' condition emotions actually take over and lead to an exaggeration in the loss of calls. Earlier I concluded that individuals in the 'Valuation by Feeling' condition switch less frequently. However, it cannot be proven that the respondents in the 'Valuation by Feeling' condition base their switching decisions, in most cases to remain with the current provider, on this expected loss of calls. The results of the importance of various switching factors suggest that only the 'consequences of the switch' for friends may cause a difference in the switching decision between groups, since no other differences occur between the rational and emotional group. No differences were found, between the two groups, regarding the importance that the following factors have on the switching decision: the price the respondents had to pay p/m to call friends in network A, the price the respondents had to pay p/m to call to other networks, the number of friends in the same network, the number of minutes that the respondent thought friends within network A would call them after the switch and feeling concerned that friends call less, because of the higher price the friends have to pay after the switch. So, in this research it seems that the consequences for friends are taken into account by the emotional conditioned group, but not the expected loss in calling minutes. Despite this outcome it does not mean that social losses, as a form of non-rational switching costs, do not exist. It is still possible that the social losses play a role in the decision making for the participants in the emotional mindset. The possibility that this group is not conscious of this role in their decision making, can lead to a potentially distorted outcome.

In short, this research shows that individuals with a rational versus emotional mindset make different choices regarding switching decision making. The higher the perceived pain is, the lower the probability someone will switch. Emotional people face higher levels of perceived pain of switching and therefore switch less frequently than rational minded people. It is not the social loss, the expected loss in calling minutes, that appears to explain the difference in switching decision between the two mindsets, but the fact that individuals in the emotional mindset care more about the consequences the switch has for their friends.

## **5.2 Academic Contribution**

This research contributes again to the fact that individuals with a more rational mindset make other decisions than people with an emotional mindset. This is consistent with the theories of Hsee and Rottenstreich (2000 & 2004), Mellers (1999), Loewenstein (2000 & 2005) and Damasio (1994). This research tried to find out if a, hitherto unknown, behavioral

phenomenon is present in switching decision making: social losses. The results of this research show that differences in the perceived loss of calls (in minutes) are found. Respondents in the 'Valuation by Feeling' condition perceive a significantly higher loss in calling minutes than the respondents in the 'Valuation by Calculation' condition. People in the 'Valuation by Feeling' condition face a higher level of the perceived pain of switching than respondents in the 'Valuation by Calculation' condition. Another fact of the research is that these groups made different switching decisions, but unfortunately it is not proven that the deviating switching decision can be attributed to the perceived social losses in calling minutes. No differences are found between the underlying reasons of the participants to switch or not to switch. Both groups indicate the loss of calls (in minutes) as slightly important to neither important nor unimportant and no significant differences were found between the groups. Only one difference is found between the two groups. In the emotional mindset the decision is based more on the consequences the switch would have for friends in comparison with the rational mindset condition. It cannot be entirely ruled out that social losses as a form of non-rational switching costs, do not play a role in the switching decision making in the telecommunication branch. This statement will be further explained in more detail in §5.4, limitations and future research.

### **5.3 Managerial Implications**

The mobile subscription penetration in the Western part of the world is very high. In a number of European countries the penetration percentages are even above the 100%, which means that individuals have multiple telecom subscriptions. Therefore companies have to acquire new customers from its competitors, which might be very hard according to Klemperer (2007). Nowadays it is common that service providers offer special packages or prices for using the same service as friends and family. Currently non-switching behavior is explained with rational considerations, driven by logical thinking and inertia, cognitive laziness, but as pointed out earlier a new behavior phenomenon could be present. In this proposed behavioral phenomenon, exaggeration, elicited by emotion, of the switching costs could lead to non-switching behavior in the telecom industry.

Results show that indeed, individuals led by emotions perceive a significant higher loss in calls (in minutes) than people led by rationality. However, it cannot be proven yet that individuals face this as a part of the switching costs and are guided by this feeling in their decision making. So, no managerial implications can be provided yet with regard to the social losses.

### *Attracting new customers*

This study also reveals that rational people make other switching decisions than emotional people. The individuals in the 'Valuation by Feeling' and 'Valuation by Calculation' condition seem to base their choice on different aspects. The main driver in the switching decision of the rational minded individuals is in this research the price they have to pay themselves to call others. For emotional minded individuals also the consequences for friends is taken into account. To increase the probability of switching and stealing customers from the incumbent, a firm should offer competitive pricing plans and be the cheapest. Individuals in the 'Valuation by Calculations' condition seem to examine and compute what pricing plan is financially most beneficial. By offering the cheapest pricing plan within a specific market a telecom provider should acquire new customers.

This research findings also have implications for the marketing communication. Based on this research it is advisable for firms to focus in their marketing communication on the financially attractive pricing plans they offer to make the (rational) prospects aware. By making them aware of the beneficial pricing plans, they will be encouraged to make calculations.

It is not possible to give practical implications for the emotional group. Further research on this group is necessary. In this research I found out why this group exhibits non-switching behavior. The 'Valuation by Feeling' group exhibits non-switching behavior when the price they have to pay, at their current provider, to call friends is (very) low and because they take into account the consequences the switch would have for friends. So, we now know what hinders them to switch provider, but not what encourages them to switch.

### *Keeping the customer*

To keep the (rational) customers, a company should offer again the lowest prices. So, when the contract expires, the firm should convince the customer that they have the best (cheapest) deal.

The priming in the 'Valuation by Feeling' condition is focused on friends and thus on emotion and resulted in an unwillingness to switch provider or in other words a high tendency to remain with the current provider. Before a subscription expires the telecom providers often send a message to the customer to extend the contract. Based on the results it is recommendable to focus on 'the friends aspect', when a provider sends this message, to keep the customers. So, in other words providers should focus in this message on the ease the provider offers to its customers and their friends and the (financial) benefits they have.



Another thing a firm could do to keep the customer is encourage existing customers to introduce new customers (friends) to the firm. For every new customer they receive a reward, e.g. free download of apps (for which you usually have to pay) or discount on a daytrip for two persons. In this way the firm can try to enhance the switching costs for the customer. The more friends have the same provider, the higher the benefit of calling against very low tariffs and thus it will be less attractive to switch provider.

#### **5.4 Limitations and future research**

Firstly, in this research the respondents do not feel the pain or joy as a consequence of their decision. By the use of the vignette approach the respondents had to imagine that they had to make a decision, but while making the decision they were aware that the decision did not have real consequences. Which means that in real life individuals would possibly make another choice. On the other hand, the research time scope was limited. Without the vignette approach and the experimental setting it is almost impossible to test if social and network related losses exist in switching decision making in the telecom branch. To get a more reliable result this research must be performed by a telecom company with individuals who are seriously considering to switch. Then the problem is finding a company that is willing to cooperate. Another problem is how to find these people who are considering switching? The research should be conducted among individuals whose contracts expire. Companies only have knowledge of their own clientele. In short, it is very complex to investigate this phenomenon without a hypothetical approach.

Another limitation is that the research was conducted in the Netherlands and 90,8%<sup>48</sup> of the respondents were Dutch. In Holland the outlined situation occurs to a limited extent. In the Netherlands a few mobile telecom providers offer pricing plans with which customers can call for free when having the same provider. However, most of the time, it has its drawbacks. These pricing plans are often only available for the business market, for a restricted number of friends within the same network, in combination with the most expensive subscription or the offer is confined to a pre-determined number of free air-time minutes. Therefore, relatively few people make use of these offers. Again, responses might be different when the research would be conducted in another country where this kind of set-up of pricing plans is more common (e.g. Portugal).

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<sup>48</sup> Please refer to appendix 3B, Descriptive statistics

Thirdly, based on the research of Hsee and Rottenstreich (2004) the priming is developed. A restriction of the use of their method is that the degree of evoked emotion is measured. The research shows that there is a significant difference between the emotion evoked in the ‘Valuation by Feeling’ and ‘Valuation by Calculation’ condition. However, it cannot be proven that the respondents are influenced by the priming, (un)consciously, in making their decisions during the study. In further research the mindset, being more rational or emotional, should be measured before the respondent starts the survey, and after being exposed to the priming, to get a more reliable view of the internal state of the respondent.

In this research a distinction is made between situations where it is financially advantageous to switch, situation two, four, five and six<sup>49</sup>. In these situations the calling costs are lower at network provider B compared to the current provider A. In these situations it is economically rational to switch provider. On the other hand there are two situations (one and three) where it is best to remain with the current provider based on the costs. In this research I examined the moderating effect of emotion (rational versus emotional) on the switching decision. Despite the fact that I excluded the brands in this research, it might be possible that the loyalty a person feels towards their own, real provider influenced the decision. It might be the case that emotional individuals are more loyal towards the provider they currently have than rational people and therefore drive their non-switching behavior. So, in further research it should be investigated to what extent the degree of loyalty influences (non-)switching behavior.

In this research the average perceived pain of switching differs significantly between having one friend and ten friends in the same network. A possibility is that this effect may only be present for very social versus less social people. The rationale behind this is that very social individuals attach a value to the number of friends they have in the same network. Meanwhile less social persons attach less value to this. The perceived pain of switching is therefore probably only significantly higher for social people (versus less social people). I recommend to explore in further research if the degree of sociality is moderating the effect of the number of friends on the perceived pain of switching.

I recommend to do another similar study. Social losses, in calling minutes, between the two mindset conditions are found, but the respondents indicate that their switching decisions were not based on this aspect. However there are differences in switching decisions between the rational and emotional respondents. In the emotional condition, respondents take into account

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<sup>49</sup> Please refer to table 8 for the pricing plan situations and the cost differences

the consequences of the switch for their friends. On the other hand this group was not found to be more pro-social than the rational minded individuals. It could be the case that individuals in the emotional mindset unconsciously take into account the social losses. A number of scientific articles focuses on the fact that not all decision and choices are made consciously<sup>50</sup>. In this research the respondents were asked directly if the potential social losses played a role in the decision making. Therefore an additional research study should investigate, with indirect questions, if this is actually the case. Another option is to use neuro-marketing to see the reactions of the brain.

Earlier it was mentioned that the phenomenon of social and network related losses also might be applicable for other branches (e.g. sport clubs, courses and mobile applications). For further research I would recommend to investigate whether this phenomenon exists in other branches. Requirements for this research are:

- The field of research should be focused on a service
- Individuals may suffer social losses after making a switching decision or stop using the same service as friends → being called less (telecom), having fewer appointments/ less contact moments (sport club)

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<sup>50</sup> For example, please refer to A. Dijksterhuis (2004), Think different: The merits of unconscious thought in preference development and decision making. *Journal of Personality and Social psychology*. Pp. 586 – 598.

## REFERENCES

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- (1) Aaker, David A., "The Value of Brand Equity". *Journal of Business Strategy*. Vol. 13. Issue 4, pp. 27 – 32.
- (2) Baumeister, Roy F., Ellen Bratslavsky, Kathleen D. Vohs and Catrin Finkenauer (2001). "Bad is stronger than good". *Review of General Psychology*. Vol 5, Issue 4, pp 323 – 370.
- (3) Beatty, S.E., M.A. Jones, D.L. Mothersbaugh and K. E. Reynolds (2007). "The positive and negative effects of switching costs on relational outcomes", *Journal of Service Research*, Vol. 9, Issue. 4, pp. 335– 355.
- (4) Bower, G.H., S.G. Gilligan and K.P. Monteiro (1981). "Selectivity of learning caused by affective states. *Journal of Experimental Psychology: General*, 110, pp. 451 – 473
- (5) Brandstätter, Eduard, Anton Kühberger and Friedrich Schneider (2002). "A cognitive-emotional account of the shape of probability weighting. *Journal of Behavioral Decision Making*. Vol. 15, Issue 2, pp. 79 – 100.
- (6) Burnham, Thomas, Judy K. Frels and Vijay Mahajan (2003). "Consumer Switching Costs: A Typology, Antecedents, and Consequences." *Journal of the Academy of Marketing Science*. Vol. 31 Issue 2., pp. 109 – 126. April, 2003.
- (7) Carlsson, Frederik and Asa Löfgren (2004). "Airline choice, switching costs and frequent flyer programs". *Working paper in Economics, no. 123*. Department of Economics, Gothenburg University, January 2004.
- (8) Clark, Bruce H., Sangit Chatterjee (1999). "The evolution of dominant market shares: The role of network effect". *Journal of Marketing Theory and Practice*. Vol. 7, Issue 2, pp. 83 – 96.
- (9) Cremer, de D. and P.A.M. van Lange (2001), "Why prosocials exhibit greater cooperation than proselfs: the roles of social responsibility and reciprocity" *European Journal of Personality*. Vol. 15, Issue 1, pp.5 –18.
- (10) Crosby, Lawrence A. and Nancy Stephens (1987). "Effects of Relationship Marketing on Satisfaction, Retention, and Prices in the Life Insurance Industry." *Journal of Marketing Research*. Vol. 24, Issue 4, pp. 404–411.
- (11) Dagger, T.S., and Meredith E. David (2012). "Uncovering the real effect of switching costs on the satisfaction-loyalty association. The critical role of involvement and relationship benefits." *European Journal of Marketing*. Vol. 46, Issue 3/4, pp. 447–468.

- (12) Damasio, Antonio R. (1994). ‘‘Decartes’ error: Emotion, reason, and the human brain.’’ New York: Putnam, 1994.
- (13) Donkers, A.C.D., B. Melenberg, A.H.O. van Soest (2001). Estimating risk attitudes using lotteries: A large sample approach. *Journal of Risk and Uncertainty*, Vol. 22, Issue 2, pp.165–195
- (14) Dubé, Jean-Pierre, Günter J. Hitsch and Peter E. Rossi (2009), ‘‘ Do switching costs make markets less competitive?’’ *Journal of Marketing Research*. Vol. 46, Issue 4, pp. 435 – 445
- (15) Johnson, E.J. and A. Tversky (1983). Affect, generalization, and the perception of risk. *Journal of Personality and Social Psychology*, Vol. 45, Issue 1, pp. 20 – 31.
- (16) Kahneman, Daniel and Amos Tversky (1991). ‘‘Loss aversion in riskless choice: A reference-dependent model’’ *The Quarterly Journal of Economics*. Vol 106, Issue 4, pp. 1039 – 1061. November 1991.
- (17) Katz, Michael L. and Carl Shapiro (1985). ‘‘Network Externalities, competition and Compatibility’’. *The American Economic Review*. Vol 75. Issue 3. pp. 424 – 440.
- (18) Keaveney, Susan M. (1995), ‘‘Customer Switching Behavior in Service Industries: An Exploratory Study.’’ *Journal of Marketing*. Vol. 59, Issue 2, pp. 71 – 82.
- (19) Klemperer, Paul (1987), ‘‘Markets with Consumer Switching Costs’’. *The Quarterly Journal of Economics*. Vol. 102, Issue 2, pp. 375 – 394. May, 1987.
- (20) Klemperer, Paul and Joseph Farrell (2007), ‘‘Coordination and Lock-In: Competition with Switching Costs and Network Effects’’. *Handbook of Industrial Organization*. Vol. 3. Chapter 31. pp. 1970 – 2056. May, 2007
- (21) Kuhlman, Michael. and Paul A.M. van Lange (1994), ‘‘Social Value Orientations and Impressions of partner’s honesty and intelligence: a test of the might versus morality effect’’ *Journal of Personality and Social Psychology*. Vol. 67, Issue 1, pp.126 – 141.
- (22) Lee, Jonathan, Janghyuk Lee and Lawrence Feick (2001), ‘‘ The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France’’. *Journal of Services Marketing*. Vol. 15, Issue 1, pp. 35 – 48.
- (23) Loewenstein, George (2000). ‘‘Emotions in economic theory and economic behavior. *The American Economic Review*. Vol. 90, Issue 2. pp. 426 – 432
- (24) Loewenstein, George (2005), ‘‘Hot-Cold Empathy Gaps and Medical Decision Making’’. *Health Psychology*. Vol. 24, Issue 4, pp. 549 – 556.

- (25) Mellers, Barbara, Ilana Ritov and Alan Schwartz (1999). "Emotion-based choice". *Journal of Experimental Psychology: General*. Vol. 128, Issue 3, pp. 332 – 345.
- (26) Ratchford, Brian T. (2001). "The economics of consumer knowledge". *Journal of Consumer Research*. Vol. 27, Issue 4.
- (27) Rottenstreich, Yuval and Christopher K. Hsee (2004), "Music, Pandas and Muggers: On the Affective Psychology of Value". *Journal of Experimental Psychology*. Vol. 13. Issue 1, pp. 23 – 30.
- (28) Rust, Roland T., Anthony J. Zahorik and Ray Kordupleski (1993), "Why Improving Quality Doesn't Improve Quality" *California Management Review*, 35 (Spring), pp. 82 – 95.
- (29) Seetharaman, P.B., Andrew Ainslie and Pradeep K. Chintagunta (1999). "Investigating Household State Dependence Effects Across Categories". *Journal of Marketing Research*. Vol. 36, Issue 4, pp 488 – 500
- (30) Shy, O. (2002). "A quick-and-easy method for estimating switching costs", *International Journal of Industrial Organization*, Vol. 20, Issue 1, pp. 71-87.
- (31) Stemersch, Stefan, Gerard J. Tellis, Philip Hans Franses and Jeroen L.G. Binken (2007), "Indirect network effect in new product growth". *Journal of Marketing*. Vol. 71. Issue 3, pp. 52 – 74.
- (32) Tellis, Gerard J. (2010). "Network effects do they warm or chill a budding product?". *International Journal of Research in Marketing*. Vol. 27. Issue 1. pp. 20 – 21.
- (33) Tucker, W.T. (2009). "The development of Brand Loyalty". *Journal of Marketing Research*. Vol. 1, Issue 3, pp. 32 – 35.
- (34) Vagias, Wade M. (2006). "Likert-type scale response anchors." *Clemson International Institute for Tourism & Research Development*, Department of Parks, Recreation and Tourism Management. Clemson University.
- (35) Weber, Max (1978), "Economy and Society: An Outline of Interpretive Sociology". *University of California Press*. Page 26, 3<sup>rd</sup> sentence.
- (36) Yanamandram, V. K. and L. White (2006), "Switching barriers in business-to-business services: a qualitative study", *International Journal of Service Industry Management*, Vol. 17 No. 2, pp. 158–92.
- (37) Zajonc, Robert B. (1980). "Feeling and Thinking: Preferences Need No Inference." *American Psychologist*. Vol. 35, Issue 2, pp. 151–175.
- (38) Zauberan, Gal (2003), "The Intertemporal Dynamics of Consumer Lock In". *Journal of Consumer Research*. Vol. 30, Issue 3, pp. 405 – 419. December, 2003.

**Part I**

**Gender:** 0 = "female," 1 = "male"


**Age:** Open question

**Nationality:** Open question

**Calling per week [own development]** I call (on average) at least once a week..

0 = "No", 1 = "Yes"

Uw factuur				
P. Klaasen Burgemeester Oudlaan 50 3062 PA ROTTERDAM 		Datum Pagina	29 april 2014 1 van 1	
Uw nummer: [REDACTED]		Klantnummer Factuurnummer	901216.12917 47963	
Kostenoverzicht	Duur/ aantal	Periode	Bedrag	Totaal
<b>Maandkosten</b>				
iSmart 150 '11		25.04.14 t/m 24.05.14	26,04	30,20
Onbeperkt Internet Voordeelb.		25.04.14 t/m 24.05.14	4,16	
<b>Gebruikskosten buiten bundel iSmart 150 '11</b>				
		t/m 24.04.14	0,00	
Subtotaal excl. BTW			€ 30,20	
BTW 21%			€ 6,34	
<b>Totaal</b>			<b>€ 36,54</b>	
Het totaalbedrag wordt omstreeks 7 mei 2014 van uw rekeningnr. [REDACTED] afgeschreven.				


**Priming**

**Emotion in general [Hsee and Rottenstreich (2004)]** How much emotion is evoked when you look at the picture?

Response scale for emotion measurement: 1= None, 2=Little, 3= Not sure 4=Some, 5=A lot

**Priming VBF [Own development]** Could you please write down the names of your three best friends you call the most with?

**Priming VBF [based on Hsee and Rottenstreich (2004)]** Please use one word to describe your predominant feeling, when you hear the following words:

1. "Family"
2. "Friends"
3. "Love"

**Priming VBC [Own development]** Could you please enumerate three aspects you definitely take into account, by choosing your telecom provider?

**Priming VBC [based on Hsee and Rottenstreich (2004)]** Please answer the following questions:

1. If it costs you €0,08 per minute to call a friend, how many minutes did you call if you telephone bill is €50?
2. If you have 5 friends, a phone bill of €85 and the calling costs are €0,17 per minute, how many minutes did you call on average with each friend?
3. If a consumer bought 3 telephones for €1863, how much did the consumer pay for each telephone on average?

## Part II

**Switching [own development]** If I had to make a decision regarding switching provider, I would choose to...

0= "Stick with network provider A", 1= "Switch to network provider B"

**Perceived pain of switching [own development]** How appealing is it according to you to switch from Provider A to Provider B...

Response scale: 1= Not appealing at all to 7= Extremely appealing

**Switching factors [own development]** Please, indicate, on a scale from 1 to 7, to what extent the following factors played a role in your decision...

1. The price I have to pay per minute to call my friends
2. The price I have to pay per minute to call to other networks
3. The price my friends have to pay per minute to call me
4. The number of friends that were in the same network
5. The number of minutes I think that friends within network A will call me if I switch to network B
6. Feeling uncomfortable making my friend pay more to call me
7. Feeling concerned that my friend may call me less, because they have to pay more per minute to call me.

Response scale: 1= Not important at all, 2= Low importance, 3= Slightly important 4= Neither important nor unimportant, 5= Moderately important, 6= Very Important, 7= Extremely important

**Calling minutes after switch [own development]** How many minutes do you think each friend/others will call you after switching to Provider B...

... minutes within the same network

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## Part III

**Switching costs [Lee and Neale (2012)]** Please indicate, by encircling, on a 7-point scale to what extent you agree..

1. For me, the costs in time, effort, and money to change telecom providers are high
2. It would take a lot of time, money and effort for me to switch to another telecom provider
3. In general, I find it a hassle for me to change telecom providers

**Inertia [Lee and Neale (2012)]** Please indicate, by encircling, on a 7-point scale to what extent you agree..

4. I would not think about switching to another telecom provider
5. I look out for attractive deals from the other telecom providers when I switch
6. I cannot be bothered to think about switching to another telecom provider

Response scale: 1=Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4= Neither agree nor disagree, 5= Somewhat agree, 6=Agree, 7= Strongly agree

**Risk aversion [Donkers et. al. (2001)]** A coin is tossed once. You can choose one of the following two options..

1. I receive €1000, with either heads or tails
2. With heads you receive €1200, with tails you don't receive anything at all

Response: 1= Risk Averse, 2= Not Risk Averse



**Risk aversion [Donkers et. al. (2001)]** Which of the following two options would you choose..

1. You draw a lottery ticket with 75% chance to win €45 (if you lose, you do not get anything at all)
2. You win €30, no matter which ticket is drawn

Response: 1= Not Risk Averse, 2= Risk Averse

**Risk aversion [Donkers et. al. (2001)]** Which of the following options would you choose?

1. You draw a lottery ticket with a chance of 30% to win €100 (if you lose, you do not get anything at all)
2. You draw a lottery ticket with a chance of 25% to win €130 (if you lose, you do not get anything at all)

Response: 1= Risk Averse, 2= Not Risk Averse

**Risk aversion [Donkers et. al. (2001)]** Which of the following options would you choose?

1. You draw a lottery ticket with 2% chance of winning €3000 (if you lose, you do not get anything at all)
2. You draw a lottery ticket with 1% chance of winning €6000 (if you lose, you do not get anything at all)

Response: 1= Risk Averse, 2= Not Risk Averse

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**Guilt [based on van Lange and Kuhlman (1994)].** Please indicate, by encircling a or b, what you would decide if you had to make a decision. Which of the following two options would you choose?

- a. You will receive €100 and your friend will receive €30
- b. You will receive € 85 and your friend will receive € 85

Response: a= Pro-Self, b= Pro-Social

**Guilt [based on van Lange and Kuhlman (1994)].** Please indicate, by encircling a or b, what you would decide if you had to make a decision. Which of the following two options would you choose?

- a. You will receive €235 and your friend will receive €110
- b. You will receive € 150 and your friend will receive € 150

Response: a= Pro-Self, b= Pro-Social

**Guilt [based on van Lange and Kuhlman (1994)].** Please indicate, by encircling a or b, what you would decide if you had to make a decision. Which of the following two options would you choose?

- a. You will receive €50 and your friend will receive €12
- b. You will receive € 20 and your friend will receive € 20

Response: a= Pro-Self, b= Pro-Social

**Guilt [based on van Lange and Kuhlman (1994)].** Please indicate, by encircling a or b, what you would decide if you had to make a decision. Which of the following two options would you choose?

- a. You will receive €10 and your friend will receive €2.50
- b. You will receive € 3 and your friend will receive € 3

Response: a= Pro-Self, b= Pro-Social

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## Appendix 2. Pricing plans – survey

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### A. Situation 1

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,00 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,15 per minute		

### B. Situation 2

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,00 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,18 per minute		

### C. Situation 3

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,02 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,15 per minute		

### D. Situation 4

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,02 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,18 per minute		

### E. Situation 5

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,05 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,15 per minute		

### F. Situation 6

Network A – Pricing Plan		Network B – Pricing Plan	
Call within network A	€0,05 per minute	Calls to <u>all networks</u>	€0,10 per minute
Calls to other networks	€0,18 per minute		

**A. Gender vs. Age**

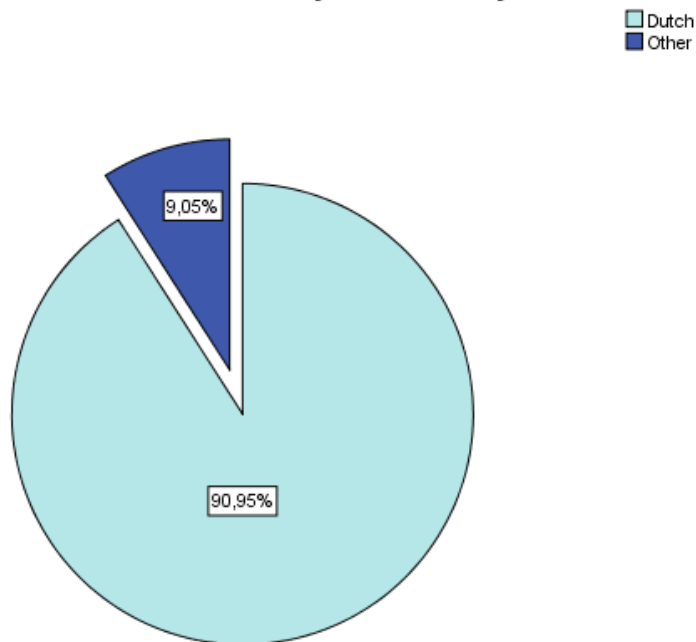
**Statistics**

What is your age?

man	N	Valid	104
		Missing	0
	Mean		33,72
	Median		25,50
	Std. Deviation		14,310
female	N	Valid	106
		Missing	0
	Mean		30,98
	Median		23,00
	Std. Deviation		12,973

**B. Nationality**

What is your nationality



### C. Mindset vs. Emotion evoked

#### Statistics

How much emotion is evoked when you look at the picture?

Rational	N	Valid	102
		Missing	0
	Mean		2,15
	Median		2,00
	Mode		2
	Std. Deviation		1,019
	Sum		219
Emotional	N	Valid	108
		Missing	0
	Mean		3,31
	Median		4,00
	Mode		4
	Std. Deviation		1,091
	Sum		358

#### How much emotion is evoked when you look at the picture?

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	None	31	30,4	30,4	30,4
		Little	40	39,2	39,2	69,6
		Not sure	16	15,7	15,7	85,3
		Some	15	14,7	14,7	100,0
		Total	102	100,0	100,0	
Emotional	Valid	None	7	6,5	6,5	6,5
		Little	20	18,5	18,5	25,0
		Not sure	24	22,2	22,2	47,2
		Some	46	42,6	42,6	89,8
		A lot	11	10,2	10,2	100,0
		Total	108	100,0	100,0	

## D. Gender vs. Mindset

### What is your gender?

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	man	51	50,0	50,0	50,0
		female	51	50,0	50,0	100,0
		Total	102	100,0	100,0	
Emotional	Valid	man	53	49,1	49,1	49,1
		female	55	50,9	50,9	100,0
		Total	108	100,0	100,0	

## E. Mindset vs. Number of friends

### Friends1

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	30	29,4	29,4	29,4
		5 friends	38	37,3	37,3	66,7
		10 friends	34	33,3	33,3	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	33	30,6	30,6	30,6
		5 friends	35	32,4	32,4	63,0
		10 friends	40	37,0	37,0	100,0
		Total	108	100,0	100,0	

### Friends2

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	31	30,4	30,4	30,4
		5 friends	40	39,2	39,2	69,6
		10 friends	31	30,4	30,4	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	35	32,4	32,4	32,4
		5 friends	38	35,2	35,2	67,6
		10 friends	35	32,4	32,4	100,0
		Total	108	100,0	100,0	

### Friends3

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	36	35,3	35,3	35,3
		5 friends	29	28,4	28,4	63,7
		10 friends	37	36,3	36,3	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	34	31,5	31,5	31,5
		5 friends	42	38,9	38,9	70,4
		10 friends	32	29,6	29,6	100,0
		Total	108	100,0	100,0	

**Friends4**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	36	35,3	35,3	35,3
		5 friends	36	35,3	35,3	70,6
		10 friends	30	29,4	29,4	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	35	32,4	32,4	32,4
		5 friends	33	30,6	30,6	63,0
		10 friends	40	37,0	37,0	100,0
		Total	108	100,0	100,0	

**Friends5**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	32	31,4	31,4	31,4
		5 friends	33	32,4	32,4	63,7
		10 friends	37	36,3	36,3	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	38	35,2	35,2	35,2
		5 friends	38	35,2	35,2	70,4
		10 friends	32	29,6	29,6	100,0
		Total	108	100,0	100,0	

**Friends6**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	1 friend	34	33,3	33,3	33,3
		5 friends	30	29,4	29,4	62,7
		10 friends	38	37,3	37,3	100,0
		Total	102	100,0	100,0	
Emotional	Valid	1 friend	36	33,3	33,3	33,3
		5 friends	40	37,0	37,0	70,4
		10 friends	32	29,6	29,6	100,0
		Total	108	100,0	100,0	

## F. Mindset vs. Importance

		Statistics						
Which version did the respondent get?		The price I have to pay per minute to call my friends in network A	The price I have to pay per minute to call to other networks	The price my friends have to pay per minute to call me	The number of friends that were in the same network	The number of minutes I think that friends from network A will call me if I switch to network B	Feeling uncomfortable for making my friends pay more to call me	Feeling concerned that my friend may call me less frequently, because of the price they have to pay
Rational	N	102	102	102	102	102	102	102
	Valid	0	0	0	0	0	0	0
	Missing							
	Mean	4,97	5,09	3,58	4,39	3,54	3,48	3,46
	Median	5,00	5,00	4,00	5,00	4,00	3,00	3,00
	Std. Deviation	1,338	1,203	1,445	1,672	1,272	1,609	1,559
Emotional	N	108	108	108	108	108	108	108
	Valid	0	0	0	0	0	0	0
	Missing							
	Mean	4,85	4,77	4,30	4,34	3,85	4,29	3,81
	Median	5,00	5,00	5,00	5,00	4,00	5,00	4,00
	Std. Deviation	1,446	1,316	1,578	1,395	1,446	1,686	1,677

## G. Frequencies and percentages – Switching decision

**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	86	84,3	84,3	84,3
		Provider B	16	15,7	15,7	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	89	82,4	82,4	82,4
		Provider B	19	17,6	17,6	100,0
		Total	108	100,0	100,0	

**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	45	44,1	44,1	44,1
		Provider B	57	55,9	55,9	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	67	62,0	62,0	62,0
		Provider B	41	38,0	38,0	100,0
		Total	108	100,0	100,0	

**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	65	63,7	63,7	63,7
		Provider B	37	36,3	36,3	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	75	69,4	69,4	69,4
		Provider B	33	30,6	30,6	100,0
		Total	108	100,0	100,0	

**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	38	37,3	37,3	37,3
		Provider B	64	62,7	62,7	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	60	55,6	55,6	55,6
		Provider B	48	44,4	44,4	100,0
		Total	108	100,0	100,0	



**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	24	23,5	23,5	23,5
		Provider B	78	76,5	76,5	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	53	49,1	49,1	49,1
		Provider B	55	50,9	50,9	100,0
		Total	108	100,0	100,0	

**Which provider would you choose?**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	Provider A	26	25,5	25,5	25,5
		Provider B	76	74,5	74,5	100,0
		Total	102	100,0	100,0	
Emotional	Valid	Provider A	47	43,5	43,5	43,5
		Provider B	61	56,5	56,5	100,0
		Total	108	100,0	100,0	

**H. Mindset vs. Inertia**

**Statistics**

Which version did the respondent get?			I would not think about switching to another telecom provider	I look out for attractive deals from the other telecom providers	I cannot be bothered to think about switching to another telecom provider
Rational	N	Valid	102	102	102
		Missing	0	0	0
	Median		4,00	5,00	4,00
	Mode		2	5	5
	Std. Deviation		1,786	1,838	1,722
Emotional	N	Valid	108	108	108
		Missing	0	0	0
	Median		3,00	5,00	4,00
	Mode		3	5	5
	Std. Deviation		1,790	1,863	1,788

## I. Cross Table – Perceived pain vs. Switching decision

*General comparison perceived pain vs. switching decision*

**PerceivedPain \* SWITCHDECISION Crosstabulation**

Count

		SWITCHDECISION		Total
		Stay with network A	Switch to network B	
PerceivedPain	1	1	36	37
	2	12	178	190
	3	13	292	305
	4	171	65	236
	5	318	7	325
	6	71	3	74
	7	91	2	93
Total		677	583	1260

*Split file – rational vs. emotion*

**PerceivedPain \* SWITCHDECISION Crosstabulation**

Count

			SWITCHDECISION		Total
			Stay with network A	Switch to network B	
rational	PerceivedPain	1	0	22	22
		2	8	95	103
		3	8	170	178
		4	63	32	95
		5	140	3	143
		6	32	2	34
		7	35	2	37
	Total		286	326	612
emotional	PerceivedPain	1	1	14	15
		2	4	83	87
		3	5	122	127
		4	108	33	141
		5	178	4	182
		6	39	1	40
		7	56	0	56
	Total		391	257	648

*Chi-square*

**Chi-Square Tests**

EMOTION		Value	df	Asymp. Sig. (2-sided)
rational	Pearson Chi-Square	439,457 <sup>a</sup>	6	,000
	Likelihood Ratio	542,987	6	,000
	Linear-by-Linear Association	347,251	1	,000
	N of Valid Cases	612		
emotional	Pearson Chi-Square	482,038 <sup>b</sup>	6	,000
	Likelihood Ratio	587,216	6	,000
	Linear-by-Linear Association	368,613	1	,000
	N of Valid Cases	648		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,28.

b. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,95.

**J. Perceived pain vs. Number of friends**

*General comparison*

**Descriptive Statistics**

FRIENDS		N	Mean	Std. Deviation
1	PerceivedPain	412	3,7549	1,53010
	Valid N (listwise)	412		
5	PerceivedPain	433	3,9469	1,42545
	Valid N (listwise)	433		
10	PerceivedPain	415	4,1928	1,53429
	Valid N (listwise)	415		

*Situation 1*

**Descriptive Statistics**

Friends1		N	Mean	Std. Deviation
1 friend	PerceivedPain1	63	4,6984	1,42144
	Valid N (listwise)	63		
5 friends	PerceivedPain1	73	4,5890	1,35232
	Valid N (listwise)	73		
10 friends	PerceivedPain1	74	5,0541	1,21511
	Valid N (listwise)	74		

*Situation 2*

**Descriptive Statistics**

Friends2		N	Mean	Std. Deviation
1 friend	PerceivedPain2	66	3,5000	1,53172
	Valid N (listwise)	66		
5 friends	PerceivedPain2	78	4,0385	1,29376
	Valid N (listwise)	78		
10 friends	PerceivedPain2	66	4,3939	1,53802
	Valid N (listwise)	66		

*Situation 3*

**Descriptive Statistics**

Friends3		N	Mean	Std. Deviation
1 friend	PerceivedPain3	70	4,0571	1,50252
	Valid N (listwise)	70		
5 friends	PerceivedPain3	71	4,4648	1,28542
	Valid N (listwise)	71		
10 friends	PerceivedPain3	69	4,4638	1,21969
	Valid N (listwise)	69		

*Situation 4*

**Descriptive Statistics**

Friends4		N	Mean	Std. Deviation
1 friend	PerceivedPain4	71	3,6197	1,59791
	Valid N (listwise)	71		
5 friends	PerceivedPain4	69	3,5942	1,42786
	Valid N (listwise)	69		
10 friends	PerceivedPain4	70	4,0571	1,40275
	Valid N (listwise)	70		

*Situation 5*

**Descriptive Statistics**

Friends5		N	Mean	Std. Deviation
1 friend	PerceivedPain5	70	3,3429	1,32846
	Valid N (listwise)	70		
5 friends	PerceivedPain5	71	3,5211	1,41279
	Valid N (listwise)	71		
10 friends	PerceivedPain5	69	3,5507	1,51983
	Valid N (listwise)	69		

*Situation 6*

**Descriptive Statistics**

Friends6		N	Mean	Std. Deviation
1 friend	PerceivedPain6	70	3,2714	1,30685
	Valid N (listwise)	70		
5 friends	PerceivedPain6	70	3,4429	1,37931
	Valid N (listwise)	70		
10 friends	PerceivedPain6	70	3,5429	1,73360
	Valid N (listwise)	70		

*Switching Costs*

**Case Processing Summary**

		N	%
Cases	Valid	210	100,0
	Excluded <sup>a</sup>	0	,0
	Total	210	100,0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
,877	3

*Inertia*

**Case Processing Summary**

		N	%
Cases	Valid	210	100,0
	Excluded <sup>a</sup>	0	,0
	Total	210	100,0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
,813	3

**Ranks**

	Which version did the respondent get?	N	Mean Rank	Sum of Ranks
How much emotion is evoked when you look at the picture?	Rational	102	76,23	7775,50
	Emotional	108	133,14	14379,50
	Total	210		

**Test Statistics<sup>a</sup>**

	How much emotion is evoked when you look at the picture?
Mann-Whitney U	2522,500
Wilcoxon W	7775,500
Z	-7,000
Asymp. Sig. (2-tailed)	,000

a. Grouping Variable: Which version did the respondent get?

**Appendix 6.**

**SPSS output – Independent Samples T-Test**

**A. Mindset vs. Perceived pain**

*Pricing plan 1.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain1	Rational	102	4,9510	1,34516	,13319
	Emotional	108	4,6296	1,31556	,12659

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PerceivedPain1	Equal variances assumed	,271	,603	1,750	208	,082	,32135	,18363	-,04067	,68337
	Equal variances not assumed			1,749	206,688	,082	,32135	,18375	-,04092	,68362

*Pricing plan 2.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain2	Rational	102	3,7941	1,45111	,14368
	Emotional	108	4,1574	1,50490	,14481



**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PerceivedPain2	,000	,998	-	208	,077	-,36329	,20421	-	,03929
			1,779					,76587	
PerceivedPain2			-	207,908	,076	-,36329	,20399	-	,03887
			1,781					,76545	

*Pricing plan 3.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain3	Rational	102	4,2353	1,31387	,13009
	Emotional	108	4,4167	1,38162	,13295

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PerceivedPain3	,038	,845	-	208	,331	-,18137	,18628	-	,18586
			,974					,54860	
PerceivedPain3			-	207,989	,331	-,18137	,18601	-	,18533
			,975					,54808	

*Pricing plan 4.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain4	Rational	102	3,5000	1,40543	,13916
	Emotional	108	4,0000	1,52854	,14708

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PerceivedPain4	Equal variances assumed	,807	,370	-2,463	208	,015	-,50000	,20297	-,90014	-,09986
	Equal variances not assumed			-2,469	207,854	,014	-,50000	,20248	-,89918	-,10082

*Pricing plan 5.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain5	Rational	102	3,1275	1,20783	,11959
	Emotional	108	3,7963	1,52707	,14694

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PerceivedPain5	10,609	,001	-	208	,001	-,66885	,19072	-	-
			3,507					1,04483	,29286
PerceivedPain5	10,609	,001	-	201,866	,001	-,66885	,18946	-	-
			3,530					1,04242	,29527

*Pricing plan 6.*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain6	Rational	102	3,0882	1,38666	,13730
	Emotional	108	3,7315	1,50765	,14507

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
PerceivedPain6	2,432	,120	-	208	,002	-,64325	,20022	-	-
			3,213					1,03797	,24852
PerceivedPain6	2,432	,120	-	207,857	,001	-,64325	,19974	-	-
			3,220					1,03703	,24946

General comparison

Group Statistics

	EMOTION	N	Mean	Std. Deviation	Std. Error Mean
PerceivedPain	rational	612	3,7908	1,49917	,06060
	emotional	648	4,1296	1,49451	,05871

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PerceivedPain	Equal variances assumed	1,014	,314	-4,015	1258	,000	-,33878	,08437	-,50430	-,17326
	Equal variances not assumed			-4,015	1253,439	,000	-,33878	,08438	-,50431	-,17325

## B. Mindset vs. Importance

*Own consequences – price*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
The price I have to pay per minute to call my friends in network A	Rational	102	4,97	1,338	,133
	Emotional	108	4,85	1,446	,139

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
The price I have to pay per minute to call my friends in network A	Equal variances assumed	,893	,346	,617	208	,538	,119	,193	-,261	,498
	Equal variances not assumed			,618	207,919	,537	,119	,192	-,260	,498

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
The price I have to pay per minute to call to other networks	Rational	102	5,09	1,203	,119
	Emotional	108	4,77	1,316	,127

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
The price I have to pay per minute to call to other networks	1,665	,198	Equal variances assumed	1,834	208	,068	,320	,174	-,024	,663
			Equal variances not assumed	1,839	207,788	,067	,320	,174	-,023	,662

*Own consequences - calling*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
Feeling concerned that my friend may call me less frequently, because of the price they have to pay	Rational	102	3,46	1,559	,154
	Emotional	108	3,81	1,677	,161

**Independent Samples Test**

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
Feeling concerned that my	,249	,618	-1,541	208	,125	-,345	,224	-,786	,096	

friend may call me less frequently, because of the price they have to pay	Equal variances not assumed	1,544	-	207,948	,124	-,345	,223	-,785	,095
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**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
The number of minutes I think that friends from network A will call me if I switch to network B	Rational	102	3,54	1,272	,126
	Emotional	108	3,85	1,446	,139

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
The number of minutes I think that friends from network A will call me if I switch to network B	Equal variances assumed	1,969	,162	1,660	208	,098	-,313	,188	-,684	,059
	Equal variances not assumed			1,666	206,972	,097	-,313	,188	-,683	,057

*Consequenses for friends*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
Feeling uncomfortable for making my friends pay more to call me	Rational	102	3,48	1,609	,159
	Emotional	108	4,29	1,686	,162

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Feeling uncomfortable for making my friends pay more to call me	Equal variances assumed	,001	,976	-3,543	208	,000	-,807	,228	-1,255	-,358
	Equal variances not assumed			-3,548	207,976	,000	-,807	,227	-1,255	-,358

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
The price my friends have to pay per minute to call me	Rational	102	3,58	1,445	,143
	Emotional	108	4,30	1,578	,152

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
The price my friends have to pay per minute to call me	Equal variances assumed	,545	,461	-3,432	208	,001	-,718	,209	-1,130	-,305
	Equal variances not assumed			-3,441	207,803	,001	-,718	,209	-1,129	-,307



*Same network*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
The number of friends that were in the same network	Rational	102	4,39	1,672	,166
	Emotional	108	4,34	1,395	,134

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
The number of friends that were in the same network	Equal variances assumed	5,742	,017	,234	208	,815	,050	,212	-,368	,468
	Equal variances not assumed			,233	197,085	,816	,050	,213	-,371	,470

### C. Loss in calling minutes

Group Statistics

	EMOTION	N	Mean	Std. Deviation	Std. Error Mean
ExpectedLossinMinutes	rational	612	69,10	23,367	,945
	emotional	648	61,81	26,284	1,033

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ExpectedLossinMinutes	Equal variances assumed	15,205	,000	5,187	1258	,000	7,283	1,404	4,529	10,038
	Equal variances not assumed			5,205	1253,452	,000	7,283	1,399	4,538	10,029

*Per situation*

Group Statistics

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
How many minutes do you expect friends of network A call you if you switch	Rational	102	70,87	23,816	2,358
	Emotional	108	63,13	24,633	2,370
How many minutes do you expect friends of network A call you if you switch	Rational	102	68,44	23,476	2,325
	Emotional	108	61,41	26,540	2,554
How many minutes do you expect friends of network A call you if you switch	Rational	102	70,77	22,172	2,195
	Emotional	108	63,46	26,674	2,567
How many minutes do you expect friends of network A call you if you switch	Rational	102	70,33	23,652	2,342
	Emotional	108	61,03	25,784	2,481
How many minutes do you expect friends of network A call you if you switch	Rational	102	67,61	22,662	2,244
	Emotional	108	61,89	26,684	2,568
How many minutes do you expect friends of network A call you if you switch	Rational	102	66,95	24,578	2,434
	Emotional	108	59,37	27,740	2,669

## Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means									
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference				
								Lower	Upper			
How many minutes do you expect friends of network A call you if you switch	.229	.632	2.314	208	.022	7.743	3.347	1.145	14.341			
How many minutes do you expect friends of network A call you if you switch	3.774	.053	2.030	208	.044	7.034	3.465	.202	13.866			
How many minutes do you expect friends of network A call you if you switch	6.757	.010	2.037	207,126	.043	7.034	3.453	.226	13.842			
How many minutes do you expect friends of network A call you if you switch	1.373	.243	2.153	208	.032	7.312	3.395	.618	14.005			
How many minutes do you expect friends of network A call you if you switch	2.165	.032	2.165	204,737	.032	7.312	3.377	.652	13.971			
How many minutes do you expect friends of network A call you if you switch	1.373	.243	2.721	208	.007	9.306	3.420	2.563	16.048			
How many minutes do you expect friends of network A call you if you switch	2.727	.007	2.727	207,827	.007	9.306	3.412	2.579	16.032			
How many minutes do you expect friends of network A call you if you switch	5.330	.022	1.669	208	.097	5.719	3.426	-1.035	12.473			
How many minutes do you expect friends of network A call you if you switch	1.677	.095	1.677	205,723	.095	5.719	3.410	-1.004	12.442			
How many minutes do you expect friends of network A call you if you switch	2.208	.139	2.091	208	.038	7.581	3.625	.435	14.726			
How many minutes do you expect friends of network A call you if you switch	2.099	.037	2.099	207,168	.037	7.581	3.612	.459	14.702			

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## Appendix 7. Chi-Square test

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### Mindset vs. Choice

#### Situation 1.

**Crosstab**

Count		Which provider would you choose?		
		Provider A	Provider B	Total
Which version did the respondent get?	Rational	86	16	102
	Emotional	89	19	108
Total		175	35	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,137 <sup>a</sup>	1	,711		
Continuity Correction <sup>b</sup>	,034	1	,853		
Likelihood Ratio	,137	1	,711		
Fisher's Exact Test				,853	,427
Linear-by-Linear Association	,137	1	,712		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 17,00.

b. Computed only for a 2x2 table

#### Situation 2.

Count		Which provider would you choose?		
		Provider A	Provider B	Total
Which version did the respondent get?	Rational	45	57	102
	Emotional	67	41	108
Total		112	98	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6,768 <sup>a</sup>	1	,009		
Continuity Correction <sup>b</sup>	6,067	1	,014		
Likelihood Ratio	6,802	1	,009		
Fisher's Exact Test				,013	,007
Linear-by-Linear Association	6,736	1	,009		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 47,60.

b. Computed only for a 2x2 table

*Situation 3.*

		Which provider would you choose?		Total
		Provider A	Provider B	
Which version did the respondent get?	Rational	65	37	102
	Emotional	75	33	108
Total		140	70	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,772 <sup>a</sup>	1	,380		
Continuity Correction <sup>b</sup>	,536	1	,464		
Likelihood Ratio	,772	1	,380		
Fisher's Exact Test				,385	,232
Linear-by-Linear Association	,768	1	,381		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 34,00.

b. Computed only for a 2x2 table

*Situation 4.*

		Which provider would you choose?		Total
		Provider A	Provider B	
Which version did the respondent get?	Rational	38	64	102
	Emotional	60	48	108
Total		98	112	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7,059 <sup>a</sup>	1	,008		
Continuity Correction <sup>b</sup>	6,343	1	,012		
Likelihood Ratio	7,103	1	,008		
Fisher's Exact Test				,009	,006
Linear-by-Linear Association	7,025	1	,008		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 47,60.

b. Computed only for a 2x2 table

*Situation 5.*

		Which provider would you choose?		Total
		Provider A	Provider B	
Which version did the respondent get?	Rational	24	78	102
	Emotional	53	55	108
Total		77	133	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14,740 <sup>a</sup>	1	,000		
Continuity Correction <sup>b</sup>	13,661	1	,000		
Likelihood Ratio	15,022	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	14,670	1	,000		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 37,40.

b. Computed only for a 2x2 table

*Situation 6.*

		Which provider would you choose?		Total
		Provider A	Provider B	
Which version did the respondent get?	Rational	26	76	102
	Emotional	47	61	108
Total		73	137	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7,518 <sup>a</sup>	1	,006		
Continuity Correction <sup>b</sup>	6,744	1	,009		
Likelihood Ratio	7,601	1	,006		
Fisher's Exact Test				,009	,005
Linear-by-Linear Association	7,482	1	,006		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 35,46.

b. Computed only for a 2x2 table

*General comparison*

Count

		SWITCHDECISION		Total
		Stay with network A	Switch to network B	
EMOTION	rational	286	326	612
	emotional	391	257	648
Total		677	583	1260

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	23,442 <sup>a</sup>	1	,000		
Continuity Correction <sup>b</sup>	22,898	1	,000		
Likelihood Ratio	23,508	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	23,423	1	,000		
N of Valid Cases	1260				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 283,17.

b. Computed only for a 2x2 table

**Appendix 8.**

**SPSS output – testing the control variables**

*Switching costs*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
SwitchingCost_2	Rational	102	4,25	1,480	,147
	Emotional	108	4,38	1,595	,153

**Independent Samples Test**

	Levene's Test for Equality of Variances	t-test for Equality of Means								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SwitchingCost_2	Equal variances assumed	,688	,408	-,572	208	,568	-,122	,213	-,541	,298
	Equal variances not assumed			-,573	207,935	,567	-,122	,212	-,540	,297

*Inertia*

**Group Statistics**

	Which version did the respondent get?	N	Mean	Std. Deviation	Std. Error Mean
Inertia_2	Rational	102	3,98	,858	,085
	Emotional	108	3,85	,812	,078



### Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Inertia_2									
Equal variances assumed	,035	,853	1,115	208	,266	,129	,115	-,099	,356
Equal variances not assumed			1,114	205,380	,267	,129	,115	-,099	,356

### Guilt

#### Guilt

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	You will receive €100 and your friend will receive €30	12	11,8	11,8	11,8
		You will receive €85 and your friend will receive €85	90	88,2	88,2	100,0
		Total	102	100,0	100,0	
Emotional	Valid	You will receive €100 and your friend will receive €30	14	13,0	13,0	13,0
		You will receive €85 and your friend will receive €85	94	87,0	87,0	100,0
		Total	108	100,0	100,0	

#### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,069 <sup>a</sup>	1	,792		
Continuity Correction <sup>b</sup>	,003	1	,957		
Likelihood Ratio	,070	1	,792		
Fisher's Exact Test				,836	,479
Linear-by-Linear Association	,069	1	,793		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,63.

b. Computed only for a 2x2 table

**Guilt**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	You will receive €150 and your friend will receive €150	52	51,0	51,0	51,0
		You will receive €235 and your friend will receive €110	50	49,0	49,0	100,0
		Total	102	100,0	100,0	
Emotional	Valid	You will receive €150 and your friend will receive €150	56	51,9	51,9	51,9
		You will receive €235 and your friend will receive €110	52	48,1	48,1	100,0
		Total	108	100,0	100,0	

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,016 <sup>a</sup>	1	,900		
Continuity Correction <sup>b</sup>	,000	1	1,000		
Likelihood Ratio	,016	1	,900		
Fisher's Exact Test				1,000	,505
Linear-by-Linear Association	,016	1	,900		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 49,54.

b. Computed only for a 2x2 table

**Guilt**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	You will receive €50 and your friend will receive €12	40	39,2	39,2	39,2
		You will receive €20 and your friend will receive €20	62	60,8	60,8	100,0
		Total	102	100,0	100,0	
Emotional	Valid	You will receive €50 and your friend will receive €12	38	35,2	35,2	35,2
		You will receive €20 and your friend will receive €20	70	64,8	64,8	100,0
		Total	108	100,0	100,0	

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,365 <sup>a</sup>	1	,546		
Continuity Correction <sup>b</sup>	,213	1	,645		
Likelihood Ratio	,365	1	,546		
Fisher's Exact Test				,570	,322
Linear-by-Linear Association	,363	1	,547		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 37,89.

b. Computed only for a 2x2 table

**Guilt**

Which version did the respondent get?			Frequency	Percent	Valid Percent	Cumulative Percent
Rational	Valid	You will receive €2 and your friend will receive €2	54	52,9	52,9	52,9
		You will receive €10 and your friend will receive €2,50	48	47,1	47,1	100,0
		Total	102	100,0	100,0	
Emotional	Valid	You will receive €2 and your friend will receive €2	48	44,4	44,4	44,4
		You will receive €10 and your friend will receive €2,50	60	55,6	55,6	100,0
		Total	108	100,0	100,0	

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,516 <sup>a</sup>	1	,218		
Continuity Correction <sup>b</sup>	1,195	1	,274		
Likelihood Ratio	1,518	1	,218		
Fisher's Exact Test				,269	,137
Linear-by-Linear Association	1,509	1	,219		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 49,54.

b. Computed only for a 2x2 table

## Risk Aversion

Count

		Lottery or certainty		Total
		I receive €1000, with either heads or tails	With heads you receive €1200, with tails you receive nothing	
Which version did the respondent get?	Rational	97	5	102
	Emotional	106	2	108
Total		203	7	210

### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,515 <sup>a</sup>	1	,218		
Continuity Correction <sup>b</sup>	,716	1	,398		
Likelihood Ratio	1,556	1	,212		
Fisher's Exact Test				,269	,200
Linear-by-Linear Association	1,507	1	,220		
N of Valid Cases	210				

a. 2 cells (50,0%) have expected count less than 5. The minimum expected count is 3,40.

b. Computed only for a 2x2 table

Count

		Lottery or certainty		Total
		You draw a lottery ticket with 75% chance to win €45 (if you lose, you do not get anything at all)	You win €30, no matter which ticket is drawn	
Which version did the respondent get?	Rational	22	80	102
	Emotional	30	78	108
Total		52	158	210

### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1,086 <sup>a</sup>	1	,297		
Continuity Correction <sup>b</sup>	,778	1	,378		
Likelihood Ratio	1,090	1	,297		
Fisher's Exact Test				,339	,189
Linear-by-Linear Association	1,080	1	,299		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,26.

b. Computed only for a 2x2 table

Count

		Lottery or certainty		Total
		You draw a lottery ticket with a chance of 30% to win €100 (if you lose, you do not get anything at all)	You draw a lottery ticket with a chance of 25% to win €130 (if you lose, you do not get anything at all)	
Which version did the respondent get?	Rational	37	65	102
	Emotional	40	68	108
Total		77	133	210

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,013 <sup>a</sup>	1	,909		
Continuity Correction <sup>b</sup>	,000	1	1,000		
Likelihood Ratio	,013	1	,909		
Fisher's Exact Test				1,000	,512
Linear-by-Linear Association	,013	1	,909		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 37,40.

b. Computed only for a 2x2 table

Count

		Lottery or certainty		Total
		You draw a lottery ticket with 2% chance of winning €3000 (if you lose, you do not get anything at all)	You draw a lottery ticket with 1% chance of winning €6000 (if you lose, you do not get anything at all)	
Which version did the respondent get?	Rational	43	59	102
	Emotional	45	63	108
Total		88	122	210

#### Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,005 <sup>a</sup>	1	,943		
Continuity Correction <sup>b</sup>	,000	1	1,000		
Likelihood Ratio	,005	1	,943		
Fisher's Exact Test				1,000	,527
Linear-by-Linear Association	,005	1	,943		
N of Valid Cases	210				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 42,74.

b. Computed only for a 2x2 table

**Appendix 9.**

**SPSS output – One-Way Anova**

**ANOVA**

PerceivedPain

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39,867	2	19,933	8,902	,000
Within Groups	2814,597	1257	2,239		
Total	2854,463	1259			

**Multiple Comparisons**

Dependent Variable: PerceivedPain

Bonferroni

(I) FRIENDS	(J) FRIENDS	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	5	-,19203	,10299	,187	-,4389	,0548
	10	-,43792*	,10407	,000	-,6874	-,1884
5	1	,19203	,10299	,187	-,0548	,4389
	10	-,24589	,10279	,051	-,4923	,0005
10	1	,43792*	,10407	,000	,1884	,6874
	5	,24589	,10279	,051	-,0005	,4923

\*. The mean difference is significant at the 0.05 level.

**Appendix 10.**

**SPSS output – Linear regression**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,334 <sup>a</sup>	,112	,109	1,421

a. Predictors: (Constant), FRIENDS, PRICE\_AtoB, Mindset\_dummy, PRICE\_AtoA

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	319,017	4	79,754	39,477	,000 <sup>b</sup>
	Residual	2535,446	1255	2,020		
	Total	2854,463	1259			

a. Dependent Variable: PerceivedPain

b. Predictors: (Constant), FRIENDS, PRICE\_AtoB, Mindset\_dummy, PRICE\_AtoA

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6,451	,451		14,311	,000
	PRICE_AtoA	-18,295	1,949	-,250	-9,387	,000
	PRICE_AtoB	-15,075	2,670	-,150	-5,647	,000
	Mindset_dummy	,341	,080	,113	4,261	,000
	FRIENDS	,047	,011	,115	4,320	,000

a. Dependent Variable: PerceivedPain



**A. Perceived pain and switching decision**

**Dependent Variable Encoding**

Original Value	Internal Value
Stay with network A	0
Switch to network B	1

**Omnibus Tests of Model Coefficients**

	Chi-square	df	Sig.
Step	1058,297	1	,000
Step 1 Block	1058,297	1	,000
Model	1058,297	1	,000

**Model Summary**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	681,414 <sup>a</sup>	,568	,759

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than ,001.

**Classification Table<sup>a</sup>**

	Observed	Predicted			
		SWITCHDECISION		Percentage Correct	
		Stay with network A	Switch to network B		
Step 1	SWITCHDECISION	Stay with network A	651	26	96,2
		Switch to network B	77	506	86,8
	Overall Percentage				91,8

a. The cut value is ,500

**Variables in the Equation**

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	PerceivedPain	-2,524	,139	327,772	1	,000	,080
	Constant	9,444	,531	316,718	1	,000	12637,993

a. Variable(s) entered on step 1: PerceivedPain.

## B. Rational switching factors and switching decision

### Dependent Variable Encoding

Original Value	Internal Value
Stay with network A	0
Switch to network B	1

### Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	184,128	4	,000
Step 1 Block	184,128	4	,000
Model	184,128	4	,000

### Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	1555,584 <sup>a</sup>	,136	,182

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than ,001.

### Classification Table<sup>a</sup>

	Observed	Predicted			
		SWITCHDECISION		Percentage Correct	
		Stay with network A	Switch to network B		
Step 1	SWITCHDECISION	Stay with network A	477	200	70,5
		Switch to network B	228	355	60,9
	Overall Percentage				66,0

a. The cut value is ,500

### Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	
Step 1 <sup>a</sup>	FRIENDS	-,083	,017	24,348	1	,000	,920
	PRICE_AtoA	29,207	3,033	92,721	1	,000	4834842948372,817
	PRICE_AtoB	25,890	4,089	40,088	1	,000	175361519242,468
	Mindset_dummy	-,633	,122	26,716	1	,000	,531
	Constant	-4,356	,691	39,782	1	,000	,013

a. Variable(s) entered on step 1: FRIENDS, PRICE\_AtoA, PRICE\_AtoB, Mindset\_dummy.

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## Appendix 12. Analysis of the importance of various aspects on the switching decision

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In the survey a few statements were presented to the respondents. These statements examine the importance of a number of aspects and feelings that possibly played a role in the decision of the participant whether to switch or not. In this analysis, I find that<sup>51</sup> that for the consequences for friends ( $p=0,000$  and  $p=0,001$ ) a significant difference occurs.

Participants in the 'Valuation by Feeling' condition consider the consequences for their friends, due to switching to a different provider, as more important in their switching decision than participants in the 'Valuation by Calculation' condition<sup>52</sup>. In short, while making a decision individuals with an emotional mindset keep in mind the consequences of the switch for their friends. Individuals in the 'Valuation by Feeling' condition feel more uncomfortable for making their friends pay more and care more about the price their friends have to pay in comparison to the rational group. The emotion evoked during the mindset treatment triggered the participants in the 'Valuation by Feeling' condition to have more pro-social thoughts.

When it comes to their own consequences it appears that participants in both mindset conditions care approximately equally about the price they have to pay themselves to call friends in the same network A ( $p=0,537$ ) and to call to others in network B ( $p=0,067$ ). Despite the fact that the difference is not significant, it is noteworthy that the respondents in the emotional condition find the price they have to pay to call to other networks (mean= 4,77) less important than the price they have to pay to call to friends in the same network (mean= 4,85), while respondents in the rational condition find the opposite. For them the price to call others is more important (mean= 5,09) than the price to call friends in the same network (mean= 4,97). The results also indicate no differences between the mindset conditions and the respondents' own consequences regarding calling as a result of switching. In other words, the individuals in both mindset conditions do not think differently about feeling concerned that friends call less after switching provider and about the number of minutes friends will call them after switching. Lastly, no significant difference is found between the mindset conditions and the importance of the number of friends who are in the same network.

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<sup>51</sup> Please refer to appendix 6B, Independent Samples T-Test

<sup>52</sup> Please refer to table 19 for the means of both groups of the importance of the switching factor: consequences for friends

Scale	Statement	Asymp. Sig.	Mean
Consequences for friends	Feeling uncomfortable for making my friends pay more to call me	0,000*	Rational 3,48 Emotional 4,29
	The price my friends have to pay per minute to call me	0,001*	Rational 3,58 Emotional 4,30
Own consequences – calling	Feeling concerned that my friends may call me less frequently, because of the price they have to pay	0,125	Rational 3,46 Emotional 3,81
	The number of minutes I think that friends from network A will call me if I switch to network B	0,097	Rational 3,54 Emotional 3,85
Own consequences – pricing	The price I have to pay per minute to call my friends in network A	0,537	Rational 4,97 Emotional 4,85
	The price I have to pay per minute to call to other networks	0,067	Rational 5,09 Emotional 4,77
Same network	The number of friends that were in the same network	0,815	Rational 4,39 Emotional 4,34

\*A significant difference is present between the 'Valuation by Feeling' and 'Valuation by Calculation' condition

Table 19. Switching factors