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Master Thesis Draft

## **Consumer demand for product bundling**

Adding a Smart TV to a bundle combining connection to internet, television, and phone

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## **Introduction**

Product bundling has been an important part of marketing strategies for a long time. It consists of selling multiple products in one combined product. One of the sectors that has been using product bundling heavily over the past years is telecommunications, in which sellers combine, for example, the sales of mobile telephones with a contract including calls, texts and internet broadband, or a combination of an internet, television, and phone connection for households. With the increasing supply and demand for Smart TVs, which need both a connection to the internet and television, it seems that these could be suitable for a bundle as well – similar to the mobile phone plus contract bundle. However, such a bundle is currently nowhere to be found on the market.

In this research, the focus will be on consumer demand in the Netherlands for such a bundle combining an internet and television connection with a Smart TV. To study consumer demand, the rationale behind bundling will first be studied on the basis of academic literature. Based on the findings of this literature, a questionnaire will be created to find out how consumers value different attributes of a bundle combining a mobile phone with a contract. Furthermore, the contingent valuation method will be used to determine the willingness to pay for a bundle combining Smart TV with a connection to internet, television, and phone. These results will then be used to answer the research question concerning the consumer demand for such a potential bundle combining a Smart TV with internet, television and phone connection.

## Background

### Smart TV

Starting in 1994, with the first published patent for an “intelligent” television system, a television has been developed, ending up with the current Smart TV (European Patent Office, 1996). According to Chang (2012), a Smart TV is not only a tool for watching broadcasts, but an innovated television with an Operating System (OS) and the possibility to connect to the internet. This gives users the opportunity to download applications to improve or change their television watching behavior.

### Telecommunications Market

According to Klein and Jakopin (2014), telecommunication providers mainly sell services that have characteristics of information goods. Most of their expenditures are fixed cost for the network infrastructure, IT-systems, and other equipment, while only a limited amount are variable cost on employees and the costs of creating and offering attractive service plans for customers. Over the past decades, the demand for network possibilities has changed, as mobile phones have transformed into smartphones. Although service providers already offered bundles to consumers, the demand for an internet connection on mobile phones has increased the incentive for providers to expand the bundles (Klein & Jakopin, 2014). Next to bundling services for mobile phones, there are also households that have bundled connections: television, phone, and internet. This is shown by Üner, Güven and Cavusgil (2015), who state that, in 2013, 45 percent of the households in Europe owned a bundle in the telecommunication market, and Centraal Bureau voor de Statistiek (CBS; Statistics Netherlands), showing that in 2014, just under

five million households in the Netherlands made use of a bundle including both the connection to internet as well as television (Centraal Bureau voor de Statistiek, 2015).

Considering the Dutch telecommunication market, it can be seen that over the past years, approximately 97.5 percent of the households owned at least one television (Stichting KijkOnderzoek, 2014; Stichting KijkOnderzoek, 2015; Stichting KijkOnderzoek, 2016) Of these households the percentage that own a Smart TV has increased from 17.3 percent in 2013, to 31.4 percent in 2015. Of these Smart TV owners, 78 percent state that they are using the additional features, such as the internet option or the downloadable applications (GfK, 2015).

In 2010, Purcell (2010) states that approximately half of the adults living in the United States uses the internet to watch or download videos, of which eight percent had connected their computer to their television screen to watch the online video on a television screen. Taking into account the growth of online streaming services such as Netflix, it can only be assumed that this number has grown over the following years. With the introduction of Smart TVs, people are becoming able of watching online videos on their television, without having to put in the effort of connecting a computer to a television screen. Combining this information with a calculation made by The New York Times, which states that there are currently almost one million paying subscribers for Netflix in the Netherlands, it can be concluded that the introduction of Smart TVs has been a successful one (Heyman, 2015).

When comparing the proposed Smart TV bundle with the Smartphone market, it can be seen that, in the Netherlands, a common offered bundle is a contract including a smartphone and a service plan with a certain amount of minutes, texts, and internet access, for which a monthly contract fee will have to be paid for either one or two years (Consumentenbond, nd).

This shows that the bundle includes both an object and a service, which is similar as the studied Smart TV bundle: a Smart TV with a service plan including the connection to television, internet, and telephony.

One major difference that needs to be taken into account, is that a Smart TV is often a tool used and purchased by a household, while a smartphone is mainly a tool used on an individual level. This might result in differences in the decision-making process and the willingness to pay for a Smart TV.

## **Research Question**

Based on the aforementioned information, the aim of this research will be to answer the following question:

*“Is there consumer demand in the Netherlands for the introduction of a bundle including a Smart TV in the already existing bundles with connection to internet, television and phone?”*

This question will be answered with the help of the following sub-questions:

*“How do consumers perceive a bundle that combines a service and an object, i.e. mobile phone with a contract?”*

*“What is the willingness to pay for the addition of a Smart TV to a monthly subscription bundled with connection to internet, television and phone?”*

## Theoretical Framework

### Bundling

According to Guiltinan (1987), bundling is a marketing practice in which sellers combine two or more products and/or services in a single package for a single price. The basic idea behind bundling is focused on the transfer of consumer surplus from one item in the bundle to another. This means that the consumer transfers some of the value of the highly valued product to the less valued product, and thus increasing the utility of the entire bundle (Guiltinan, 1987; Sharpe & Staelin, 2010). Furthermore, several authors mention that companies can market three forms of bundling: Pure bundling, mixed bundling, and unbundling (Sharpe & Staelin, 2010; Stremersch & Tellis, 2002). Pure bundling can be the case when a seller only offers bundles, and no individual products, whereas in the case of mixed bundling, both bundles and individual products are offered. In the case of unbundling, only individual items are offered, and no bundles are formed of these separate products (Sharpe & Staelin, 2010; Stremersch & Tellis, 2002).

Bundling can be separated in two different kinds of bundling: product bundling and price bundling (Klein & Jakopin, 2014). Product bundling is focused on bundling multiple integrated products and selling them for one price. In this case, the value perceived by the consumer is created due to the integration of several separate products into one bundle (Stremersch & Tellis, 2002). For this reason, the actual price of the bundle does not have to be lower than the sum of the prices of the separate components, which is confirmed by Harris and Blair (2012), who found that, in three product categories, 8.8 percent of the bundles were priced above, or



at the same price of the separate components. On the other hand, price bundling is focused on the combination of multiple products sold for a lower price than the sum of the separate prices (Klein & Jakopin, 2014). In this case, the bundle itself does not create additional value, and thus has to be created in the form of a discounted price (Stremersch & Tellis, 2002). This separation of two kinds of bundling is shown from a consumers perspective by Harris and Blair (2012), who state that bundles may be perceived as either a package of separate products, or as one, single product.

From an economic perspective, bundling is often explained as third-degree price discrimination (Breidert, 2006, p. 15). This can be explained as the price setting of products depending on the customer group or segment, i.e. student discounts. In the case of bundling, the willingness to pay for a product defines the segment that the customer is in. This is based on an individual basis in which the consumer has a different willingness to pay for individual products. When bundled, the customer can behave in three ways: (1) the customer has a greater willingness to pay than the actual price of the product, and thus realizes a surplus; (2) considering pure bundling, the consumer will identify the bundle as one product and have a corresponding willingness to pay, resulting in the idea that it is not depending on the WTPs of both individual products; (3) the customer will have the same willingness to pay for the bundle as for the individual items when mixed-bundling is the case, resulting in a decision towards the highest surplus (Breidert, 2006, p. 16).

Studies show that there are multiple advantages for consumers when buying bundles: Klein and Jakopin (2014) show that bundling reduces the search costs for consumers, as they have the possibility to buy complementary goods in one package for one price. This is confirmed

by Harris and Blair (2006), by showing that bundling has a positive effect on consumers because of the reduced search costs, and Heeler, Nguyen and Buff (2007) who state that consumers experience a reduction in transaction costs due to bundling. Furthermore, Harris and Blair (2012) state that the purchase of a bundle by consumers might also be due to the convenience experienced. As stated above, the availability of bundles will decrease search costs, but it can also decrease the amount of bills that have to be paid as only one invoice will be sent (Üner, Güven & Cavusgil, 2015). All these aspects reduce the amount of difficulties a consumer can experience when purchasing or using a product. Lastly, bundling results in a perceived benefit for the consumer because the consumer will often expect and assume that the bundle will be sold at a discounted price (Heeler, Nguyen & Buff, 2007) This results in an increased perceived transaction value and thus an higher overall evaluation of the offer (Nguyen, Heeler & Buff, 2009). According to Harris and Blair (2012), a problem might arise when consumers have an increased perceived value of a bundle. They state that consumers will purchase bundles with only a small, or without, discount because they are not able to process the price information correctly.

Within the telecommunication sector, Üner, Güven and Cavusgil (2015) define bundling as “at least two products from one single provider in one single invoice with or without discount”. This shows that a provider of telecommunication services sells several different products to the same customer in one package. In the heavily competitive telecommunication market, bundling can be one of the solutions from companies to minimize the switching between providers of consumers by increasing the switching costs. This will allow companies to protect their market

positions, while increasing the loyalty of the customers they already obtained (Üner, Güven & Cavusgil, 2015).

### Willingness to Pay

An important aspect of bundling is the Willingness to Pay (WTP) of consumers. WTP is a concept focusing on the amount of money an individual is willing to pay for a certain good or service (Le Gall-Ely, 2009). In other words, the WTP is the point at which someone becomes indifferent between buying and not buying a product, and is thus the maximum price a consumer is willing to pay (Gensler, Hinz, Skiera & Theysohn, 2012). Nowadays, it is often used in marketing research as a critical input in pricing, product line, and assortment decisions, and is considered essential for suppliers in the estimation of demand for certain products (Wertenbroch and Skiera, 2002). However, the former use of willingness to pay measures was focused on giving economic value to goods that were hard to value, such as environmental goods (Hoevenagel, 1994, p. 31). By using the contingent valuation method, authorities were able to gain knowledge about the value of environmental goods by asking for a willingness to pay (for example in the form of additional taxes) to obtain (or keep) an environmental good, and for a willingness to accept (lower taxes) for losing, or the deterioration of, the environmental situation.

From an economic perspective, willingness to pay is focused on the consumer surplus that a consumer is expected, and wants to gain (Wertenbroch, & Skiera, 2002). It can be described as the economic measure of consumer satisfaction, and is calculated by analyzing the difference between what the consumer is willing to pay and the actual price on the market. Whenever this difference is positive, the consumer experiences consumer surplus. This can be compared to the

economic theory of reservation price, which is explained as the limit of a price for a good or service (Breidert, 2006, p. 26). From the supply side, it defines the smallest price at which a seller is willing to sell, often explained as the willingness to accept, whereas from the demand side, it is the maximum price a buyer is willing to pay – willingness to pay.

Reservation price, or willingness to pay, of consumers is, amongst others, dependent on the disposable income of the consumer. Disposable income can be defined as the total personal income minus personal taxes, and can thus be compared to the net income (OECD, 2016). The amount of money a person or households has available to spend is an important factor of their willingness to pay for a certain product. In general, people with a lower disposable income will have a lower WTP for luxury goods than people with a high disposable income as they have more money available for expenditures.

Miller, Hofstetter, Krohmer, and Zhang (2011) show that WTP can be measured either directly or indirectly, and that it can determine a consumers' hypothetical or actual WTP. In the case of marketing research and its focus on pricing and demand, it is possible that the measured product is not yet marketed. The result is that consumers' willingness to pay cannot be measured based on a real and existing product, and should thus be questioned in a hypothetical form. This can be done directly with the use of open-ended questions, and indirectly, by using a choice-based conjoint analysis (Miller, et al., 2011). The latter uses consumers' choices among multiple product alternatives to calculate WTP. On the other hand, when products do exist, a real WTP can be measured using either the Becker, DeGroot and Marschak method, in which a participant is forced to buy a product if the price drawn from a lottery is less than or equal to his or her indicated willingness to pay, or the incentive-aligned choice-based conjoint analysis, in

which the participants are obliged to make a purchase based on the WTP of their revealed preference (Miller, et al., 2011). In these methods, the former – BDM method – is measuring WTP directly, where the latter – measures WTP indirectly.

Wertenbroch and Skiera (2002) divide the methods of estimating WTP in studying market transactions – similar to measuring real WTP – and survey data, which is similar to hypothetical willingness to pay. They show that the advantage of using market transaction data is that it is based on actual purchases and observed under realistic market conditions, while also stating that the data only reveals that the WTP is at least as high as the posted price for the buyer, whereas the WTP of the non-buyer is lower than the actual price. This proves that no actual WTP can be defined from using market transaction data. On the other hand, the main advantage of survey data is that it can be used in new product development and the evaluation of nonmarket public goods (Wertenbroch & Skiera, 2002). However, survey data has one major disadvantage, which is the fact that it is based on a hypothetical situation, which makes the data prone to the hypothetical bias – which is the bias that is experienced when answering to hypothetical situations (Miller, et al., 2011).

In bundles, it is often the case that one part of the bundle is valued more to one consumer than to the other and vice versa (Varian, 1995). When these products would have been sold independently, the price would be close to the lowest willingness to pay. However, when sold in a bundle, the price can be set at the average WTP, thus increasing the utility of the consumer and the profit of the producer.

Le Gall-Ely (2009) describes several possibilities to study WTP of consumers, including contingent valuation and conjoint analysis. In contingent valuation, the respondent is required

to directly express his or her WTP for the product, while in conjoint analysis, the WTP is derived from evaluations of alternatives and focuses on the different attributes of a product.

### *Conjoint Analysis*

Conjoint analysis assumes that the utility of a product or service is based on the utility of its separate different attributes (Halme and Kallio, 2011). It is defined by Green and Srinivasan (1990) as “any decompositional method that estimates the structure of a consumer’s preference [...], given his or her overall evaluations of a set of alternatives that are prespecified in terms of levels of different attributes”. This means that it can be measured by decomposing a product or several products into different elements, and using the valuation of these separate elements to define consumer preference. The underlying assumption that needs to be taken into account based on this is that the consumer’s utility of a product is the sum of the values of each individual attribute of the product (Braidert, 2006, p. 59). A study by Green and Wind (1975) shows that for several examples, utility for separate aspects can change – meaning that consumers often do not like every attribute of one product more than the attribute of the other product – resulting in attributes offsetting each other. This is also proven by Nikou, Bouwman, and Reuver (2014), who state that different factors can affect the decision making process simultaneously, and Le Gall-Ely (2009), who presents that conjoint analyses focuses on revealing compromises that consumers make between different product attributes.

According to Braidert, Hahsler, and Reuterrer (2006), one of the most important applications of conjoint analysis is focused on pricing strategies. To find the WTP of consumers using a conjoint analysis, products are compared in several attributes, including price, and the WTP of a certain product is defined at the moment the participant chooses the competing

product, assuming that only the price has changed (Le Gall-Ely, 2009). This is done by incorporating the price in the study as one of the elements of the product, and thus as an additional attribute (Breidert, Hahsler, & Reuterrer, 2006). An example of a difficult market with respect to different attributes is the mobile phone market (Simmons & Esser, 2001). The division of attributes that is preferred by customers is broad and ranging from the quality of a phone call to the absence of a contract. Because of these different favored attributes, providers have also shifted their priority to one of the attributes, completely changing the market (Simmons & Esser, 2001).

### *Contingent Valuation*

According to Portney (1994), contingent valuation is a way of measuring the willingness to pay for a hypothetical project or program. It requires the respondent to directly express his or her WTP for the product in a questionnaire based on hypothetical situations. Furthermore, Carson, Flores, and Meade (2001) show that the contingent valuation method is often used to assess the value of environmental projects, for example by asking respondents the amount of money they are willing to pay to keep an environmental project, such as a park. For these kind of questions, Carson, Flores, and Meade (2001) state that, next to surveys, also in-person interviews can be used.

Venkatachalam (2004) focuses on the criticism around contingent valuation surveys, and states that this is mainly because of the validity and reliability. In the case of contingent valuation, validity refers to the degree to which the method measures the true economic value of the respondents. This can then be separated in three different aspects: content validity, criterion validity and construct validity. Content validity can be explained as the ability of the

questions in the survey to measure the willingness to pay appropriately and whether all facets of the construct are included, whereas criterion validity focuses on whether the respondents' answers to the hypothetical questions are predicted correctly compared to the real situation (Vossler & Kerkvliet, 2003). Lastly, construct validity refers to the degree to which a method measures what should be measured. On the other hand, reliability is explained by Venkatachalam (2004) to refer to the extent to which the test can be repeated to gain the same results, which, in the case of contingent valuation, focuses on the variance of the willingness to pay.

A common way of setting up a contingent valuation survey is by composing it of six different aspects (Carson, Flores, & Meade, 2001). Firstly, an introduction of the context has to be given in order to clarify the situation of the respondent and the corresponding decision that has to be made. Furthermore, the good that will be offered has to be described in a detailed way, such that the respondent exactly knows what he or she will pay for. For the next aspects of the survey, Carson, Flores, and Meade (2001) state that the setting in which the good will be provided has to be explained, as well as the method in which the product will be paid for. To conclude the questions on the specific product and the decisions made by the respondent, some debriefing questions should be asked to gain more insight in the reasons behind the decisions made. The last part of the survey should involve questions on the respondent's characteristics, including attitudes and demographic information. All these steps are also confirmed by Portney (1994), who states that a contingent valuation survey should contain both the elaborate questions on the product and the willingness to pay, as well as some questions regarding the respondent's characteristics.



## Hypotheses

Based on the information provided above, the following hypotheses will be tested:

1. *The majority of the consumers in the Netherlands have a demand for the introduction of a bundle including a Smart TV in the already existing bundles with connection to internet, television and phone*
2. *People who perceive the characteristics of the mobile phone as an important aspect of their mobile phone bundle will have a higher interest in the addition of a Smart TV.*
3. *People will be more interested in adding a Smart TV to the already existing bundles when it concerns an expensive television.*
4. *People with a lower income will have a higher interest in the addition of a Smart TV.*
5. *People who are more financial fragile will have a higher interest in the addition of a Smart TV.*

## **Methodology**

### **Sampling and Procedure**

To retrieve the data necessary for answering the research question, a questionnaire was created and consisted of 33 questions. For convenience of the respondents, the questionnaire was created in Dutch (see Appendix A), and was translated to English for the purpose of this thesis (see Appendix B).

The link to this e-questionnaire was e-mailed to the researcher's closest contacts, asking them to participate in this study, and thus fill in the questionnaire, and to forward it to their closest contacts. This form of snowball sampling is described by Hoyle, Harris and Judd (2002), who explain that it is a multistage sampling procedure in which the initial sample either gives names or forwards the researcher towards a bigger sample. This is done until the sample size is large enough to meet the requirements of the study. The researcher aims to have approximately 150 respondents in order to be able to analyze the data appropriately and to come to significant results. Snowball sampling is part of nonprobability sampling, which means that there is no assurance that every element has a chance of being included in the sample (Hoyle, Harris, & Judd, 2002). Therefore, it is not sure whether the sample of participants is representative for the entire population.

### **Operationalization**

The questions asked in the survey are mainly based on the literature described above. As described by Hoyle, Harris, and Judd (2002), the order of the questions can have an influence on the respondent. To avoid biases, and to avoid participants quitting the survey, the questionnaire

started with some easy to answer, but relevant questions. Afterwards, the questions regarding willingness to pay were presented. To assess the willingness to pay of the participants, four situations were described of which each participants was randomly selected to two of the situations – see Table 1 for the division of situations. The order in which these situations were presented was also randomized. Both the reduced amount of questions and the randomization were done to reduce the order effect, which can be explained as the effect the order of questions has on the answers of respondents (Strack, 1992). In this way, the influence a question can have on a participant is reduced when analyzing the answers of all participants. The final questions in the survey were focused on the background and the household situation of the respondent.

#### **Different situations presented**

	Which questions?
Situation 1: Smart TV of €269	Q11, Q12, Q13
Situation 2: Smart TV of €499	Q14, Q15, Q16
Situation 3: Smart TV of €829	Q17, Q18, Q19
Situation 4: Smart TV of €1699	Q20, Q21, Q22

*Table 1: Different situations put forward to respondents*

#### *Televisions and connections*

In the first three questions, the respondents were asked whether they have (smart) televisions and how much time they spent watching TV on a daily basis. This was done to get an idea about the television-watching behavior of the respondents. Furthermore, it was asked what connections the participants are currently having available in their homes, and what they

are paying for these connections on a monthly basis. This gave the researcher a baseline of what was already being paid for television services.

### *Demand and Willingness to Pay*

The next sets of questions were focused on the demand for the addition of a Smart TV to the respondents current contract, and, if interested, what they would be willing to pay on a monthly basis for this addition. These questions were divided into four subgroups, all focusing on a different Smart TV. In Table 1, this division can be found, including the specifications and the price of the specific Smart TVs. If the respondent stated that he or she was not interested in the television, the next question would be asking why they are not interested, whereas if the respondent stated that he or she was interested, the next question would be focusing on their willingness to pay.

### *Financial fragility, income, and monthly housing costs*

In order to measure the financial capability of a household, a measure called financial fragility will be used. Financial fragility is based on the question whether respondents are able to access emergency funds when a sudden need arises (Lusardi, Schneider, and Tufano, 2011). By gaining this knowledge about the respondents, the available money can be identified indirectly, and thus their ability to purchase a Smart television in once, or whether a spread-out payment would be more suitable. This is also based on the income of the respondent's household members, as people with a higher income are assumedly less financial fragile, although this might be countered by high monthly fixed costs for housing.

### *Age and household composition*

In a study done by SPOT (2015), it is shown that the amount of time spent on watching streamed, downloaded or bought (using Netflix or Videoland) movies and series differs between age groups. They show that people aged between 13 and 34 watch approximately 30 minutes of streamed, downloaded, or bought movies and series, whereas this is only two minutes for people aged 65 years and older. On the other hand, older people spend more time watching regular television than younger people. This can be connected to the questions regarding household composition, which is done to study the effects of having certain age groups within a household.

### *Gender*

Adriaens, Van Damme, and Courtois (2011) show that there is no significant difference in the amount of time adolescent males and females spent on watching television. However, CBS shows that there is a difference in television use between men and women (Centraal Bureau voor de Statistiek, 2014).

### **Method of Analysis**

The questionnaire will be created and distributed by using Qualtrics. To analyze the data retrieved from the questionnaires, IBM SPSS Statistics 20 will be used.

## Results

### Recode

In order to be able to analyze the data retrieved from the questionnaires, several variables had to be recoded. The full list of what has been recoded can be found in Appendix C. In short, the questions (Q2, Q3, Q4, Q25, Q28) that had to be answered with numbers have been recoded such that the number of the answer equals the actual answer. Next to that, for questions which had to be answered with 'Yes' or 'No' (Q5, Q10, Q11, Q14, Q17, Q20), 'Yes' has been set to '1' and 'No' has been set to '0'. Also, a total score for the perceived value of respondents of mobile phones compared to their contract has been calculated. To do so, the questions regarding specific features of their mobile phone and contract have been divided into "Phone" or "Contract", after which these scores have been subtracted from each other. This results in several scores, in which positive scores are meaning a higher value for the mobile phone than the contract and negative scores mean that the respondent values the contract more than the mobile phone. Furthermore, dummy variables were created for income and education, which have both been set to '2' for high, and '1' for low. Based on Centraal Planbureau, €37,500 was defined as the average income per adult in the household (Centraal Planbureau, 2016). For convenience, the gross yearly income was divided by the amount of adults in the household to calculate the gross income per adult in the household. This was then separated into two groups, above €37,500 per adult and below €37,500 per adult. Lastly, the WTPs for the four specific Smart TVs have been recoded to percentages of the television price

as stated in the questions. These percentages have then been averaged, to come to one number for each respondent.

## Overview

As shown in Table 2, with the questionnaire, a total of 116 respondents were collected, of which 50 males and 66 females. Table 3 shows that the average age was 38 years, and was ranging between 17 and 82 years old. Most of the respondents lived in a household consisting of two adults and zero children. The amount of adults in the household was ranging between one and five, whereas the amount of children was between zero and four. The interesting factor was that the average age of the youngest child in the household was around 14 years old, with 30 percent of the children being over 18 years old. Furthermore, almost 50 percent of the respondents indicated that they already own one or more Smart TVs. In Table 4, it can be found that from the 115 respondents that stated their education, 89 were considered highly educated, which means that they have finished HBO or higher, whereas 26 respondents had a lower education.

### Descriptive statistics of Gender

	N	Amount of Males	Amount of Females
Gender	116	50	66

*Table 2: Descriptive Statistics of Gender*

### Descriptive statistics of multiple variables

	N	Mean	Minimum	Maximum
Age	116	38.5086	17	82
Amount of Adults in Household	116	2.0259	1	5
Amount of Children in Household	113	.7434	0	4

Age of oldest Child	41	13.76	0	21
Gross Income	95	65,578.9474	20,000	300,000
Amount of Smart TVs	132	1.67	0	5

Table 3: Descriptive Statistics of Age, Amount of Adults, Amount of Children, Age of Oldest Child, Gross Income, Amount of Smart TVs

#### Descriptive statistics of Education Level

	N	Higher Educated (HBO, WO Bachelor, WO Master, etc.	Lower Educated (No education, education up to and including WO-propedeuse)
Education level	115	26	89

Table 4: Descriptive Statistics of Education level

The average gross income per household was around €65,500, with the lowest being under €20,000 and the highest being over €300,000 (see Table 3). Per adult household member, this came down to an average of around €35,000, ranging from €4,000 to €150,000 per year. In Table 5, it can be seen that over 70 percent of the respondents stated that they were (almost) sure that they could pay of a bill of €2,000 in the next month, meaning that most of the respondents are not financially fragile.

#### Descriptive statistics of Financial Fragility

	N	Able to pay €2,000	Almost sure; Able to pay €2,000	Almost sure not able to pay €2,000	Not able to pay €2,000
Financial Fragility	101	59	17	5	20

Table 5: Descriptive Statistics of Financial Fragility



When looking at television watching behavior, Table 6 shows that on average, respondents watch approximately 2.5 hours of television per day, and ranges between 0.5 hours per day to 7.5 hours per day. Next to that, as can be seen in Table 7, over 70 percent of the respondents indicate that they watch films or series online.

**Descriptive statistics of Amount of Hours of TV per day**

	N	Mean	Minimum	Maximum
Amount of Hours of TV per day	129	2.5039	.50	7.50

*Table 6: Descriptive Statistics of Amount of Hours of TV per day*

**Descriptive statistics of Watch Online**

	N	Yes	No
Watch Online	121	100	21

*Table 7: Descriptive Statistics of Watch Online*

After recoding the variables concerning the valuation of mobile phone and contract, the following division of scores were calculated. As can be seen in Table 8, the mean score was -1.5, which means that, on average, respondents valued their contract more than their mobile phone. This is confirmed by the minimum and maximum score from this calculated, respectively -9 and +8.

**Descriptive statistics of Total Score**

	N	Mean	Minimum	Maximum
Total Score	109	-1.4862	-9	8

*Table 8: Descriptive Statistics of Total Score*

## Descriptive statistics of Independent Variables

Table 9 shows that approximately two-thirds of the respondents were not interested in the addition of a Smart TV to the bundle. This shows that there is little demand for this bundling option.

**Descriptive statistics of Demand for a Smart TV**

	N	Yes	No
Demand for a Smart TV	126	32	94

*Table 9: Descriptive Statistics of Demand for a Smart TV*

Multiple reasons have been submitted by respondents why they were not interested in the addition of a Smart TV to the bundle. As can be seen in Table 10, of the 94 respondents that received this question because they stated that they were not interested, 31 indicated that they already own a Smart Television and are not interested in another one. Furthermore, 32 respondents indicated that they do not see the additional value of a Smart TV. Lastly, 31 respondents give another reason for their disinterest. The main reasons given in these open answers can be summarized into two reasons: the respondent already has another product (i.e. laptop, blu-ray player, playstation, etc.) that gives him or her the opportunity to watch online television/series and uses that product; or the respondent is not interested in watching online television and is thus not interested in this option.

**Descriptive statistics of Why not interested in Smart TV**

N	Already own a Smart TV	Do not see additional value of Smart TV	Other
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Why not interested in Smart TV	94	31	32	31
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Table 10: Descriptive Statistics of Why not interested in Smart TV

The 32 respondents that indicated that they are interested in additional Smart TV received another two questions about specific Smart TVs that could be added to the contract. As can be seen in Table 11, for the cheapest Smart TV, eight of the 12 respondents answered that they are interested. For the second Smart TV, 11 out of 14 respondents indicated that they would be interested. Twelve respondents received the question about the third Smart TV, of which eight indicated that they are interested. For the most expensive Smart TV, 14 out of 20 respondents expressed an interest in the addition of the Smart TV to the bundle.

**Descriptive statistics of Interest in Different Smart TVs**

	N	Interested	Not Interested
Smart TV 1	12	8	4
Smart TV 2	14	11	3
Smart TV 3	12	8	4
Smart TV 4	20	14	6

Table 11: Descriptive Statistics of Interest in Different Smart TVs

When looking at the reasons respondents give for not being interested in the specific Smart Televisions, the most given answer overall is that they are not interested in the form of payment presented. Other answers that were less frequently given were about the size of the television (too small or too big), and one respondent stated that he or she recently bought a new television and thus was not looking for one right now.

When looking at the average relative WTP, Table 12 shows that the mean is 2.9 percent. This means that the respondents are willing to pay 2.9 percent of the total price for the Smart TV per month. After 24 months, this would add up to approximately 70 percent of the total price of the television, which means a 30 percent discount. However, the WTP amount ranges from .72 percent (approximately 17 percent in total) to 8.62 percent (over 200 percent of the price of the Smart TV).

**Descriptive statistics of Average Relative Willingness to Pay**

	N	Mean	Minimum	Maximum
Average Relative WTP	23	2.8973	.72	8.62

*Table 12: Descriptive Statistics of Average Relative WTP*

Specifying these amounts for the four different situations, Table 13 shows that for the cheapest television, respondents are willing to pay of average 3.39 percent of the total price per month. For the second Smart TV, this is 3.71 percent, and for the third and fourth Smart TV, these percentages are respectively 2.93 percent and 1.44 percent.

**Descriptive statistics of Relative WTP for Smart TVs**

	N	Mean	Minimum	Maximum
Relative WTP Smart TV 1	8	3.3922	1.86	4.83
Relative WTP Smart TV 2	10	3.7073	1.60	8.62
Relative WTP Smart TV 3	8	2.9252	.97	4.58
Relative WTP Smart TV 4	14	1.4378	.47	3.12

*Table 13: Descriptive Statistics of Relative WTP for Smart TVs*

## Correlation between income and financial fragility

When calculating the correlation between joint gross income and financial fragility, it can be seen in Table 14 that the Pearson Correlation is .357 (sign: .001). This shows that the two variables are mildly correlated.

**Correlation between Gross Income and Financial Fragility**

		Gross Income	Financial Fragility
Gross Income	Pearson Correlation	1.000	.357**
	Sig. (2-tailed)		.001
	N	95	87
Financial Fragility	Pearson Correlation	.357**	1
	Sig. (2-tailed)	.001	
	N	87	101

\*\*Correlation is significant at the 0.01 level (2-tailed)

*Table 14: Correlation between Gross Income and Financial Fragility*

## Regressions on Demand for Smart TVs

In Table 15 and Table 16, it can be seen that there is no clear effect of age on the demand for a Smart TV. With a Beta of .002 (sig.: .459), the results show that it is not sure whether age has an effect on the demand for Smart TVs. This means that the demand for Smart TVs does not have to change when the age of the respondent changes.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
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1	.069 <sup>a</sup>	.005	-0.004	.42525
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a. Predictors: (Constant), Age

Table 15: Model Summary of Regression Age on Demand for Smart TV

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.159	.107		1.496	.138
	Age	.002	.003	.069	.743	.459

a. Dependent Variable: DSTV

Table 16: Coefficients of Regression Age on Demand for Smart TV

In Table 17 and Table 18 it can be seen that the age of the oldest at home living child of the respondent has no visible influence on the demand for a Smart TV (Beta: .009; sig.: .426).

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.128 <sup>a</sup>	.016	-0.009	.48223

a. Predictors: (Constant), Age Child

Table 17: Model Summary of Regression Age Child on Demand for Smart TV

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.215	.174		1.239	.223
	Age Child	.009	.011	.128	.804	.426

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a. Dependent Variable: DSTV

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Table 18: Coefficients of Regression Age Child on Demand for Smart TV

When regressing the joint gross income on the demand for a Smart Television, Table 20 shows a Beta of  $2.103 \times 10^{-7}$  (sign: .819). This means that there is no clear evidence that gross income has an effect on the demand for the addition of Smart TV.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.024 <sup>a</sup>	.001	-.010	.43282

a. Predictors: (Constant), Gross Income

Table 19: Model Summary of Regression Gross Income on Demand for Smart TV

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

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1.	(Constant)	.228	.075		3.051	.003
	Gross Income	2.103E-007	.000	.024	.229	.819

a. Dependent Variable: DSTV

Table 20: Coefficients of Regression Gross Income on Demand for Smart TV

After separating gross income in higher gross income and lower gross income, there is still no visible effect of gross income on the demand for a Smart TV. This can be seen in Table 21 and Table 22, which show a Beta of .047 (sig.: .616).

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.052 <sup>a</sup>	.003	-.008	.43235

a. Predictors: (Constant), Gross Income Dummy

*Table 21: Model Summary of Regression Gross Income Dummy on Demand for Smart TV*

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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.179	.133		1.344	.182
	Gross Income Dummy	.047	.093	.052	.504	.616

a. Dependent Variable: DSTV

*Table 22: Coefficients of Regression Gross Income Dummy on Demand for Smart TV*

In Table 23 and Table 24, it can be seen that the Beta value is -.007 (sig.: .833). This shows that there is no clear evidence for an effect of financial fragility on the demand for a Smart TV.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.021 <sup>a</sup>	.000	-.010	.41682

a. Predictors: (Constant), Financial Fragility

*Table 23: Model Summary of Regression Financial Fragility on Demand for Smart TV*



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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.241	.117		2.054	.043
	Financial Fragility	-.007	.035	-.021	-.211	.833

a. Dependent Variable: DSTV

*Table 24: Coefficients of Regression Financial Fragility on Demand for Smart TV*

In Table 25 and Table 26, it can be seen that it is not sure whether people watch television, series, or movies online has an effect on the demand for a Smart TV.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077 <sup>a</sup>	.006	-,002	.44342

a. Predictors: (Constant), Watch Online

*Table 25: Model Summary of Regression Watch Online on Demand for Smart TV*

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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.190	.097		1.968	.051
	Watch Online	.090	.106	.077	.841	.402

a. Dependent Variable: DSTV

*Table 26: Coefficients of Regression Watch Online on Demand for Smart TV*

As shown in Table 27 and Table 28, the hours per day spent on watching television does not have a clear effect on the demand for a Smart TV (Beta: -.007; sig.:.742).

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.030 <sup>a</sup>	.001	-.007	.43858

a. Predictors: (Constant), Hours of TV per day

*Table 27: Model Summary of Regression Hours of TV per day on Demand for Smart TV*

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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.271	.066		4.139	.000
	Hours of TV per day	-.007	.021	-.030	-.330	.742

a. Dependent Variable: DSTV

*Table 28: Coefficients of Regression Hours of TV per day on Demand for Smart TV*

In Table 29 and Table 30, the results of the regression of Total Score on the Demand for a Smart TV can be seen. With a Beta of .000 (sig.:.990), the conclusion can be drawn that there is no evidence that the total score has an effect on the demand for a Smart TV

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.001 <sup>a</sup>	.000	-.009	.42433

a. Predictors: (Constant), Total Score

Table 29: Model Summary of Regression Total Score on Demand for Smart TV

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1.	(Constant)	.230	.046		5.032	.000
	Total Score	.000	.014	.001	.012	.990

a. Dependent Variable: DSTV

Table 30: Coefficients of Regression Total Score on Demand for Smart TV

Regressions on Average Relative Willingness to Pay

Considering the average relative willingness to pay for the Smart TVs, there is no clear evidence that gross income effects the average relative WTP. This can be seen in Table 31 and Table 32, which shows a Beta of  $5.83 \times 10^{-6}$  (sign: .522).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.162 <sup>a</sup>	.026	-.035	1.24945

a. Predictors: (Constant), Gross Income

Table 31: Model Summary of Regression Gross Income on Average Relative WTP

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		

		B	Std. Error	Beta		
1.	(Constant)	2.213	.696		3.181	.006
	Gross Income	5.83E-006	.000	.162	.655	.522

a. Dependent Variable: Average Relative Willingness to Pay

Table 32: Coefficients of Regression Gross Income on Average Relative WTP

After separating gross income in higher gross income and lower gross income, there is still no evidence that it affects the average relative willingness to pay. This is shown in Table 33 and Table 34, as the Beta is  $-.284$  (sig.:  $.641$ ).

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.118 <sup>a</sup>	.014	-.048	1.25723

a. Predictors: (Constant), Gross Income Dummy

Table 33: Model Summary of Regression Gross Income Dummy on Average Relative WTP

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1.	(Constant)	3.036	.911		3.333	.004
	Gross Income Dummy	-.284	.596	-.118	-.476	.641

a. Dependent Variable: Average Relative Willingness to Pay

Table 34: Coefficients of Regression Gross Income Dummy on Average Relative WTP

In Table 35 and Table 36, it can be seen that the Beta value is  $-.084$  (sig.:  $.857$ ). This means that there is no clear evidence for a possible effect of financial fragility on the average relative willingness to pay.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.044 <sup>a</sup>	.002	-.057	1.94265

a. Predictors: (Constant), Financial Fragility

*Table 35: Model Summary of Financial Fragility on Average Relative WTP*

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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients		
1.	(Constant)	3.110	1.572		1.979	.064
	Financial Fragility	-.084	.462	-.044	-.182	.857

a. Dependent Variable: Average Relative Willingness to Pay

*Table 36: Coefficients of Regression Financial Fragility on Average Relative WTP*

In Table 37 and Table 38, it can be seen that on the effect of online watching behavior on the average relative willingness to pay is significant on the  $.1$  significance level. With a Beta of  $2.387$  (sig.:  $.062$ ), the regression shows that if the respondent watches online, their average relative willingness to pay increases by  $2.3$  percentage point. The explained variance in this regression is  $.156$ , and adjusted for the amount of respondents is  $.116$ , which means that

whether the respondents watch online explains almost 12 percent of their average relative willingness to pay.

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.395 <sup>a</sup>	.156	.116	1.63593

a. Predictors: (Constant), Watch Online

Table 37: Model Summary of Regression Watch Online on Average Relative WTP

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized	T	Sig.
				Coefficients		
		B	Std. Error	Beta		
1.	(Constant)	.718	1.157		.621	.542
	Watch Online	2.387	1.211	.395	1.972	.062

a. Dependent Variable: Average Relative Willingness to Pay

Table 38: Coefficients of Regression Watch Online on Average Relative WTP

On a 10 percent confidence interval, the amount of hours spent watching television per day seems to have an effect on the average relative willingness to pay. Table 40 shows a Beta of .416 (sig.: .074), which means that when respondents watch more television, the average relative willingness to pay increases as well. The explained variance in this model is .144 (as shown in Table 39), which means that over 14 percent of the average relative willingness to pay

is explained by the hours of television watched per day. Adjusted to the small sample size, this is reduced to 10 percent.

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.379 <sup>a</sup>	.144	.103	1.64799

a. Predictors: (Constant), Hours of TV per day

*Table 39: Model Summary of Regression Hours of TV per day on Average Relative WTP*

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

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	1.894	.636		2.980	.007
	Hours of TV per day	.416	.222	.379	1.877	.074

a. Dependent Variable: Average Relative Willingness to Pay

*Table 40: Coefficients of Regression Hours of TV per day on Average Relative WTP*

**Regressions with control variables**

When controlling for age and gender, Table 41 and Table 42 show that there is no significant effect of Gross Income on the Demand for a Smart TV. This is presented by the Beta value of  $1.476 \times 10^{-7}$  (sig.: .881).

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.093 <sup>a</sup>	.009	-.013	.43338
2	.095 <sup>b</sup>	.009	-.024	.43570

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Gross Income

Table 41: Model Summary of Regression Gross Income on Demand for a Smart TV (with control variables)

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.077	.188		.411	.682
	Age	.002	.003	.062	.600	.550
	Gender	.063	.089	.073	.706	.482
2.	(Constant)	.070	.195		.361	.719
	Age	.002	.003	.057	.521	.603
	Gender	.065	.091	.076	.716	.476
	Gross Income	1.476E-007	.000	.017	.150	.881

a. Dependent Variable: Demand Smart TV

Table 42: Coefficients of Regression Gross Income on Demand for a Smart TV (with control variables)

In Table 43 and Table 44, the results for regressing financial fragility on the demand for Smart TVs controlling for age and gender have been presented. It shows a Beta of -.007 (sig.: .848), which means that there is no clear evidence that financial fragility has an effect on demand for Smart TVs while controlling for age and gender.

### Model Summary



Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.105 <sup>a</sup>	.011	-.009	.41674
2	.106 <sup>b</sup>	.011	-.019	.41880

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Financial Fragility

Table 43: Model Summary of Regression Financial Fragility on Demand for a Smart TV (with control variables)

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1.	(Constant)	.082	.177		.463	.644
	Age	-7.088E-005	.003	-.003	-.026	.979
	Gender	.088	.084	.105	1.040	.301
2.	(Constant)	.097	.195		.499	.619
	Age	.000	.003	.005	.042	.966
	Gender	.087	.085	.104	1.032	.305
	Financial Fragility	-.007	.037	-.021	-.193	.848

a. Dependent Variable: Demand Smart TV

Table 44: Coefficients of Regression Financial Fragility on Demand for a Smart TV (with control variables)

As the aforementioned information has shown, there is little information that can explain the low demand for Smart Televisions. Looking at the results of the regressions, only the effect of online watching behavior of respondents on the average relative willingness to pay had an significant result taking into account a confidence interval of 10 percent. This shows that although there is a very clear result stating that the majority of the respondents is not

interested in a Smart TV. After the addition of control variables, age and gender, no significant results were found, showing that this data shows no evidence for a possible explanation about why the respondents were not interested in a Smart TV.

## Discussion

Whereas several studies have shown that bundles ought to be more attractive for consumers, this study shows that for the proposed bundle this is not the case. The results have presented evidence that the majority of the respondents is not interested in either the addition of a Smart TV to the bundle for telephone, internet, and television in their homes, or the Smart TV in general. However, comparing these results with the amount of people that already own a Smart TV, which is approximately 50 percent, it is interesting to see that demand is low.

One of the most commonly given reasons for not being interested in the addition of a Smart TV is that consumers are not interested in the extra features introduced in the Smart television. This means that the perceived value of the additional features is low for consumers, and that they thus do not see the benefits of a Smart TV compared to a regular television. However, when comparing this with the amount of people that watch films or series online – which is one of the most important features of a Smart TV – it seems that these do not match. One possible reason for this behavior is that people mostly use their laptops for watching online broadcasts, and do not see the necessity of watching these on a bigger screen.

Another possible reason for the disinterest in a Smart TV is the fact that some respondents stated that they are happy with the television they already own or that they recently bought a new television and not looking for a new one. The conclusion that can be drawn from these answers is that people keep their televisions for a longer period. Comparing this to the smartphone market, where people often change their mobile phones after a period of two years, a difference can be seen that explains the results of this study. A possible explanation is that the proposed situation where respondents pay off the Smart TV in two years

might be too comparable with the smartphone market where people change their mobile phone after paying off the old one. This might have caused the respondents to think that they will get a new Smart TV after two years, whereas they would normally keep a television for a longer period. The fact that this option was available in the situation presented in the questionnaire might have been missed by the respondents, and thus lead to the idea that they are not interested. This can be linked to certain habits consumers are used to: i.e. you get a new smartphone after every two years, whereas a television is a product that is only bought when the old television breaks down. This difference in habits might influence the decision-making behavior in this study. Because the respondents are used to the way certain things go, a change in their habits might seem unnatural, and therefore they are not interested in the addition of a Smart TV to the telecommunication bundle.

### Limitations

As described above already, there are certain limitations to this study. Firstly, the contingent valuation method focuses on hypothetical situations. Although these situations have been presented as clearly and realistically as possible, they are still hypothetical. Therefore it is not certain whether the respondent would make the same decision in when the situation occurs in real life. The same can be concluded for the willingness to pay, which can differ between real and hypothetical situations. Furthermore, the respondents are not selected randomly. By using snowball sampling, there is the probability that it cannot be generalized to the Dutch society. This has to be taken into account when drawing conclusions on the collected data.

Furthermore, due to the high amount of respondents stating in the beginning of the questionnaire that they were not interested in the addition of a Smart TV to the bundle, only a

small amount of respondents received the questions with the specific example televisions.  
Therefore, the analysis of these questions were nearly impossible.

## Conclusion

In this paper, the demand for the addition of a Smart TV for a household telecommunication bundle has been studied. Next to the possible demand, the willingness to pay for such a bundle has been researched with four different situations. To be able to compare the results, some insight in the market for mobile phones – and the bundle in which they are offered in the Netherlands – has been looked at. From the questionnaire, the results presented a clear disinterest in the addition of a Smart TV to the bundle, and, more importantly, a lack of interest in the demand for a Smart TV in general. Several reasons have been given for the low demand in a Smart TV, including the idea that people are not interested in the additional features it offers. This results in the following conclusion and answer to the research question: There is little demand in the Netherlands for the addition of a Smart TV to the bundle for telephone, internet, and television. This is different than the demand for the addition of a smartphone to the contract offered by telecommunication providers, which shows a high demand for smartphones included in bundles with a monthly pay-off. Due to the lack of interest in a Smart TV, the willingness to pay for the product has been hard to measure, and can thus not be answered.

For future studies, it can be recommended to look at these results again in a few years from now, as more information will be available on Smart TVs and people might have more knowledge about the advantages of such a product.

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## Appendix A Questionnaire in Dutch

### Q1

Beste deelnemer,

Waarschijnlijk heeft u in uw huishouden een abonnement op televisie-, internet-, en/of telefonieaansluiting. Met behulp van deze vragenlijst wil ik onderzoeken of er vraag is naar de toevoeging van een Smart televisie aan dit abonnement.

Een Smart Televisie is een televisie die naast de televisie aansluiting ook een internet aansluiting heeft. Door deze toevoeging kan u de Smart TV ook gebruiken om apps te downloaden en zo online video's en films te bekijken.

Ik doe dit onderzoek puur vanuit wetenschappelijke interesse en ben dus niet verbonden aan een telecom aanbieder.

U krijgt in deze vragenlijst een aantal algemene vragen over televisiegebruik en uw persoonlijke situatie. Daarnaast krijgt u twee aanbiedingen voor de toevoeging van een Smart TV.

Het invullen van de vragenlijst zal ongeveer 10 minuten duren en de antwoorden zullen volledig anoniem behandeld worden.

Alvast bedankt voor uw bijdrage aan het onderzoek.

Caspar Wieten

### Q2

Hoeveel televisies heeft u in uw huis staan?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15 of meer

**Q3**

Hoeveel van deze televisies zijn Smart Televisies?

Een Smart Televisie is een televisie die naast de televisie aansluiting ook een internet aansluiting heeft. Door deze toevoeging kan u de Smart TV ook gebruiken om apps te downloaden en zo online video's en films te bekijken.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15 of meer

**Q4**

Hoeveel uur per dag staat de televisie gemiddeld aan in uw huishouden? (Heeft u meerdere televisies, tel de tijd van deze televisies dan bij elkaar op)

- 0 - 1 uur
- 1 - 3 uur
- 3 - 5 uur
- 5 - 10 uur
- Meer dan 10 uur

**Q5**

Zou u, tegen bijbetaling, geïnteresseerd zijn in een toevoeging van een Smart TV aan uw huidige abonnement voor internet, televisie en telefonie?

- Ja
- Nee

**Q6** *Answer if for Q5 "Nee" is Selected*

Waarom bent u niet geïnteresseerd in de toevoeging van een Smart TV aan uw huidige abonnement voor internet, televisie en telefonie?

- Ik heb al een (of meerdere) Smart Televisie(s) en wil er niet nog meer hebben
- Ik vind dat Smart TVs geen toegevoegde waarde hebben

- Anders; \_\_\_\_\_

**Q7**

Op welke aansluitingen heeft u in uw huishouden een abonnement?

- Internet, televisie en vaste telefonie
- Internet en televisie
- Internet en vaste telefonie
- Televisie en vaste telefonie
- Alleen internet
- Alleen televisie
- Alleen vaste telefonie
- Ik heb geen aansluitingen

**Q8** Answer if for Q7 "Ik heb geen aansluitingen" is Not Selected

Wat betaalt u maandelijks voor dit abonnement?

- Minder dan €10
- €11 - €20
- €21 - €30
- €31 - €40
- €41 - €50
- €51 - €60
- €61 - €70
- €71 - €80
- €81 - €90
- €91 - €100
- Meer dan €100
- Weet ik niet

**Q9** Answer if for Q7 "Ik heb geen aansluitingen" is Not Selected

Hoe tevreden bent u met wat u maandelijks betaalt?

- Zeer tevreden
- Tevreden
- Neutraal
- Ontevreden
- Zeer ontevreden

**Q10**

Kijkt u wel eens films/series via het internet? (bijvoorbeeld via Youtube, Netflix, HBO, andere streamingdiensten)

- Ja
- Nee

**Q11** Answer if for Q5 "Ja" is Selected



De specificaties van bovenstaande Smart TV zijn:

Beeldresolutie: Full HD

Beeldscherm diagonaal: 32 inch (80 cm)

Stel, u krijgt van uw aanbieder het aanbod om een Smart Televisie toe te voegen aan uw huidige abonnement voor internet, televisie en telefonie.

Zou u geïnteresseerd zijn in de toevoeging van deze Smart TV aan het abonnement?

- Ja
- Nee

**Q12 Answer if for Q11 "Ja" is Selected**

Wat zou u bereid zijn om maximaal maandelijks extra te betalen voor de Smart TV? Dit bedrag zal alleen gerekend worden voor de duur van het contract (24 maanden). Na afloop van deze maanden betaalt u alleen nog de kosten voor de aansluitingen en is de TV van u. **Beeldresolutie: Full HD**

**Beeldscherm diagonaal: 32 inch (80 cm)**

**Nieuw prijs: €269**

- Tot en met €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70



- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- Meer dan €100

**Q13** Answer if for Q11 "Nee" is Selected

Waarom bent u niet geïnteresseerd? (Er kunnen meerdere antwoorden geselecteerd worden)

- Het scherm is te groot
- Het scherm is te klein
- Ik ben niet geïnteresseerd in deze betaalwijze
- Anders: \_\_\_\_\_

**Q14** Answer if for Q5 "Ja" is Selected



€499

De specificaties van bovenstaande Smart TV zijn:

Beeldresolutie: Full HD

Beeldscherm diagonaal: 43 inch (109 cm)

Stel, u krijgt van uw aanbieder het aanbod om een Smart Televisie toe te voegen aan uw huidige abonnement voor internet, televisie en telefonie.

Zou u geïnteresseerd zijn in de toevoeging van deze Smart TV aan het abonnement?

- Ja
- Nee

**Q15** Answer if for Q14 "Ja" is Selected

Wat zou u bereid zijn om maximaal maandelijks extra te betalen voor de Smart TV? Dit bedrag zal alleen gerekend worden voor de duur van het contract (24 maanden). Na afloop van deze maanden betaalt u alleen nog de kosten voor de aansluitingen en is de TV van u.

**Beeldresolutie: Full HD**

**Beeldschermdiagonaal: 43 inch (109 cm)**

**Nieuwprijs: €499**

- Tot en met €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- Meer dan €100

**Q16** Answer if for Q14 "Nee" is Selected

Waarom bent u niet geïnteresseerd? (Er kunnen meerdere antwoorden geselecteerd worden)

- Het scherm is te groot
- Het scherm is te klein
- Ik ben niet geïnteresseerd in deze betaalwijze
- Anders: \_\_\_\_\_

**Q17** Answer if for Q5 "Ja" is Selected



€829

De specificaties van bovenstaande Smart TV zijn:

Beeldresolutie: Ultra HD (4K)

Beeldscherm diagonaal: 50 inch (125 cm)

Stel, u krijgt van uw aanbieder het aanbod om een Smart Televisie toe te voegen aan uw huidige abonnement voor internet, televisie en telefonie.

Zou u geïnteresseerd zijn in de toevoeging van deze Smart TV aan het abonnement?

- Ja
- Nee

**Q18** Answer if for Q17 "Ja" is Selected

Wat zou u bereid zijn om maximaal maandelijks extra te betalen voor de Smart TV? Dit bedrag zal alleen gerekend worden voor de duur van het contract (24 maanden). Na afloop van deze maanden betaalt u alleen nog de kosten voor de aansluitingen en is de TV van u.

**Beeldresolutie: Ultra HD (4K)**

**Beeldscherm diagonaal: 50 inch (125 cm)**

**Nieuw prijs: €829**

- Tot en met €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65

- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100)
- Meer dan €100

**Q19** Answer if for Q17 "Nee" is Selected

Waarom bent u niet geïnteresseerd? (Er kunnen meerdere antwoorden geselecteerd worden)

- Het scherm is te groot
- Het scherm is te klein
- Ik ben niet geïnteresseerd in deze betaalwijze
- Anders: \_\_\_\_\_

**Q20** Answer if for Q5 "Ja" is Selected



€1699

De specificaties van bovenstaande Smart TV zijn:

Beeldresolutie: Curved Ultra HD (4K)

Beeldscherm diagonaal: 55 inch (138 cm)

Stel, u krijgt van uw aanbieder het aanbod om een Smart Televisie toe te voegen aan uw huidige abonnement voor internet, televisie en telefonie.

Zou u geïnteresseerd zijn in de toevoeging van deze Smart TV aan het abonnement?

- Ja
- Nee

**Q21** Answer if for Q19 "Ja" is Selected

Wat zou u bereid zijn om maximaal maandelijks extra te betalen voor de Smart TV? Dit bedrag zal alleen gerekend worden voor de duur van het contract (24 maanden). Na afloop van deze maanden betaalt u alleen nog de kosten voor de aansluitingen en is de TV van u.

**Beeldresolutie: Curved Ultra HD (4K)**

**Beeldschermdiagonaal: 55 inch (138 cm)**

**Nieuwprijs: €1699**

- Tot en met €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- Meer dan €100

**Q22** Answer if for Q19 "Nee" is Selected

Waarom bent u niet geïnteresseerd? (Er kunnen meerdere antwoorden geselecteerd worden)

- Het scherm is te groot
- Het scherm is te klein
- Ik ben niet geïnteresseerd in deze betaalwijze
- Anders: \_\_\_\_\_

**Q23**

Stel dat u een nieuw abonnement met een mobiele telefoon wil gaan afsluiten. Geef aan hoe belangrijk de verschillende aspecten van een abonnement met mobiele telefoon voor u zijn.

	Ze er be lang rijk	Be lang rijk	Ne utraal	On be lang rijk	Ze er on be lang rijk
Prijs van het abonnement met de mobiele telefoon					

Aantal minuten / Sms					
Aantal MB's					
Besturingssysteem van de mobiele telefoon (Android, IOS, Windows)					
Kwaliteit van de camera					
Mogelijkheid tot gebruik van het 4G netwerk					
Overige specificaties van de mobiele telefoon					
De specifieke mobiele telefoon die u krijgt (merk en model)					

#### Q24

U krijgt een onverwachte rekening van €2000. Hoe zeker weet u dat u deze binnen één maand kan betalen?

- Ik weet zeker dat ik die €2000 euro kan betalen
- Ik weet bijna zeker dat ik die €2000 kan betalen
- Ik weet bijna zeker dat ik die €2000 niet kan betalen
- Ik weet zeker dat ik die €2000 niet kan betalen
- Ik heb geen idee
- Ik wil deze vraag niet beantwoorden

#### Q25

Wat is uw leeftijd?

- 16 en jonger
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26

- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40
- 41
- 42
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- 44
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- 53
- 54
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- 56
- 57
- 58
- 59
- 60
- 61
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
- 70
- 71
- 72
- 73

- 74
- 75
- 76
- 77
- 78
- 79
- 80
- 81
- 82
- 83
- 84
- 85
- 86
- 87
- 88
- 89
- 90 en ouder

**Q26**

Wat is uw geslacht?

- Man
- Vrouw

**Q27**

Hoe is uw huishouden samengesteld?

- \_\_\_\_\_ Aantal volwassenen
- \_\_\_\_\_ Aantal thuiswonende kinderen

**Q28** *Answer if for Q26 "Aantal thuiswonende kinderen" is Greater than 0*

Wat is de leeftijd van uw jongste thuiswonende kind?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



- 14
- 15
- 16
- 17
- 18
- 19
- 20
- Ouder dan 20

**Q29**

Wat is uw hoogst afgeronde opleiding?

- Geen onderwijs / basisonderwijs / lagere school
- LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)
- MAVO / eerste 3 jaar HAVO en VWO / VMBO (theoretische en gemengde leerweg)
- MBO
- HAVO of VWO bovenbouw / WO-propedeuse
- HBO / WO-bachelor of kandidaats
- WO-doctoraal of master

**Q30** Answer if for Q26 "Aantal volwassenen" is Greater than or Equal to 2

Kies de volwassene (maar niet uzelf) met de hoogst afgeronde opleiding binnen uw huishouden. Wat is zijn/haar hoogst afgeronde opleiding?

- Geen onderwijs / basisonderwijs / lagere school
- LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)
- MAVO / eerste 3 jaar HAVO en VWO / VMBO (theoretische en gemengde leerweg)
- MBO
- HAVO of VWO bovenbouw / WO-propedeuse
- HBO / WO-bachelor of kandidaats
- WO-doctoraal of master

**Q31**

Wat is het gezamenlijke bruto inkomen van uw huishouden?

- Minder dan €20.000
- €20.000 - €30.000
- €30.000 - €40.000
- €40.000 - €50.000
- €50.000 - €60.000
- €60.000 - €70.000
- €70.000 - €80.000
- €80.000 - €90.000
- €90.000 - €100.000
- €100.000 - €110.000
- €110.000 - €120.000
- €120.000 - €130.000

- €130.000 - €140.000
- €140.000 - €150.000
- €150.000 - €160.000
- €160.000 - €170.000
- €170.000 - €180.000
- €180.000 - €190.000
- €190.000 - €200.000
- €200.000 - €250.000
- €250.000 - €300.000
- Meer dan €300.000

**Q32**

Wat is ongeveer de hoogte van uw maandelijkse woonlasten (huur/ rente en/of aflossing van hypotheek + gas,water,licht)?

- Minder dan €100
- €100 - €200
- €200 - €300
- €300 - €400
- €400 - €500
- €500 - €600
- €600 - €700
- €700 - €800
- €800 - €900
- €900 - €1000
- €1000 - €1100
- €1100 - €1200
- €1200 - €1300
- €1300 - €1400
- €1400 - €1500
- €1500 - €1600
- €1600 - €1700
- €1700 - €1800
- €1800 - €1900
- €1900 - €2000
- €2000 - €2100
- €2100 - €2200
- €2200 - €2300
- €2300 - €2400
- €2400 - €2500
- €2500 - €2600
- €2600 - €2700
- €2700 - €2800
- €2800 - €2900
- €2900 - €3000
- €3000 - €3500
- €3500 - €4000

- Meer dan €4000

**Q33**

Als u geïnteresseerd bent in de resultaten van dit onderzoek, kunt u in dit veld uw e-mailadres achterlaten.

---

Met onderstaande knop kunt u het indienen van de vragenlijst bevestigen.

## Appendix B: Questionnaire translated to English

### Q1

Dear respondent,

You probably already have a connection to television, internet and/or phone in your household. In this study, I want to research a possible demand for adding a Smart Television to this contract.

A Smart TV is a television which has, next to the regular television connection, the possibility to connect to the internet. This can be used to download apps and watch online videos and movies.

This study is done purely out of academic interest, and is thus not connected to a telecom provider.

In this questionnaire, you will get some general questions about television usage and your personal situation. Next to that, you will receive two offers for the addition of a Smart TV.

This questionnaire will take you approximately 10 minutes to fill in and all answers will be analyzed anonymously.

Thank you very much for participating.

Caspar Wieten

### Q2

How many televisions do you have in your home?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15 or more

### Q3

How many of these are Smart Televisions?

A Smart TV is a television which has, next to the regular television connection, the possibility to connect to the internet. This can be used to download apps and watch online videos and movies.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15 or more

**Q4**

How much time is the television on in your household? (If you have more televisions, please add the time together)

- 0 - 1 hour
- 1 - 3 hours
- 3 - 5 hours
- 5 - 10 hours
- More than 10 hours

**Q5**

Would you, for a monthly fee, be interested in the addition of a Smart TV to your current contract for internet, television and phone connection?

- Yes
- No

**Q6** Answer if for Q5 "No" is Selected

Why are you not interest in the addition of a Smart TV to your current contract for internet-, television-, and/or phone connection?

- I already have one (or more) Smart TV(s) and I do not want any more.
- I do not see the additional value of a Smart TV
- Other; \_\_\_\_\_

**Q7**

What connections do you have at home?

- Internet, television and phone
- Internet and television
- Internet and phone
- Television and phone
- Only internet
- Only television
- Only phone
- I don't have any connections

**Q8** Answer if for Q7 "I don't have any connections" is Not Selected

What do you pay on a monthly basis for this contract?

- Less than €10
- €11 - €20
- €21 - €30
- €31 - €40
- €41 - €50
- €51 - €60
- €61 - €70
- €71 - €80
- €81 - €90
- €91 - €100
- More than €100
- I don't know

**Q9** Answer if for Q7 "I dont have any connections" is Not Selected

How satisfied are you with your monthly expenses on this connection?

- Very satisfied
- Satisfied
- Neutral
- Unsatisfied
- Very unsatisfied

**Q10**

Do you ever watch movies/series via the internet? (for example using Youtube, Netflix, HBO, other streamingservices)

- Yes
- No

**Q11** Answer if for Q5 "Ja" is Selected



The specifications of this Smart TV are:

Resolution: Full HD

Screen size: 32 inch (80 cm)

You are getting an offer from your provider to add a Smart TV to your current contract for internet, television and phone.

Would you be interested in adding this Smart TV to your contract?

- Yes
- No

**Q12 Answer if for Q11 "Ja" is Selected**

What would you be willing to pay on a monthly basis for this Smart TV. This amount will only be charged for the duration of your contract (24 months). After this, you will only pay for the connections and the TV will be yours to keep.

**Resolution: Full HD**

**Screen size: 32 inch (80 cm)**

**Price: €269**

- Up to €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70

- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- More than €100

**Q13** Answer if for Q11 "Nee" is Selected

Why are you not interested? (Multiple answers can be selected)

- The screen is too big
- The screen is too small
- I am not interested in this form of payment
- Other: \_\_\_\_\_

**Q14** Answer if for Q5 "Ja" is Selected



€499

The specifications of this Smart TV are:

Resolution: Full HD

Screen size: 43 inch (109 cm)

You are getting an offer from your provider to add a Smart TV to your current contract for internet, television and phone.

Would you be interested in adding this Smart TV to your contract?

- Yes
- No

**Q15** Answer if for Q14 "Ja" is Selected



What would you be willing to pay on a monthly basis for this Smart TV. This amount will only be charged for the duration of your contract (24 months). After this, you will only pay for the connections and the TV will be yours to keep.

**Resolution: Full HD**

**Screen size: 43 inch (109 cm)**

**Price: €499**

- Up to €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- More than €100

**Q16** Answer if for Q14 "Nee" is Selected

Why are you not interested? (Multiple answers can be selected)

- The screen is too big
- The screen is too small
- I am not interested in this form of payment
- Other: \_\_\_\_\_

**Q17** Answer if for Q5 "Ja" is Selected



€829

The specifications of this Smart TV are:

Resolution: Ultra HD (4K)

Screen size: 50 inch (125 cm)

You are getting an offer from your provider to add a Smart TV to your current contract for internet, television and phone.

Would you be interested in adding this Smart TV to your contract?

- Yes
- No

**Q18** Answer if for Q17 "Ja" is Selected

What would you be willing to pay on a monthly basis for this Smart TV. This amount will only be charged for the duration of your contract (24 months). After this, you will only pay for the connections and the TV will be yours to keep.

**Resolution: Ultra HD (4K)**

**Screen size: 50 inch (125 cm)**

**Price: €829**

- Up to €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65

- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100)
- More than €100

**Q19** Answer if for Q17 "Nee" is Selected

Why are you not interested? (Multiple answers can be selected)

- The screen is too big
- The screen is too small
- I am not interested in this form of payment
- Other: \_\_\_\_\_

**Q20** Answer if for Q5 "Ja" is Selected



€1699

The specifications of this Smart TV are:

Resolution: Curved Ultra HD (4K)

Screen size: 55 inch (138 cm)

You are getting an offer from your provider to add a Smart TV to your current contract for internet, television and phone.

Would you be interested in adding this Smart TV to your contract?

- Yes
- No

**Q21** Answer if for Q19 "Ja" is Selected

What would you be willing to pay on a monthly basis for this Smart TV. This amount will only be charged for the duration of your contract (24 months). After this, you will only pay for the connections and the TV will be yours to keep.

**Resolution: Curved Ultra HD (4K)**

**Screen size: 55 inch (138 cm)**

**Price: €1699**

- Up to €5
- €6 - €10
- €11 - €15
- €16 - €20
- €21 - €25
- €26 - €30
- €31 - €35
- €36 - €40
- €41 - €45
- €46 - €50
- €51 - €55
- €56 - €60
- €61 - €65
- €66 - €70
- €71 - €75
- €76 - €80
- €81 - €85
- €86 - €90
- €91 - €95
- €96 - €100
- More than €100

**Q22** Answer if for Q19 "Nee" is Selected

Why are you not interested? (Multiple answers can be selected)

- The screen is too big
- The screen is too small
- I am not interested in this form of payment
- Other: \_\_\_\_\_

**Q23**

You want to subscribe for a new mobile phone with contract. Please state how important the following different aspects of a mobile phone with contract are for you.

	Very important	Important	Neutral	Unimportant	Very unimportant
Price of the mobile phone with contract					
Minutes / Texts in					

contract					
Mobile Data					
Operating system of the mobile phone (Android, IOS, Windows)					
Quality of the camera					
Possibility to use the 4G network					
Other specifications of the mobile phone					
The specific mobile phone you will get (brand and model)					

**Q24**

You are getting an unexpected bill of €2,000. How sure are you that you will be able to pay this within one month?

- I am sure that I am able to pay the €2,000
- I am almost sure that I am able to pay the €2,000
- I am almost sure that I am not able to pay the €2,000
- I am sure that I am not able to pay the €2,000
- I do not know
- I do not want to answer this question

**Q25**

What is your age?

- 16 and younger
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
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- 75
- 76
- 77
- 78
- 79
- 80
- 81
- 82
- 83
- 84
- 85
- 86
- 87
- 88
- 89
- 90 and older

**Q26**

What is your gender?

- Male
- Female

**Q27**

What is the composition of your household?

- \_\_\_\_\_ Amount of adults
- \_\_\_\_\_ Amount of children

**Q28** Answer if for Q26 "Aantal thuiswonende kinderen" is Greater than 0

What is the age of the youngest child in your household?

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- Older than 20

**Q29**

What is your highest finished education?

- No education / Primary school
- LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)
- MAVO / first 3 years of HAVO en VWO / VMBO (theoretische en gemengde leerweg)
- MBO
- HAVO of VWO bovenbouw / WO-propedeuse
- HBO / WO-bachelor or kandidaats
- WO-doctoraal or master

**Q30** Answer if for Q26 “Aantal volwassenen” is Greater than or Equal to 2

Choose the adult in your household (but not yourself) with the highest finished education. What is his or her highest finished education?

- No education / Primary school
- LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)
- MAVO / first 3 years of HAVO en VWO / VMBO (theoretische en gemengde leerweg)
- MBO
- HAVO of VWO bovenbouw / WO-propedeuse
- HBO / WO-bachelor of kandidaats
- WO-doctoraal of master

**Q31**

What is the joint gross income of your household?

- Less than €20,000
- €20,000 - €30,000
- €30,000 - €40,000
- €40,000 - €50,000
- €50,000 - €60,000
- €60,000 - €70,000
- €70,000 - €80,000
- €80,000 - €90,000
- €90,000 - €100,000
- €100,000 - €110,000
- €110,000 - €120,000



- €120,000 - €130,000
- €130,000 - €140,000
- €140,000 - €150,000
- €150,000 - €160,000
- €160,000 - €170,000
- €170,000 - €180,000
- €180,000 - €190,000
- €190,000 - €200,000
- €200,000 - €250,000
- €250,000 - €300,000
- More than €300,000

**Q32**

What are approximately your monthly housing costs (rent / mortgage + gas, water, electricity)?

- Less than €100
- €100 - €200
- €200 - €300
- €300 - €400
- €400 - €500
- €500 - €600
- €600 - €700
- €700 - €800
- €800 - €900
- €900 - €1,000
- €1,000 - €1,100
- €1,100 - €1,200
- €1,200 - €1,300
- €1,300 - €1,400
- €1,400 - €1,500
- €1,500 - €1,600
- €1,600 - €1,700
- €1,700 - €1,800
- €1,800 - €1,900
- €1,900 - €2,000
- €2,000 - €2,100
- €2,100 - €2,200
- €2,200 - €2,300
- €2,300 - €2,400
- €2,400 - €2,500
- €2,500 - €2,600
- €2,600 - €2,700
- €2,700 - €2,800
- €2,800 - €2,900
- €2,900 - €3,000
- €3,000 - €3,500
- €3,500 - €4,000

- More than €4,000

**Q33**

If you are interested in the results of this research, you can fill in your e-mail address below.

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By clicking the button below you can finish and submit the questionnaire.

## Appendix C: Recoded Variables

The following variables have been recoded.

Recoded Variable	New Variable Name	Old Value	New Value
Q2	AmountTVs	"0" = 1	"0" = 0
		"1" = 2	"1" = 1
		"2" = 3	"2" = 2
		"3" = 4	"3" = 3
		"4" = 5	"4" = 4
		"5" = 6	"5" = 5
		"6" = 7	"6" = 6
		"7" = 8	"7" = 7
		"8" = 9	"8" = 8
		"9" = 10	"9" = 9
		"10" = 11	"10" = 10
		"11" = 12	"11" = 11
		"12" = 13	"12" = 12
		"13" = 14	"13" = 13
		"14" = 15	"14" = 14
Q3	AmountSTVs	"0" = 1	"0" = 0
		"1" = 2	"1" = 1
		"2" = 3	"2" = 2
		"3" = 4	"3" = 3
		"4" = 5	"4" = 4
		"5" = 6	"5" = 5
		"6" = 7	"6" = 6
		"7" = 8	"7" = 7
		"8" = 9	"8" = 8
		"9" = 10	"9" = 9
		"10" = 11	"10" = 10
		"11" = 12	"11" = 11
		"12" = 13	"12" = 12
		"13" = 14	"13" = 13
		"14" = 15	"14" = 14

Q4	HourTV	"15 or more" = 16 "0 – 1 hours" = 1 "1 – 3 hours" = 2 "3 – 5 hours" = 3 "5 – 10 hours" = 4 "More than 10 hours" = 5	"15 or more" = 15 "0 – 1 hours" = 0.5 "1 – 3 hours" = 2 "3 – 5 hours" = 4 "5 – 10 hours" = 7.5 "More than 10 hours" = 11
Q5	DemandSTV	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 0
Q10	WatchOnline	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 0
Q11	DemandSTV1	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 0
Q14	DemandSTV2	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 0
Q17	DemandSTV3	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 2
Q20	DemandSTV4	"Yes" = 1 "No" = 2	"Yes" = 1 "No" = 0
Q25	Age	"16 and younger" = 1 "17" = 2 "18" = 3 "19" = 4 ... "87" = 72 "88" = 73 "89" = 74 "90 and older" = 75	"16 and younger" = 15 "17" = 17 "18" = 18 "19" = 19 ... "87" = 87 "88" = 88 "89" = 89 "90 and older" = 90
Q28	AgeChild	"0" = 1 "1" = 2 "2" = 3 ... "19" = 20 "20" = 21 "Older than 20" = 22	"0" = 0 "1" = 1 "2" = 2 ... "19" = 19 "20" = 20 "Older than 20" = 21
Q24	FinancialFragility	"I am sure that I am able to pay the €2000" = 1 "I am almost sure that I	"I am sure that I am able to pay the €2000" = 4 "I am almost sure that I am

				am able to pay the €2000" = 2 "I am almost sure that I am not able to pay the €2,000" = 3 "I am sure that I am not able to pay the €2,000" = 4 "I do not know" = 5 "I do not want to answer this question" = 6 "No education / Primary school" = 1 "LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)" = 2 "MAVO / first 3 years of HAVO en VWO / VMBO (theoretische en gemengde leerweg)" = 3 "MBO" = 4 "HAVO of VWO bovenbouw / WO-propedeuse" = 5 "HBO / WO-bachelor or kandidaats" = 6 "WO-doctoraal or master" = 7	able to pay the €2000" = 3 "I am almost sure that I am not able to pay the €2,000" = 2 "I am sure that I am not able to pay the €2,000" = 1 "I do not know" = Missing "I do not want to answer this question" = Missing "No education / Primary school" = 1 "LBO / VBO / VMBO (kader- en beroepsgerichte leerweg)" = 1 "MAVO / first 3 years of HAVO en VWO / VMBO (theoretische en gemengde leerweg)" = 1 "MBO" = 1 "HAVO of VWO bovenbouw / WO-propedeuse" = 1 "HBO / WO-bachelor or kandidaats" = 2 "WO-doctoraal or master" = 2
Q29		Education Respondent			
Q45, Q47, Q49, Q51		Average WTP	Relative	From the specific WTPs, the relative WTP was calculated following: $rWTP_x = (WTP_{TVx} * 100) / P_{TVx}$	$P_{TV1} = €269$ $P_{TV2} = €499$ $P_{TV3} = €829$ $P_{TV4} = €1,699$
Q31		Gross Income		Average Relative WTP was calculated following: $AveRWTP = MEAN(rWTP_{TV1}, rWTP_{TV2}, rWTP_{TV3}, rWTP_{TV4})$ "Less than €20,000" = 1 "€20,000 - €30.000" = 2 "€30,000 - €40,000" = 3 ... "€200,000 - €250,000" = 20 "€250,000 - €300,000" = ...	"Less than €20,000" = 20,000 "€20,000 - €30.000" = 25,000 "€30,000 - €40,000" = 35,000 ...

		21	"€200,000 - €250,000" =
		"More than €300,000" =	225,000
		22	"€250,000 - €300,000" =
			275,000
			"More than €300,000" =
			300,000
Gross Income	Gross Income per Adult in Household	= Gross Income / Q27.1 (Amount of adults in household)	
GrossIncomeAdult	Gross Income Dummy	If GrossIncomeAdult < 37,500 = 1	
		If GrossIncomeAdult ≥ 37,500 = 2	
Q22_1	ContractPrice	"Very Important" = 1	"Very Important" = 5
Q22_2	ContractMinutes	"Important" = 2	"Important" = 4
Q22_3	ContractMBs	"Neutral" = 3	"Neutral" = 3
Q22_4	PhoneOS	"Unimportant" = 4	"Unimportant" = 2
Q22_5	PhoneCamera	"Very Unimportant" = 5	"Very Unimportant" = 1
Q22_6	PhoneBrand		
Q22_7	Contract4G		
Q22_8	PhoneOther		
PhoneOS	PhoneTotal	= PhoneOS	+
PhoneCamera		PhoneCamera	+
PhoneBrand		PhoneBrand	+
PhoneOther		PhoneOther	
ContractPrice	ContractTotal	= ContractPrice	+
ContractMinutes		ContractMinutes	+
ContractMBs		ContractMBs	+
Contract4G		Contract4G	
PhoneTotal	TotalScore	= PhoneTotal	+
ContractTotal		ContractTotal	

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