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FACULTY OF BUSINESS ECONOMICS
Master of Management

Masterproef
The moderation effect of warranty on the country of origin effect

Promotor :
Prof. dr. Pieter PAUWELS

Sinja Cimiotti
Master Thesis nominated to obtain the degree of Master of Management

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Summary

In this thesis I have investigated the moderation effect of warranty on the country of origin (COO) effect regarding attitude towards the ad/product, willingness to buy (WTB) and willingness to pay (WTP). The goal has been to see whether there is an interaction effect (IE) of the two heuristic cues and if there is none, whether there are any main effects (ME).

The COO effect has been widely studied in the past and is experiencing a revival nowadays by investigating new relationships with new moderators or different fields of investigation like the consumer's WTP. Especially other extrinsic cues like brand knowledge or attitude towards the product have been frequently used as moderators. Warranty as an indicator for quality has not been examined yet. Because companies can determine themselves which warranty level to offer it is in their best interest to know how it interacts with the COO. Attitude, WTB and WTP have been chosen as measurement constructs as they are linked by attitude theory which states that cognitive and affective attitude leads to conative attitude which in the case of this thesis is the customer's WTB. WTP has been added as it most clearly indicates the value of a specific warranty level and COO to the customer. Further, it offers the greatest possibility to the company to gain additional profits from its offering.

A woman's wrist watch shown in an advertisement is used as stimulus because it constitutes a moderate to considerable investment by the respondents. Female Belgians are the target population because wrist watches are gender specific and the COO depends on cultural issues as it is built mainly on stereotypes. By only investigating only one nation cultural bias is reduced. The final wrist watch has been examined in a pre-test with female Belgian students. The price indicated in the advertisement has been determined in a second pre-test using a price parameter. After conducting an interpolation a price of €110 has been chosen.

Poland and Switzerland have been determined as COO fit and COO non-fit countries in a pre-test investigating the country image and product category fit. The pre-test is illustrated in appendix 2.

Warranty has been researched for well known watch manufactures. The minimum warranty length is two years which is the current international standard. It has

therefore been chosen as short warranty. Lifetime warranty was the longest offered warranty by Skagen and has consequently been chosen as long warranty.

In the final experiment 145 female Belgian respondents have participated as convenience sample and were randomly exposed to one conditional advertisement. The respondents were able to win a cinema voucher.

The evaluation of the results revealed that there is no IE of warranty and the COO effect. Further, warranty does not show any ME. Regarding the COO there is a ME in all three constructs. The COO fit effect is always significantly greater than the COO non-fit effect as has been expected. The effect for no COO is also greater than the COO fit effect in the case of attitude. When looking only at the international warranty standard of two years the COO fit_short mean is significantly greater than the COO non-fit_short mean for all three constructs. Yet, it is not significantly greater than no COO_short for attitude towards the ad and WTB. Regarding attitude, the latter is actually higher ranked than the COO fit_short condition. For WTB the ranking is according to the expectations with COO fit_short being ranked highest followed by no COO_short and COO non-fit_short even though the difference between COO fit_short and no COO_short is not significant as well as the difference between no COO_short and COO non-fit_short. Concerning WTP, there is a significant difference between COO fit_short and no COO_short as well as between COO fit_short and COO non-fit_short. No COO_short and COO non-fit_short do not differ significantly. The rank order is according to the expectations with COO non-fit_short ranked lowest following no COO_short and COO fit_short which is ranked highest.

To sum it up, warranty has no main effect on attitude towards the product, WTB or WTP. The COO effect is significant but it differs according to the construct examined. Generally it can be said that the effect of a COO non-fit is always significantly smaller than the effect of a COO fit. Regarding no COO, the results differ. Yet, besides for WTP it is never significantly different from the COO fit condition.

There are several limitations to this thesis. First of all female students and non-students have been used as a convenience sample. Given that non-students might have for example a higher income this could lead to biasing results concerning WTP. Further, brand knowledge could have influenced the results given that the brand name has been shown in the stimulus. The stimulus itself can be a restriction

if it is not perceived as appropriate. Furthermore, the COO effect if product category specific and changes over time so that a longitudinal study and studies using other product categories as stimulus shall be conducted. Additionally the liking of the watch could confound the results as even though it had been pre-tested there might always be people that do not like the watch in the end.

A linear regression analysis has shown that indeed it play a role whether the ad is perceived as being realistic plays a significant role in the determination of attitude towards the ad and WTP. To have a better model fit is has been excluded in the linear regression for WTB. Yet, before the exclusion, realism determined WTB significantly. Regarding the determination of WTB, the fact of being a student or a non-student plays a significant role. The determination of WTP depends on brand knowledge as a positive determinant. Those results already show that the assumptions made are valid and shall be tested further as their testing has been beyond the scope of this thesis.

Overall it can be said that the COO effect is a strong predictor of attitude towards the ad, WTB and WTP whereas warranty plays a minor role. Additionally, the two heuristic cues do not interact in predicting the value of the outcome for the consumer.

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List of Abbreviations

BDM	Becker, deGroot, Marschak
CBC	Choice-based conjoint
COO	Country of origin
ICBC	Incentive-aligned choice-based conjoint
IE	Interaction Effect
LDC	Less developed country
LSD	Least significant difference
MDC	More developed country
ME	Main Effect
MSA	Measure of sampling adequacy
N.a.	Not availableMastert
N.r.	Not relevant
OE	Open-end
Sig.	Significant
Std.	Standard
Std. dev.	Standard deviation
VIF	Variance inflation factor
WTB	Willingness to buy
WTP	Willingness to pay

1. Introduction

In this thesis I am going to investigate the relationship of the country of origin (COO) effect on attitude, willingness to buy and willingness to pay. Further I examine the interaction effect on warranty length on the described relationships.

The influence of the COO on consumers' quality perception has been subject to a wide range of studies. The COO is widely known as the "made in" label of products. It can enhance the product perception is a positive country image is linked to the "made in" label (COO fit) or devalue the product when a negative country image is linked to it (COO non-fit). The cognitive factor of the COO effect will be referred to in this research. Schooler was the first to explore the effect of the COO on product evaluations in 1965 (Dinnie, 2003). He examined the existence of a COO effect but not its strength or direction. The following studies from 1965 to 1982 have focused mainly on single-cue studies that did not take into account relationships between product attributes like price or brand name. Bilkey and Nes (1982) give a good summary over the research that had been done in this period. According to Bilkey and Nes (1982) differences of less developed countries (LDC), more developed countries (MDC) and industrialized countries, brand familiarity, high and low involvement contexts, demographics and personality variables have been studied.

From 1983 to 1992 the research emphasis had been on multiple-cue studies and the relationship between country image and product category. Roth and Romeo (1992) have made a comprehensive study about country image, product category fit and willingness to buy (WTB[1]). Willingness to pay (WTP), however, has not been examined yet as a means to monetize the COO effect. WTP is defined as "the maximum price at or below which a consumer will definitely buy one unit of the product" (Miller et al., 2011, p. 172).

Until 2004 the known COO constructs have been revisited. Examples are longitudinal researches which show that the COO effect changes over time and the investigation of the different facets of the COO effect since products are not produced in solely one country anymore. In fact, one should differentiate for instance between the country of manufacturing, design or assembling. Nevertheless, I assume that the consumers mainly refer to the made in label as COO indicator.

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[1] WTB and purchase intention are terms that will be used equivalently.

1.1 Objective of the study

As mentioned before, WTP has received little attention in the COO research so far. This assumption goes hand in hand with the findings of Agrawal and Kamakura (1999, p. 257) who state that "very little is known regarding the influence of COO on pricing decisions." The main object of research concerning the COO effect has been the evaluation of a product by consumers. Little emphasis has been put on the purchase intention of such a product (Agrawal and Kamakura, 1999).

Further, it is known that the role of the COO effect decreases if the consumer moves closer to the purchase situation. This is supported by studies conducted by Verlegh and Steenkamp (1999) which state that in multiple-cue studies the impact of the COO effect diminishes. Thus, if other indicators of quality beside the COO are available, the COO effect plays a minor role in the purchase decision making process. This is likely the case in a real purchase situation when consumers seek to gather as much information concerning the product at hand as possible. Consequently, marketers could think that the widely studied importance of the COO effect on perceived quality shall not be emphasized in the marketing strategy of a product. This also holds as consumers might not be willing to pay a premium price for a product made in a preferred country if the product from a less preferred country mirrors the perceived quality better (Koschate-Fischer, Diamantopoulos and Oldenkotte, 2012).

Indeed it was found that the COO effect has no impact on the actual sales price resulting in a WTP consumers feel is justified (Agrawal and Kamakura, 1999). However, it is assumed that consumers are fully informed when purchasing the product and that the COO mirrors their actual knowledge and experience with a product and country but not the actual country image. But as consumers are hardly fully informed about the quality of products in real life due to information asymmetry, no equilibrium according to equity theory (Huppertz, Arenson and Evans, 1978) is gained enabling firms to charge price premiums (Koschate-Fischer, Diamantopoulos and Oldenkotte, 2012). Especially during the growing globalization and availability of products that are marketed worldwide, marketers need to find ways to differentiate themselves in order to be able to compete with LDC that can mostly offer their products cheaper due to favorable production factor costs (Douglas and Craig, 2011).

Therefore, the research field of consumers' WTP and COO is currently being revitalized by the Viennese professor Adamantios Diamantopoulos. In 2012, Koschate-Fischer, Diamantopoulos and Oldenkotte (2012) published a paper investigating the WTP of students with respect to product familiarity and its COO. They further distinguish between high and low involvement situations using mineral water as a low involvement product and sport shoes and DVD players as high involvement product. The findings of their experiment indicate that COO does play a role in the consumers' WTP. Meaning that they are willing to pay a premium for products made in a favorable country. The COO can, thus, increase the customers' WTP and influence pricing tactics made by firms like non-linear pricing, one-to-one pricing and targeted promotions (Miller et al., 2011). Marketers, consequently, can profit from a good COO by increasing the price and therefore increase their profit. Marn and Rosinello (1992) have found out that a 1% increase in price can lead to an increase in operating income of 11,1%. If marketers tried to increase sales volume by 1% it results in an increase in operating income of merely 3,3%. Nevertheless, one has to bear in mind that volume shall not decrease if the price increases by 1%. Otherwise an 11,1% increase cannot be observed. Further, the COO effect can equally decrease consumers' WTP if the product is made in a less favorable country.

Before inferences can be made about the consumer's WTP, one needs to know whether the consumer is willing to buy the product as such. Therefore the first step is to determine whether the COO effect does affect WTB. Several studies dealing with the buyers' WTB have been conducted. Roth and Romeo (1992) state that if a country image and a product category are perceived as a match, the buyers' purchase intention increases. This perceived match will be referred to as COO fit. Further, Wang and Yang (2008) say that brand personality is positively moderated by the COO effect resulting in a higher WTB.

There are many more moderators that can influence the consumers' WTB and WTP. One possible moderator is warranty. In previous research warranty as a moderator on the effect of the COO has received little attention. As stated above, the main emphasis had been on the differences of LDC, MDC and industrialized countries, brand familiarity, high or low involvement contexts, demographics and personality variables (Bilkey and Nes, 1982). However, since the COO effect and warranty are both extrinsic factors signaling product quality, the importance of warranty shall not

be neglected (Price and Dawar, 1995; Boulding and Kirmani, 1993). Indeed, it shall be emphasized since both factors are latent influencers of quality.

In signaling theory, warranty as a signal for quality has been proofed to be valid and has been studied extensively (Boulding and Kirmani, 1993). It was found that credible high quality firms can increase perceived quality by offering long and unconditional warranties. High bond credibility firms are firms that value repeated purchase and word of mouth advertising. Since warranties are linked to the company's transaction costs and their reputation, high quality firms can afford to set long and unconditional warranties despite of the moral hazard of customers. They can do so because their profits - increased reputation and repeated purchase - outweigh those costs.

Yet, the impact of warranty on the consumers' WTB and true WTP with respect to the underlying perception of quality has not been studied. The COO and warranty are both latent determinants of quality. Nevertheless, it is not known if both factors are equally powerful in determining perceived quality. Both constructs have been explored independently in combination with other latent factors such as price, product knowledge, brand personality and brand extensions (Ghalandari and Norouzi, 2012; Wang and Yang, 2008; Rezvani et al., 2012a; Roth and Romeo, 1992). Anyhow, the combination of the COO and warranty has not received any attention yet. Consequently, the question arises whether warranty can offset potentially negative influences of a less favorable COO which would yield to a strong marketing tool for firms. Not only could the sales volume potentially be increased but also the firm's profit. Marn and Rosinello's (1992) study shows the importance of reasonable pricing decisions for firms. Marketers should try to exploit all possible means to match consumers' WTP and possibly increase price if quality perception can be augmented.

This is the reason why this study focuses on the research question how the COO effect and perceived warranty length influence the consumers' WTB and WTP. Additionally, it will be studied whether marketers can use warranty length as a means to eliminate an unfavorable country image to increase profits by increasing prices based on an increase in WTP.

In addition to the constructs of WTB and WTP, the attitude construct is equally important and shall not be neglected given that the COO is a heuristic cue which influences a person's attitude towards an object (Chen and Chaiken, 1999). Further, Morris et al. (2002) found out that cognitive and affective attitude are interdependent and positively linked to conative attitude and consequently to purchase intention. It is therefore of interest to know whether the two heuristic cues, COO and warranty, result in a better attitude and whether warranty is a moderator of the relationship between the COO and attitude.

1.2   Structure

I will start with a literature review during which the hypotheses will be developed. This chapter starts with the underlying theory of equity theory and a short introduction to attitude. Then the constructs of the COO and warranty and their predicted influence on WTB, WTP will be explained.

Second, the methodology used will be described in detail. I will refer to the research design, sampling, the experimental design which describes the dependent variables as well as the independent variables in more detail, the stimulus and the survey designs of the two pre-tests concerning the COO and product category fit and the type of wrist watch used, and the price level used in the advertisement. Thereafter I will describe the final experiment survey.

Third, the results of the pre-test "COO and product category fit and wrist watch", the pre-test "Price" and the actual experiment are illustrated. Each section will start with the descriptive statistics and will be followed by exploratory statistics.

Finally, the results of the experiment will be concluded in a concise manner followed by managerial implications and limitations of the thesis which lead to opportunities for future research.

2.   Literature review

In order to study the effect of COO and warranty on attitude, WTB and WTP, equity theory is used as a base in this research. Further, the literature review reveals general findings from former research that are used to develop the hypotheses. In the following subsections the underlying theories and findings will be explained in more detail. Figure 2.2 at the end of this chapter illustrates the hypotheses development graphically.

2.1   Equity theory

Equity theory builds the base for this research. Its applicability in the construct of WTP has been affirmed in Homburg, Koschate and Hoyer (2005) and Fischer - Koschate, Diamantopoulos and Oldenkotte (2012). It implies that people expect their input to equal their perceived output (Al-Zawahreh and Al-Madi, 2012 and Huppertz, Arenson and Evans, 1978). Thus, it is assumable that the buyer's WTP will equal its perceived output with respect to the product bought. If the input and the output are incongruent, inequity exists which is comparable to perceived injustice. The person will try to restore the equilibrium by means of a decrease in input if the output is overvalued or vice versa. Since consumers cannot influence the output in case of a product purchase, the input in terms of price will be used as a mean to restore the equilibrium. Further, Huppertz, Arenson and Evans (1978) state that price inequity is perceived as more important than other inequities. The consequence for firms is therefore, that a price will have to be determined that fits to the perceived outcome of their products. Alternatively, a company can invest in product development to change the product's characteristics according to the consumers' WTP. Given that firms profit more likely from an adjustment in price than a change in product, it is essential that marketers know the buyers' WTP.

The COO and warranty are both influencers of quality, which in turn influences the perceived value of an outcome. Their relationship on attitude, WTB and WTP is examined based on equity theory to offer firms a guideline how each of the factors can be augmented.

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2.2 Attitude

Additionally to WTB and WTP attitude is an important construct that shall not be neglected given that the COO and warranty are heuristic cues which are expected to influence attitude. Further, Nixon (1936, p. 16) stated early on that there exists "a relationship between attitude and the tendency to buy or not to buy". With respect to the heuristic-systematic mode there exist two basic modes how a person can develop his attitude towards an object exist (Chen and Chaiken, 1999). The systematic mode implies that the person draws from his cognitive knowledge that he has gathered upfront and derives a certain conclusion, his attitude towards the object, based on concrete information and individual knowledge of the object he is opposed to. Thus, he needs a certain level of upfront knowledge to systematically build his attitude. If the person has little particular and individual knowledge about the exposed object, it is unlikely that systematic judgment will be used. Heuristic processing, however, makes minimal use of cognitive knowledge. Moreover, it reflects on easily available heuristic cues such as the COO and warranty level to form an attitude. Yet, heuristic processing implies the availability, activation and applicability of heuristics which the respondent has learned regardless a particular domain such as "experts' statements can be trusted" (Chen and Chaiken, 1999, p. 74). Thus, the heuristic cues, COO and the warranty level, both influence the object's attitude towards the product. Availability is given because COO is based on prejudicial assumptions and warranty length is a common service nowadays. The cue activation is introduced by the advertisement and the presentation is applicable. Further, it has been examined that attitude is positively linked to purchase intentions. It is therefore of interest to also include attitude as a separate independent variable in the experiment to see whether the COO and warranty also influence attitude separately from WTB and WTP.

2.3 Country-of-origin

Buyers use intrinsic and extrinsic factors to evaluate a product's quality (Rezvani et al. 2012a; Veale and Quester, 2009). Extrinsic factors are not functional or physical product attributes, yet they are product related like price, warranty and COO whereas intrinsic factors are readily observable functional and physical attributes like shape or technical features. The COO has a direct influence on the perceived quality of a product (Rezvani, 2012b). Perceived quality is the subjective evaluation

of a product on how well it will satisfy the buyer's needs and can be evaluated ex-ante or ex-post (Veale and Quester, 2009; Zeithaml, 1988; Rao and Monroe, 1988). As the product first needs to be purchased before quality can be examined ex-post, the quality evaluation based on extrinsic and intrinsic factors ex-ante are primarily important in assessing the consumer's attitude towards the product, WTB and WTP. From the firm's perspective, price can serve as an indicator for quality and can, depending on the product, overrule other intrinsic factors. The same holds for a favorable COO. A favorable COO[2] is defined as the perceived match between a country image and a product category whereby the country image can be referred to as the stereotypic perception a buyer has towards a country's product (Roth and Romeo, 1992).[3] If a COO fit exists, it increases the consumer's attitude and WTB. Thus, when examining the consumer's behavior, a favorable COO positively influences quality perception. This relationship will be explained in more detail below.

The COO effect is an important extrinsic factor that influences the consumer's perception of quality (Biswas, Chowdhury and Kabir, 2011; Insh and Mc Bride, 2004; Roth and Romeo, 1992). The perception of quality is defined as the "(…) consumer's judgment about a product's overall excellence" (Zeithaml, 1988, p. 3) as quality can be equated with excellence or superiority and is always evaluated relatively to other available products. The COO can be an intangible asset as well as a liability (Chen, Su and Lin, 2011). It is the image, reputation and stereotype that consumers attach to a specific country which is based on variables such as national, political and economic characteristics as well as the country's history and traditions (Nagashima, 1970; Maheswaran, 1994; Roth and Romeo, 1992). Thus, a favorable country image will lead to a better evaluation of the product. This relation is expected to be profitable for the seller. Like Wang (2011) states, quality is the number one priority for consumers in their purchase consideration. Yet, the importance of the COO, in its role of a predictor of quality, depends on several prerequisites as has been stated before. The consumer's expertise about a product and the strength of attribute information are determinants of the influential strength of the COO (Maheswaran, 1994) as well as the buyer's familiarity and involvement (Rao and Monroe, 1988; Rezvani et al. 2012a; Ghalandari and Norouzi, 2012). However, regardless of the importance of the strength of the influence of the COO, it is as-

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[2] In the following the terms favorable COO and COO fit are used equivalently.
[3] An unfavorable COO is a perceived mismatch of the COO and product category and is further referred to as unfavorable COO or COO non-fit.

sumed that the COO always has an influence on the quality perception of a product especially if intrinsic attributes are difficult to evaluate or unavailable (Zeithaml, 1988; Ghalandari and Norouzi, 2012; Insh and McBride, 2004). The restrictions mentioned also allow for a prediction in case the COO is not available as an extrinsic cue. Then buyers will use other available information to form their perception of quality (Olson and Jacoby, 1972). As stated by Lim, Darley and Summers (1994) the COO effect is weakest for implicit, multiple-cue studies. Price is a more powerful predictor of quality than the COO and will thus be used as an indicator for quality (Rao and Monroe, 1988; Veale and Quester, 2009). There are two possible ways in which price can reveal quality information (Gerstner, 1985). On the one hand, it can reveal demand related quality information since a high demand is expected to signal high quality. On the other hand, it can reveal supply related quality information given that high prices indicate high production costs that in turn indicate high quality. Thus, one could argue that price will be used foremost as predictor of quality. Yet, consumers use all available cues in their product evaluation which results in a negatively influenced evaluation in case of a COO non-fit and a positive evaluation in case of a COO fit. Additionally, Gerstner (1985) has found that the price-quality relation is product specific and weak in most cases. Roth and Romeo (1992) further explain that given that COO and product category match, consumers show a higher purchase intention. Additionally, Rezvani et al. (2012a) emphasize that a COO fit can increase the consumer's purchase intention as a favorable country image is associated with better quality. Koschate-Fischer, Diamantopoulos and Oldenkotte (2012) elevate the importance of the COO effect on a new level in examining the consumers WTP and determined that consumers are willing to pay more for branded products with a favorable COO. Hu and Wang (2010) determined in their research concerning the internet retailer eBay that buyers are willing to pay a premium for a retailer coming from a country with a favorable country image. Yet, it has to be stated that not the product's COO had been used in their research but the retailer's COO. Thus and despite the research by Agrawal and Kamakura (1999) which states that from a firm perspective COO does not play a role in the firms competitive advantage in terms of premium pricing I hypothesize that COO positively influences perceived quality which according to equity theory leads to an increase in consumer benefit and therefore in a better attitude towards the product and an increased WTB and WTP (figure 2.1):

H1.1: In case of a low warranty level:

   a. COO-fit leads to a higher attitude towards the product than no COO

   b. No COO leads to a higher attitude towards the product than COO non-fit

   c. COO fit leads to a higher attitude towards the product than COO non-fit

H1.2: In case of a low warranty level:

   a. COO-fit leads to a higher WTB than no COO

   b. No COO leads to a higher WTB than COO non-fit

   c. COO fit leads to a higher WTB than COO non-fit

H1.3: In case of a low warranty level:

   a. COO-fit leads to a higher WTP than no COO

   b. No COO leads to a higher WTP than COO non-fit

   c. COO fit leads to a higher WTP than COO non-fit

Figure 2.1: Hypothesis 1
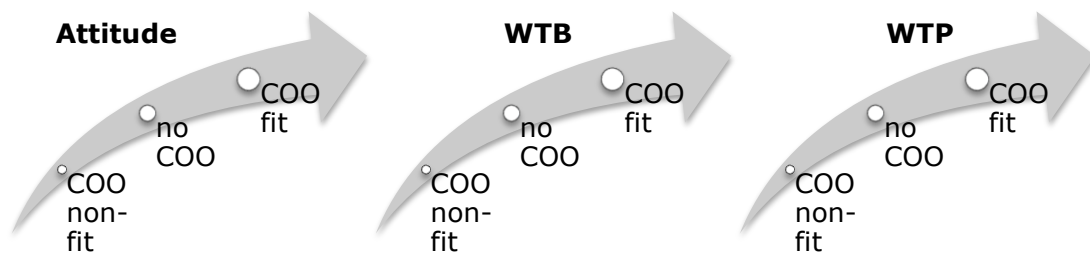
Own illustration.

2.4   Warranty

Warranty is defined as a bond of the seller against product failure (Boulding and Kirmani, 1993). The seller commits that in case of a breakdown he replaces the broken part (Gal-Or, 1989). Yet, a warranty can only be effective if the breakdown underlying the warranty is objectively observable ex-post (Grossman, 1981). Fur-

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ther, it is solely dependent on the quality offered by sellers[4] and not by any third party. To ensure this premise sellers precisely determine the conditions under which the warranty will hold. This is what will be referred to as the scope of warranty.

Past research has explored the signaling effect of such warranties on quality. The focus has been especially on warranty length since sellers primarily differentiate themselves on that dimension (Chu and Chintagunta, 2011). Two different types of warranties exist:

1. Base warranties are exclusively offered by manufacturers. They are not purchasable separately from the product and their price is not observable since it is included in the sales price.

2. Extended warranties are sold by manufacturers as well as retailers, dealers and third parties. They are offered additionally to the base warranty and have a predetermined price that is readily observable.

This paper focuses merely on base warranties since they can be directly influenced by manufacturers.

One can distinguish between four different types of theory concerning the influence of base warranties that can be exploited by sellers (Chu and Chintagunta, 2011).

1. Warranties can be used to share risk. Hereby the burden of product failure is taken from the buyers. This theory can only apply in settings in which consumers are risk-averse. If consumers are risk-neutral or risk-loving they will bear the risk that can be associated with information asymmetry and possible product failure. Further, the product failure rate must be greater than zero so that consumers actually see the need of a warranty as insurance in case of product failure (Heal, 1977).

2. Warranties can be used as a sorting instrument for price discrimination (Chu and Chintagunta, 2011). Manufacturers that offer contracts that specify price, warranty and quality can extend their product line to reach different types of consumers by offering different warranty lengths at different prices

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[4] In the course of this paper the terms seller and manufacturer will be used synonymously.

and thus capture additional profits. Therefore consumers that value a higher warranty as they might be more risk-averse get the chance to purchase a contract that differs in price and warranty length. In doing so the manufacturer might even be able to capture additional profit that otherwise extended warranty suppliers had captured. Thus, longer warranties capture a higher WTP. As otherwise risk-averse consumers were not able to find a suitable product that is congruent to their needs their WTB increases, too.

3. Signaling theory which is based on information asymmetry between the buyer and the seller states that warranty length is a predictor of quality whereas quality drives unobservable characteristics of a product which indicate durability and reliability (Spence, 1977; Choi and Ishii, 2009; Grossman, 1981; Boulding and Kirmani, 1993). Those quality characteristics can only be observed after usage so that sellers need to send pre-purchase signals to indicate their product quality.

   Yet, one has to differentiate between the role of warranty for low- and high-quality sellers and low- and high-bond credibility settings. Supplementary, the interaction with other signaling attributes plays a role in the strength of warranty as a signal for quality. Generally, warranties are more powerful if brand experience is low and high bond settings exist so that consumers can derive that the warranty actually mirrors the quality level. This holds as warranties are costly for the manufacturer. The broken parts have to be replaced for free by the seller which incurs costs.

   If the manufacturer knows that his quality is low and that he can expect high redemption costs, a long warranty will be too expensive and cannot be recovered by sales. Thus, it will not be offered to buyers. For high-quality manufacturers the opposite holds. Further, a separating equilibrium has to exist which is characterized by the availability of warranties of different length and different provided expected reliabilities to give the consumer the possibility to choose from a variety of offerings that possibly represent different quality levels (Gal-Or, 1989; Choi and Ishii, 2009; Boulding and Kirmani, 1993).

To put it in a nutshell, it was found that in a high-bond setting better warranties lead to a greater quality perception and thus a higher purchase intention. If brand experience is low, warranty likewise signals good quality and leads to an increase in purchase intention as economic theories state that consumer demand increase with an increase in perceived quality.

4. It was found that warranty can serve as an incentive for sellers to improve the quality of existing and future products to decrease redemption costs (Priest, 1981). Yet, since the consumer's WTB and not the seller's motivation for a higher quality level are under investigation in this research, this theory will not be considered.

To sum it up and referring it to equity theory all the above theories can be applied to the notion that consumers are only willing to buy and to pay for what they assume to receive in return. Thus, if their risk-aversion can be compensated by a higher warranty level as it offers them additional welfare, they are more likely to buy the longer warranty and are willing to pay a premium for it. The same holds for the sorting theory. By following price discrimination the underlying principle is that there are customers that are willing to pay diverse prices for diverse underlying offerings. Therefore, as longer warranties generally are priced higher, it is proposed that higher warranty levels result in greater WTB and higher WTP as consumers gain more when buying such an offering. In signaling theory is has been determined that warranty serves as a signal for quality in high bond credibility contexts and in settings in which consumers have little brand experience. As quality improvements should result in a higher benefit for the customer its WTB and WTP should increase as well.

Therefore I hypothesize that:

H2: Warranty is positively related to

a) Attitude towards the product
b) WTB
c) WTP

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H3.1: There is an evaluation difference between a high and low warranty level for attitude towards the product

    a) in case of a COO fit condition
    b) in case of a COO non-fit condition
    c) in case of a no COO condition

H3.2: There is an evaluation difference between a high and low warranty level for WTB

    a) in case of a COO fit condition
    b) in case of a COO non-fit condition
    c) in case of a no COO condition

H3.3: There is an evaluation difference between a high and low warranty level for WTP

    a) in case of a COO fit condition
    b) in case of a COO non-fit condition
    c) in case of a no COO condition

Figure 2.2: Hypotheses development
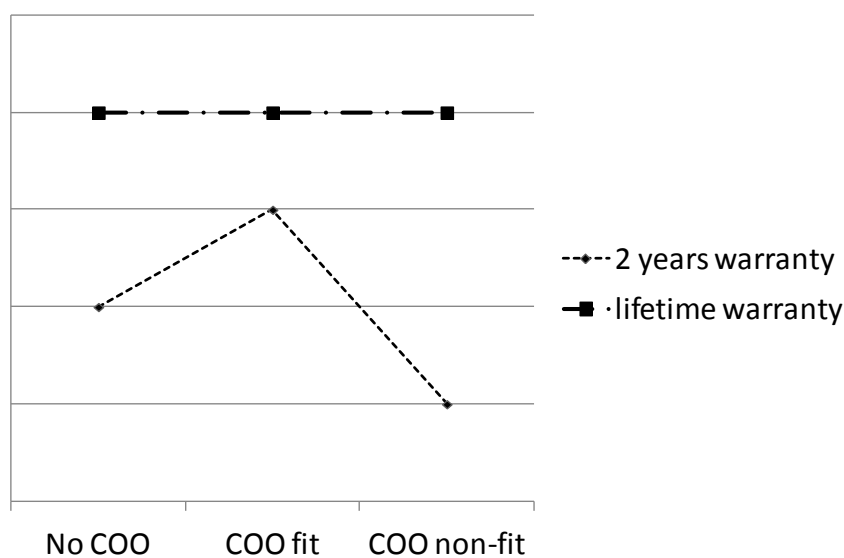
Own illustration.

3.   Methodology

It is important to be clear what kind of methodology is used in order to answer the research questions. Therefore the following chapters give a guideline which methodology is used and why. It starts with a general introduction about which research design is used, followed by sampling and identifying the target population of the experiment. Thereafter, the experimental design in explained in detail.

3. 1   Research design

To explore the effect of warranty as a moderator on the relationship of the COO effect and attitude/WTB/WTP an experiment has been conducted. Hence, the causal relationship between the independent variables (X) warranty and COO and the dependent variables (Y) attitude, WTB and WTP can be measured. A cause is thereby the event that leads to changes in the dependent variable whereas the change that occurs measures the effect that the manipulation of the independent variable has on the dependent variable (Christensen, 2007; Malhotra and Birks, 2007). Put differently, causality "applies when the occurrence of X increases the probability of the occurrence of Y" (Malhotra and Birks, 2007, p. 302). To assume causality in an experiment several conditions must be given and are mentioned below. Yet, those conditions are necessary but not sufficient in order to reliably measure causality (Malhotra and Birks, 2007).

1. Concomitant variation is given if the effect and the cause vary in a way as predicted by the determined hypothesis. It is necessary that the effect and the cause vary or occur together. This will be tested with the experiment.

2. The time order of occurrence must be given. An effect cannot be assigned to a cause if the effect occurs before the manipulated cause. Time order of occurrence is ensured by the experimental design.

3. Other possible factors that could lead to a change in the independent variable must be eliminated or controlled. Such factors are, beside others, extraneous variables that can be controlled depending on the experimental designs chosen. Extraneous variables are controlled for by the experimental design.

As stated above those three factors are necessary but not sufficient to prove conclusively that a causal relationship between X and Y exists. Nevertheless, if the relationship measured is strong it can be assumed that a causal relationship exists.

In order to examine the interaction of the COO effect and warranty length on attitude, WTB and WTP a between-group post-test 3x2 two-way factorial design has been conducted as visualized in table 3.1 (Malhotra and Birks, 2007). The two independent variables COO and warranty length are presented on three levels, no COO (A1), COO fit (A2), COO non-fit (A3) and two levels, "short" warranty (B1) and "long" warranty (B2) respectively. Gender as extraneous variable is accounted for in only using female participants. Other extraneous variables will not be taken into account in this study and allow for future research as otherwise the number of respondents needed would exceed the scope of this research. Yet, extraneous variables like history, maturation, testing effects, instrumentation and statistical regression have been eliminated because no pre-test experiment has been conducted.

It is expected that there is an ordinal interaction effect (IE), as well as a main effect (ME) for the COO and warranty likewise.

Table 3.1: Between-group post-test 3x2 two-way factorial design

		Country of Origin				
		A1	A2	A3		
Warranty length	B1	A1; B1	A2; B1	A3; B1	B1 mean	Main effect B
	B2	A1; B2	A2; B2	A3; B2	B2 mean	
		A1 mean	A2 mean	A3 mean		
		Main effect A				

Own illustration.

3.2   Sampling

A convenience sample consisting of female Belgians has been used. Only Belgian women have been surveyed to reduce multicultural perception bias since differences in the COO effect depend on the origin of the people and their demographic and personality variables (Bilkey and Nes, 1982). Wrist watches are used as stimulus. The stimulus is subject in section 3.3.3. Therefore the experiment depends on the realistic likelihood that the subjects will buy the product in real life. Given that wrist watches are gender specific females are used as the target population.

Since a between-group post-test 3x2 factorial experiment with six cells has been conducted, six experimental groups consisting of at least 20 participants each have been used. The number of experimental groups is derived from the different levels of the independent variables namely "short" and "long" warranty and no COO, COO fit and COO non-fit. Figure 3.1 visualizes the conception of the experiment. The participants have been randomly allocated to each cell.

Randomization will be ensured through the random distribution of the surveys so that in the end each cell contains >20 respondents. Additionally, the survey is pro-grammed in a way that each respondent is randomly assigned to one treatment. Therefore, selection bias will be reduced, yet not eliminated. The participating fe-male Belgians will be chosen based on probability sampling. Each respondent has the same probability of participation in one of the cells.

3.3   Experimental design

This section concerns the experimental design. It consists of the presentation of the dependent and independent variables used within the experiment, the stimulus and the survey design of the two pre-tests concerning the COO and product category fit and wrist watches, the price index, and the actual experiment. Figure 3.2 depicts the conception of the experiment.

Figure 3.2: Conceptual model
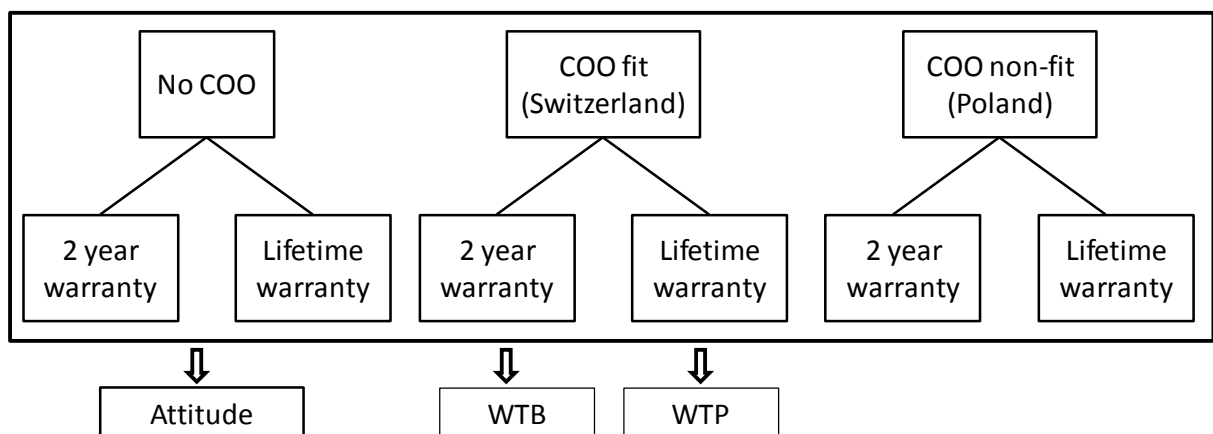
Own illustration.

3.3.1 Dependent variables

The dependent variables examined in the experiment are attitude, WTB and WTP. Those variables are explained in detail in the following sections.

3.3.1.1   Attitude

The personal feelings of liking an object are defined as a subject's attitude towards that object (Fishbein and Ajzen, 1975 and Erickson, Johansson and Chao, 1984). It is the amount of affect for or against a product (Fishbein and Ajzen, 1975) and is assembled of a tripartite construct consisting of affective, cognitive and behavioral (conative) attitude (Giner-Sorolla, 1999). Affective attitude reflects the subject's feelings and emotions whereas behavioral attitude outlines what a respondent intends to do but might actually not do. Cognitive attitude are the beliefs and ideas that a respondent has towards an idea or object. In this experiment the cognitive attitude plays a crucial role given that COO and warranty both display heuristic cues that are used to build cognitive memory which in turn influences the overall attitude of the respondent (Chen and Chaiken, 1999). In advertising, attitude towards the ad "is defined as a predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure occasion" (MacKenzie and Lutz, 1989). In this experiment an advertisement will be used as stimulus to present the watch. Therefore the attitude towards this advertisement will be examined. It has been tested previously by Spears and Singh (2004) that a direct link between attitude towards the ad and attitude towards the brand and purchase intention exists. Consequently, attitude towards the ad is introduced as an independent variable to examine the effects of the COO and warranty on attitude. Attitude towards the ad is measured instead of attitude towards the product given that the stimulus is an ad showing the wrist watch. It has been measured on a four item 7 point cognitive and affective Likert scale based on Holbrook and Batra (1987) findings. The scale is illustrated in appendix 1.

3.3.1.2   Willingness to buy

WTB is introduced as the second dependent variable to examine the effect of warranty and the COO effect on the consumer behavior towards the product. It is a conative component of attitude and strongly related to it (Fishbein and Ajzen, 1975; Ghalandari and Norouzi, 2012). It is defined as the probability that a person

will engage in a certain behavior which in the case of WTB is the choice to buy a certain product in a purchase situation. Roth and Romeo (1992) and Wang and Yang (2008) have already shown that in combination with product knowledge, familiarity and brand personality the COO is positively linked to WTB. As intention is related to attitude and consequently to the COO effect and warranty length, it is used to measure the impact of those two attributes on the perception of quality. WTB will be measured on a five item seven-point bipolar scale based on Dodds, Monroe and Grewal (1991).

3.3.1.3 Willingness to pay

The next dependent variable that is tested in the experiment is WTP. To measure WTP a range of possible methods that are acknowledged in literature exist. Each of the methods explored has its advantages and disadvantages. The main differences of the measures of WTP can be split into indirect or direct measurements and hypothetical WTP or true WTP (Miller et al., 2011). In the following, four well known approaches are described briefly. Thereafter, I will explain why open-ended questions have been used as the WTP measure in this experiment.

Hypothetical WTP can be measured directly through open-end questions (OE). The respondent is presented with a hypothetical situation and asked how much he would be willing to pay for a specific product. No answer possibilities are offered. The corresponding indirect approach is the choice-based conjoint (CBC) method in which the WTP on the basis of consumer choices among alternatives is calculated. However, the CBC method has disadvantages in measuring true WTP because all possibly available products have to be available during the study. Therefore the CBC is mostly hypothetical. As Ding, Grewal and Liechty (2005) have revealed those hypothetical settings are likely threatened by a weaker external validity than real WTP approaches. More information on CBC is available in Louvière and Woodworth (1983). OE is further described in Arrow et al. (1993). Additionally, Völckner (2006) stated that hypothetical WTP results in a higher WTP than true WTP. Further, hypothetical measures are vulnerable due to incentive compatibility as the respondents do not have to actually buy the product and thus have no incentive to state their true WTP (Wang, Venkatesh and Chatterjee, 2007).

True WTP can be measured directly through the Becker, deGroot, Marschak (BDM) approach (Miller et al., 2011). Initially, it had been developed to measure "the utili-

ty of lotteries by eliciting minimum selling prices" (Wertenbroch and Skiera, 2002, p. 231). Figure 3.3 visualizes the process of the BDM approach. First the respondent is asked to state its true WTP for a product that is known to him (Ding, 2007). In a second step the researcher draws a random price out of a lottery. Thirdly, the respondent will have to purchase the product given that he stated a price that is greater or equal the price that has been drawn. If the price which the participant had been willing to pay is below the drawn price, he is not able to purchase the product. Therefore, the BDM approach is suitable to reveal the respondents' true WTP. A drawback is, however, that due to the real purchase situation the approach is only suitable for less expensive products. The BDM approach has been used in the Koschate-Fischer, Diamantopoulos and Oldenkotte (2012) study for low-involvement products.

The mostly used indirect measure of true WTP is the incentive-aligned choice-based conjoint approach (ICBC). Ding (2007) has developed this approach in order to combine the CBC approach with the BDM approach to merge their advantages respectively. In the first step the respondents are asked to fill out the conjoint analysis. In a second step the researcher presents a real product for which the respondents will have to state their WTP based on the BDM approach. Yet, the product will not be for sale afterwards which allows for the application of the approach in settings dealing with expensive products. Forth, the researcher calculates the WTP for each product variation using the conjoint analysis and inferred WTP (see figure 3.4).

Figure 3.3: BDM approach

| Respondents are confronted with a product and have to state their true WTP | ⇨ | A price (p) for the presented product is drawn randomly from a lottery | ⇨ | The respondent will have to buy the product at the drawn price if:
•WTP = p
•WTP > p |
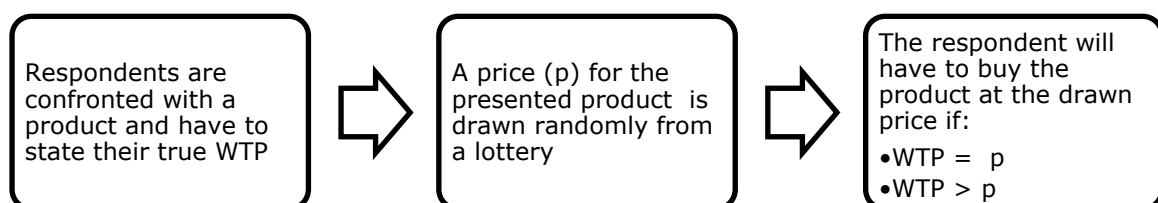
Own illustration based on Ding (2007) and Wertenbroch and Skiera (2002).

Figure 3.4: ICBC approach

| Respondents fill out a conjoint analysis | → | Respondents are confronted with a real product type | → | Respondents state their true WTP according to BDM | → | The researcher calcualtes the inferred WTP for each product variation |
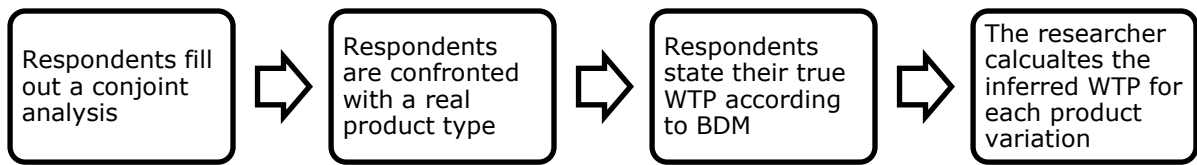
Own illustration based on Ding (2007).

Given that the BDM is only applicable in a setting with cheap and already marketed products, the ICBC approach is not realistic in the setting of this master thesis and the CBC approach is only suitable if all other alternative products are available, the OE question format has been applied to measure the respondents WTP. Although the subjects have been already exposed to a retail price stated in the advertisement that has been shown to them at the beginning of the survey they have been, nevertheless, asked to indicate their WTP in an OE question format. Thus, it has been revealed whether they are willing to pay a premium in a given manipulation setting or not. Additionally, it can be examined whether the respondents have paid attention during the experiment as they are expected to remember the given retail price. Additionally, the measure of WTP is less exposed to strategic bias (Wang, Venkatesh and Chatterjee, 2007). Strategic bias occurs if the respondents expect that their answer influences the final price of a product. Thus, they seek to give the answer of which they expect to get the highest utility. Consequently, a higher WTP might be stated if the respondent assumes that it increases the likelihood of getting the product at the end.

3.3.2 Independent variables

The manipulated variables, also known as independent variables, are also explained in more detail below. The emphasis is on their definition, manipulation and pre-testing.

3.3.2.1 Country of Origin

The independent variable COO is presented in three levels namely no COO, COO fit and COO non-fit and manipulated by type of variable (Christensen, 2007). COO fit describes a country image and product category fit. "Country image is the overall perception consumers form of products from a particular country, based on their

prior perception of the country's production and marketing strengths and weaknesses" (Roth and Romeo 1992, p. 480). Further, Roth and Romeo (1992) have found out that merely country image and product category matches lead to a higher WTB. Examples are cars and watches from Germany, Japan and the US. The respondents from Ireland, Mexico and the USA were more willing to buy those products than cars and watches from Hungary or Mexico. In the latter country image does not resemble important characteristics of the products. Thus, country image and product category must fit together and known by the subject as otherwise the results are futile. In a pre-test (see appendix 2), the subjects rate the country image/product fit according to innovativeness, design, workmanship and prestige based on Roth and Romeos (1992) findings. France, Germany, Switzerland and Poland are used in the pre-test. Switzerland is expected to have the highest warranty claims and has a high reputation with respect to wrist watches. Thus, it is expected to score highest in all items. Poland is expected to have the lowest warranty claims and is not known for producing wrist watches. Therefore it is expected to score lowest in all items. France has a high reputation concerning design and fashion. Consequently, France is expected to score high in design but not the other three items. Germany is known for good quality products and good workmanship. This is expected to lead to a high position concerning "innovation" and "workmanship".

The COO non-fit resembles a country image and product category mismatch. In the same pre-test as for the COO fit, it is investigated which country and product combination does not match. The two most differing countries in terms of country image/product fit have been used in the experiment.

3.3.2.2   Warranty

The third independent variable, warranty, is the moderator on the COO effect. It is presented on two levels referred to as "long" warranty and "short" warranty and has been manipulated by amount of the variable (Christensen, 2007). Warranty is composed of two factors: length and scope (Boulding and Kirmani, 1993).

The appropriate length of "long" warranty and "short" warranty has been examined using current market data of February 2013. The difference in scope has been defined as limited and unconditional.

For simplification purposes warranty levels are only differentiated on length. The eligible warranty length for both levels has been determined according to current market standards. Consequently, the "short" warranty has been set to two years which is the current international standard. A lifetime warranty for "long" warranty has been chosen given that this is the longest possible warranty length which is offered by manufacturers. An overview of the currently guaranteed warranties on the market can be found in appendix 3.

3.3.3 Stimulus

The applied stimulus in this experiment is a printed advertisement of a branded wrist watch. The chosen brands within the pre-test are all unpopular brands. Wrist watches are used as they are durable goods that are not purchased frequently and are expected to constitute a modest to considerable investment for participants. Thus, they count as a luxury good on which the COO effect has a stronger influence than on necessity items (Veale and Quester, 2009). Further, their service life is expected to be reasonable long which makes COO and warranty influencers for perceived quality and thus the measurement of WTB and WTP. An unpopular wrist watch is used as it has been determined in past research that the effect of COO diminishes if brand knowledge and reputation is high. This could result in misleading results during the experiment. To avoid the diminishing influence of the COO, the brand of the wrist watch used is revealed in the course of the experiment, yet no representative brands have been chosen.

Additional attributes of technical relevance have been made available in the advertisement. Since, it was found that subjects can only process five to nine items of information at once which limits the efficiency of multiple attribute advertisements (Fishbein and Ajzen, 1975). Hence, the number of attributes in the stimulus is limited to seven including the COO and warranty description. Further, the price is stated in the advertisement to correctly measure WTB. It is known that the results in measuring WTP with a given price can be biased. Yet, the correct measure of WTB and potential future research allow for an estimation concerning WTP in this research context. The manipulated variables are disclosed as well and are the only variables that change respectively.

3.3.4 Pre-test design: COO and product category fit and wrist watch

This pre-test had been conducted to evaluate the COO and product fit and non-fit respectively. Additionally, the watch to be used in the stimulus has been defined. The survey has been distributed by email as a self-administered questionnaire.

Question one is a general introduction to the topic of the survey in order to prepare the respondents for the following questions. The rest of the survey is structured in six blocks.

The first block (questions two – four) concerns the socio-demographic factors to control for the sample. Gender, age group and if the respondent is a student have been applied.

Then four blocks concerning the COO and product fit of France, Switzerland, Poland and Germany follow. Those four blocks have been randomized to control for order effects. Each block contains the same type of questions which only differ in country name and flag used. The last question in each block asks directly for the respondent's evaluation of wrist watches made in the respective country. The COO and product fit is measured on a bipolar seven point scale using four items namely "innovativeness", "design", "prestige" and "workmanship" which have been randomized likewise. Within the Polish block the item "workmanship" has been introduced as an inverse item to account for attentiveness of the respondent. Equally, "design" has been randomized in the French block.

The last block applies to the wrist watch that has been used in the stimulus. Six watches have been shown to the respondents in random order. It has been the respondents' task to order the watches according to their likelihood of purchase. The watches were chosen randomly.

3.3.5 Pre-test design: Price

The second pre-test has defined the price level which has been indicated on the stimulus. In order to define the price, the pre-test has been structured in four blocks. The survey has been distributed to students as a self-administered questionnaire.

In the beginning the respondent's have been exposed to an introduction in order to prepare them for the coming questionnaire.

The second block applies to the socio-demographic factors of the sample so as to ensure that the survey has been only taken by the sample population. Namely the respondents' gender, age group and occupation have been asked for.

Thereafter, the price parameter of Pelsmacker and Van Kenhoven (2010) has been used. Within a range from 25€ to 500€ the respondents have answered which price level is too cheap, cheap, expensive, and too expensive for the shown watch which has been determined within the first pre-test.

In the last block an actual purchase of the respondents is assumed. They have been asked to indicate their maximum willingness to pay on a bar slide considering that they actually have to buy the shown watch. This question has been introduced as a control question to see whether the price resulting out of the price parameter reflects the respondents' willingness to pay given that they actually have to buy the watch.

3.3.6 Survey design: Experiment

The experiment has been conducted via a self-administered online survey which has been sent by email to the respondents. The survey consists of eight blocks. The full survey is shown in appendix 1.

The first block introduces the subject to the survey and explains its purpose. After having read the introduction the subject has an idea what it can expect from the survey and how long the filling out will take.

The second part shows the advertisement of the watch, the stimulus, indicating characteristics such as kind of movement, water resistance, band and case material and, price. Those characteristics were chosen based on current advertisements. The advertisements are shown randomly. Each respondent is exposed to one advertisement.

In the third block it is tested whether the advertisement is realistic or not. This has been done on a one item seven-point Likert scale.

The forth part is related to the subject's attitude towards the watch as attitude is predicted to influence the students WTB and WTP. As mentioned before attitude is measured on a bipolar scale based on Holbrook and Batra (1987). The scale is randomized to account for possible order effects. No items are reversed.

The fifth part concerns the subject's WTB and is equally measured on a bipolar scale. The scale is based on Dodds, Monroe and Grewal (1991) and is also randomized.

The emphasis in the sixth part is in the consumer's WTP. Therefore the advertisement is shown again. Yet, the price is not indicated to not bias the results further. It is shown so that the respondent can recall it when deciding how much he is willing to pay for the watch. His WTP is measured in an OE question format where he is asked to state the price he is willing to pay if he had to purchase the watch.

The seventh part examines the respondent's brand knowledge. Although it was assumed that the chosen brand is unknown it is yet controlled for. The option "I don't know" is offered to the respondents if they do not remember the brand. In the analysis it will be assumes that it is equal to "I have not known the brand before" because not much attentions has been paid to the brand.

The last part controls for the sample. Socio-demographic factors like "age", "gender", "nationality" and whether the respondent is a student or a non-student are asked.

4. Results

Section four summarizes all results starting with the pre-test of the COO and product category fit and the wrist watches followed by the pre-test concerning the price level used in the advertisement. Finally the results of the experiment will be developed.

4.1 Pre-Test COO and product fit and wrist watches

The self-administered survey has been distributed among master students from the "Marketing" course and bachelor students following a third year bachelor course in the economics faculty of Hasselt University.

The sample of this pre-test consists of 36 respondents of which 7 are male and 28 are female. Two respondents are non-students and have consequently been taken out of the analysis. Case 15 (male) was deleted due to missing values. Since the sample consists of female students, data from male respondents was deleted. After the adjustments, the data from 26 females between 18 and 25 years old has been analyzed.

First, the inverse variables have been recoded in order to match the other variables so that seven always represents the favorable characteristics. Considering that the inverse questions have been inserted to see whether the respondents pay attention, I controlled the results to insure for consistent results. In order to do so, I changed the cases 2 and 15 with respect to question "design France" from two to six because innovation, prestige and workmanship were evaluated as six, seven, and seven and three times six respectively. Regarding the question "workmanship Poland" I adjusted the cases 6, 9 and 25 from the values seven and six to one and two respectively given that all other values were one, three, one; three times two and, one, two, two respectively.

The minimum mean with respect to COO and product fit is 2,208 ("innovation Poland") whereas the maximum mean is 6,346 ("workmanship Switzerland"). The lowest standard deviation (std. dev.) is 0,704 for "prestige_S". The highest std. dev. is 1,379 for "workmanship_P".

With respect to the watch ranking the lowest mean is 1,731 ("watch 4") whereas watch 3 resembles the highest mean with 4,923. The highest and lowest std. dev.

can be found at watch 5 (1,192) and watch 4 and 1 respectively (0,899). Yet, one has to bear in mind that the watch with the lowest mean is most wanted given that 1 indicates I would most likely buy the watch. The detailed results can be found in table 4.1.

The correlation analysis shows that for all COO and product fit constructs the items are significantly correlated at the 0,05 level. The respective tables can be found in appendix 5.

Normality has been examined for all variables concerning the COO and product fit using the measurement of the skewness and kurtosis whereas the respective factor is not 2,5 times the standard error except for the items "prestige_S" and "workmanship_S" which are negatively skewed. The results are displayed in appendix 6.

Table 4.1: Descriptive statistics pre-test COO and product fit and wrist watch

	Scale	Mean	Std. dev.	Min	Max	% higher than midpoint	Skewness	Kurtosis
Innovation_F	1-7	4,462	1,041	2	7	54%	-,223	-,355
Design_F	1-7	4,538	1,308	2	6	50%	-,209	-1,336
Prestige_F	1-7	5,000	0,769	3	7	69%	-,245	-,481
Workmanship_F	1-7	4,538	1,006	2	7	42%	,124	-,443
Innovation_D	1-7	4,615	1,030	2	7	54%	-,149	-,567
Design_D	1-7	4,692	1,077	2	7	50%	,022	-,568
Prestige_D	1-7	5,154	1,000	3	7	69%	-,474	-,799
Workmansip_D	1-7	5,538	1,065	3	7	73%	-,661	-,695
Innovation_P	1-7	2,808	1,053	1	5	4%	-,051	-1,257
Design_P	1-7	3,385	0,970	2	5	15%	-,074	-1,363
Prestige_P	1-7	2,846	0,740	1	4	0%	-,331	-,669
Workmanship_P	1-7	3,692	1,379	1	6	35%	-,089	-0,975
Innovation_S	1-7	5,500	1,000	4	7	77%	,088	-1,391
Design_S	1-7	5,577	0,994	3	7	81%	-,362	-,741
Prestige_S	1-7	6,346	0,704	4	7	96%	-1,192	,860
Workmanship_S	1-7	6,346	0,754	4	7	96%	-1,144	,323
Watch1	1-6	3,962	0,899	1	6	31%		
Watch2	1-6	4,308	1,130	2	6	31%		
Watch3	1-6	4,923	1,030	2	6	19%		
Watch4	1-6	1,731	0,899	1	5	88%		
Watch5	1-6	3,654	1,192	1	6	50%		
Watch6	1-6	2,423	1,124	1	6	81%		

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.1 COO and product fit

Next, the determination of the COO fit and COO non-fit has been done. To do so a repeated measures (RM) ANOVA has been chosen as statistical instrument because different observations are recorded for each person. Further, a within-subject design is given as all respondents had to answer all questions. Yet, several assumptions must be made before the RM ANOVA can be conducted.

1. The variables need to be at least interval scaled. This assumption is given because all variables that need to be examined are measured on a seven point Likert scale.

2. The measures need to be balanced which is the case given that there are no missing values and each subject has answered all questions.

3. The variables need to be normally distributed. This assumption is examined using the Kolmogorov–Smirnov test and the Shapiro-Wilk test as well as a graphical illustration using the Q-Q plot, the Box plot as well as the Histogram.

4. Last, the sphericity-assumption must be given meaning that the population variance does not differ between the levels of the factors.

In the following the RM ANOVA assumptions as well as the test will be conducted for each of the four elements determining the COO and product fit. If the assumptions do not hold a Friedman-Test as the non-parametric equivalent will be conducted as especially normality is no assumption that must hold for this non-parametric test. Assumptions for the Friedman-Test are:

1. One group is measured in different occasions which is given in this research design

2. The group is a random sample which is also ensured through the chosen research design

3. The dependent variable should be at least ordinal scaled which is the case likewise.

4. The sample does not need to be normally distributed.

Another aspect is that the values of the four countries with respect to the item under investigation must be ranked. For this purpose the values have been ranked from one to four with one representing the lowest rank. Ties were set on the average corresponding rank.

4.1.1.1   Innovation

As mentioned before the skewness and kurtosis measured do not show any exceptions concerning the factor "innovation". The Kolmogorov-Smirnov test and the Shapiro-Wilk test (table 4.2) show, however, that the null hypothesis needs to be rejected for Poland and Switzerland. When having a closer look at the graphical illustration shown in appendix 7 one can see that according to the Q-Q plot all four countries are normally distributed. Solely the Box plot for Switzerland indicates that this variable is not normally distributed. Therefore, I assume a normal distribution for all variables.

Table 4.2: Tests of Normality for Innovation

	Tests of Normality					
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Innovation_F	0,202	26	0,008	0,939	26	0,128
Innovation_D	0,161	26	0,082	0,940	26	0,132
Innovation_P	0,224	26	0,002	0,880	26	0,006
Innovation_S	0,208	26	0,005	0,855	26	0,002

* Lilliefors Significance Correction
Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The RM ANOVA shows that the forth assumption, the sphericity, is also given. The null hypothesis cannot be rejected according to the significance level of the Mauchly-Test ($p = 0,281 > 0,05$). Thus, the results can be interpreted in a precise manner. Wilks-Lambda is significant with $p = 0,001 < 0,05$. The following results are summarized in table 4.3. This table shows the mean differences as well as the Bonferroni corrected significant differences between the respective innovation factors at the 95% level. As can be seen only Poland with the lowest mean (mean = 2,81) is significantly different than the other countries. Switzerland as the country with the highest mean score (mean = 5,5) is not found to be significantly different from the second highest country Germany (mean = 4,62).

Table 4.3: RM ANOVA of Innovation

	Mean	Mean difference			
		France	Germany	Poland	Switzerland
France	4,46	0	0,154	-1,654*	1,039*
Germany	4,62	-0,154	0	-1,808*	0,885
Poland	2,81	1,654*	1,808*	0	2,692*
Switzerland	5,50	-1,039*	-0,885	-2,692*	0

* Bonferroni corrected significance level 95%

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

Although the assumptions only show very mild deviations and the results might be robust, a Friedman-Test has been conducted. The mean ranks of the four measures can be seen in table 4.4. The test was significant with p = 0,001 < 0,05 (chi² = 39 > 7,82). A Bonferroni-corrected Wilcoxon Signed Rank test has been conducted as post-hoc test between Poland and France as the two lowest countries and Germany and Switzerland as the two highest countries. The difference between Poland and France is significantly different (z = -3,819; p = 0,001 < 0,05/6). The difference between Germany and Switzerland, however, is not significantly different given a z-value of -2,532 and p = 0,011 > 0,05/6 (0,0083). When comparing Switzerland with Poland the mean rank difference is significant with p = 0,001 < 0,0083 (z = -4,143). Therefore, Poland has been chosen as COO non-fit and Switzerland as COO fit as there is no reason why I should choose Germany as COO fit as the descriptive statistics show a higher mean and a higher mean rank for Switzerland which is expected to have the highest warranty claims as discussed in my country selection. The Bonferroni-correction might be, thus, too conservative here.

Table 4.4: Mean ranks of Innovation

	Mean ranks
Poland	1,42
France	2,58
Germany	2,62
Switzerlan	3,38

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.1.2 Design

According to the skewness and kurtosis results all four factors are normally distributed. The Kolmogorov-Smirnov test and the Shapiro-Wilk test (table 4.5) show, however, that the null hypothesis needs to be rejected for France, Poland and Switzerland.

Table 4.5: Tests of Normality of Design

	Tests of Normality					
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Design_F	0,215	26	0,003	0,861	26	0,002
Design_D	0,204	26	0,007	0,935	26	0,100
Design_P	0,251	26	0,000	0,842	26	0,001
Design_S	0,179	26	0,031	0,897	26	0,014

 * Lilliefors Significance Correction

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The graphical analysis is shown in appendix 8 and reveals that according to the Q-Q plot all items are normally distributed. Yet, the Box plot and the Histogram do not show clear results. Nevertheless, normal distribution is assumed. A Friedman-Test has been conducted to test for robustness.

The conducted RM ANOVA indicates that the forth assumption holds because the Mauchly-Test is not significant ($p = 0,431 > 0,05$). Further, Wilks-Lambda is significant ($p = 0,001 < 0,05$). At the Bonferroni corrected significance level of 95% the mean differences of the country with the lowest mean (Poland) and the second lowest country France are significantly different (see table 4.6). The difference between Switzerland which is ranked highest and Germany which is ranked second highest are equally significantly different.

Table 4.6: RM ANOVA of Design

	Mean	Mean difference			
		France	Germany	Poland	Switzerland
France	4,54	0	0,154	-1,154*	1,038*
Germany	4,69	-0,154	0	-1,308*	0,885*
Poland	3,38	1,154*	1,308*	0	2,192*
Switzerland	5,58	-1,038*	-0,885*	-2,192*	0

* Bonferroni corrected significance level 95%

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The Friedman-Test is significant (p = 0,001 < 0,05; chi² = 27,971 > 7,82) with Switzerland having the highest mean rank and Poland having the lowest mean rank (see table 4.7). In order to test for differences between the two lowest and the two highest countries as well as between the highest and the lowest country a Wilcoxon Signed Rank Test has been conducted as post-hoc test. The difference between Poland and France is not significant (z = -2,641; p = 0,014 > 0,0083). The difference between Switzerland and Germany is significant (z = -3,004; p = 0,003 < 0,0083). The difference between Poland and Switzerland is equally significant (z = -4,043; p = 0,001). Consequently, there is no reason why Switzerland shall not be chosen as COO fit. The opposite holds for Poland which has been chosen as the COO non-fit with respect to design although it is not significantly different from the second last ranked country France. Nevertheless, as Poland is expected to have the lowest warranty claims, it will be chosen as COO non-fit country regarding "design". Switzerland and Poland are significantly different from each other which is important when choosing a COO fit and a COO non-fit.

Table 4.7: Mean ranks of Design

	Mean ranks
Poland	1,71
France	2,40
Germany	2,48
Switzerland	3,40

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.1.3 Prestige

"Prestige_S" is one of the two factors which is negatively skewed (statistic/std. error = -2,618). Further, as can be seen in table 4.8, the Kolmogorov-Smirnov Test as well as the Shapiro-Wilk Test do not show a normal distribution as all null hypotheses need to be rejected (sig. for all factors < 0,05).

Table 4.8: Tests of Normality of Prestige

	Tests of Normality					
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Prestige_F	0,192	26	0,014	0,910	26	0,026
Prestige_D	0,262	26	0,000	0,880	26	0,006
Prestige_P	0,220	26	0,002	0,872	26	0,004
Prestige_S	0,319	26	0,000	0,757	26	0,000

* Lilliefors Significance Correction

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The Q-Q plots in appendix 9 also show that the prestige factors are normally distributed besides "Prestige_S" which shows a slight deviation from the trend line. When looking at the Box plots normal distribution can only be assumed for France and Germany. According to the Histogram it is also difficult to assume a normal distribution for "Prestige_S". Nevertheless, I assume a normal distribution and conduct a RM ANOVA. Yet, to check for robustness of the results I have also conducted a Friedman-Test which will be outlined below.

The Mauchly-Test for sphericity is not significant (p = 0,540 > 0,05). Thus, the null hypothesis cannot be rejected. Additionally, Wilks-Lambda is significant (p = 0,001 < 0,05). Therefore, the results can be interpreted. Table 4.9 illustrates the results. Poland, as the country with the lowest prestige evaluation is significantly different from all other countries. Switzerland as the country with the highest evaluation is also significantly different from all other countries.

Table 4.9: RM ANOVA of Prestige

	Mean	Mean difference			
		France	Germany	Poland	Switzerland
France	5,00	0	0,154	-2,154*	1,346*
Germany	5,15	-0,154	0	-2,308*	1,192*
Poland	2,85	2,154*	2,308*	0	3,5*
Switzerland	6,35	-1,346*	-1,192*	-3,5*	0

* Bonferroni corrected significance level 95%

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The conducted Friedman-Test has been significant ($p = 0,001 < 0,05$; $chi^2 = 50,308 > 7,82$). The mean ranks are displayed in table 4.10. The differences between Poland and France and Germany and Switzerland respectively have been examined using the Bonferroni adjusted Wilcoxon Signed Rank test as post-hoc test. Additionally, the difference between Switzerland as the highest ranked country and Poland as the lowest ranked country has been examined. The difference between the two lowest countries Poland and France is significant with $p = 0,001$ and $z = -4,070$. The difference between Switzerland with the highest score and Germany with the second highest score is significant, too ($p = 0,003 < 0,0083$; $z = -2,996$). Further, the difference between the highest and the lowest rank is also significant with $p = 0,001 < 0,0083$ ($z = -4.530$)

Thus, Poland is used as COO non-fit with respect to "prestige" and Switzerland is used as COO fit.

Table 4.10: Mean ranks of Prestige

	Mean ranks
Poland	1,25
France	2,44
Germany	2,63
Switzerland	3,67

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.1.4   Workmanship

With respect to the factor "workmanship" the analysis of the skewness and kurtosis demonstrates a normal distribution for France, Germany and Poland. Switzerland shows a negative skewness (statistic/std. error = -2,511). The Kolmogorov-Smirnov test and the Shapiro-Wilk test do not show any normality for France, Germany and Switzerland. The Shapiro-Wilk test shows, however, a normal distribution for Poland. All other values are significant so that the null hypothesis of normality is rejected (see table 4.11).

Regarding the graphical analysis consisting of the Q-Q plot, the Box plot and the Histogram (see appendix 10) normality can be assumed for France, Germany and Poland. Yet, Switzerland shows slight deviations from the trend line in the Q-Q plot. The Box plot and the Histogram do not show any normality. Nevertheless, as with "prestige", normality is assumed and a Friedman-Test is conducted as a robustness test.

Table 4.11: Tests of Normality of Workmanship

Tests of Normality						
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Workmanship_F	0,249	26	0,000	0,915	26	0,034
Workmanship_D	0,295	26	0,000	0,852	26	0,002
Workmanship_P	0,175	26	0,040	0,930	26	0,079
Workmanship_S	0,345	26	0,000	0,740	26	0,000
* Lilliefors Significance Correction						

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The Mauchly-Test for sphericity is not significant (p = 0,480 > 0,05). Therefore, the fourth assumption is given. Wilks-Lambda is significant (p = 0,001 < 0,05), too, so that the RM ANOVA results can be analyzed. As can be seen in table 4.12 Poland scores lowest with respect to workmanship and is significantly different to Germany and Switzerland, yet, not to the second lowest France. Considering Switzerland as the highest ranked country, it is significant to France and Poland. However, it is not significant compared to Germany which is ranked second.

Table 4.12: RM ANOVA of Workmanship

		Mean difference			
	Mean	France	Germany	Poland	Switzerland
France	4,54	0	1*	-0,846	1,808*
Germany	5,54	-1*	0	-1,846*	0,808
Poland	3,69	0,846	1,846	0	2,654*
Switzerland	6,35	-1,808*	-0,808	-2,654*	0

 * Bonferroni corrected significance level 95%

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

The Friedman-Test reveals similar results. The test is significant with p = 0,001 < 0,05 (chi² = 37,394 > 7,82). The mean ranks are illustrated in table 4.13. The conducted post-hoc test (Bonferroni-corrected Wilcoxon Signed Rank test) shows no significant difference between Poland and France (z = -1,491; p = 0,136 > 0,0083) and Switzerland and Germany (z = -2,167; p = 0,012 > 0,0083) respectively. Yet, the difference between Poland and Switzerland is significant (p = 0,001; z = -4,201). But here it also holds that there is no reason why Poland shall not be chosen as COO non-fit country and Switzerland shall not be chosen as COO fit country as expected in my country selection.

Table 4.13: Mean ranks Workmanship

	Mean ranks
Poland	1,65
France	2,06
Germany	2,73
Switzerland	3,56

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.1.5 Summary COO and product category fit

To sum it all up, Poland is ranked lowest in all four factors. Further, it is significantly different from the other countries for "innovation" and "prestige". With respect to "design" and "workmanship" it is not significantly different from the second lowest ranked country France. Yet, Poland is expected to be ranked lowest for all items and thus the Bonferroni-correction might have been too conservative. Further, given the descriptive results I use Poland as COO non-fit country. Switzerland is ranked highest in all items. Yet, it is not significantly different from Germany as the second highest country in the cases for "innovation" and "workmanship". Nevertheless, Switzerland is significantly different from Germany in the case of "design" and "prestige". However, there is no reason why I should not chose Switzerland as COO fit country as it has the highest score for each item and is expected to be ranked higher than the other countries. Further, there is no reason why Germany should be chosen for another reason as discussed in my country selection. Additionally, Switzerland is expected to be the country with the highest warranty claims. Thus, the Bonferroni-corrections may have been too conservative. Additionally, Switzerland is always significantly different compared to Poland. All results are illustrated in table 4.14.

Table 4.14: Parametric and Non-Parametric results

| | | Parametric | | | | Non-Parametric | | | | | |
| | | RM ANOVA | | | Post-Hoc Test Bonferroni-corrected | Friedman-Test | | | Wilcoxon Signed Rank-Test | | |
		Means	Mauchly-Test	Wilks-Lambda	Mean difference	P-value	Chi²	Mean ranks	Mean rank difference	Z-value	Sig.
Innovation	General		chi²(5)=7,035; p=0,281	F(3,23)=15,989; p=0,001		0,001	39,000				
	Poland/France	2,81 / 4,46			-1,654*			1,42 / 2,58	-1,160	-3,410	0,001*
	Switzerland/Germany	5,50 / 4,62			0,885			3,38 / 2,62	0,760	-2,532	0,011
	Switzerland/Poland				2,692*				1,960	-4,143	0,001*
Design	General		chi²(5)=6,642; p=0,249	F(3,23)=12,078; p=0,001		0,001	27,971				
	Poland/France	3,38 / 4,54			-1,154			1,71 / 2,40	-0,690	-2,641	0,014
	Switzerland/Germany	5,58 / 4,69			0,885*			3,40 / 2,48	0,920	-3,004	0,003*
	Switzerland/Poland				2,195*				1,690	-3,811	0,001*
Prestige	General		chi²(5)=4,065; p=0,54	F(3,23)=43,449; p=0,001		0,001	50,308				
	Poland/France	2,85 / 5,00			-2,154*			1,25 / 2,44	-1,192	-4,070	0,001*
	Switzerland/Germany	6,35 / 5,15			1,192*			3,67 / 2,63	1,038	-2,996	0,003*
	Switzerland/Poland				3,500*				2,420	-4,530	0,001*
Workmanship	General		chi²(5)=4,045; p=0,480	F(3,23)=23,061; p=0,001		0,001	37,394				
	Poland/France	3,69 / 4,54			-0,846			1,65 / 2,06	-0,404	-1,491	0,136
	Switzerland/Germany	6,35 / 5,54			0,808			3,56 / 2,73	0,827	-2,502	0,012
	Switzerland/Poland				2,654*				1,904	-4,201	0,001*

*Bonferroni-corrected sig. at the 95% level

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

4.1.2 Wrist watch

To check which wrist watch is the one which is purchased most likely by students a Friedman-Test has been conducted. This test has been chosen given that the data is ordinal and not metric so that no RM ANOVA can be conducted. The assumptions for a Friedman-Test are described in section 4.1. All four assumptions hold.

The Friedman-Test is significant (p = 0,001; chi² = 53,516 > 11,07) allowing for the assumption that there are mean rank differences. The ordered mean ranks are shown in table 4.15. Watch four scores lowest and is thus the watch which is most

likely purchased. Watch three is the one on the last rank. Thus, students are less willing to purchase this watch.

Table 4.15: Friedman-Test

	Mean Rank	Friedman-Test
Watch 4	1,73	
Watch 6	2,42	
Watch 5	3,65	N=26; df=5; chi²=53,516; p=0,000
Watch 1	3,96	
Watch 2	4,31	
Watch 3	4,92	

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

Yet, one cannot determine which mean ranks differ significantly. However, based on the means and observations of watch sales at "Galeria Kaufhof" and "Karstadt" in Freiburg im Breisgau, Germany, watch four and six are expected to be the watches that are most likely purchased. To see whether those watches differ significantly a Wilcoxon Signed Rank test has been used. The test, summarized in table 4.16, shows that watch four is significantly different from watch six when considering a two-sided test with a probability of 90% (p = 0,064 > 0,1). Likewise, it is significantly different from the last ranked watch number three with a significance of p = 0,001 and z = -4,431.

Table 4.16: Wilcoxon Signed Rank Test

Variable	Compared variable	Mean rank difference	Z-value	Sig.
Watch 4	Watch 6	-0,69	-1,856	0,064
Watch 4	Watch 3	-3,19	-4,431	0,001

Own illustration based on data from the pre-test "COO and product category fit and wrist watch".

Thus, watch four is chosen to be used in the advertisement as it is ranked first according to the descriptive statistics and the exploratory statistics. There is no reason, why watch six shall be chosen instead.

4.2   Pre-test: Price

The self-administered pre-test survey for the price level to be used in the advertisement has been distributed among bachelor students of "organizational behavior and strategic management" at Hasselt university and a first year master course. 27 students have participated of which 25 are females. The cases six and ten are male students and are consequently deleted from the data. The remaining 25 respondents are all in the age group of 18-25 years. Next, the result consistency has been checked. There were no missing values and no illogical results. Further, the frequencies of "too cheap", "cheap", "expensive" and, "too expensive" have been calculated for each euro amount. They are shown in table 4.17. Additionally, the results are shown graphically in figure 4.1.

Table 4.17: Frequencies of "too cheap", "cheap", "expensive" and, "too expensive"

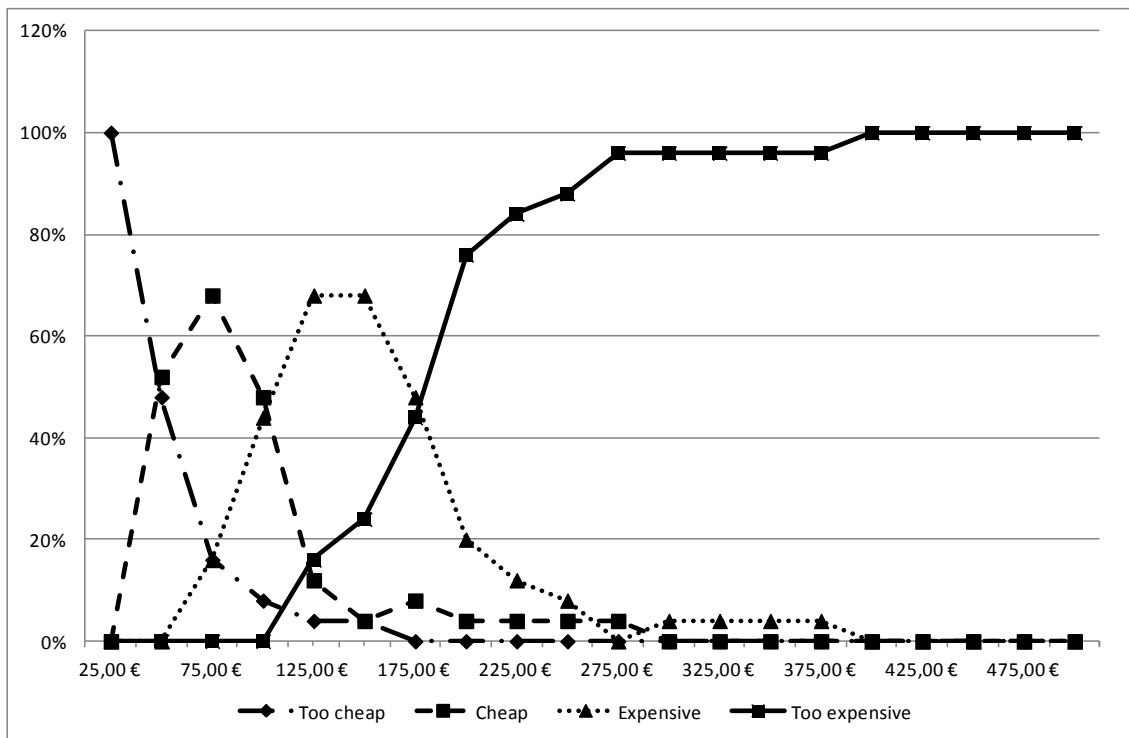|	Too cheap	Cheap	Expensive	Too expensive
25,00 €	100%	0%	0%	0%
50,00 €	48%	52%	0%	0%
75,00 €	16%	68%	16%	0%
100,00 €	8%	48%	44%	0%
125,00 €	4%	12%	68%	16%
150,00 €	4%	4%	68%	24%
175,00 €	0%	8%	48%	44%
200,00 €	0%	4%	20%	76%
225,00 €	0%	4%	12%	84%
250,00 €	0%	4%	8%	88%
275,00 €	0%	4%	0%	96%
300,00 €	0%	0%	4%	96%
325,00 €	0%	0%	4%	96%
350,00 €	0%	0%	4%	96%
375,00 €	0%	0%	4%	96%
400,00 €	0%	0%	0%	100%
425,00 €	0%	0%	0%	100%
450,00 €	0%	0%	0%	100%
475,00 €	0%	0%	0%	100%
500,00 €	0%	0%	0%	100%

Own illustration based on data pre-test "Price".

The optimal price according to de Pelsmacker and van Kenhove (2010) is the intersection of the price which is "too cheap" and the price which is "too expensive" to buy the object. Thus, to determine the optimal price for the wrist watch the crossing of these two functions is essential. As can be seen in figure 4.1 those two lines

cross approximately at a price of €110. A trend line analysis based on a linear model revealed a point of intersection at €100 which is, however, too far from the actual crossing and will thus not be considered. A second trend line analysis based on a polynomial model resulted in a point of intersection at €110 which is very close to the expected value of the optimal price. To strengthen the result an interpolation has been calculated. The two closest known points of the two lines "too cheap" and "too expensive" at $x_0=100$ and $x_1=125$ have been used. The formula used in table 4.18 is the following:

$$f(x) = f(x_0) + \frac{f(x_1) - f(x_0)}{x_1 - x_0} * (x - x_0)$$

Figure 4.1: Price parameter

Own illustration based on data pre-test "Price".

The interpolation reveals that at x=110 the values for f(x) are identical. Thus, the optimal price will be set at €110.

Table 4.18: Interpolation results

x-value	f(x) in %	
	"too expensive"	"too cheap"
100	0,00%	8,00%
101	0,64%	7,84%
102	1,28%	7,68%
103	1,92%	7,52%
104	2,56%	7,36%
105	3,20%	7,20%
106	3,84%	7,04%
107	4,48%	6,88%
108	5,12%	6,72%
109	5,76%	6,56%
110	6,40%	6,40%
111	7,04%	6,24%
112	7,68%	6,08%
113	8,32%	5,92%
114	8,96%	5,76%
115	9,60%	5,60%
116	10,24%	5,44%
117	10,88%	5,28%
118	11,52%	5,12%
119	12,16%	4,96%
120	12,80%	4,80%
121	13,44%	4,64%
122	14,08%	4,48%
123	14,72%	4,32%
124	15,36%	4,16%
125	16,00%	4,00%

Own illustration based on data pre-test "Price".

When looking at the maximal WTP, ranging from €25 to €250, the mean WTP is €124,56 with a std. dev. of 37,9072. This price is higher than the actual intersection point of the two lines. Given that the respondents have been asked to state their hypothetical maximal WTP considering that they should imagine that they actually have to buy the product, this price can be considered realistic. Yet, one has to bear in mind that Wertenbroch and Skiera (2002) mention that hypothetical WTP is generally higher than real WTP. Therefore I assume that €110 is the optimal price and €125 is too high because the respondents were not obliged to actually buy the wrist watch.

To sum it up, the pre-test concerning the price level which has been used in the advertisement for the watch revealed an optimal price of €110. This price is based on the interpolation of the two lines demonstrated in figure 4.1.

4.3   Experiment

This chapter summarizes the experimental results. First, the descriptive statistics for the whole data set will be presented followed by a factor analysis of the constructs "attitude towards the ad" and "WTB". Thirdly, the 2x3 factorial ANCOVA and ANOVA analysis has been conducted for each of the three dependent variables attitude towards the ad, WTB and WTP. The assumptions are presented and tested first. A separate detailed analysis follows and ends with a short summary of the results. Thereafter, it has been tested whether "ad_realistic" can be considered a full dependent variable and if warranty and the COO effect have an effect on it. As a round up a linear regression examining the determinants of each construct has been conducted to test for possible independent variables and covariates. Finally, the experimental results will be briefly summarized.

4.3.1   Descriptives

The survey has been distributed via email to first year bachelor students of the law faculty of Hasselt University and to a first year bachelor course at the economics faculty of Hasselt University. Additionally, it has been distributed via a discussion forum for Adobe Photoshop and via Facebook in the community of a student house with students not being part of Hasselt University.

The total number of respondents has been 187. Thereof 27 did not complete the survey and were consequently deleted. Out of the 160 remaining respondents, 10 were male and 7 were non-Belgians. Those cases have been equally deleted so that the sample consists solely of female Belgian respondents. The resulting sample is comprised of 145 respondents. The main part are students (64%) in the age group from 19-25 years (61%). 83% have not known the brand before and an additional 7% does not remember the brand anymore. Concerning congruency of the data four cases[5] can be addressed whose WTP is zero. However, when having a closer look one can see that their WTB is very low which can result in no WTP. In general, attitude items score higher than WTB items which have a lower mean and a higher std. dev. Further, on average 34% of the attitude items score higher than the midpoint whereas only 18% of the WTB items on average score higher. The mean WTP is located at €94 with a std. dev. of 43,790 and a maximum value of €270. I assume that this wide spread of WTP is an indication that the initially shown price in

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[5] Cases 76, 80, 81, 91.

the first advertisement does not have a large biasing effect on the measurement of WTP. Regarding normality, "Ad_reaslistic" is negatively skewed whereas WTB1, WTB2, WTB3 and WTP are positively skewed. WTB4 is the only item which is shallow. An overview of the descriptive statistics is illustrated in appendix 11.

4.3.2 Factor analysis

A factor analysis has been conducted to reduce the number of variables of each construct as attitude towards the ad and WTB have been measured on four and five items respectively. The Principle Components method (extraction based on eigenvalues > 1) has been used with rotations fixed at 25. Several assumptions must hold to conduct a meaningful factor analysis. The analysis of the assumptions is followed by the individually conducted factor analyses.

The assumptions that must hold in order to conduct a factor analysis are:

1. All variables must be at least interval scaled: The items have all been measured in a seven point Likert scale. Per definition the Likert scale is ordinal. Yet, according to common standards it can be considered interval scaled.
2. All items need to have the same level of measurement: As stated before, all variables are measured on a seven point Likert scale.
3. Sufficient number of observations: The number of observations must be at least 100 and/or ten times as many observations per item included in the analysis. In this case the number of observations exceeds both criteria.
4. Last, the items must be correlated with a correlation exceeding 0,3. The correlation table of all variables is shown in appendix 12.

As all assumptions hold, the factor analysis can be conducted.

4.3.2.1   Attitude

Additional conditions that must be given are that the variables are correlated which is tested by Bartlett's test of sphericity. Given the p-value of 0,001 the null hypothesis of no correlation is rejected. The anti-image correlation shows that all values besides the correlation of attitude1/attitude2 (-0,732) and attitude3/attitude4 (-0,511) are close to zero. Partial correlation is given. The global measure of sampling adequacy (MSA) is reflected in the Kaiser-Meyer-Olkin value (p=0,751) which has to be greater 0,5. Consequently, this condition is equally given. The MSA linked

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to each individual variable is greater than 0,5 likewise (min. = 0,711). Thus, as all conditions are valid, the principal component analysis can be conducted.

When looking at the communalities the lowest value equals 0,662 indicating that all variables are relevant for the underlying factor. The factor loadings are shown in table 4.19.

Table 4.19: Factor loadings "Attitude"

Description attitude item	Factor loading
Attitude1	0,896
Attitude2	0,885
Attitude4	0,861
Attitude3	0,813
min. factor loading for 145 respondents = 0,5	

Own illustration based on data "Final experiment".

Reliability has been tested using Cronbach's Alpha which is a pre-requisite to calculate the factor score using the summated scale method. A value greater than 0,8 is considered a "very good" reliability and no items have to be deleted. Cronbach's alpha for the four underlying variables is 0,886 > 0,8. Therefore, the new factor ("Attitude") can be calculated based on the items' means.

4.3.2.2   Willingness to buy

Regarding WTB the same procedure applies as for "Attitude". Preliminary conditions are that the Bartlett's test of sphericity is significant stating that the items are correlated. The Bartlett's test is significant with p=0,001. Further, partial correlation is given between all items beside attitude1/attitude2 (-0,537) and attitude3/attitude4 (-0,671). The lowest MSA value linked to each individual item is 0,786 > 0,5. The Kaiser-Meyer-Olkin value is also greater than 0,5 (0,830). Concerning the communalities the lowest value is 0,722. Therefore, all items are sufficiently explained by the resulting factor. The factor loadings in table 4.20 show a similar result with the lowest value of 0,849 > 0,5.

Table 4.20: Factor loadings "COO"

Description WTB item	Factor loading
WTB2	0,946
WTB3	0,926
WTB1	0,905
WTB5	0,870
WTB4	0,849
min. factor loading for 145 respondents = 0,5	

Own illustration based on data "Final experiment".

All prerequisites are given. A factor analysis is meaningful. Yet, as a summated scale shall be calculated Cronbach's alpha needs to be high enough. Here, it is "very good" with 0,938 > 0,8. The summated scale for the factor "WTB" can be calculated.

4.3.3 Two-way 2x3 factorial ANCOVA/ANOVA

After having conducted the factor analyses, the main analysis can be conducted. The outline will be as follows. First, the general assumptions are tested in order to be able to conduct an ANCOVA and ANOVA analysis. Analysis specific assumptions are tested within each individual chapter corresponding to one dependent variable. An ANCOVA as well as an ANOVA anaslsis has been conducted in each chapter to see how strong the influence of "ad_realistic" is.

General assumptions include:

1. Interval scaled dependent variables: This assumption holds for all variables as "attitude towards the ad" and WTB are measured on a seven point Likert scale and WTP is measured continuously.

2. Categorical scaled independent variables: According to the experimental design all independent variables are categorical scaled.

3. Independence of observations: The experimental design ensures that each respondent is only exposed to one advertisement and each respondent answers the questions individually.

Analysis specific assumptions:

4. The variables need to be normally distributed: This assumption is examined using the Kolmogorov–Smirnov test and the Shapiro-Wilk test as well as a graphical illustration using the Q-Q plot, the Box plot as well as the Histogram. The analysis will be conducted within the respective chapters and is displayed in appendix 13.

5. Error variance must be equal: A Levene's test of equality of error variance has been conducted and is presented in the respective chapters.

6. Equality of the slope of the regression lines between the dependent variable and the covariates: A statistical analysis has been conducted. The results are presented in the respective chapter for each dependent variable examined.

If normality as one assumption criteria does not seem robust enough a Kruskal-Wallis test will be conducted to examine the mean rank differences. If the test is significant it will be followed by a Wilcoxon-Mann-Whitney test to examine the pairwise differences.

To be able to conduct a Kruskal-Wallis test and a Wilcoxon-Mann-Whitney test several assumptions must hold:

1. The dependent variable must be at least ordinal scaled which is the case in this experiment because the dependent variable is measured on a seven point Likert scale

2. The independent variable must be categorical. This is also the case.

3. No normal distribution is assumed.

4. The observations need to be independent. Given the research design this assumption holds.

The experiment is not balanced due to the high number of unfinished surveys and male and non-Belgian respondents that had to be deleted. Thus, the initially programmed even counting could not be executed properly. By chance warranty is equally distributed. Given that the experiment is not balanced, the Type III sum of

squares approach will be used. The weighted cell means are not relevant here as the group based average is of importance. For the purpose of this research it is not expected that the size of the sample per cell has an influence on the results. Table 4.21 shows the respondent distribution per cell.

Table 4.21: Cell counts final experiment

		Country of Origin			
		COO fit	COO non-fit	no COO	Sum
Warranty length	Short	20	35	20	75
	Long	26	23	21	70
	Sum	46	58	41	145

Own illustration based on data "Final experiment".

4.3.3.1 Attitude

Before analyzing the results it has been tested whether the residuals of "attitude" are normally distributed. The Kolmogorov-Smirnov test as well as the Shapiro-Wilk test are not significant (p=0,200 and p=0,694). The Q-Q plot, the Box plot and the Histogram show similar results (see appendix 13). "Attitude" is therefore normally distributed.

Concerning the covariate "ad_realistic" it has to be of equal slope of the regression line as the dependent variable. This has been tested statistically using the tests of between-subjects effects. Neither IE is significant at the 95% or 90% level as can be seen in table 4.22.

Table 4.22: Equality of the slope of the regression line

	F-Value	Sig.
Warranty*Ad_realistic	0,156	0,693
COO*Ad_realistic	0,782	0,459
COO*Warranty*Ad_Realistic	0,12	0,887
* sig. at the 90% level		
Grey cells are sig. at the 95% level		

Own illustration based on data "Final experiment".

The null hypothesis of the error variance assumption (Levene's test) cannot be rejected at the 95% level and the 90% level either (p=0,543 in case of the ANCOVA

and p=0,666 in case of the ANOVA analysis). All necessary assumptions hold. The results of the factorial ANCOVA/ANOVA can be interpreted.

Looking at the ANCOVA results shown in table 4.23, the ME of "warranty" is not significant (p=0,838 > 0,05) whereas "COO" shows a significant ME (p=0,002 < 0,05). So, H2.a must be rejected. An IE does not exist given that p=0,703 > 0,05. The ME of the covariate "ad_realistic" is significant at p=0,001. When one does not adjust for the covariate and conducting a factorial two-way ANOVA analysis, the interpretation of the outcome does not change. The ME of "warranty" is still insignificant (p=0,946 > 0,05) whereas the ME of the "COO" is significant (p=0,003 < 0,05). The IE stays insignificant with p=0,264 > 0,05. Adjusting the significance level to 90% has no effect on the results either.

Table 4.23: ME and IE of the "attitude" ANCOVA and ANOVA analysis

ANCOVA (Levene's test = 0,543)			
Independent variable	F-Value	df	Sig
Ad_Realistic	55,308	1	0,001
COO	6,664	2	0,002
Warranty	0,042	1	0,838
COO*Warranty	0,340	2	0,703
ANOVA (Levene's test = 0,666)			
Independent variable	F-Value	df	Sig
COO	6,097	2	0,003
Warranty	0,005	1	0,946
COO*Warranty	1,344	2	0,264
* sig. at the 90% level			
Grey cells are sig. at the 95% level			

Own illustration based on data "Final experiment".

Figure 4.2 below illustrates as well, that there are no IE as in both graphs the lines run parallel so that the different effects are equal among all factors.

Figure 4.2: ME of the COO effect in the case of the ANCOVA and ANOVA analysis
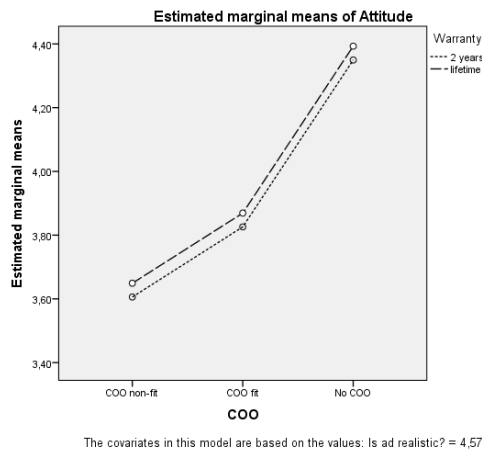
ANCOVA   ANOVA
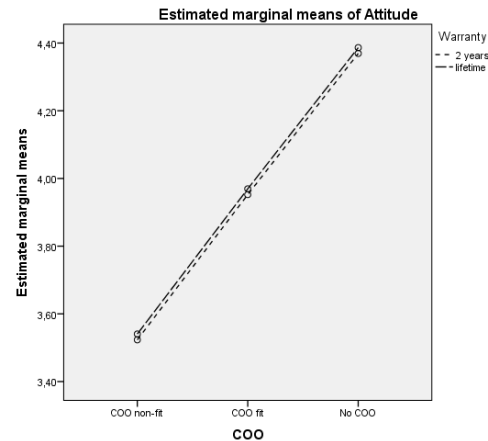
Own illustration based on data "Final experiment".

The pairwise comparison for the ANCOVA shows that the "COO non-fit" is Bonferroni corrected significantly different from "no COO" ($p=0,001 < 0,05$). The difference between "COO fit" and "no COO" is not Bonferroni corrected significantly different with $p=0,053 < 0,05$. Yet, if setting the significance level to 90% the difference is significant ($p=0,053 < 0,1$). Thus there is a significant difference between "COO fit" and "no COO". The "COO fit" mean ($x=3,848$) is smaller than the "no COO" mean ($x=4,371$). Further, there exists no Bonferroni corrected significant difference between the "COO fit" and the "COO non-fit" ($p=0,796 > 0,05$). The pairwise comparison regarding the ANOVA reveals similar results as the ANCOVA analysis. The difference between the "COO non-fit" and "no COO" is Bonferroni corrected significant ($p=0,001 < 0,05$). All other differences are not significantly different from each other. So when the model is not adjusted for "ad_realistic" the "COO fit" is not significantly smaller than the effect with "no COO" shown. All figures are demonstrated in table 4.24.

Table 4.24: Pairwise comparison of COO and warranty based on the factorial ANCOVA/ANOVA analysis

ANCOVA		Mean diff.	Bonferroni corrected Sig.
COO fit	COO non-fit	0,222	0,796
	no COO	-0,509	0,053*
COO non-fit	no COO	-0,731	0,001
2 years	lifetime	-0,034	n.r.
ANOVA		**Mean diff.**	**Bonferroni corrected Sig.**
COO fit	COO non-fit	0,442	0,176
	no COO	-0,384	0,379
COO non-fit	no COO	-0,825	0,002
2 years	lifetime	-0,013	n.r.
* sig. at the 90% level			
Grey cells are sig. at the 95% level			

Own illustration based on data "Final experiment".

With respect to the comparison of the different samples using the one-way ANOVA and the LSD and Bonferroni corrected post-hoc tests the following results emerge. Regarding the LSD post-hoc test, the "COO fit_short" mean is significantly greater than the "COO non-fit_short" mean (p=0,021 < 0,05). Further, "no COO_short" is significantly greater than "COO non-fit_short" (p=0,019 0,05). Those results are confirmed by the Kruskal-Wallis test and the Wilcoxon-Mann-Whitney test. The Kruskal-Wallis test is significant at the 95% and 90% level with p=0,012. Table 4.25 shows the statistics and the ordered mean ranks whereas table 4.16 shows the one-way ANOVA and Wilcoxon-Mann-Whitney test results. It can be seen that the "COO non-fit" samples score lowest and "no COO_long" sample scores highest followed by "COO fit_short". Appendix 14 illustrates the sample mean ranks and means graphically. The relationships formerly described are significant at the 95% level with p=0,017 and p=0,02 respectively. Thus, H1.1c and H1.1b are valid. H1.1a needs to be rejected as there is no significant difference between "COO fit_short" and "no COO_short". The Bonferroni corrected post-hoc test is only significant for the mean difference of "no COO_long" and "COO non-fit_short" (p=0,016 < 0,05). The "no COO_long" sample has a greater mean than "the COO

non-fit_short" sample. This significance is equally mirrored by the Wilcoxon-Mann-Whitney. No additional mean differences are significant at the 90% level.

Table 4.25: Kruskal-Wallis result "attitude"

Variable	Rank mean	Chi-square	Sig.
COO non-fit_short	57,60		
COO non-fit_long	61,70		
COO fit_long	69,58	14,617	0,012
No COO_short	84,03		
COO fit_short	84,73		
no COO_long	93,62		

Own illustration based on data of "Final experiment".

Table 4.26: One-way ANOVA and Wilcoxon-Mann-Whitney results "attitude"

Attitude		Post-hoc significance			Wilcoxon-Mann-Whitney Test		
		Mean difference	LSD	Bonferroni corrected	U-value	Z-value	Sig.
COO fit_short	COO non-fit_short	0,755	0,021	n.r.	213,500	-2,396	0,017
	No COO_short	-0,012	0,973	n.r.	199,500	-0,014	0,989
	COO fit_long	0,443	0,200	n.r.	205,000	-1,225	0,221
	COO non-fit_long	0,571	n.r.	1	154,500	-1,845	0,065
	no COO_long	-0,311	n.r.	1	178,000	-0,838	0,402
COO non-fit_short	No COO_short	-0,768	0,019	n.r.	217,500	-2,326	0,020
	COO fit_long	-0,312	n.r.	1	377,500	-1,134	0,257
	COO non-fit_long	-0,184	0,554	n.r.	389,500	-0,207	0,836
	no COO_long	-1,067	n.r.	0,016	188,000	-3,047	0,002
No COO_short	COO fit_long	0,456	n.r.	1	213,500	-1,034	0,301
	COO non-fit_long	0,584	n.r.	1	156,000	-1,807	0,071
	no COO_long	-0,299	0,410	n.r.	177,000	-0,863	0,388
COO fit_long	COO non-fit_long	0,128	n.r.	1	276,000	-0,462	0,644
	no COO_long	-0,755	n.r.	0,417	185,000	-1,891	0,059
COO non-fit_long	no COO_long	-0,883	n.r.	0,189	141,000	-2,368	0,018
* sig. at the 90% level							
Grey cells are sig. at the 95% level							

Own illustration based on data of "Final experiment".

To put it in a nutshell, there is no IE of "warranty" and the COO effect. Further, there is no ME of "warranty". Regarding the ME of "COO", the "no COO" mean is significantly greater than the "COO non-fit" mean and the "COO fit" mean. Yet, there is no significant difference between "COO fit" and "COO non-fit" opposed to what has been expected. Regarding H1.1, the "COO fit_short" sample shows a significantly greater mean than the "COO non-fit_short" sample and the "no COO_short" sample mean is greater than the "COO non-fit_short" mean. The "COO

fit_short" sample mean is larger than the "no COO_short" sample mean, yet, the difference is not significant. Thus, H1.1b and H1.1c are valid whereas H1.1a needs to be rejected as well as H2. As could be expected there are no differences in the sample means for the comparisons of the same COO effect but different warranty length. H3 needs to be rejected.

4.3.3.2 Willingness to buy

First the normal distribution of the residual for WTB has to be tested. The Kolmogorov-Smirnov test as well as the Shapiro-Wilk test are significant at the 95% and 90% level (p=0,001 < 0,05). The Q-Q plot and the Box plot indicate, however, normality (see appendix 13). I therefore assume that WTB is normally distributed. Further, the Levene's test of error variance is not significant at the 95% and 90% level in the case of the ANCOVA (p=0,829 > 0,05) and the ANOVA analysis (p=0,327 > 0,05). Consequently, homogeneity of error variance is given. When a covariate is included an equal slope of the regression line as the dependent variable needs to be given. This can be tested statistically using the between-subjects effect. As table 4.27 shows, all IE are insignificant at the 95% level indicating an equal slope. Regarding the 90% level the IE of "warranty" and "ad_realistic" and the IE of the "COO effect" and "ad_realistic" are significant (p=0,058 < 0,1 and p=0,075 > 0,1 respectively). The ANCOVA analysis can, consequently, not be conducted when interpreting the results at the 90% level. However, the ANOVA and ANCOVA analysis (95% level) can be interpreted.

Table 4.27: Equality of the slope of the regression line

	F-Value	Sig.
Warranty*Ad_realistic	3,656	0,058*
COO*Ad_realistic	2,635	0,075*
COO*Warranty*Ad_Realistic	0,428	0,652
* sig. at the 90% level		
Grey cells are sig. At the 95% level		

Own illustration based on data "Final experiment".

The ANCOVA shows that there is neither a ME for "warranty" (p=0,865 > 0,05) and the COO effect (p=0,146 > 0,05) nor an IE (p=0,573 > 0,05). Solely the covariate is significant (p=0,001 < 0,05). The same holds for the ANOVA analysis. Yet, when looking at the 90% level, the ANOVA shows a significant ME for the "COO effect"

(p=0,075 < 0,1) as can be seen in table 4.28. Figure 4.3 shows clearly that the lines run parallel. Consequently there is no IE. H2 needs to be rejected.

Table 4.28: ME and IE of the "WTB" ANCOVA and ANOVA analysis

ANCOVA (Levene's test = 0,829)			
Independent variable	**F-Value**	**df**	**Sig**
Ad_Realistic	20,787	1	0,001
COO	1,950	2	0,146
Warranty	0,029	1	0,865
COO*Warranty	0,559	2	0,573
ANOVA (Levene's test = 0,327)			
Independent variable	**F-Value**	**df**	**Sig**
COO	2,638	2	0,075*
Warranty	0,054	1	0,817
COO*Warranty	1,441	2	0,240
* sig. at the 90% level			
Grey cells are sig. at the 95% level			

Own illustration based on data "Final experiment".

Figure 4.3: ME of the COO effect in the case of the ANCOVA and ANOVA analysis
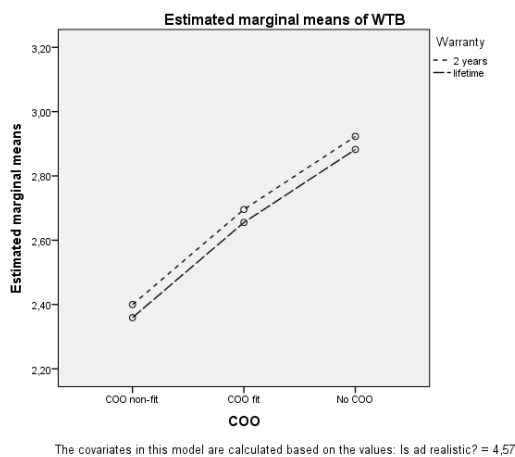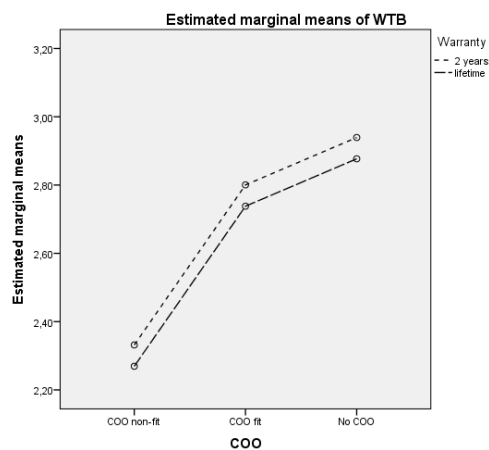
ANCOVA   ANOVA

Own illustration based on data "Final experiment".

The pairwise comparison of the ANCOVA (see table 4.29) reveals the expected results, namely that there are no significant ME. The ANOVA shows the same which is

contradictory to the formerly mentioned results. Yet, when not adjusting for family-wise error and predicting that there is a ME for the "COO effect" the difference for "COO non-fit" and "no COO" is significant at p=0,035 < 0,05 and the difference between "COO fit" and "COO non-fit" is equally LSD significant (p=0,96 < 0,1). The Bonferroni-corrected significance might be too conservative given that it has been previously tested already that there is a difference. Further, it has been hypothe-sized that in case of a standard warranty level of two years there exists a difference between the several COO conditions.

Table 4.29: Pairwise comparison of COO and warranty based on the facto-rial ANCOVA/ANOVA analysis

ANCOVA		Mean diff.	Bonferroni corrected Sig.
COO fit	COO non-fit	0,317	0,687
	no COO	-0,200	1,000
COO non-fit	no COO	-0,517	0,165
2 years	lifetime	0,037	0,865
ANOVA		**Mean diff.**	**Bonferroni corrected Sig.**
COO fit	COO non-fit	0,494	0,230
	no COO	-0,099	1,000
COO non-fit	no COO	-0,593	0,118
2 years	lifetime	0,054	n.r.
* sig. at the 90% level			
Grey cells are sig. at the 95% level			

Own illustration based on data "Final experiment".

Looking at the sample differences of each advertisement using the LSD and the Bonferroni corrected post-hoc test, one can see that according to the LSD post-hoc-test, the "COO fit_short" mean is significantly greater than the "COO non-fit_short" at p=0,04 < 0,05. This confirms H1.2c. H1.2a and H1.2b need to be rejected. The Kruskal-Wallis test which has been conducted to ensure robustness due to the vague normality assumption is not significant (p=0,108 > 0,05 and 0,1). Table 4.30 gives an overview over the rank means and shows the statistical values. The Wilcoxon-Mann-Whitney test has, consequently, not been conducted which is also indicated in table 4.31 giving an overview over the sample comparison. Therefore,

H1.2 would need to be rejected completely. Yet, this might be too conservative looking at appendix 14 showing the sample means and mean ranks graphically which is why I do not reject H1.2c. As could be expected there are no differences in the sample means for the comparisons of the same COO effect but different warranty lengths. H3 needs to be rejected.

Table 4.30: Kruskal–Wallis result "WTB"

Variable	Rank mean	Chi-square	Sig.
COO non-fit_short	63,39		
COO non-fit_long	64,15		
COO fit_long	68,62	9,015	0,108
No COO_short	73,98		
no COO_long	85,48		
COO fit_short	91,63		

Own illustration based on data "Final experiment".

Table 4.31: One-way ANOVA and Wilcoxon-Mann-Whitney results "WTB"

WTB		Post-hoc significance			Wilcoxon-Mann-Whitney Test		
		Mean difference	LSD	Bonferroni corrected	U-value	Z-value	Sig.
COO fit_short	COO non-fit_short	0,803	0,040	n.r.	n.a.	n.a.	n.a.
	No COO_short	0,400	0,362	n.r.	n.a.	n.a.	n.a.
	COO fit_long	0,592	0,152	n.r.	n.a.	n.a.	n.a.
	COO non-fit_long	0,778	n.r.	1	n.a.	n.a.	n.a.
	no COO_long	-0,005	n.r.	1	n.a.	n.a.	n.a.
COO non-fit_short	No COO_short	-0,403	0,301	n.r.	n.a.	n.a.	n.a.
	COO fit_long	-0,211	n.r.	1	n.a.	n.a.	n.a.
	COO non-fit_long	-0,025	0,947	n.r.	n.a.	n.a.	n.a.
	no COO_long	-0,808	n.r.	0,544	n.a.	n.a.	n.a.
No COO_short	COO fit_long	0,192	n.r.	1	n.a.	n.a.	n.a.
	COO non-fit_long	0,378	n.r.	1	n.a.	n.a.	n.a.
	no COO_long	-0,405	0,351	n.r.	n.a.	n.a.	n.a.
COO fit_long	COO non-fit_long	0,186	n.r.	1	n.a.	n.a.	n.a.
	no COO_long	-0,597	n.r.	1	n.a.	n.a.	n.a.
COO non-fit_long	no COO_long	-0,783	n.r.	0,943	n.a.	n.a.	n.a.
* sig. at the 90% level							
Grey cells are sig. at the 95% level							

Own illustration based on data "Final experiment".

4.3.3.3   Willingness to pay

Regarding the ANCOVA and ANOVA analysis of the moderation effect of warranty on the COO effect with respect to the WTP, it first has to be examined whether WTP is normally distributed. As shown in appendix 13, the Kolmogorov-Smirnov test as well as the Shapiro-Wilk test are significant at the 95% and 90% level (p=0,001 < 0,05). Thus, the null hypothesis stating that there is normal distribution must be rejected. The Q-Q plot and the Box plot can be interpreted as being normally distributed. The Histogram is vaguer. Nevertheless, normality is assumed. Further, to conduct an ANCOVA an equal slope of the regression lines needs to be given. Statistically this implies that there are no significant IE between the independent variables and the covariate. Yet, the interaction of the COO with "ad_realistic" is significant (p=0,011 < 0,05). Therefore, the covariate will not be included in the analysis. Table 4.32 gives a summary over the results. The Levene's test of equal error variance in the case of the ANOVA is not significant at the 95% and 90% level (p=0,846 > 0,05). The ANOVA results can be interpreted.

Table 4.32: Equality of the slope of the regression line

	F-Value	Sig.
Warranty*Ad_realistic	2,155	0,144
COO*Ad_realistic	4,658	0,011
COO*Warranty*Ad_Realistic	1,168	0,314
* sig. at the 90% level		
Grey cells are sig. at the 95% level		

Own illustration based on data "Final experiment".

Regarding the ANOVA analysis, there is a significant ME of the "COO effect" (p=0,017 < 0,05). Yet, there is no ME of "warranty" (p=0,943 > 0,05) and no significant IE (p=0,350 > 0,05). The same holds for the 90% significance level (see table 4.33). So, H2 needs to be rejected.

Table 4.33: ME and IE of the "WTP" ANCOVA and ANOVA analysis

ANCOVA (Levene's test =n.a.)			
Independent variable	**F-Value**	**df**	**Sig**
Ad_Realistic	n.a.	1	n.a.
COO	n.a.	2	n.a.
Warranty	n.a.	1	n.a.
COO*Warranty	n.a.	2	n.a.
ANOVA (Levene's test = 0,846)			
Independent variable	**F-Value**	**df**	**Sig**
COO	4,186	2	0,017
Warranty	0,005	1	0,943
COO*Warranty	1,058	2	0,350

Own illustration based on data "Final experiment".

Figure 4.4 depicts that there is no IE because the lines run parallel and do not show any rank order differences.

To investigate the ME if the COO effect in more detail, table 4.34 shows the pair-wise comparisons of the COO effect. As can be seen, the mean difference of "COO fit" and "COO non-fit" is significant at the 95% level with p=0,013. All other comparisons are not significant.

Figure 4.4: ME of the COO effect in the case of the ANOVA analysis
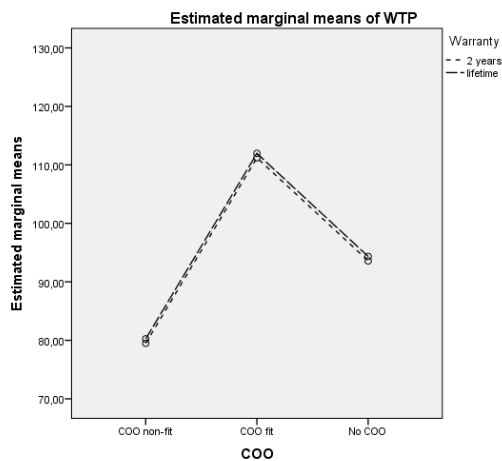
Own illustration based on data "Final experiment".

Table 4.34: Pairwise comparison of COO and warranty based on the factorial ANOVA analysis

ANOVA		Mean diff.	Bonferroni corrected Sig.
COO fit	COO non-fit	32,319	0,013
	no COO	19,046	0,348
COO non-fit	no COO	-13,273	0,750
2 years	lifetime	-0,673	0,943
* sig. at the 90% level			
Grey cells are sig. at the 95% level			

Own illustration based on data "Final experiment".

H1.3 can be examined comparing the different sample means. The "COO fit_short" mean is significantly greater than the "COO non-fit_short" (p=0,004 < 0,05). Further, it is significantly greater than the "no COO_short" sample mean (p=0,048 < 0,05). For robustness reasons a Kruskal-Wallis test has been conducted and is significant with p=0,013 < 0,05. The ordered mean ranks in table 4.35 show that the "COO non-fit" samples score lowest whereas the "COO fit_short" sample scores highest. The conducted Wilcoxon-Mann-Whitney test confirms the formerly mentioned comparisons. Thus, H1.3a and H1.3c are confirmed. H1.3b needs to be rejected. As could be expected there are no differences in the sample means for the comparisons of the same COO effect but different warranty length. An overview is illustrated in table 4.36. A graphical illustration of the sample means and mean ranks is depicted in appendix 14.

Table 4.35: Kruskal–Wallis result "WTP"

Variable	Mean rank	Chi-square	Sig.
COO non-fit_short	57,27		
COO non-fit_long	62,26		
No COO_short	70,30	14,428	0,013
COO fit_long	80,37		
no COO_long	82,60		
COO fit_short	95,93		

Own illustration based on data "Final experiment".

Table 4.36: One-way ANOVA and Wilcoxon-Mann-Whitney results "WTP"

WTP		Post-hoc significance			Wilcoxon-Mann-Whitney Test		
		Mean difference	LSD	Bonferroni corrected	U-value	Z-value	Sig.
COO fit_short	COO non-fit_short	45,307	0,004	n.r.	164,000	-3,263	0,001
	No COO_short	35,250	0,048	n.r.	123,000	-2,096	0,036
	COO fit_long	18,788	0,260	n.r.	212,000	-1,067	0,286
	COO non-fit_long	38,120	n.r.	0,406	116,500	-2,770	0,006*
	no COO_long	21,631	n.r.	1	176,000	-0,890	0,373
COO non-fit_short	No COO_short	-10,057	0,521	n.r.	274,500	-1,327	0,184
	COO fit_long	-26,519	n.r.	1	323,000	-1,933	0,053
	COO non-fit_long	-7,188	0,632	n.r.	365,000	-0,600	0,549
	no COO_long	-23,676	n.r.	1	248,000	-2,031	0,042
No COO_short	COO fit_long	-16,462	n.r.	1	222,000	-0,846	0,397
	COO non-fit_long	2,870	n.r.	1	201,500	-0,697	0,486
	no COO_long	-13,619	0,436	n.r.	167,000	-1,127	0,260
COO fit_long	COO non-fit_long	19,331	n.r.	1	228,500	-1,417	0,157
	no COO_long	2,842	n.r.	1	272,000	-0,022	0,983
COO non-fit_long	no COO_long	-16,489	n.r.	1	169,500	-1,697	0,090
* sig. at the 90% level							
Grey cells are sig. at the 95% level							

Own illustration based on data "Final experiment".

4.3.3.4 Ad_Realistic

To investigate how large the influence of "ad_realistic" is, it has not only been used as a covariate but also as a full dependent variable. The target was to see whether the COO effect, warranty or the interaction of the two have an influence on if the advertisement is perceived as realistic. Yet, not all assumptions hold to be able to conduct a factorial ANOVA. The assumption of a homogenous error variance is not given because the Levene's test is significant at the 95% level (p=0,005 < 0,05) leading to a rejection of the null hypothesis. A factorial ANOVA can therefore not be conducted. The conducted Kruskal-Wallis test can also not be interpreted as it is insignificant at the 95% and 90% level with p=0,330 > 0,1.

4.3.3.5 Linear regression analysis

In order to make a first prediction if being a student or brand knowledge plays a role in the model a linear regression analysis has been conducted. The outline of this chapter is as follows. First the assumptions which are necessary in order to conduct a linear regression analysis are explained. Thereafter follows a chapter for each dependent variable. Last, the results are briefly summarized.

To be able to do so several conditions must apply.

General assumptions valid for each analysis with this model:

1. Causality must be given meaning that there is an effect of the independent variable on the dependent variable which is given in all three models.

2. All variables need to be at lease interval scaled. This is not the case. However, being a student, brand knowledge. The COO effect and warranty have been coded as dummies to be able to insert them in the linear regression analyses. The coding is shown in table 4.37.

3. An additive relationship is assumed which is the case as it has already been tested for IE.

4. The residuals of the dependent variables must be normally distributed which has been already tested in section 4.3.3.

5. All observations must be independent which is also the case based on the experimental design.

6. There must be sufficient observations to conduct a linear regression namely five times the amount of parameters. As six parameters are included the number of observations should be 30 which is the case as 145 respondents have participated.

7. Outliers might have to be accounted for. Yet, the goal of this research is to evaluate the respondents' actual perception and willingness to act so that outliers will be kept in the analysis.

Model specific assumptions will be tested in the respective chapter. Those are:

8. Linear relationship between the dependent and the independent variable in order to base the analysis on a linear model.

9. Homoscedasticity stating that the residual has the same variance for every value of the independent variable must be given.

10. No multicollinearity shall exist.

Table 4.37: Coding categorical variables

		Coding	
		Dummy 1	Dummy 2
COO	COO fit	1	0
	COO non-fit	0	1
	no COO	0	0
Warranty	2 years	0	
	lifetime	1	
Brand knowledge	yes	1	
	no	0	
	I don't know*	0	
Being a student	yes	0	
	no	1	
* is considered as brand not known before			

Own illustration.

4.3.3.5.1 Attitude

The assumptions 8-10 are tested in the following based on the scatterplot shown in figure 4.5 and the variance inflation factor (VIF) value. As can be seen there is no pattern visible in the scatterplot indicating that there is a linear relationship between the dependent and the independent variable and homoscedasticity. The variances are randomly scattered around the zero line. The highest VIF value is 1,469 for "COO non-fit" and is consequently < 10.

Figure 4.5: Scatterplot regression standardized residuals "attitude"
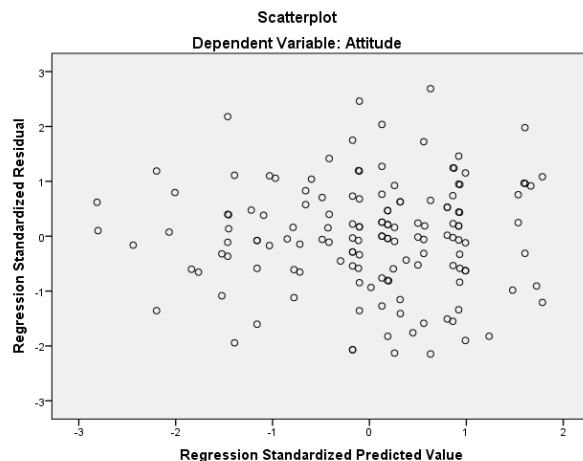
Own illustration based on data "Final experiment".

As all assumptions apply the linear regression analysis can be interpreted. The ANOVA is significant at p=0,001 < 0,05 indicating that there is a good fit between the data and the assumed regression. The adjusted R square demonstrates that 32,9% of the variation in "attitude" is explained by the six independent variables. The variables which significantly influence the variation in "attitude" are "ad_realistic", "COO fit" and "COO non fit". Those variables are all significant at the 95% level as shown in table 4.38. It is important to notice that as expected the two COO conditions influence the variation in attitude negatively. This has already been predicted in the factorial ANCOVA/ANOVA analysis. The "COO non-fit" shows a greater influence with beta=-0,304. The "COO fit" beta is equal to -0,204. "Ad_realistic" has the highest beta value (beta=0,528) and has consequently the highest influence on "attitude". The more the advertisement is perceived as being realistic the higher the result for "attitude" will be. Student, brand known and warranty do not influence "attitude".

It is thus important the advertisements appear to be realistic in the eye of the customer. Further, it is best to not indicate the COO. This might go hand in hand with the formerly stated influence of "ad_realistic" as it is not often seen that the COO is stated that clearly as it is here in this experiment.

Table 4.38: Linear regression analysis "attitude"

Dependent variable	Independent variable	Unstand. Coeff.	Stand. Coeff.	T-value	P-value
Attitude: **R² (adj) = 0,329** **F = 12,761** **(p = 0,001*)**	Ad_realistic	0,483	0,528	7,645	0,001*
	No student	0,050	0,020	0,285	0,776
	Brand known	0,136	0,035	0,495	0,622
	Lifetime warranty	0,043	0,018	0,258	0,797
	COO fit	-0,524	-0,204	-2,470	0,015*
	COO non-fit	-0,741	-0,304	-3,673	0,001*
*sig at the 95% level					

Own illustration based on data "Final experiment".

4.3.3.5.2 Willingness to buy

Concerning "WTB" the scatterplot shown in figure 4.6 depicts that there might not be a linear relationship between the dependent and independent variables as the plot shows a triangular pattern. Further, the residual variance of the independent variables is not randomly scattered due to the same reason. Looking at the partial

regression plot reveals that "ad_realistic" might be the cause of this pattern. A squaring of "ad_realistic" did not improve the fit. Consequently, it has been taken out of the model which resulted in a better fit. The new scatterplot is also shown in figure 4.6 on the right hand side. Now it can be said that there is a linear relationship as well as homoscedasticity. The VIF values show that there is no multicollinearity as the maximum VIF value equals 1,463 which is smaller than 10.

All assumptions are correct and the results in table 4.39 can be interpreted. The ANOVA analysis is significant allowing for the further testing of the linear regression (p=0,014 < 0,05). The adjusted R square reveals that 6,5% of the variation in "WTB" are explained by the independent variables which is rather low. The variables being a "non-student" and "COO non-fit" significantly influence "WTB". "No student" is significant at p = 0,016 and has a negative influence on "WTB" with beta = -0,589. "COO non-fit" is significant at the 95% level with p = 0,033 also showing a negative beta as has been expected (beta = -0,598). Here, the "COO non-fit" has the highest influence on "WTB".

Figure 4.6: Scatterplots regression standardized residuals "WTB" with and without "ad_realistic"
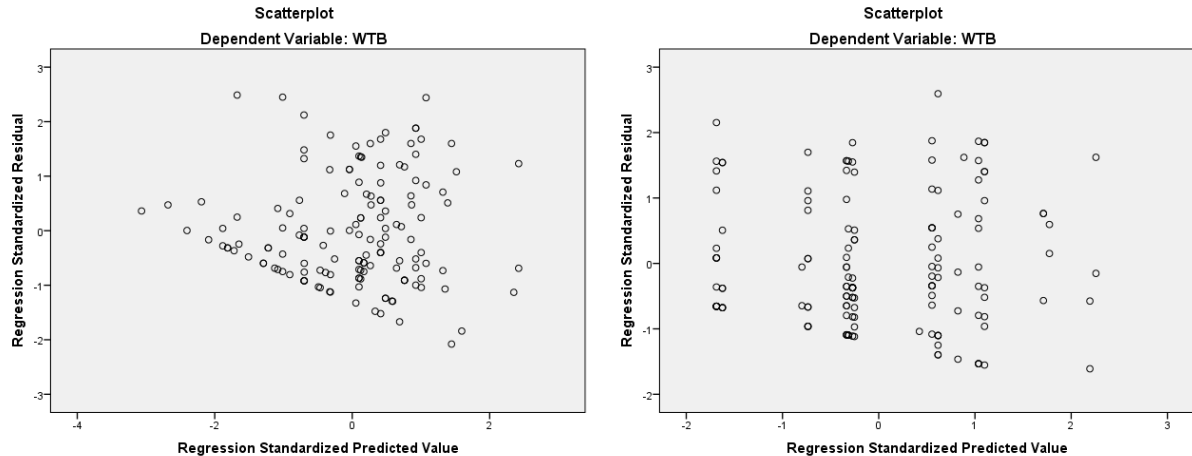
Own illustration based on data "Final experiment".

Table 4.39: Linear regression analysis "WTB"

Dependent variable	Independent variable	Unstand. Coeff.	Stand. Coeff.	T-value	P-value
WTB:	Ad_realistic	not incl.	not incl.	not incl.	not incl.
R² (adj) = 0,065	No student	-0,589	-0,203	-2,440	0,016*
F = 2,990	Brand known	0,505	0,110	1,335	0,184
(p = 0,014*)	Lifetime warranty	0,027	0,010	0,119	0,905
	COO fit	-0,211	-0,070	-0,722	0,471
	COO non-fit	-0,598	-0,210	-2,156	0,033*
*sig at the 95% level					

Own illustration based on data "Final experiment".

4.3.3.5.3   Willingness to pay

The last linear regression analysis conducted uses "WTP" as dependent variable. The scatterplot in figure 4.7 indicates a linear relationship and homoscedasticity as no pattern is visible. It has to be mentioned, however, that the graph is not as clear as for "attitude" or "WTB". Additionally, the normal distribution as already described in section 4.3.3.4, is not as clear as for the other two constructs. Yet, the results will be interpreted to get an idea of which variables besides the COO and warranty might influence "WTP". The VIF value testing for multicollinearity is less than ten with the maximum value of 1,469 for "COO non-fit". Hence, there is no multicollinearity in the model.

Figure 4.7: Scatterplots regression standardized residuals "WTP"
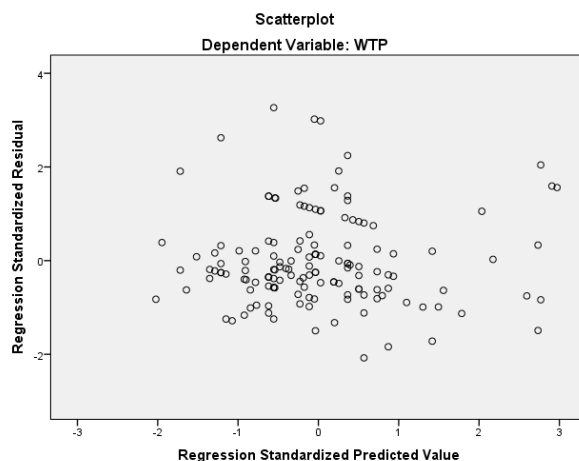
Own illustration based on data "Final experiment".

Considering that the assumptions are applicable the model fit has been tested using the ANOVA outcome which is significant (p=0,001 < 0,05) resulting in a good model fit. According to the adjusted R square value 16,1% of the variation in "WTP" is explained by the independent variables. Table 4.40 depicts that "ad_realistic" and "brand known" influence "WTP" significantly at the 95% level. "Ad_realistic" has a p-value of 0,007 and a beta value of 0,213 whereas "brand known" has a p-value of 0,001 and a higher beta value of 0,325. Hence, the latter explains more variation in "WTP" than the former. The "COO" is no significant determinant of "WTP" when including additional independent variables. The standardized coefficient signs show in the expected direction. Regarding "COO fit" the sign is positive and for "COO non-fit" the sign is negative. If only the COO and warranty were included in the regression the results for COO would be significant.

Table 4.40: Linear regression analysis "WTB"

Dependent variable	Independent variable	Unstand. Coeff.	Stand. Coeff.	T-value	P-value
WTP:	Ad_realistic	9,231	0,213	2,755	0,007*
R² (adj) = 0,161	No student	1,602	0,014	0,172	0,864
F = 5,606	Brand known	60,501	0,325	4,151	0,001*
(p = 0,001*)	Lifetime warranty	3,503	0,031	0,397	0,692
	COO fit	13,596	0,112	1,208	0,229
	COO non-fit	-11,171	-0,097	-1,044	0,298
*sig at the 95% level					

Own illustration based on data "Final experiment".

4.3.3.5.4   Summary linear regression

Even though all R square adjusted are relatively small the linear regression gives a good indication of which other variables can play a role in determining attitude towards the ad, WTB and WTP. A reason why the R square adjusted is so small could be that there are other variables which have not been tested but play a significant role in the determination of the constructs like income. When looking at the variables included in the model "ad_realistic" plays a significant role in the determination of attitude towards the ad and WTP. Before it had been excluded from the WTB model it also played a significant role there (p=0,001 < 0,05). Further, the fact whether the brand has been known before is a determinant of WTP whereas the fact of being a student or a non-student is a determinant of WTB. The COO effect is a significant determinant for attitude and WTB. For WTP it is not significant but the

signs show the expected direction. For "COO fit" the standardized coefficient is positive, whereas it is negative for "COO non-fit".

4.3.3.6   Summary experiment

Concluding it can be said that there is never a main effect of "warranty" as opposed to H2. Regarding H1 the results differ dependent on the dependent variable examined. The "COO fit_short" mean is not significantly greater than the "no COO_short" mean when looking at "attitude". It is, however, greater than the "COO non-fit_short" mean. Comparing the samples "no COO_short" and "COO non-fit_short" there is also a significant difference as expected. With respect to the dependent variable "WTB" the sole significant difference can be found for the "COO fit_short" sample and the "no COO_short" sample. This difference is equally significant for "WTP". Additionally, the mean difference between "COO fit_short" and "COO non-fit_short" is significant. All hypotheses results are summarized in table 4.37.

Table 4.41: Hypotheses summary

			Attitude	WTB	WTP
H1	low warranty	COO fit > no COO	✗	✓	✓
		no COO > COO non-fit	✓	✗	✗
		COO fit > COO non-fit	✓	✓	✓
H2		long warranty > short warranty	✗	✗	✗
H3	evaluation difference between high and low warranty	COO fit	✗	✗	✗
		COO non-fit	✗	✗	✗
		no COO	✗	✗	✗

Own illustration.

5.   Discussion

A general finding, no matter which construct has been examined and regardless of the country of origin (COO) effect, is that warranty never shows a main effect. The distinction between two years warranty and lifetime warranty does not play a role in the consumer's attitude towards the ad, his willingness to buy (WTB) or his willingness to pay (WTP). Therefore hypothesis 2, which states that lifetime warranty will result in a better attitude, WTB and WTP, has to be rejected.

A reason therefore could be that the consumer evaluates a two year warranty as standard and not as in particular short. He therefore does not have any negative association with it. Further, lifetime warranty might not be evaluated as positive either as it might not be needed or it is perceived to be unrealistic. The analysis whether the COO effect or warranty has an effect on "Is the ad realistic" would have been interested but could not be executed due to a violation of the assumptions. This fact leaves room for future research.

Additionally, the stimulus might have an effect on the perception of warranty. It could be that warranty has not been realized as much as the "made in" label because there was no symbol next to the text as it has been with the "made in" label. So, future research could play with that in either not emphasizing any condition or changing the importance of the condition by adding a symbol only to the warranty condition. Besides, the wrist watch used in the advertisement is possibly not as linked to warranty for quality perception as a more luxury good. Investigating how important warranty for the consumer is, with respect to wrist watches, can be integrated in future research. In addition the use of a more luxury good like cars shall be tested. Yet, the perception of what is a luxury good also depends on the target group. If only students had been participating the result might be different as a wrist watch that costs €110 could be considered a luxury good for which a lifetime warranty is desirable.

Moreover, brand knowledge could play a role with respect to the constructs and in particular attitude. Because the brand is a low priced brand, a lifetime warranty might be confusing as it is generally expected that only high quality retailers offer high warranties as they will have to pay for defects on the product. Considering that they can expect a higher defect rate, their costs would increase which can make their business unprofitable. Therefore, people with brand knowledge might

have a modest attitude towards the ad and WTB when being confronted with the confounding advertisement. Regarding the measurement of WTP, respondents can adjust their price according to their perceived value of the output which results in a less confounding effect of the advertisement. The linear regression including six independent variables also indicates that warranty is no significant determinant of the three constructs.

Yet, the ANCOVA and ANOVA show a main effect of the COO effect which means that over the average of warranty there is a difference between some of the COO conditions. So the main question is between which COO conditions the difference can be found.

<u>Attitude:</u>

Regarding attitude, people seem to be in favor of "no COO" stated in the advertisement instead of Poland as the "COO non-fit" or Switzerland as the "COO fit" country when accounting for realism. A reason therefore might be that "no COO" is perceived as the most realistic condition in an advertisement. On the one hand people which have seen ads with "no COO" stated could have a more positive feeling towards the ad as they are perceived as being realistic. On the other hand people that are confronted with a clearly stated "made in" label might be irritated as they are not used to that kind of advertisement.

Considering that a two years warranty is the common known international standard, the differences of the COO conditions have been examined taking this into account. Hypothesis 1 states that for a standard warranty a "COO fit_short" is ranked higher than "no COO_short" and the "COO non-fit_short" condition. Additionally, "no COO_short" is also ranked higher than the "COO non-fit_short" condition. Figure 2.2 in section 2.4 illustrates this relationship graphically. The results reveal that there is, indeed, a difference between Switzerland as the "COO fit_short" and Poland as "COO non-fit_short" as stated in hypothesis 1.1c. Further, there is a difference between "no COO_short" and Poland which indicates that when considering a standard warranty length, the "made in" label plays an important role for attitude towards the ad/product. Hypothesis 1.1b is therefore given, too. Poland is generally perceived worse than the other two conditions. The difference between "no COO" and Switzerland is not significant, however, so that H1.1a needs to be rejected. A

reason could be that it is presumed that the watch, given the stated price of €110 was made in a favorable country even if "no COO" is indicated. Brand knowledge would influence attitude towards the ad/product contrarily because the brand is actually a cheap brand so that customers could get the impression that the advertisement is build on lies when indicating Switzerland as the COO. Indicating "no COO" would, likewise, result in a modest attitude because brand knowledge could result in an unfavorable COO association and an irritation concerning the stated price. The linear regression has shown that brand knowledge does not determine attitude significantly. Succeeding research shall analyze the strength of the effect of brand knowledge.

<u>Willingness to buy:</u>

Looking at the main effect of the COO on WTB one can see that there is a significant difference between Poland and "no COO". "No COO" has the highest mean whereas Poland has the lowest mean. This goes hand in hand with what has been previously described. Yet, when it comes to WTB the customer seems to value "made in Switzerland" more compared to attitude towards the ad/product. It is still lower ranked than "no COO" but not significantly anymore. This difference is, thus, neglectable. When the consumer comes closer to the buying decision, the COO seems to play a more important role.

Considering again that a two years warranty is international standard, the "COO fit_short" condition is significantly greater than the "COO non-fit_short" condition mentioning Poland as the COO. The hypothesis 1.2c stating that for two years warranty the "COO fit" is evaluated better regarding WTB than a "COO non-fit" is therefore valid which is congruent to what has been expected. The difference between "no COO" and Switzerland is not significant as opposed to hypothesis 1.2a, nevertheless, the mean WTB for Switzerland for a short warranty length is above the mean WTB of the "no COO_short" condition. This fact reveals that the hypothesis does indicate the right direction. Further, it confirms the assumption made before that when the consumer approaches the buying decision, the "made in" label becomes more important. "No COO_short" and "COO non-fit_short" are also not significantly different so that hypothesis 1.2b needs to be rejected as well. Nevertheless, "no COO_short" shows a higher mean so that the results go into the right direction. Here, brand knowledge offers a field for future research, too. Because the

brand is actually marketed at a low price, people with brand knowledge, who are confronted with no COO in the advertisement, associate an unfavorable country of origin with the advertisement which in turn leads to a modest WTB. Further, the indicated high price could lead to a biased image of the brand resulting in a modest WTB. On the other hand people without brand knowledge might associate a favorable COO with the brand at the stated price leading to a stronger WTB. Moreover, being a student or a non-student can play a significant role in the determination of WTB as the pre-test has been conducted with only students. The linear regression reveals that being a student results in a higher WTB.

Those results are statistically congruent with the results for attitude towards the ad/product. The logical reasoning of the attitude construct is therefore given. Yet, neglecting the fact whether the results are significant, the trend of the results is different. Considering the standard warranty conditions no COO is stronger compared to a COO fit in the case of attitude, whereas the opposite is given for WTB. Future experiments shall further examine whether this difference could result in conflicting relationships. Theory predicts that cognitive and affective attitude leads to conative attitude which would be the purchase intention here. As in the case of attitude towards the ad "no COO" is preferred to a "COO fit", a "COO fit" is preferred to "no COO" for WTB. This can result in incongruent implications for managers and is therefore subject for future research.

Willingness to pay:

Looking at the implications for WTP, the main effect result shows that the presentation of the "COO fit" country results in a higher WTP than showing the "COO non-fit" country. "No COO" shown is ranked in the middle and is neither significantly different compared to Switzerland nor Poland. Here the results differ from the other two constructs as for the first time "no COO" is not ranked highest for the main effect keeping in mind that the difference was not significant.

A closer look at the two years warranty condition shows, however, that Switzerland has a significantly greater WTP than no "made in" label and Poland as "made in" label. The hypothesis 1.3a and hypothesis 1.3c are therefore predicted right. Nevertheless, there is no difference between "no COO_short" shown and Poland shown as "COO non-fit_short" country. Thus, I must reject hypothesis 1.3b.

Being closest at the actual purchase situation, the COO effect plays an important role and outperforms the other two COO conditions. Yet, income could be confounding so that subsequent research shall be carried out examining whether the high WTP results purely from the favorable COO. As students and non-students have participated in this experiment there might be a large income gap within the sample. Equally brand knowledge can be troublesome. People that know the brand might state a low price regardless of the conditions shown as here they can for the first time adjust their input according to their perceived output. How strong the influence of brand knowledge is shall be further explored. The linear regression has shown that brand knowledge is a significant predictor of WTP. The standardized coefficient sign is, however, positive which is contrary to what has been expected.

Generally, comparing the same COO condition with the different warranty conditions no significant differences can be found. This holds for all three constructs and indicates that there is no IE between the two heuristic cues. Appendix 14 shows the different means and the mean ranks graphically. On the first sight one could think that there are differences depending on the interaction of the heuristic cues. But having a closer look at the scale indicates that the differences are very small. Therefore, the mean order does not change opposed to what has been predicted in hypothesis 3. Furthermore, it can be said that the COO effect plays a more important role in the prediction of quality and the customer's attitude towards the ad, WTB and WTP than warranty.

General remarks applying to all three constructs:

Another fact that can influence the results is the liking of the watch as such. Although it had been pre-tested which watch is most preferred there are never all people in favor of the watch. This could also be a function of age if younger people prefer glittery watches and of being a student or a non-student. The underlying reason is that the pre-test has been conducted among students only to be able to ensure that no one who took the pre-test will later also participate in the final experiment. Nevertheless, non-students also participated in the experiment and their watch choice might have been different. Consequently, if they do not like the watch shown in the advertisement their attitude towards the ad, WTB and WTP will be low regardless of the COO or the warranty length shown.

The conducted linear regression analysis already gives some indications of which other variables play a role in the determination of the dependent variables attitude towards the ad, WTB and WTP. In the case of all three dependent variables R square is very low; especially for WTB and WTP. One reason might be that there are other circumstances like the above mentioned that play a significant role in the determination of the constructs. Examining the variables which could be included in the linear regression analysis based on the data available, the degree to which the ad is perceived as being realistic plays a significant role in the determination of attitude towards the ad and WTP. To get a better model fit it had been excluded from the model measuring WTB. Yet, before the exclusion it played a significant role in the determination of WTB, too. Additionally, being a student or a non-student is a significant determinant of WTB. This could be partly because of the pre-test which has tested for liking of the watch because only students have participated in that pre-test. Therefore being a non-student might have a negative determination role for WTB. Regarding WTP, brand knowledge plays a significant determination role. The fact that the brand is known is a positive determinant of WTP. This fact leaves room for further investigation because the brand knowledge was expected to negatively determine WTP. A possible explanation could be that it has not been specifically tested for brand recall. Therefore it might be that respondents associated another brand with shown watch or that they mixed up brands without realizing it. To sum it up, it can be seen that the linear regression analysis gives already a confirmation of some assumptions that have been made which allow for future research.

6.   Managerial implications

As a manager it is important to know what the consumers value and what they are willing to buy and pay for. Within the context of equity theory it has been examined which influence warranty and the COO effect have on the consumer's attitude towards the product/ad, their WTB and WTP. This research revealed that warranty has no main effect. Therefore the emphasis of warranty in the advertisement and the marketing of a product play a minor role. In order to increase the consumer's perception of the product the emphasis should be on the COO effect. Regarding attitude towards the product/ad the indication of no COO led to the highest attitude. As discussed, there could be several circumstances why this is the case, which should be clarified in future research. Possible additional underlying reasons are brand knowledge, stimulus quality and liking of the product in general and income. The same holds for WTB and WTP if no warranty effects are considered.

When looking at the standard warranty level of two years, the results of attitude versus WTB and WTP differ. Attitude towards the ad is highest if the COO is not indicated though it has to be mentioned that this difference is not significantly different to the advertisement in which Switzerland is shown as the COO. Regarding WTB and WTP, however, the results indicate that a favorable COO is enhancing the successful marketing of the wrist watch. Even though the difference from COO fit to no COO was not significant, the general trend suggests that a COO fit is preferable.

Thus, when producing in a favorable country, managers can increase sales and what is more important the price, as consumers perceive the output as more valuable. Therefore they are willing to pay more. As already indicated the friction between the results for attitude and WTB and WTP needs to be further examined as theoretically a positive attitude shall result in a higher WTB. If the predicting variables are, however, conflicting this leads to problems on how to approach the consumer.

7.   Limitations and further research

According to Price and Dawar (1995) there are different dimensions in quality. Signaling theory states that one has to distinguish between mechanical reliability and product performance. Mechanical reliability, on the one hand, concerns the well functioning of a product without a breakdown. On the other hand, product performance is measured on how well product attributes perform as promised by the company. Consumers take into account both quality dimensions in their purchase decision. Warranties, however, are primarily a measure of mechanical reliability. As this experiment does not distinguish between the two quality dimensions, it allows for further research.

Additionally transaction costs play a major role in the price decision process. If an extended warranty leads to an increase in willingness to pay it needs to be gauged whether the increased costs can be offset by an increase in price. This holds especially for low quality firms that use warranty extensions as a signal for high quality (Moorthy and Srinivasan, 2001). If a high warranty length is suitable needs to be examined on a product by product and company by company basis.

Further, COO changes over time (Biswas, Chowdhury and Kabir, 2011). It is known that when consumers become familiar with the country and/or the product the effect of COO diminishes or changes. One example is Japanese cars that had a negative reputation but are now widely accepted. Beyond that, consumer preferences change over time with a change in lifestyle or industrial development of the nation. Thus, conclusions drawn from the experiment cannot be taken for granted in the long run and cannot be applied to any type of country. Especially in rapidly growing economies like Brazil, Russia, India and China (Douglas and Craig, 2011) consumer preferences can change steadily. Further research should be done covering those aspects.

Moreover, further research should be done in evaluating real purchase situations since the gap between the theoretical intend to buy a product at a specific price and the actual behavior differ (Carrington, Neville and Whitwell, 2010). Due to the scope of this research it was not possible to investigate the real purchase situation that has been simulated with the survey. Additionally, WTP could not purely be measured as the price had been indicated in the advertisement leaving the respondents with an initial idea of how much the watch is worth. Further research

shall be done in examining the consumers' actual WTP with warranty as a moderator on the COO effect.

Given that only female respondents have been surveyed in this experimental research, male subjects' behavior leaves room for further research. Further, it shall be examined whether income plays a crucial role in measuring the three constructs applied in this thesis. Other demographic factors and personality can equally be taken into account as they play a role in the COO effect as well (Bilkey and Nes, 1982).

Additionally, even though it is assumed that price consciousness is equally spread in the population and thus within the sample, it shall not interfere with the results found in this study. Yet, it concedes future research.

On a product basis Insh and McBride (2004) have found that the COO effect needs to be examined on a product by product basis since the effects of the COO differ according to style related and purely functional products. This finding is backed up by Roth and Romeo (1992) that state that a country image and product category fit only results in an increase in purchase intention. Since this relation differs due to subjective perceptions it will have to be examined for each product category and possibly each product type separately.

Further, the relationship between attitude, WTB and WTP is not examined in this master thesis. Yet, it is an interesting field that shall be examined in future research. It would contribute to the Coo literature as well as to the attitude literature.

8.   References

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Appendix

Appendix 1: Survey design

<u>Question 1:</u>

Beste student,

Ik ben studente Master of Management aan de UHasselt. Voor mijn masterproef heb ik een experiment opgezet. Het invullen van deze vragenlijst is deel van het experiment en zal een grote bijdrage leveren aan mijn afstudeeronderzoek. Ook jij kan mij heel erg helpen indien je deze korte vragenlijst wilt invullen. Er zijn geen juiste of foute antwoorden. Het is jouw eigen mening die van belang is. Het invullen van deze vragenlijst duurt ongeveer 5 minuten en, nogmaals, je helpt er mij echt mee verder! Indien je deelneemt, maak je zelfs kans op het winnen van een Kinepolis cadeaubon.

Bedankt voor je deelname.

Hartelijke groeten,

Sinja Cimiotti

Dear student,

I am currently doing my "Master of Management" at the Uhasselt. For my master thesis I conduct an experiment with students from the Uhasselt. Filling out the questionnaire is part of the experiment and helps me a lot to conduct the research for my master thesis. It will only take you around 5 minutes to fill out the question-naire and at the end you will have the chance to win one of the Kinepolis vouchers. Your help is much appreciated and I am looking forward to analyzing your results.

Thank you for your participation.

Best regards,

Sinja Cimiotti

➔ Page break

Question 2:

Hierna wordt een advertentie getoond. Kijk er goed naar. De meeste vragen die hierna volgen, gaan over deze advertentie.

The questions in this questionnaire are linked to the following advertisement. Please look at it carefully and answer the questions accordingly.

➔ Page break

Question 3:

Question 4:

Made in Polen

2 jaar garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 5:

2 jaar garantie

Made in Zwitserland

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 6:

2 jaar garantie

Made in Polen

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 7:

2 jaar garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 8:

Question 9:

Question 10:

Made in Zwitserland

Levenslange garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 11:

Made in Polen

Levenslange garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

Question 12:

Levenslange garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.
Prijs: €110

➔ Page break

Question 13:

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met uw mening.

	Helemaal niet akkoord (1)	Niet akkoord (2)	Eerder niet akkoord (3)	Noch niet akkoord, noch akkoord (4)	Eerder akkoord (5)	Akkoord(6)	Helemaal akkoord (7)
Deze advertentie is realistisch (1)	❍	❍	❍	❍	❍	❍	❍

Please answer the following questions by clicking on the radio button that matches your opinion.

	Strongly disagree (1)	*Disagree (2)*	*Rather disagree (3)*	*Neither agree nor disagree (4)*	*Rather agree (5)*	*Agree(6)*	*Strongly agree (7)*
This advertisement is realistic (1)	❍	❍	❍	❍	❍	❍	❍

➔ Page break

Question 14:

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Ik houd niet van deze advertentie: Ik houd erg van deze advertentie (1)	❍	❍	❍	❍	❍	❍	❍
Ik ben geen liefhebber van deze advertentie: Ik ben een liefhebber van deze advertentie (2)	❍	❍	❍	❍	❍	❍	❍
Ik sta negatief t.o.v. deze advertentie: Ik sta positief t.o.v. deze advertentie (3)	❍	❍	❍	❍	❍	❍	❍
Deze advertentie is slecht: Deze advertentie is goed (4)	❍	❍	❍	❍	❍	❍	❍

Please answer the following questions by clicking on the radio button that matches your opinion.

	1 (1)	*2 (2)*	*3 (3)*	*4 (4)*	*5 (5)*	*6 (6)*	*7 (7)*
I dislike the ad: I like the ad (1)	❍	❍	❍	❍	❍	❍	❍
I react unfavorable to the ad: I react favorable to the ad (2)	❍	❍	❍	❍	❍	❍	❍
I feel negative towards the ad: I feel positive towards the ad (3)	❍	❍	❍	❍	❍	❍	❍
The ad is bad: The ad is good (4)	❍	❍	❍	❍	❍	❍	❍

➔ Page break

Question 15:

De volgende vragen hebben betrekking op de mate waarin u bereid bent dit polshorloge te kopen.

The following questions concern your willingness to buy this wrist watch.

Question 16:

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met uw mening.

	Heel laag (1)	Laag(2)	Eerder laag (3)	Noch laag, noch hoog (4)	Eerder hoog (5)	Hoog (6)	Heel hoog (7)
De kans dat ik dit polshorloge zal aanschaffen is … (1)	❍	❍	❍	❍	❍	❍	❍
De waarschijnlijkheid dat ik zal overwegen om dit polshorloge aan te schaffen is … (2)	❍	❍	❍	❍	❍	❍	❍
Mijn bereidheid om dit polshorloge aan te schaffen is …(3)	❍	❍	❍	❍	❍	❍	❍

Please answer the following questions by clicking on the radio button that matches your opinion.

	Very low (1)	*Low (2)*	*Rather low (3)*	*Neither low, nor high (4)*	*Rather high (5)*	*High (6)*	*Very high (7)*
The likelihood of purchasing the watch is … (1)	❍	❍	❍	❍	❍	❍	❍
The probability that I would consider buying the watch is …(2)	❍	❍	❍	❍	❍	❍	❍
My willingness to buy the watch is …(3)	❍	❍	❍	❍	❍	❍	❍

Question 17:

	Helemaal niet akkoord (1)	Niet akkoord (2)	Eerder niet akkoord (3)	Noch niet akkoord, noch akkoord (4)	Eerder akkoord (5)	Akkoord(6)	Helemaal akkoord (7)
Als ik een polshorloge zou kopen, overweeg ik om dit model aan te schaffen tegen de weergegeven prijs. (1)	❍	❍	❍	❍	❍	❍	❍
Ik overweeg dit polshorloge aan te schaffen tegen de weergegeven prijs. (2)	❍	❍	❍	❍	❍	❍	❍

	Strongly disagree (1)	Disagree (2)	Rather disagree (3)	Neither agree nor disagree (4)	Rather agree (5)	Agree(6)	Strongly agree (7)
If I were going to buy this product, I would consider buying this model at the price shown. (1)	❍	❍	❍	❍	❍	❍	❍
At the price shown, I would consider buying the product. (2)	❍	❍	❍	❍	❍	❍	❍

➔ Page break

Question 18:

De volgende vraag gaat over de prijs die u zou willen betalen voor het polshorloge dat wordt weergegeven in de advertentie.

The following question concerns your willingness to pay for the watch shown in the advertisement.

Question 19: Display If Ad1 Is Displayed

Made in Zwitserland

2 jaar garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 20: Display If Ad 2 Is Displayed

Made in Polen

2 jaar garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 21: Display If Ad 3 Is Displayed

2 jaar garantie

Made in Zwitserland

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 22: Display If Ad 4 Is Displayed

2 jaar garantie

Made in Polen

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 23: Display If Ad 5 Is Displayed

Question 24: Display If Ad6 Is Displayed

Question 25: Display If Ad 7 Is Displayed

Question 26: Display If Ad 8 Is Displayed

Question 27: Display If Ad 9 Is Displayed

Made in Polen

Levenslange garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 28: Display If Ad 10 Is Displayed

Levenslange garantie

Waterdichte, kwartsgestuurde polshorloge (3 bar).
Band en wijzerkast van metaal.

Question 29:

Geef hieronder de maximumprijs (in €) aan die u bereid bent te betalen voor het polshorloge weergegeven in de advertentie.

Please enter the maximum price (in €) you are willing to pay for the watch in the advertisement in the default field

➔ Page break

Question 30:

Ik kende het geadverteerde merk al eerder.

- o nee (1)
- o ja (2)
- o ik weet het niet (3)

I have known this brand before.
- o *no (1)*
- o *yes (2)*
- o *I don't know (3)*

➔ Page break

Question 31:

Wat is uw geslacht?

❍ mannelijk (1)
❍ vrouwelijk (2)

Please state your gender.

❍ male (1)
❍ female (2)

Question 32:

Tot welke leeftijdscategorie behoort u?

Please state in which age group you are in.

❍ < 18 (1)
❍ 18-25 (2)
❍ 26-30 (3)
❍ 31-40 (4)
❍ > 40 (5)

Question 33:

Bent u een (niet-)student?

❍ student (1)
❍ geen student (2)

Are you a student/non-student?

❍ *student (1)*
❍ *non-student (2)*

Question 34:

Heb jij enkel de Belgische nationaliteit?

❍ nee (1)
❍ ja (2)

Do you have solely the Belgian nationality?

❍ *no (1)*
❍ *yes (2)*

Question 35:

Indien u één van de Kinepolis waardebonnen wil winnen, vul dan hierna uw emailadres in.

If you want to win one of the Kinepolis vouchers please fill in your email address.

<u>Exemplary screenshots of the survey:</u>

108

2 jaar garantie

Waterdichte (3 bar), kwartsgestuurde polshorloge
Band en wijzerkast van metaal.
Prijs: €110

universiteit ▶▶hasselt

KNOWLEDGE IN ACTION

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met uw mening.

	Helemaal niet akkoord	Niet akkoord	Eerder niet akkoord	Noch niet akkoord, noch akkoord	Eerder akkoord	Akkoord	Helemaal akkoord
Deze advertentie is realistisch.	○	○	⦿	○	○	○	○

0% ▮▮▮▮ 100%

>>

universiteit **hasselt**

KNOWLEDGE IN ACTION

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

Ik sta negatief t.o.v. deze advertentie	○ ○ ○ ◉ ○ ○ ○							Ik sta positief t.o.v. deze advertentie
Deze advertentie is slecht	○ ○ ○ ○ ◉ ○ ○							Deze advertentie is goed
Ik ben geen liefhebber van deze advertentie	○ ○ ○ ◉ ○ ○ ○							Ik ben een liefhebber van deze advertentie
Ik houd niet van deze advertentie	○ ○ ○ ○ ○ ◉ ○							Ik houd erg van deze advertentie

0% ▮▮▮▮▯▯▯ 100%

>>

De volgende vragen hebben betrekking op de mate waarin u bereid bent dit polshorloge te kopen.

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met uw mening.

	Heel laag	Laag	Eerder laag	Noch laag, noch hoog	Eerder hoog	Hoog	Heel hoog
Mijn bereidheid om dit polshorloge aan te schaffen is...	○	○	○	○	○	◉	○
De kans dat ik dit polshorloge zal aanschaffen is...	○	○	○	○	○	◉	○
De waarschijnlijkheid dat ik zal overwegen om dit polshorloge aan te schaffen is...	○	○	○	○	◉	○	○

	Helemaal niet akkoord	Niet akkoord	Eerder niet akkoord	Noch niet akkoord, noch akkoord	Eerder akkoord	Akkoord	Helemaal akkoord
Als ik een polshorloge zou kopen, overweeg ik om dit model aan te schaffen tegen de weergegeven prijs.	○	○	○	○	○	◉	○
Ik overweeg dit polshorloge aan te schaffen tegen de weergegeven prijs.	○	○	○	○	○	◉	○

0% ▮▮▮▮▯▯▯ 100%

>>

110

2 jaar garantie

Waterdichte (3 bar), kwartsgestuurde polshorloge
Band en wijzerkast van metaal.

Geef hieronder de maximumprijs (in €) aan die u bereid bent te betalen voor het polshorloge weergegeven in de advertentie.

| 99 | × |

0% ▮▮▮▯▯ 100%

>>

universiteit ►►hasselt
KNOWLEDGE IN ACTION

Ik kende het geadverteerde merk al eerder.

- ● nee
- ○ ja
- ○ ik weet het niet

0% ▮▮▮▯ 100%

>>

universiteit ►►hasselt
KNOWLEDGE IN ACTION

Wat is uw geslacht?

○ mannelijk
◉ vrouwelijk

Tot welke leeftijdscategorie behoort u?

○ < 18
◉ 19-25
○ 26-30
○ 31-40
○ > 40

Bent u een (niet-)student?

◉ student
○ geen student

Heb jij enkel de Belgische nationaliteit?

○ nee
◉ ja

Indien u één van de Kinepolis waardebonnen wil winnen, vul dan hierna uw emailadres in.

sinja.cimiotti@student.uhasselt.be

0% ▓▓▓▓▓▓▓▓ 100%

>>

universiteit ►►hasselt
KNOWLEDGE IN ACTION

Wij danken u voor de tijd die u aan deze enquête hebt besteed.
Uw reactie is opgeslagen.

0% ▓▓▓▓▓▓ 100%

Appendix 2: Pre-Test design COO and product category fit and wrist watches

Question 1:

Beste student,

momenteel doe ik mijn 'Master of Management' aan de UHasselt. Voor mijn master thesis moet ik een aantal onderzoeken uitvoeren en bijgaande vragenlijst is daar een belangrijk deel van. U zou me heel behulpzaam zijn mocht u deze vragenlijst willen invullen. Er zijn geen juiste of foute anwtoorden mogelijk, het is uw eigen mening die van belang. Het invullen neemt duurt ongeveer 10 minuten en, nogmaals, u zou mij er echt mee verder helpen!

Alvast bedankt,

Sinja Cimiotti

Dear student,

I am currently doing my "Master of Management" at the UHasselt. For my master thesis I have to conduct several studies and the attached survey is part of them. It would be very helpful if you filled out this survey. There are no "right" or "wrong" answers possible. It is solely your opinion that counts. The filling out takes about 10 minutes and you would really help me.

Thank you,

Sinja Cimiotti

Question 2:

Gelieve uw geslacht aan te geven.
○ Mannelijk (1)
○ Vrouwelijk (2)

Please state your gender.
○ Male (1)
○ Female (2)
○

Question 3:

Gelieve uw leeftijdsgroep aan te duiden.
Please state in which age group you are in.
○ < 18 (1)
○ 18-25 (2)
○ 26-30 (3)
○ 31-35 (4)
○ 36-40 (5)
○ > 40 (6)

Question 4:

Bent u een (niet-)student?
○ Student (1)
○ Niet-Student (2)
Are you a student/non-student?
○ *Student (1)*
○ *Non-Student (2)*

Question 5:

Op de volgende pagina's zal telkens uw waardering voor polshorloges gevraagd worden in functie van een bepaald land van herkomst.

On the following pages will always be asked to state your opinion concerning wrist watches in relation to a particular country of origin.

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

Please answer the following questions by indicating with the ball at which end you position yourself more.

Question 7:

Question 8:

Welke waardering geeft u aan polshorloges afkomstig uit Frankrijk?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
niet vernieuwend: vernieuwend (1)	❍	❍	❍	❍	❍	❍	❍
aantrekkelijk design: onaantrekkelijk design (2)	❍	❍	❍	❍	❍	❍	❍
laag aanzien: hoog aanzien (3)	❍	❍	❍	❍	❍	❍	❍
slecht vakmanschap: goed vakmanschap (4)	❍	❍	❍	❍	❍	❍	❍

How would you evaluate a wrist watch from France?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Not innovative: innovative (1)	❍	❍	❍	❍	❍	❍	❍
Good design: bad design (2)	❍	❍	❍	❍	❍	❍	❍
Not prestigious: very prestigious (3)	❍	❍	❍	❍	❍	❍	❍
Bad workmanship: good workmanship (4)	❍	❍	❍	❍	❍	❍	❍

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

Please answer the following questions by indicating with the ball at which end you position yourself more.

Question 10:

Question 11:

Welke waardering geeft u aan polshorloges afkomstig uit Duitsland?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
niet vernieuwend: vernieuwend (1)	❍	❍	❍	❍	❍	❍	❍
onaantrekkelijk design: aantrekkelijk design (2)	❍	❍	❍	❍	❍	❍	❍
laag aanzien: hoog aanzien (3)	❍	❍	❍	❍	❍	❍	❍
slecht vakmanschap: goed vakmanschap (4)	❍	❍	❍	❍	❍	❍	❍

How would you evaluate a wrist watch from Germany?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Not innovative: innovative (1)	❍	❍	❍	❍	❍	❍	❍
bad design: good design (2)	❍	❍	❍	❍	❍	❍	❍
Not prestigious: very prestigious (3)	❍	❍	❍	❍	❍	❍	❍
Bad workmanship: good workmanship (4)	❍	❍	❍	❍	❍	❍	❍

Question 12:

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

Please answer the following questions by indicating with the ball at which end you position yourself more.

Question 13:

Question 14:

Welke waardering geeft u aan polshorloges afkomstig uit Polen?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
niet vernieuwend: vernieuwend (1)	❍	❍	❍	❍	❍	❍	❍
onaantrekkelijk design: aantrekkelijk design (2)	❍	❍	❍	❍	❍	❍	❍
laag aanzien: hoog aanzien (3)	❍	❍	❍	❍	❍	❍	❍
goed vakmanschap: slecht vakmanschap (4)	❍	❍	❍	❍	❍	❍	❍

How would you evaluate a wrist watch from Poland?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Not innovative: innovative (1)	❍	❍	❍	❍	❍	❍	❍
bad design: good design (2)	❍	❍	❍	❍	❍	❍	❍
Not prestigious: very prestigious (3)	❍	❍	❍	❍	❍	❍	❍
Good workmanship: bad workmanship (4)	❍	❍	❍	❍	❍	❍	❍

Beantwoord onderstaande vragen door telkens het bolletje aan te duiden dat overeenkomt met de mate waarin u zich positioneert tussen de gegeven uiteinden.

Please answer the following questions by indicating with the ball at which end you position yourself more.

Question 16:

Question 17:

Welke waardering geeft u aan polshorloges afkomstig uit Zwitserland?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
niet vernieuwend: vernieuwend (1)	❍	❍	❍	❍	❍	❍	❍
onaantrekkelijk design: aantrekkelijk design (2)	❍	❍	❍	❍	❍	❍	❍
laag aanzien: hoog aanzien (3)	❍	❍	❍	❍	❍	❍	❍
slecht vakmanschap: goed vakmanschap (4)	❍	❍	❍	❍	❍	❍	❍

How would you evaluate a wrist watch from Switzerland?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)
Not innovative: in-novative (1)	❍	❍	❍	❍	❍	❍	❍
bad design: good design (2)	❍	❍	❍	❍	❍	❍	❍
Not prestigious: very prestigious (3)	❍	❍	❍	❍	❍	❍	❍
Bad workmanship: good workmanship (4)	❍	❍	❍	❍	❍	❍	❍

Question 18:

Rangschik de onderstaande horloges via slepen en neerzetten door bovenaan de horloge te zetten die u het meest waarschijnlijk zou kopen ('1') en vervolgens de andere horloges in volgorde van dalende aankoopintentie. Onderaan staat dan de horloge waar u de laagste aankoopintentie voor heeft ('6').

Please arrange the following watches via drag and drop with the watch you would most likely buy on the top ('1'). Then put the other watches in order with respect to decreasing purchase intent. The last watch is the watch for which you have the lowest purchase intent ('6').
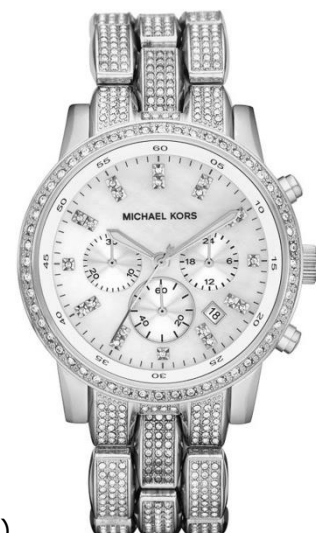

(1)　　　　　　　　　　(2)　　　　　　　　　　(3)

(4)　　　　　　　　　　(5)

(6)

Appendix 3: Current warranty claims

Manufacturer	Warranty length	Warranty scope	URL (25.02.2013)
Fossil	2 years	limited	http://www.fossilglobal.com/en_GB/shop/stella_stainless_steel_watch-es2860p.html?Ntt=warranty&beginIndex=0&pageSize=60&pn=sr&cm_vc=2020&imagePath=ES2860
Swatch	2 years	limited	http://www.swatch.com/zz_en/customerservices/warranty.html
Skagen	lifetime	limited	http://www.skagen.com/webapp/wcs/stores/servlet/ContentView?catalogId=26505&langId=-1&nav=leftNav_CustomerCare&page=customerCare_warrantyRepairs&storeId=37082
Michael Kors	2 years	limited	http://www.michaelkors.com/category/assistance/service/Kors_InstWarr-WEB_8-12.pdf
Esprit	2 years	limited	http://www.esprit.com/index.php?page_id=6143
IceWatch	2 years	limited	http://ice-watch.com/warranty.php?lg=en
Wenger	3 years	limited	http://www.wengerna.com/swiss-watches-overview
Breitling	2 years	manufacturing defects	http://www.breitling.com/en/service/index.php?idIndex=87356
Guess	10 years	limited	http://files.sotmarket.ru/instr/naruchnie_chasi/guess/manual_guess_w0016l1.pdf
Glam Rock	2 years	manufacturing defects	http://www.glamrockwatches.com/warranty-international/
Cartier	2 years	limited	http://www.cartier.com/customer-services/recommendations-services/watches/guarantee#/customer-services/recommendations-services/watches/guarantee

Appendix 4: Pre-Test design Price

Question 1:

Beste student,

Ik ben studente in de Master of Management aan de UHasselt. Voor mijn masterproef voer ik een aantal onderzoeken uit. Bijgaande vragenlijst is daar een klein maar belangrijk deel van. Je zou me heel erg helpen indien je deze korte vragenlijst wil invullen. Er zijn geen juiste of foute antwoorden. Het is jouw eigen mening die van belang is. Het invullen van deze vragenlijst duurt ongeveer 5 minuten en, nogmaals, je helpt er mij echt mee verder!

Alvast bedankt,

Sinja Cimiotti

Dear student,

I am currently doing my "Master of Management" at the UHasselt. For my master thesis I have to conduct several studies and the attached survey is part of them. It would be very helpful if you filled out this survey. There are no "right" or "wrong" answers possible. It is solely your opinion that counts. The filling out of this questionnaire takes about 5 minutes and you would help me a lot.

Thank you,

Sinja Cimiotti

➔ *Page break*

Question 2:

Gelieve uw geslacht aan te geven.

- o mannelijk (1)
- o vrouwelijk (2)

Please state your gender.

- o Male (1)
- o Female (2)

Question 3:

Gelieve uw leeftijdsgroep aan te duiden.

Please state in which age group you in are.

- o < 18 (1)
- o 18-25 (2)
- o 26-30 (3)
- o 31-35 (4)
- o 36-40 (5)
- o >40 (6)

Question 4:

Bent u een (niet-)student?

- o student (1)
- o geen student (2)

Are you a student/non-student?

- o *Student (1)*
- o *Non-Student (2)*

➔ **Page break**

Question 5:

Hoeveel zou je willen betalen voor het getoonde horloge?

The following questions concern your maximum willingness to pay for this watch.

Question 6:

Question 7:

Door telkens het gepaste bolletje aan te duiden geef je aan welke prijs te goedkoop, goedkoop, duur of te duur is voor dit horloge. Gelieve slechts **<u>één bolletje per rij</u>** aan te duiden.

*Please indicate, by filling the respective circle, which price is too cheap to trust the quality, cheap, expensive and too expensive to afford the watch. Please only fill four circles - **<u>one in each line</u>***.

Scale / Statements	Te goedkoop (1) *Too cheap (1)*	Goedkoop (2) *Cheap (2)*	Duur (3) *Expensive (3)*	Te duur (4) *Too expensive (4)*
25€ (1)	○	○	○	○
50€ (2)	○	○	○	○
75€ (3)	○	○	○	○
100€ (4)	○	○	○	○
125€ (5)	○	○	○	○
150€ (6)	○	○	○	○
175€ (7)	○	○	○	○
200€ (8)	○	○	○	○
225€ (9)	○	○	○	○
250€ (10)	○	○	○	○
275€ (11)	○	○	○	○
300€ (12)	○	○	○	○
325€ (13)	○	○	○	○
350€ (14)	○	○	○	○
375€ (15)	○	○	○	○
400€ (16)	○	○	○	○
425€ (17)	○	○	○	○
450€ (18)	○	○	○	○
475€ (19)	○	○	○	○
500€ (20)	○	○	○	○

➔ **Page break**

<u>Question 8:</u>

We veronderstellen dat je op het punt staat een polshorloge te kopen. Hoeveel wil je maximaal betalen voor de getoonde horloge. Je geeft dit aan door de balk te verschuiven tot de de betreffende prijs.

Barslide (0-500): Maximale bereidwilligheid aan om te betalen in euro (1)

Please indicate your maximum willingness to pay for the shown watch in moving the bar below to the respective price.

Bar slide (0-500): Maximum willingness to pay in euro (1)

Appendix 5: Correlations COO and product category fit

	Innovation_F	Design_in_F	Prestige_F	Workmanship_F
Innovation_F	1			
Design_in_F	0,254	1		
Prestige_F	0,586*	0,301	1	
Workmanship_F	0,535*	0,444*	0,682*	1

	Innovation_D	Design_D	Prestige_D	Workmansip_D
Innovation_D	1			
Design_D	0,626*	1		
Prestige_D	0,613*	0,736*	1	
Workmansip_D	0,748*	0,715*	0,895*	1

	Innovation_P	Design_P	Prestige_P	Workmanship_P
Innovation_P	1			
Design_P	0,695*	1		
Prestige_P	0,729*	0,612*	1	
Workmanship_P	0,494*	0,425*	0,620*	1

|	Innovation_S	Design_S	Prestige_S	Workmanship_S
Innovation_S	1			
Design_S	0,673*	1		
Prestige_S	0,394*	0,476*	1	
Workmanship_S	0,570*	0,528*	0,842*	1

* Significant at the 0,05 level.

Own illustration based on data "Pre-test COO and product category fit and wrist watch".

Appendix 6: Normality descriptive statistics

|	Skewness			Kurtosis		
	Statistic	Standard error	Normality check	Statistic	Standard error	Normality check
Innovation_F	-,223	,456	-0,489	-,355	,887	-0,400
Design_F	-,209	,456	-0,458	-1,336	,887	-1,507
Prestige_F	-,245	,456	-0,538	-,481	,887	-0,542
Workmanship_F	,124	,456	0,272	-,443	,887	-0,499
Innovation_D	-,149	,456	-0,328	-,567	,887	-0,639
Design_D	,022	,456	0,049	-,568	,887	-0,641
Prestige_D	-,474	,456	-1,041	-,799	,887	-0,901
Workmansip_D	-,661	,456	-1,452	-,695	,887	-0,784
Innovation_P	-,051	,456	-0,111	-1,257	,887	-1,418
Design_P	-,074	,456	-0,163	-1,363	,887	-1,537
Prestige_P	-,331	,456	-0,726	-,669	,887	-0,755
Workmanship_P	-,089	,456	-0,194	-0,975	,887	-1,099
Innovation_S	,088	,456	0,193	-1,391	,887	-1,569
Design_S	-,362	,456	-0,794	-,741	,887	-0,836
Prestige_S	-1,192	,456	-2,618	,860	,887	0,970
Workmanship_S	-1,144	,456	-2,511	,323	,887	0,364

Own illustration based on data "Pre-test COO and product category fit and wrist watch".

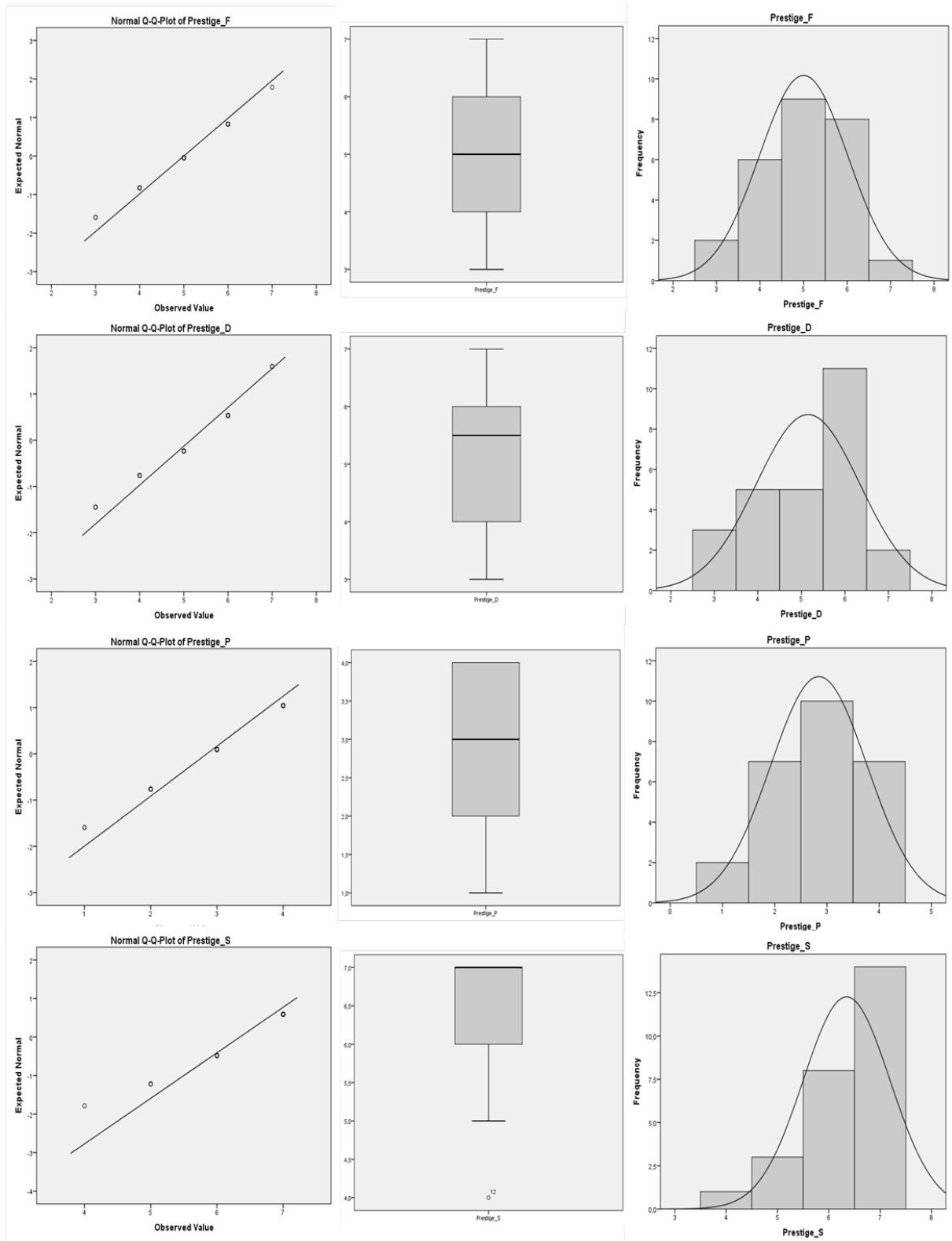Appendix 7: Q-Q plot, Box plot and Histogram for Innovation
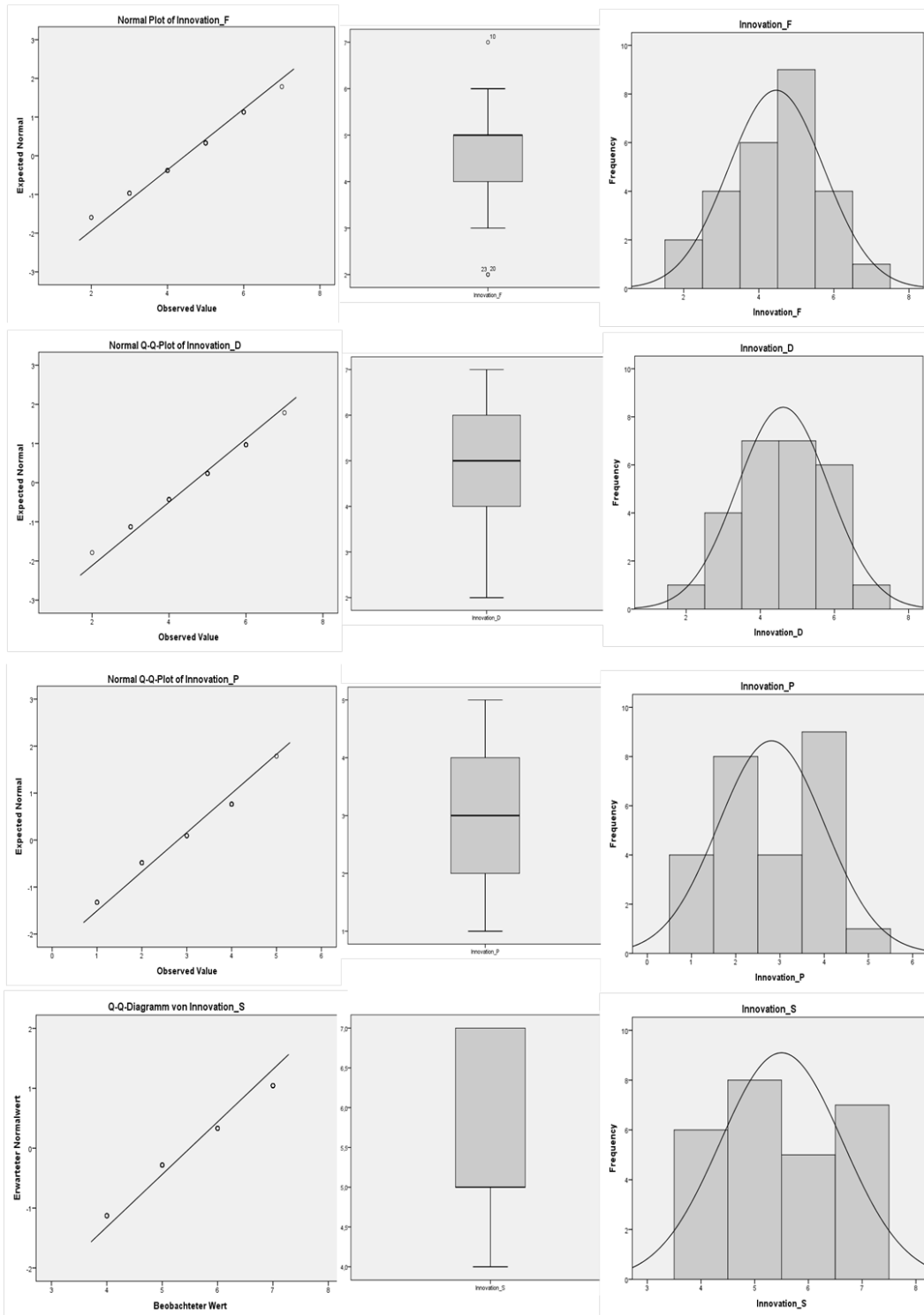
Own illustration based on data "Pre-test COO and product category fit and wrist watch".

Appendix 8: Q-Q plot, Box plot and Histogram for Design
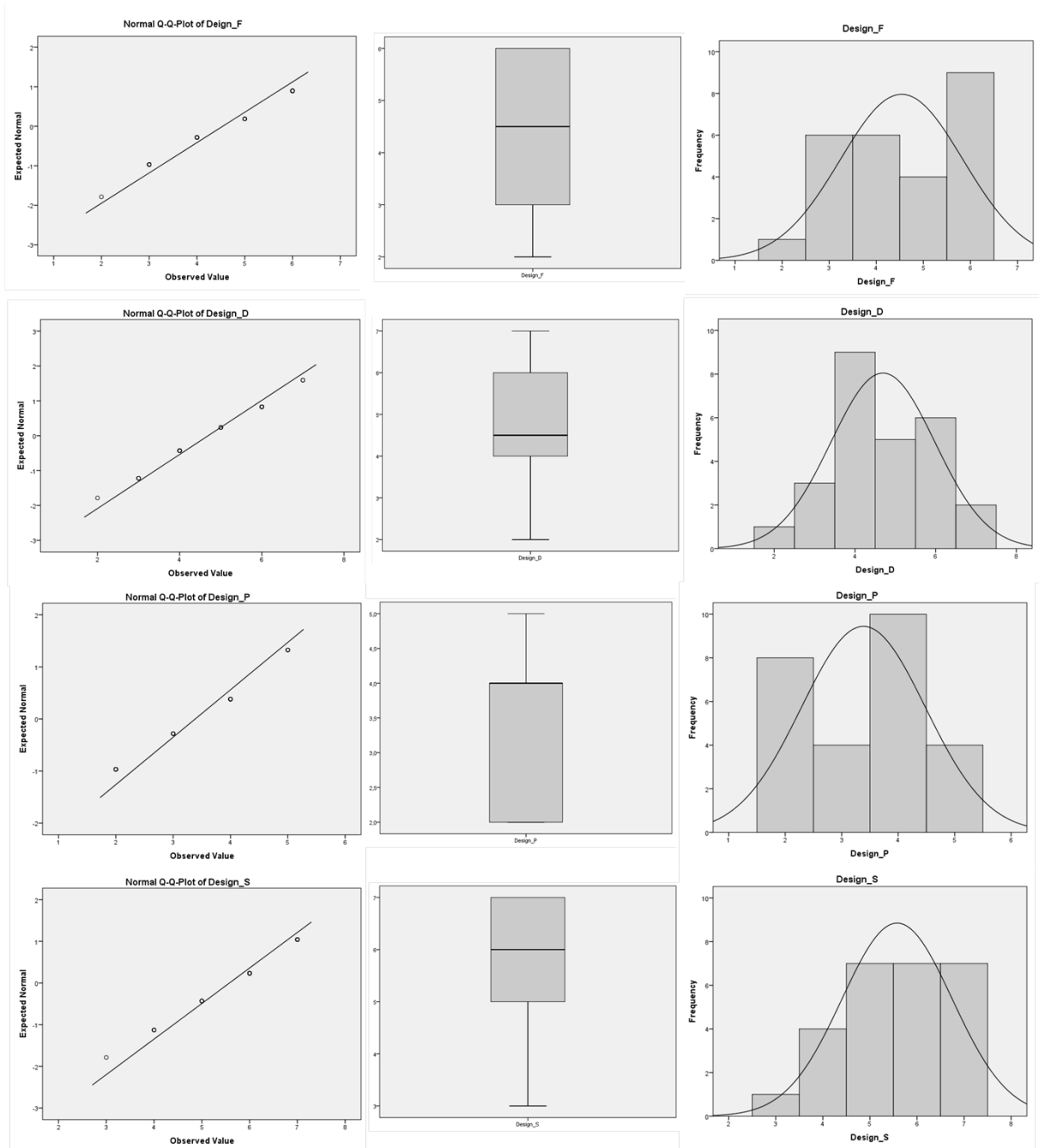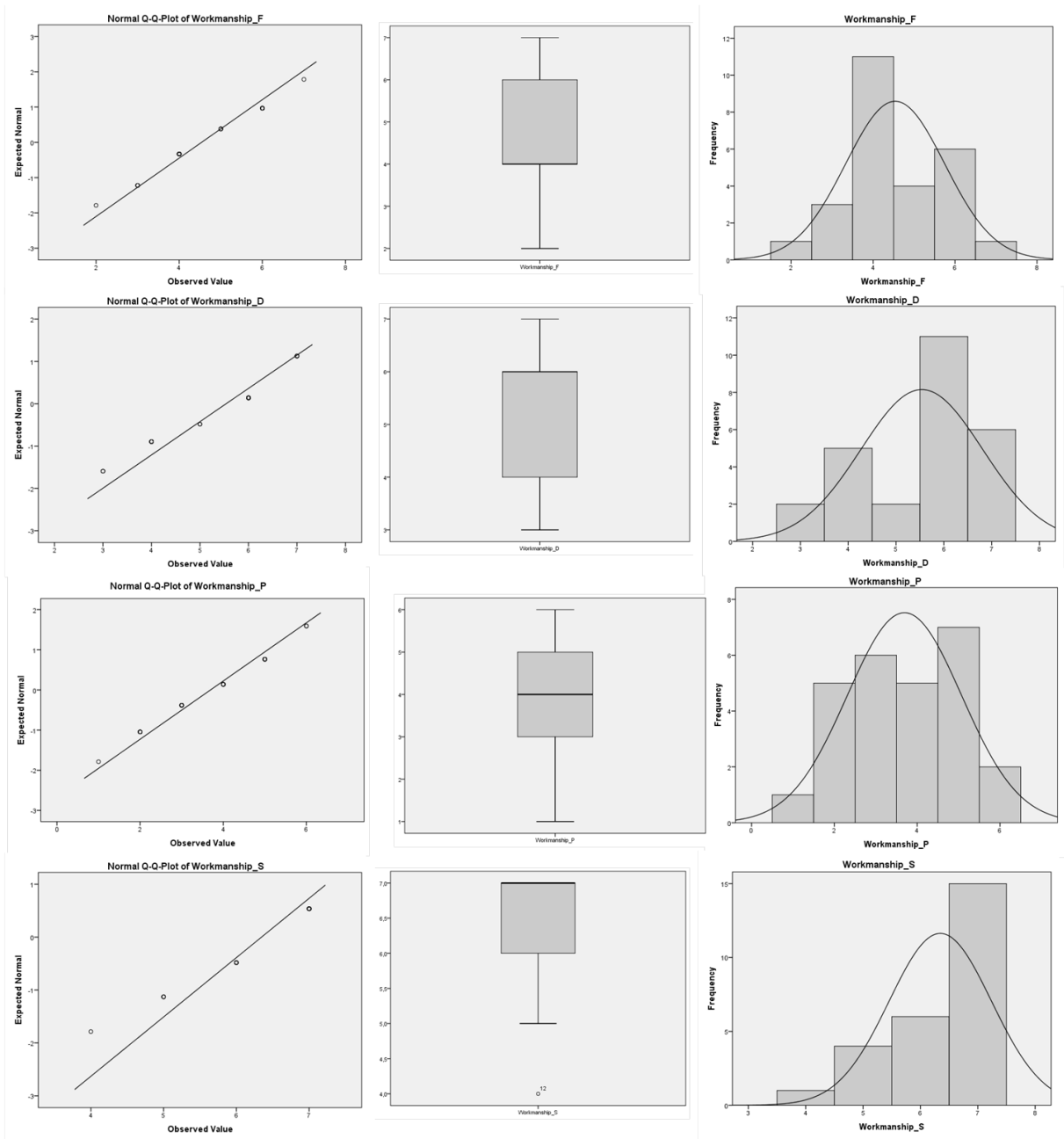

Own illustration based on data "Pre-test COO and product category fit and wrist watch".

Appendix 9: Q-Q plot, Box plot and Histogram for Prestige

Own illustration based on data "Pre-test COO and product category fit and wrist watch".

Appendix 10: Q-Q plot, Box plot and Histogram for Workmanship

Own illustration based on data "Pre-test COO and product category fit and wrist watch".

Appendix 11: Descriptive statistics "Final experiment"[6]

	1	2	3	4	5
Brand knowledge	83%	10%	7%		
Gender		100%			
Age group	4%	61%	3%	13%	19%
Student/non-student	64%	36%			

	Scale	Mean	Std. dev.	Min	Max	% higher than midpoint
Realistic	1-7	5	1,057	1	7	66%
Attitude1	1-7	4	1,003	1	7	23%
Attitude2	1-7	4	1,212	1	7	28%
Attitude3	1-7	4	1,118	1	7	43%
Attitude4	1-7	4	1,113	1	7	41%
WTB1	1-7	2	1,180	1	6	10%
WTB2	1-7	2	1,262	1	7	14%
WTB3	1-7	3	1,276	1	6	14%
WTB4	1-7	3	1,530	1	7	30%
WTB5	1-7	3	1,380	1	6	21%
WTP		94	43,790	0	270	

	Skewness			Kurtosis		
	Statistic	Std. Error	Normalitiy Check	Statistic	Std. Error	Normality Check
Is ad realistic?	-0,798	0,201	-3,961	0,185	0,400	0,461
Attitude1	0,073	0,201	0,363	-0,013	0,400	-0,031
Attitude2	0,053	0,201	0,263	-0,695	0,400	-1,736
Attitude3	-0,200	0,201	-0,994	-0,308	0,400	-0,770
Attitude4	-0,191	0,201	-0,947	-0,384	0,400	-0,961
WTB1	0,943	0,201	4,684	-0,050	0,400	-0,125
WTB2	0,853	0,201	4,237	-0,200	0,400	-0,500
WTB3	0,753	0,201	3,741	-0,541	0,400	-1,351
WTB4	0,383	0,201	1,904	-1,220	0,400	-3,049
WTB5	0,493	0,201	2,451	-1,001	0,400	-2,501
WTP	,996	,201	4,946	,907	,400	2,267

The grey cells show an abnormal distribution.

---

[6] Own illustration based on data "Final experiment".

Appendix 12: Correlation "Attitude" and "WTB"

	Attitude 1	Attitude 2	Attitude 3	Attitude 4
Attitude 1	1			
Attitude 2	0,848*	1		
Attitude 3	0,590*	0,550*	1	
Attitude 4	0,640*	0,642*	0,700*	1

	WTB 1	WTB 2	WTB 3	WTB 4	WTB 5
WTB 1	1				
WTB 2	0,899*	1			
WTB 3	0,875*	0,895*	1		
WTB 4	0,640*	0,704*	0,663*	1	
WTB 5	0,637*	0,740*	0,714*	0,840*	1

Own illustration based on data "Final experiment".

Appendix 13: Normality distribution of "attitude", "WTB" and "WTP"[7]

| Tests of Normality						
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Residuals for Attitude	0,047	145	0,200	0,993	145	0,694
Residuals for WTB	0,131	145	0,001	0,934	145	0,001
Residuals for WTP	0,161	145	0,001	0,926	145	0,001
* Lilliefors Significance Correction						

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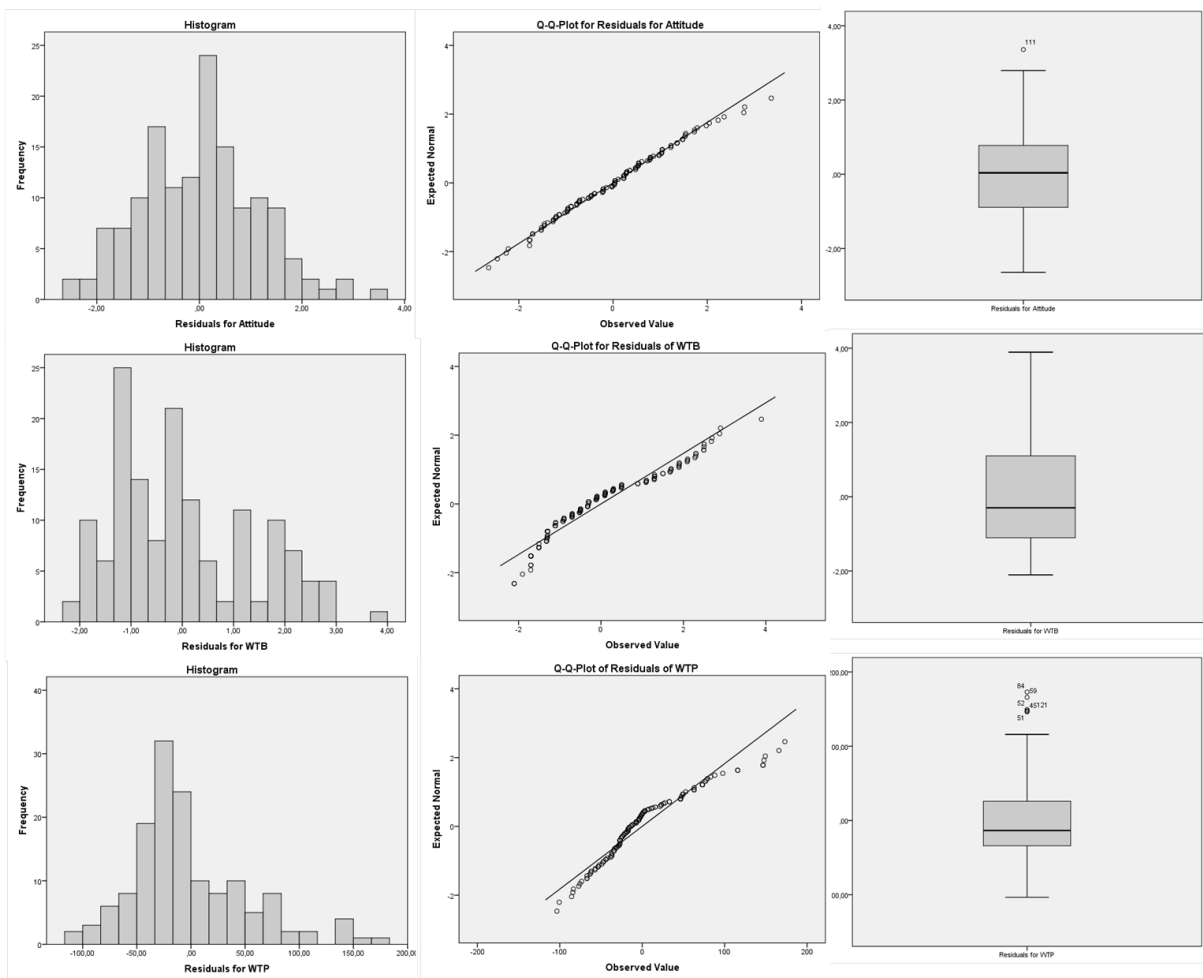
[7] Own illustration based on data "Final experiment".

Appendix 14: Mean comparison for two years warranty and lifetime warranty [8]

Means:
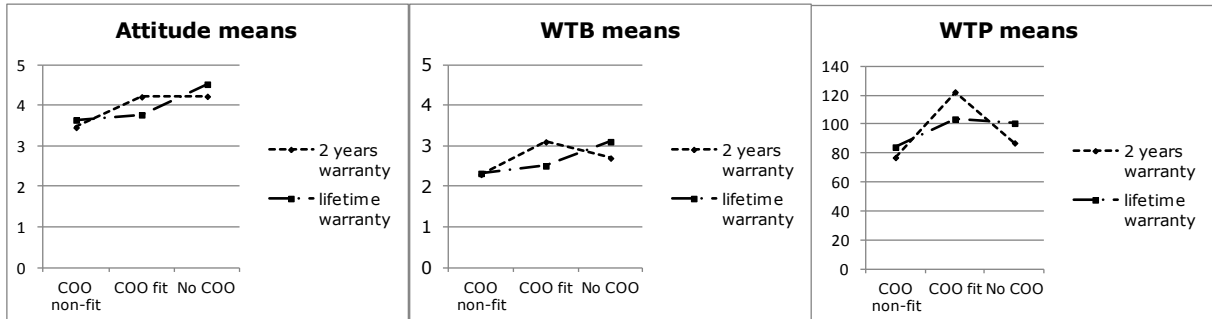
Rank means:

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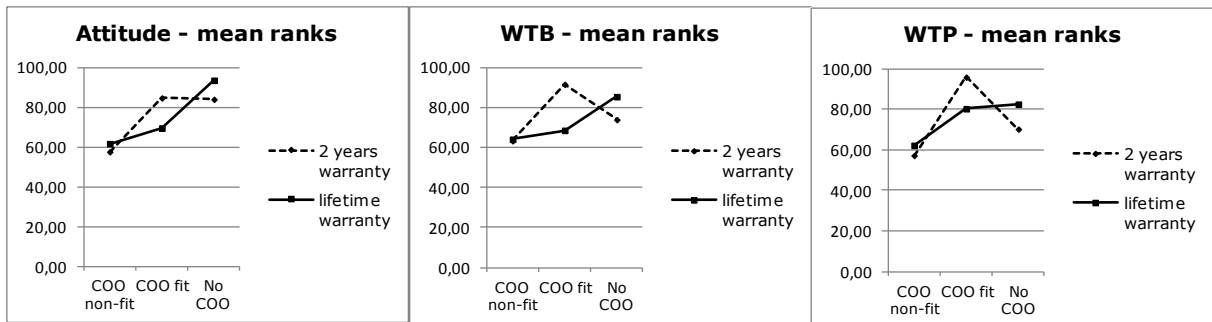
[8] Own illustration based on data "Final experiment".

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Jaar: **2013**

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Voor akkoord,

Cimiotti, Sinja

Datum: **8/06/2013**