IN-STORE PRODUCT DEMONSTRATION

THE EFFECT ON BRAND VALUE & BRAND SALES

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PREFACE & ACKNOWLEDGEMENTS

This research has been conducted for the completion concerning my Master. The selection of this research topic was primarily based on my personal interest. Alongside my study, I worked for a sales promotion company as a product demonstrator. Demonstrating durable high-end products inside the store constituted my motivation to find more information about the effectiveness of this tool. This interest turned out to be a shared interest involving manufacturers and retailers. They have facilitated product demonstrations, without knowing the actual consequences of this tool. In my opinion, assuming an effect is not sufficient to implement an in-store marketing strategy. Product demonstration, when considering the cost per consumer, is a very expensive in-store marketing tool and, remarkably, no prior research have paid attention towards this tool. Altogether, the lack of understanding practically and the gap of knowledge academically have motivated me to conduct this research.

I could not have completed this thesis in its present form without the help of certain people. I would like to use this section to give these people my appreciation. First of all, I would like to thank my supervisor Vijay Ganesh Hariharan for his guidance and advice throughout the process. Even without making an appointment he was willing to listen to my ideas or issues. His feedback and comments were enlightening and therefore I could not wish for a better supervisor. Secondly, I would like to thank my father for his role as coach and for giving me new insights concerning the data collection. Third, I want to thank Simon Oosterom (Manager Mediamarkt Rotterdam), Ronald Hoogeweg (Trade Marketing Manager at Hewlett-Packard) and Egon Diekstra (CEO Hamilton Bright B.V.) in recognizing the need of this research. Thanks to this collaboration, all necessary data for this examination have been accomplished.

Rotterdam, November 2013

Arne de Leeuw

ABSTRACT

This research provides the first step in examining the effect of product demonstration, as an in-store promotional tool, on brand value and brand sales. The collaboration with a giant retailer and a company that facilitates sales promotions enabled the implementation of this research.

The effect on brand value has been measured using a field experiment. Data have been analysed using an Independent T-test and Linear Regression Analysis. The results indicates that product demonstration is a valuable and powerful tool that affect consumers' purchase intentions inside the store. Although product demonstration and brand value perceptions positively relates to purchase intentions, participating in a product demonstration does not affect brand value perceptions.

The effect on brand sales have been analysed using weekly point of sales data of the product category navigation systems from 2010, 2011, 2012. Data have been analysed using a Simple and Multiple Linear Regression Analysis. Results indicates that the presence of a product demonstration increases sales of the promoted brand in the same product category. However the analysis did not support the negative relationship between the presence of a product demonstration and sales of non-promoted brands. In addition, a decrease in price sensitivity was not found significant in this research.

The findings of this study determine sufficient insights that can be used in the practical field, however, are limited in several ways. In order to overcome these limitations, further research concerning the effect of in-store product demonstration is required.

TABLE OF CONTENTS

LIST OF TABLES & FIGURES

INTRODUCTION

Beggars, artist and street traders typify the center of Amsterdam on a normal weekday in the 19th century. It was a time where craftsman continued the traditional work of their ancestors. Trading took place in the middle of the city, where traders and merchants shouted the latest prices of their traditional made products on informal markets. In a time where people bought their basic necessities on these informal street markets, enormous crowds can be imagined. Every now and then, merchants from outside the city introduced new and unfamiliar products and received much of attention. Mainly they stand on a crate to look over the audience, where the public curiously listened to their product demonstration.

This way of selling changed over time and became more formal and permanent. The majority of merchants and traders changed their stand for a store. This became generally known as 'retailing'. Retailing was simply viewed as a point of purchase, a location where consumers could buy a product. In the beginning there were not many advertising channels and because of this consumers only knew what they were told. Therefore, retailers could easily sell their products to the consumer mainly because the retailer was the only source of information. These traditional stores developed into enormous shopping malls and shopping itself became a leisure activity. Also the range of products changed drastically, currently the majority of products that retailers sell come from giant manufacturers.

The strong position of the retailer, partly due to asymmetric information, changed drastically. More information sources became available, e.g. the television and radio, and consumers were more informed than before. However, the main revolution in the retail environment can be explained by the emergence of the Internet Platform, generally known as the internet. The internet enabled consumers to find (product) information, share product experiences and compare different products, brands and even stores. This evolution went even further; e-commerce websites enabled consumers to buy products on the internet and in many cases for a lower price than in the physical store. Due to these retailing developments it was no longer sufficient to view the physical store only as a point of purchase or information source and because of this in-store marketing had to be reviewed.

In a time where retailers struggling with the online environment and manufacturers face serious in-store competition, it is necessary to change the rules of the game. Although retailers' objective is based on store level and manufactures' objective is based on brand level, both want to sell their products inside the store. Physical stores have one main advantage above the online environment; consumers can interact with the product. Concentrating on this interaction and the emotional aspect of shopping enhances the ability to be distinctive (Hulten, 2011). There are many in-store promotion tools that attract consumers towards the product, however, one important tool that seems to be forgotten in the academic field is in-store product demonstrations. This tool suffices the marketing strategy of product experience and is already widely used by many manufacturers. It is noteworthy to consider the similarities between this tool and the product demonstration during the 19th century.

PRACTICAL RELEVANCE

Manufacturers use a wide variety of sales promotion tools at the point of purchase. The purpose is to increase sales and maintain or enhance the competitive position. More and more manufacturers of durable goods make use of product demonstration as a sales promotion tool. However, the effect on brand sales and brand value has never been examined. This is noteworthy because this tool counts the most marketing costs per consumer. Several reasons can be imagined: (1) marketing managers assume the effectiveness of product demonstration since other promotional tools, such as special display, have an effect on consumer's behavior. (2) Because competitors use product demonstrations, manufacturers have to facilitate the same tool in order to maintain their competitive position.

The majority of products that retailers sell come from manufacturers. The objective of retailers is to increase store sales and is therefore partial similar as manufactures. However, retailers are not always satisfied with sales promotional activities facilitated by manufacturers. Although sales promotion increase brand sales, it is not necessarily profitable for the retailer. There are several reasons for this: (1) sales promotion involves substitution effects; this implies that consumers only switch between brands. (2) If the promoted brand contains low margins, and the promotion is very effective, than the retailer earns less profit than without a promotion.

Besides these direct effects on brand sales, sales promotional activities can influence brand value. Marketing activities can influence brand value perception and the type of activity determines the direction of the effect. Manufactures and retailers are interested in this indirect effect, because brand value is important, for instance, to maintain the competitive position or to enhance total store image. Common interests in the effect of in-store product demonstration on brand value satisfy the need of this research.

The lack of knowledge concerning the effectiveness of product demonstration in the practical field motivates a research concerning this tool. The purpose of this study is to examine the effect of in-store product demonstration on brand sales and brand value. The findings of this research are valuable for manufacturers and retailers that facilitated or are planning to use product demonstration as an in-store promotional tool.

ACADEMIC RELEVANCE

Until now, the effect of product demonstration, as an in-store promotional tool, on brand sales and brand value have never been examined before. According to Gilbert and Jackaria (2002), a few researchers have paid attention to value adding in-store promotional tools, however, product demonstration seems to be forgotten. This is noteworthy because this tool belongs to one of the most expensive marketing tool per customer and has been widely used by manufacturers and retailers in different branches.

This research aims to set the first step in providing a deeper understanding of the effectiveness of product demonstrations. The main contribution of this research lies in the combination of a non-monetary sales promotional tool and perceived brand value. Furthermore, examining the effect on brand sales of promoted and non-promoted brands including price sensitive elasticity, fills a major gap in the in-store marketing literature. This initial step will form the basis for further research concerning this tool.

RESEARCH QUESTION

The goal of this research is to gain insight into the effectiveness of product demonstration, as an in-store promotional tool. Prior research indicated that sales promotion can influence consumers' behavior at the point of purchase. The main purpose of facilitating product demonstrations is to enhance brand attention and to increase brand sales inside the store. Therefore, this research examined the effect of product demonstration on brand value perceptions and brand sales which is formulated in the following research question:

What is the effect of product demonstration, as an in-store promotional tool, on brand sales and brand value?

THESIS STRUCTURE

Chapter 1 reviews existing literature concerning in-store marketing, brand sales and brand value. Although in-store product demonstration has never been examined before, many researchers have paid attention towards in-store promotional tools. Therefore, this research reviews prior work on these promotional tools and the effect on brand sales and brand value.

Chapter 2 provides the conceptual framework of this research, indicating the hypotheses that has been examined and are based on relevant academic concepts and theories. Examination of these hypotheses generates an answer towards the main question.

Chapter 3 outlines the methodology and the collection of data used in this research. This research examines the effect of in-store product demonstration on two fields: brand sales and brand value and therefore separates this chapter in two studies related to these field. This chapter describes the research design, conceptualization, operationalization and the processing of the data collection concerning both studies.

Chapter 4 elaborates on the analysis of the data and results which emerged from the statistical tests. These test results enables the justification of the hypothesized relationships. Intentionally, this chapter described an understandable and clear process of the analysis that satisfied the requirements of justification and repetition.

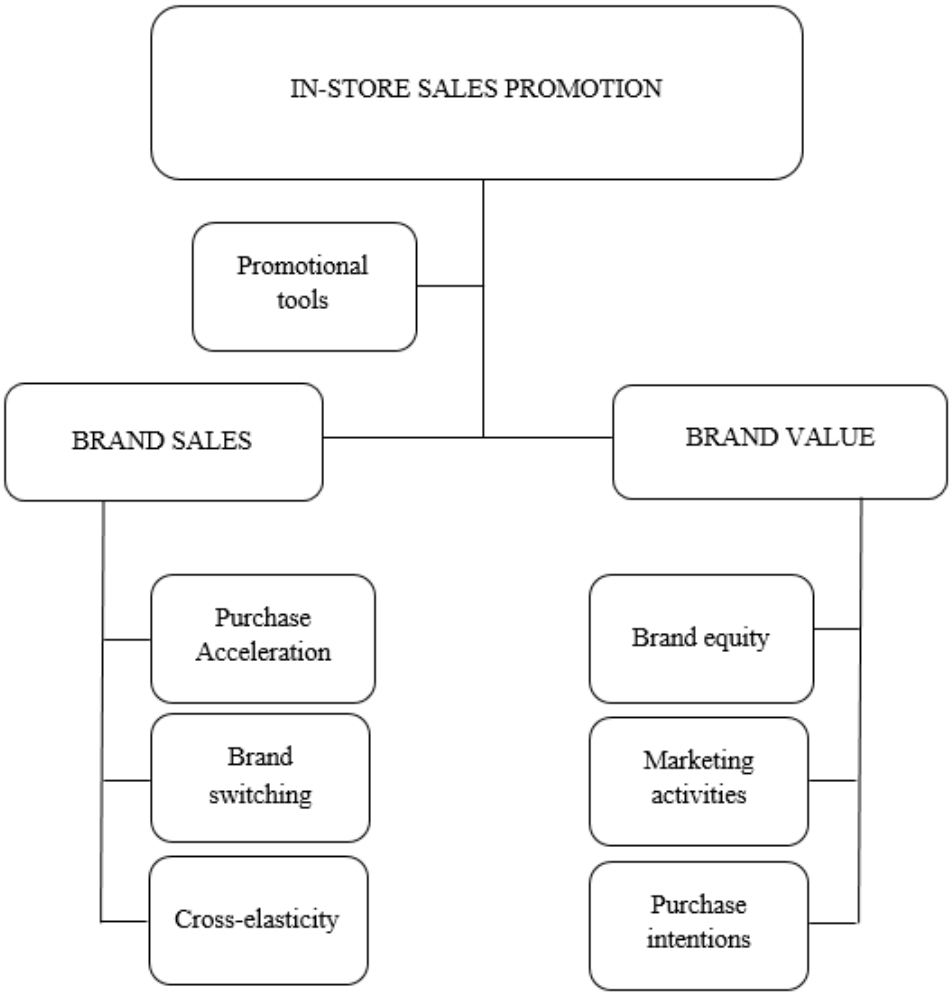
Chapter 5 formulates the tested hypotheses and additional findings into a general conclusion. This conclusion serves as an answer towards the research question separated into a theoretical interpretation and a practical implementation.

Chapter 6 identified the boundaries of this research. Because this research has been subjected to considerable limitations, it is necessary to describe the influential effects towards the credibility of the research findings. Moreover, this chapter outlines the importance of further research in relation to the findings and possible improvements of current research.

CHAPTER 1 LITERATURE REVIEW

This research examines the effectiveness of product demonstration as an in-store promotional tool. Reviewing existing literature on in-store sales promotion, in relation to brand sales and brand value, will provide a deeper understanding about the area of this research. Figure 1 represents a comprehensive overview regarding the structure.

Figure 1: Structure Literature Review



1.1 IN-STORE SALES PROMOTION & TOOLS

This research focusses on product demonstration, an in-store promotional tool used in the practical field. There is a great lack of academic research on the effectiveness of this tool which makes reviewing the literature difficult. Gilbert and Jackaria (2002) distinguish value increasing (discounts and coupons) and value adding (special display, product sampling/demonstration) promotional tools and indicate the lack of research on value adding promotional tools. Therefore, this chapter will elaborate on other promotional tools that are important to consider in relation with this research. The effectiveness of other tools indicates the potential effectiveness of product demonstration. There are various tools to promote a brand and many of these tools have been widely examined. This review will focus on special display, price promotions, product sampling and product demonstration. Table 1 represents an overview of studies that have paid attention towards these tools and has been reviewed in this study.

Table 1: Academic Literature: In-store Promotional Tools

Special display	*In-store display*	Chevalier (1975)
	In-store display and feature advertising	Allenby & Ginter (1995
	Sales promotion, feature and display	Kumar and Leone (1988)
Price promotion	*Coupon promotion*	Antil (1985)
	The effects of sales promotion in general	Blattberg & Neslin, (1989)
	Concepts, methods and strategy of sales promotion	Blattberg et al. (1990)
	Short-term effects of in-store promotion	Bemmaor & Mouchoux (1991)
	Long-term effects of promotion and advertising	Mela et al. (1997)
	The effects of store & brand name and price discounts	Grewal et al. (1998)
	The long-term effects of price promotion	Jedidi et al. (1999)
	Alternative price promotional methods	Munger & Grewal (2001)
	Sales promotion, discounts and couponing	Gilbert & Jackaria (2002)
	Long-term effects of price promotion	Pauwels et al. (2002)
	Promoting or discounting a brand	Raghubir (2004)
	Product sampling	Bettinger et al. (1979)
Sampling	*Product sampling*	Marks & Kamins (1988)
	Monetary and nonmonetary promotions	Chandon et al. (2000)
	Product sampling	Sprott & Shimp (2004)
Demonstration	*'Foot in the door' effect of demonstration*	Freedman & Fraser (1966)
	'Foot in the door' effect of demonstration	Pliner et al. (1974)
	Product demonstration and purchase decision	Scott (1976)
	Methods to reduce purchase uncertainty	Heiman et al. (2001)

Special display - is a widely used in-store promotional tool and therefore important to review. This tool creates store excitement and increases the attention towards the product. Chevalier (1975) indicated that special display is an important tool to influence the consumer at the point of purchase. Allenby and Ginter (1995) observed the effects of in-store display and feature advertisement and indicated that these tools increase the product net utility and decrease the price sensitivity of the promoted product. Special display inside the store has an individual effect whereas feature advertisement has a certain effect, when suggesting that consumers already have brand preferences. Also Kumar and Leone (1988) indicate a positive relationship between sales promotion, feature and display activities on sales. These findings are important when examining the effectiveness of in-store product demonstrations. If only a special display generates this effect, it can be expected that a demonstration creates at least the same effect.

Price promotion - is the most used marketing tool to influence the consumer. There are many price promotion methods, such as bundling, rebate and free-option (Munger and Grewal, 2001). This research will only review price discounts and in-store coupons. This promotional tool is very effective when looking at the short-term, within two months. In the short-term price promotions have significant effect on brand choice, purchase quantity and category incidence (Pauwels et al., 2002). Many researchers have paid attention towards the effect of monetary incentives and indicated a positive effect on store traffic, perceived value for money and purchase intentions (Bemmaor and Mouchoux, 1991; Blattberg and Neslin, 1989; Grewal et al., 1998). In couponing promotion retailers can maintain the original price and only the coupon holder can make use of a discount. According to Antil (1985), couponing has become an important promotional tool for manufacturers and widely accepted by consumers. There are many couponing forms, however, they all provide an indirect monetary incentives to purchase a product or brand.

Although price promotion seems to be a very effective tool, there are negative effects in the long-term. Price discount on a frequent basis increase consumers' expectations and force the manufacturer to increase the price discount (Grewal et al., 1998). Increased price promotion significantly change consumers to be more price and promotion sensitive over time (Mela et al., 1997). Jedidi et al. (1999) indicated that the effects of price promotions in the long-term have negative overall effects especially concerning brand equity. More in this line can be seen in the research of Blattberg and Neslin (1990) and Grewal et al. (1998). Their research showed that frequent discounts can negatively affect consumers' quality perceptions. Altogether, price promotion seems to be a very effective tool to increase sales in the short-term and poorly when it comes to brand building and expectations. Price promotions are more than just a monetary function, it is a source of information that consumers use to make a judgment about the product

or brand (Raghubir, 2004). Price discounts and in-store coupons are the most used promotional tools (Gilbert and Jackaria, 2002) and positively affect brand attention, purchase intentions and behavior. Appendix A represents empirical research on the temporal effects of price promotions.

Product sampling - is a promotional tool which has many commonalities with product demonstration. Both tools are using (human) endorsers to draw consumers to try products. Also the purpose of both tools are the same. These tools enable consumers to get familiar with a product by giving an opportunity to try the product before buying. This way, a consumer can get a short term usage experience and can create his or her own image. Consumers can experience extrinsic (price, function) and intrinsic (taste, weight) product features. Sprott and Shimp (2004) supports this notion and indicates that consumers rely more on intrinsic than on extrinsic cues, if consumers believe they can confidently judge physical product characteristics that indicates quality. Although these tools have common features, there are major differences. The purpose of product sampling is mainly to let consumers taste or try a new product and is more sensory grounded. It is an effective way to introduce new or unusual products (Marks and Kamis, 1988). Product demonstration also give consumers the opportunity to try the product, however this tool provides more functional information and therefore is more cognitive grounded. Because of this, most of the time product sampling is a tool used in the food-branch, whereas product demonstration is a tool mainly used for durable goods. Furthermore, in-store product sampling creates brand equity (Chandon et al., 2000). An important determinant of brand equity is brand image (Keller, 1993), and, according to Bettinger et al. (1979), sampling can change the image of a brand.

Product demonstration - is an effective mechanism that reduces uncertainty (Heiman et al., 2001). Consumers can experience the intrinsic and extrinsic cues and therefore can find 'proof' or 'evidence' which will positively affect their purchase decisions. Consumers perceive product demonstrations as additional sales effort which reduces consumers' resistance towards the sales (Freedman and Fraser, 1966; Pliner et al., 1974; Scott, 1976). Therefore, participating in a product demonstration increases the likelihood that consumers will buy that product. Also because the information provided from a product demonstration can be seen as information obtained from the primary source. Another important role of product demonstration is the fact that consumers learn about the product. This learning process decreases consumers' uncertainty.

1.2 SALES PROMOTION & BRAND SALES

In order to enhance or maintain a strong competitive position, manufacturers facilitate promotional activities at the point of purchase (Blattberg and Neslin, 1989). Previous section elaborated on different in-store promotional tools and many researchers have found evidence for the positive relationship between promotional activities and sales of the promoted product at the point of purchase. Gupta (1988) explored sales increase during a promotion and indicated that increased sales comes from brand switching (84%), purchase acceleration (14%) and stockpiling (2%). The decomposition of sales increase due to promotional activities has primarily been based on price promotions. Nonetheless, this section will provide a deeper understanding concerning brand switching and cross-elasticity. In light of this research, it can be expected that a product demonstration increase sales of the demonstrated product, due to these factors.

PURCHASE ACCELERATION

Purchase acceleration is a positive consequence of promotional activities and research indicated two reasons: buying more products or decrease of purchase time. A promotion can motivate consumers to buy more of the promoted product in order to obtain a full profit of the promotion or to buy the product as soon as possible before the promotion ends. These effects have significant impact on market-share and the profitability of the promotion (Neslin and Shoemaker, 1983). Neslin et al. (1985) examined the effect of purchase acceleration during a promotion and indicates that couponing, local retailer advertising, price cuts and advertised price cuts all increase the quantity, however, only advertised price cuts decreased purchase time. Because purchase acceleration mainly results from price promotion, this effect of sales promotion will not be examined in this research.

BRAND SWITCHING

Promotional tools increase sales of the promoted product and therefore are widely used by manufacturers and retailers. According to many researchers, sales increase due to promotional activities can be partly explained by brand and category switching. Kumar and Leone (1988) examined the effect of price promotion, featuring and display for a specific brand that leads to higher sales for that brand. They indicated that this increase can be explained by in-store substitution. Moreover, price promotion and featuring were key determinants for store substitution. Also Gupta (1988) indicated that sales promotions are effective in drawing consumers from competitors in a product category. This finding is supported by Walters (1991) who indicates that retail price promotions improve brand substitution within a store. Furthermore,

the substitution effects are asymmetric which means that the substitution effects differ among brands. This finding will be discussed in next section.

CROSS-ELASTICITIES

Previous section illustrates how brand switching partly explains the increase in sales caused by promotional activities. Therefore, some researchers examined the nature of cross-elasticity between different brands and their promotional activities. The main finding is that the elasticity between sales promotion and actual sales is asymmetric (Blattberg and Wisniewski, 1989). This implies that the effectiveness of sales promotion on actual sales differs between brands. Moreover, Narasimhan et al. (1996) indicates a difference in promotional elasticity among different type of categories. In addition, the elasticity in categories with a relatively low amount of brands is significantly higher compared with high number of brands.

1.3 SALES PROMOTION & BRAND VALUE

Previous part elaborated on the effects of sales promotion towards brand sales, where brand switching caused by sales promotion is an important determinant. Besides the immediate and direct effects, manufactures are interested in the consequences towards brand value. Brand value can be measured by using the concept of customer-based brand equity (CBBE). This section will first explain this concept and hereafter existing literature regarding the relation of sales promotion and brand equity will be discussed.

THE CONCEPT OF CBBE

First of all, it is necessary to mention that customer-based brand equity (CBBE) has multiple conceptualizations. Many researchers have paid attention towards this subject and, as a result, several concepts of CBBE exist. However, the majority of studies have based their concepts on two frameworks established by Keller (1993) and Aaker (1996). Therefore, this literature review will start elaborating on their findings.

Keller (1993, p.2) created the term CBBE and defined it as '*the differential effect of brand knowledge on consumer's response to the marketing of the brand'.* This definition contains three important concepts; (1) differential effect, (2) brand knowledge and (3) consumer response to marketing. The differential effect involves the difference between consumers response towards different marketing activities of a brand. Brand knowledge is related to the associative network model in terms of two determinants; brand awareness and brand image. Brand knowledge is a node inside the mind of a consumer, where brand awareness is the strength of the brand node (recall and recognition) and brand image is the relation with other nodes (associations). Together, brand awareness and brand image form the total brand knowledge (Appendix B).

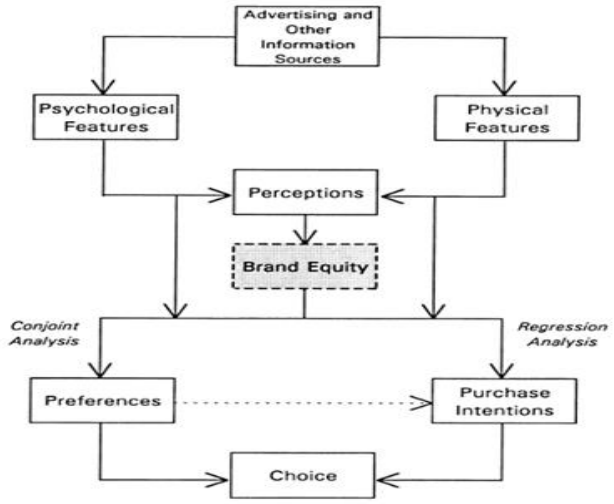
Aaker (1992, 1996) determined multiple dimensions of CBBE, namely; brand loyalty, perceived quality, brand awareness, brand associations and other assets (Appendix C). Also, Shocker and Weitz (1988) confirmed loyalty and associations to be dimensions of brand equity. In line with this research, Yoo et al. (2000) adopted four dimensions of Aaker's framework including brand loyalty, brand awareness, perceived quality and brand associations. According to Yoo et al. (2000), 'other assets' is not an important dimension to measure CBBE. Furthermore, they developed a model which indicates that perceived quality, brand loyalty and brand associations are core determinants of CBBE. Because brand associations are a much richer concept than awareness and the number of advertisements will not enhance more brand associations Yoo et al. (2000) measured brand awareness and brand associations in a mixed form. In light of previous

findings Lassar et al. (1995) developed a CBBE measurement scale based on five perceptive dimensions; performance, value, social image, trustworthiness and commitment. The advantage of their scale is the potentiality to measure CBBE across brands and products.

MARKETING ACTIVITIES & CBBE

Cobb-Walgren et al. (1995) examined the effect of marketing activities on brand equity and, in turn, brand equity on consumer preferences and purchase intentions. This study indicates that a greater advertising budget increased the levels of brand equity and, consequently, brands with a higher equity evoked significantly greater preferences and intentions to buy. In other words, as can be seen in Figure 2, marketing activities have an interaction effect between brand equity and purchase intentions.

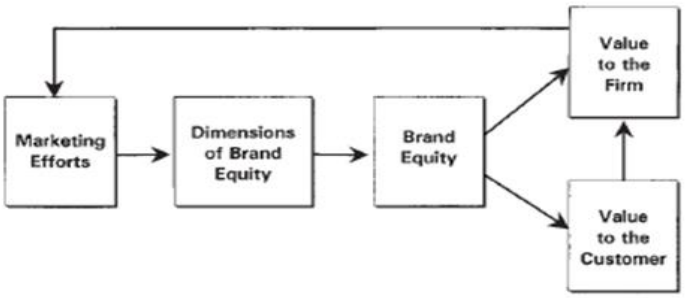
Figure 2: Marketing Activities and Brand Equity



Source: Cobb-Walgren et al. (1995, p.29)

Yoo et al. (2000) developed a conceptual framework that shows how marketing activities can affect brand equity. They consider perceived quality, brand loyalty and brand associations with strong brand awareness as dimensions of brand equity. In their research they argue that any marketing activity has the potential to have an effect on brand equity. Their results show that price promotions have a negative effect on brand equity in the long-term. Frequently advertising leads not only to higher brand awareness and associations but also to higher quality perceptions. They suggest that higher quality perceptions lead to strong brand equity. Increased CBBE enhance value to the customer and to the firm (Figure 4). Therefore, brand managers need to think their marketing strategy through.

Figure 3: Marketing Efforts and Brand Equity



Source: Yoo et al. (2000, p.196)

Also Villarejo-Ramos and Sánchaez-Franco (2005) examined the effect of advertisement and price promotion on brand equity. They indicated that advertisement has a significant positive effect on perceived quality, awareness and image, whereas price promotion had a significant negative effect on perceived quality. This negative effect has been supported by Gedenk and Neslin (2000); they examined the effect of retail promotion on future brand loyalty via purchase event feedback. The results of their study indicated that in-store price promotional activities have a negative effect on purchase event feedback. In contrast, non-price promotional activities turn out to have a significant positive purchase event feedback. Furthermore, high marketing expenditures have a positive effect on consumers' quality perceptions of a brand (Kirmani and Wright, 1989; Cobb-Walgren et al., 1995; Milgrom and Roberts, 1986).

DIMENSIONS OF CBBE & PURCHASE INTENTIONS

It is interesting to see how marketing activities significantly affect CBBE. In addition, how marketing activities moderates this relation. The question why CBBE is important remains unclear. As already can be seen in the research, CBBE positively affect consumers' purchase intentions. Purchase intention is a widely used concept to measure certain effects in the marketing environment. The main interest in this concept is the beneficial relation towards buying behavior. Various researchers have determined a positive relationship between purchase intention and purchase behavior (Morwitz and Schmittlein, 1992; Morwitz et al., 1996). Purchase intentions can be used to analyze marketing decisions. Despite limited academic research concerning the total concept of brand equity and purchase intentions, there are studies concerning the individual dimensions of brand equity and purchase intentions.

Prior research indicated that purchase intentions increases through higher quality perceptions (Tsiotsou, 2006). In light of this research, viewing perceived quality as an attitude also has an effect on purchase intentions (Carman, 1990; Boulding et a., 1993; Parasuraman et al., 1985, 1988; Zeithaml, 1996). In contrast, there are academics who reported an indirect relation of perceived quality and purchase intentions, because satisfaction mediated this relation (Cronin and Taylor, 1992; Sweeny et al., 1999). Considering these contradictions, Bou-Llusar et al. (2001) examined the relation between perceived quality and purchase intentions and indicated three main conclusions: (1) perceived quality has an important positive main effect on purchase intentions; (2) a part of this effect can be explained by the overall satisfaction rate; (3) there is no interaction effect between perceived quality and satisfaction. Therefore, it can be concluded that perceived quality is an important dimension of CBBE when considering purchase intentions.

Esch et al. (2006) examined the relation of brand knowledge on current and future purchases. They indicated that brand image (associations) directly and brand awareness indirectly affects current purchases. Both dimensions did not affect future purchases. O'cass and Lim (2002) examined non-product-related associations towards purchase intentions. They used the constructs of Keller (1998) which are price, user & usage imagery, brand personality and feelings & experiences. The findings indicate that brand associations can influence the purchase intentions. Prior research indicate that brand awareness or the position of a brand in the mind of a consumer, is positively related to the intention to buy that brand and positively relates to the relative quantity purchases of that brand (Wilson, 1981; Burke and Schoeffler, 1980). The position of a brand in consumer's mind influenced the preferences and intention to buy that product (Woodside and Wilson, 1985). Brand awareness contributes to consumers' value judgments which in turn increase the purchase intentions and decrease the search behavior (Oh, 2000).

Brand loyalty negatively affects brand switching and increase brand preferences which in turn leads to increased purchase intentions. Hong and Cho (2011) examined the role of trust and attitudinal loyalty on purchase intentions in the online environment. They indicated that attitudinal loyalty, increase by trust as a mediator, positively affect purchase intentions. Their research determined attitudinal loyalty to be an important driver of purchase intentions.

Brand trust is a key determinant concerning the intention to buy. When consumers do not trust a brand or product they most probably will not buy this product or brand if there is an outside option. Confidence is an important factor of trust as can be seen in the definition of Delgado-Ballester (2003). Prior research already indicated that confidence has a positive relation towards the intention to buy (Sheth, 1969; Bennett and Harrell, 1975). This relationship is justified by Laroche and Sadokierski (1994) as they indicated that the intention of investment is influenced by the confidence in the investment.

In a more recent study, Laroche et al. (1996) indicated that confidence is one of the determinants of purchase intentions. They argued that managers need to enhance the confidence towards a brand by providing the consumer product related information or a direct- product experience. In line with this finding, Chang and Wildt (1994) examined the influence of price and non-price product information on purchase intentions. Their results indicate that the influence of price on perceived quality decreases when direct product information is presented.

INTRODUCTION TO THEORY

As can be seen in the literature review, sales promotion is an important marketing strategy to increase brand sales and brand value. The consequences of sales promotion, considering these orientations, are widely examined. Despite these explorations, there is a great lack of empirical findings concerning product demonstration as a promotional tool. Therefore this research examines the effect of product demonstration on brand sales and brand value.

This research will be completed in cooperation with a giant retailer and a company that facilitates product demonstration inside the store. They are mainly interested in the short-term effect of product demonstrations which explains their support in providing access to internal data. In light of these interests and considering the lack of literature on this topic, this research will add great value towards the scientific and practical area.

As can be seen in the literature review, sales promotion has a significant interaction effect between CBBE and purchase intentions. In line with this finding, this research will first examine the relationship between product demonstration, the intention to buy and the equity of a brand. In order to measure the effect of product demonstration, a field-survey is necessary to collect reliable data.

Hereafter, the immediate effects of product demonstration will be measured. As can be seen in the literature review, sales promotions have significant effect on brand sales. Therefore, this research will examine the effect of product demonstration on brand sales. In order to measure this effect, internal weekly point of sale data is necessary.

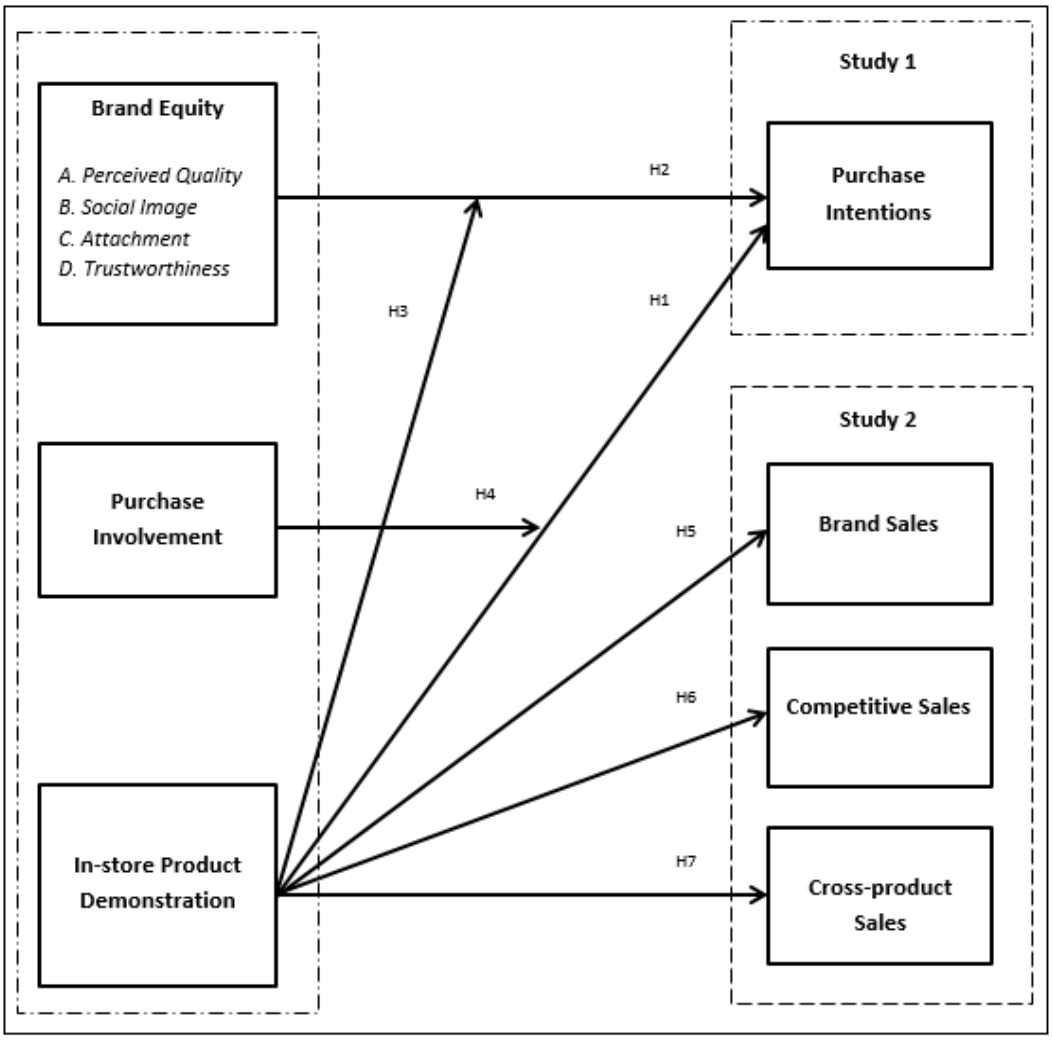
The next chapter will elaborate on the proposed relationships concerning brand sales and brand value. These relationships will be supported in reference to existing literature that have paid attention to sales promotion, CBBE and purchase intentions.

CHAPTER 2 THEORY

This research examines the effectiveness of in-store product demonstration as a promotional tool on brand sales and brand value. First this chapter will present a conceptual framework that will provide a comprehensive overview (Figure 4). Hereafter the proposed framework will be explained. Because this research conducts two studies, both will be handled separately.

2.1 CONCEPTUAL FRAMEWORK

Figure 4: Conceptual Framework



2.2 HYPOTHESES

As can be seen in the theoretical framework, this study examines the relationship between product demonstration, CBBE and purchase intentions. These different relationships will be explained and corresponding hypotheses will be discussed.

PRODUCT DEMONSTRATION

In-store marketing activities, as can be seen in the literature review, increase brand preferences and purchase intentions (Chevalier, 1975; Kumar and Leone, 1988). Purchase intentions are affected by positive store experience (interesting store display), rather than bad experiences (Swinyard, 1993). Therefore is can be expected that product demonstration also positively affect purchase intentions. One of the main determinants of purchase intention is confidence, which is the opposite of perceived risk or uncertainty (Howard and Seth, 1969; Bennett and Harrell, 1975). Information that is useful and valuable to consumers can serve as risk reducing (Hansen, 1972). Product demonstrations provide intrinsic and extrinsic cues which reduces consumer purchase uncertainty (Heiman et al., 2001). In light of these findings, this research hypothesized the following relation:

H1	*In-store product demonstration has a positive effect on consumers' purchase intentions towards the demonstrated brand.*

CUSTOMER-BASED BRAND EQUITY

Purchase intentions can be explained by the position of the brand in consumers' mind (Woodside and Wilson, 1985). Cobb-Walgren et al. (1995) determined and indicated the effect of brand equity on purchase intentions. Therefore this research suggests that brand equity, perceived by the consumer, is related to consumers' purchase intentions.

H2	*Customer-based brand equity has a positive effect on consumers' purchase intentions towards that brand.*

This research determines perceived quality, social image, brand attachment and trustworthiness to be the perceptual dimensions of CBBE. Therefore, subhypotheses have been developed that includes the dimensions of CBBE.

When consumers perceive a product to be of high quality, compared with other products, the intention to purchase that product will be higher. Prior research already supports the positive relation between perceived quality and purchase intentions (Tsiotsou, 2006; Carman, 1990; Boulding et al., 1993; Parasuraman et al., 1985, 1988, 1996; Yoo et al., 2000). Therefore, this research hypothesizes the following relationship:

H2a	*Perceived quality towards a brand has a positive effect on consumers' purchase intentions of that brand.*

Consumers that perceive a fit between product/brand associations and the image that holds their social group, will have a higher intention to purchase a brand. Considering the findings of O'cass and Lim (2002), in which they conclude a positive relationship between non-product-related associations and purchase intentions, it can be expected that a positive social image towards a brand will have a positive effect on consumers' purchase intentions to that brand. In light of these findings, this research hypothesizes the following relationship:

H2b	*Social Image of a brand has a positive effect on consumers' purchase intentions of that brand.*

Brand attachment is the emotional bond between a consumer and a brand and involves special feelings. When consumers have special feeling towards a brand it affects their purchase decision and the intention to purchase that particular product. Esch et al. (2006) examined brand attachment with brand satisfaction and brand trust as components. According to their results, brand attachment significantly affects current and future purchasing. In light of these findings, this research hypothesizes the following relationship:

H2c	*Brand attachment towards a brand has a positive effect on consumers' purchase intentions of that brand.*

When consumers are at the point of purchase, they face a wide range of products and brands in each category. When consumers perceive a brand to be trustworthy it can be expected that the intention towards this product or brand would be higher than otherwise. Brand trust reduces the uncertainty when consumers are in vulnerable situations, they can rely on the brand they trust (Erdem et al., 2004). In light of these findings, this research hypothesizes the following relationship:

H2d	*Trustworthiness towards a brand has a positive effect on consumers' purchase intentions of that brand.*

INTERACTION EFFECTS

The main purpose of this research is to find evidence for the interaction effect of product demonstration between CBBE and purchase intentions. The hypothesis described before propose positive individual relationships between in-store product demonstration and purchase intentions. Measuring these single effects enables this research to examine the role of product demonstration on these single effects.

According to Yoo et al. (2000), any marketing activity has an effect on brand equity and, in turn, on purchase intentions. Price related promotions negatively affect the equity of a brand, whereas non-price promotions such as special display of product sampling increases brand equity. Because consumers already have a brand equity perception which positively affects their purchase intentions, it can be expected that a product demonstration moderates this relationship. Product demonstrations can characterize as a non-price promotion, this effect should be positive. In light of these findings, this research hypothesizes the following moderation effect:

H3	*In-store product demonstration has a positive interaction effect between brand equity and consumers' purchase intentions.*

Considering the proposed relationship between product demonstration and purchase intentions, it can be expected that consumers who are highly involved with the purchase process will be very pleased with the presence of a product demonstration.

H4	*In-store product demonstration has a higher positive effect on consumers' purchase intentions for high involved than for low involved consumers.*

BRAND SALES

This research suggest that sales of promoted brand due to promotional activities increase sales of that brand. Prior research already indicated that sales promotion increase purchase acceleration and that these effects have significant impact on market share and the profitability of the promoted brands (Neslin and Shoemaker, 1983; Neslin et al., 1985). The increase in sales due to promotional activities can partly be explained by in-store substitution (Kumar and Leone, 1988; Gupta, 1988). In line with this research, it can be expected that a product demonstration in a product category increase the sales of the promoted brand and decrease sales of non-promoted brands.

H5	*Sales of promoted brands are higher during the presence of an in-store product demonstration of that brand.*
H6	*Sales of non-promoted brands are lower during the presence of an in-store product demonstration of competitive brands.*

CROSS-PRODUCT SALES

Prior research confirms the fact that promotional activities increase sales, however, this effect differs among brands (Blattberg and Wisniewski, 1989; Narasimhan et al.,1996). Therefore this research examines the cross-product sales by measuring the promotional elasticity among different brands in the same product category. This research suggest that the presence of a product demonstration decrease the price sensitivity of promoted brands. In other words, the negative relation between price and sales will decrease during the presence of a product demonstration for promoted brands.

H7	*The presence of an in-store product demonstration decrease price sensitivity for promoted brands*

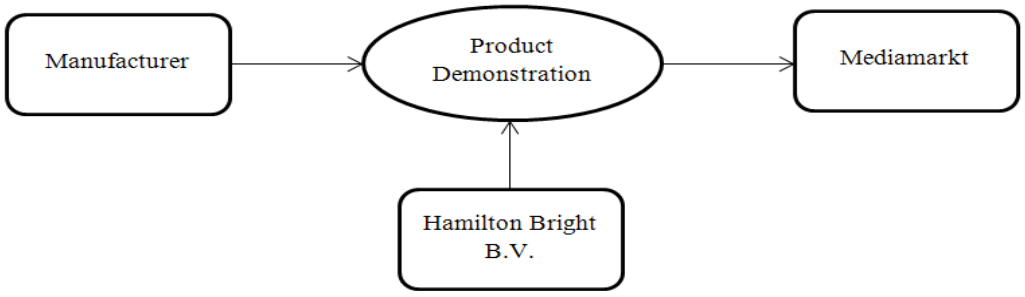
CHAPTER 3 METHODOLOGY & DATA

This chapter outlines the methodology and data collection of this research used to test the hypotheses in the proposed conceptual framework. Because this research conducts two studies which are different in their methodology and type of data, both will be handled separately. Before elaborating on these two studies, first the contribution of external parties will be discussed.

EXTERNAL CONTRIBUTION

This research has been conducted as a thesis requirement with the support of the Mediamarkt Rotterdam[i] and Hamilton Bright B.V[ii]. To understand their contribution in this research, Figure 5 displays the relationship between these companies. The objective of the manufacturer is to increase brand sales and value by influencing consumers at the point of purchase using promotional tools. A commonly used promotional tool is product demonstration which, most of the time, are provided and facilitated by Hamilton Bright B.V. The Mediamarkt, in turn, provides the location (couple of meter shelve space) where product demonstration can take place in order to increase sales. Their contribution consists of the approval in a field-based survey inside the store, data provision concerning weekly point of sales data and dates of facilitated in-store product demonstrations.

Figure 5: Network of Companies Related to In-store Product Demonstrations

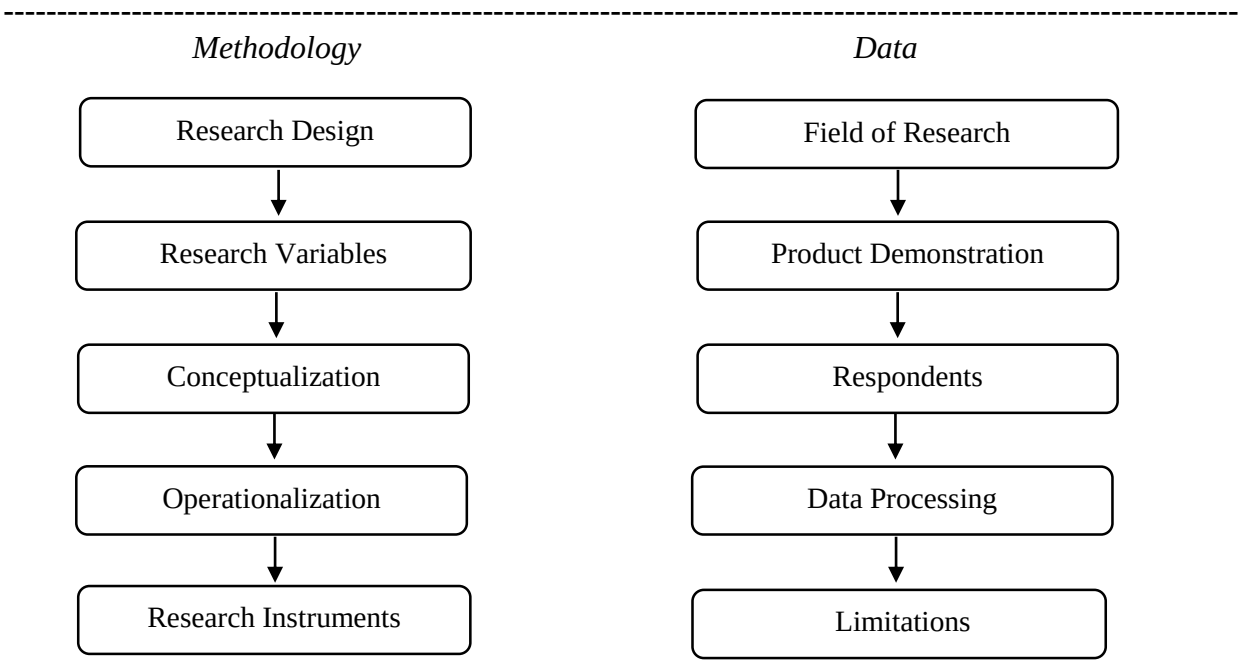


[i] A giant retail company specialized in consumer electronic goods situated in Rotterdam
[ii] A company that facilitates in-store sales promotional activities for manufactures in the electronica branch

3.1 STUDY 1

The purpose of study 1 was to test the hypotheses that incorporates the effect of in-store product demonstration related to brand value and purchase intentions. This section describes the research design, variable measurement, conceptualization, operationalization and research instruments. Hereafter, data collection of study 1, including field of research, product of the demonstration, respondents, data processing and limitations are discussed. In order to outline the implementation of this study, Figure 6 visualizes the steps that have been followed.

Figure 6: Study 1: Methodology & Data



RESEARCH DESIGN

The purpose of this study is a descriptive research to describe the effect of a product demonstration. This implies that the promotional tool and its effect were observed and described. As suggested, product demonstration has a single effect on purchase intentions and an interaction effect between CBBE and purchase intentions. This means that brand equity and the consumers' purchase intentions are measured on an individual level. The units of analysis, individuals in this study, are also the units of observation.

This research collected data from respondents more or less at the same time and therefore can be characterized as a cross-sectional study. According to Sherman and Smith (1997), collecting data in a natural setting increases the validity of the data.

RESEARCH VARIABLES

Table 2: Study 1: (In) Dependent Variable Description

Dependent Variable	*Description*	*Measure*
[PI]	Purchase Intentions	Likert scale 1-7
Independent Variables		
[CBBE]	Customer-based brand equity	Average of dimensions
[CBBE-PQ]	Perceived Quality	Likert scale 1-7
[CBBE-SI]	Social Image	Likert scale 1-7
[CBBE-BA]	Brand Attachment	Likert scale 1-7
[CBBE-BT]	Brand Trustworthiness	Likert scale 1-7
[PD]	Product Demonstration	Yes or No
Interaction Variables		
[PINV]	Purchase Involvement	Likert scale 1-7
[PD]	Product Demonstration	Yes or No
[GENDER]	Gender	Man or Woman
[AGE]	Age	Category scale
[INC]	Income	Category scale
[EDU]	Education	Category scale

CONCEPTUALISATION

In order to careful deliberate observations of the real world to describe the effect of product demonstration in terms of attributes composing a variable, the conceptualization and operationalization to measure the variables are discussed in this section. The variables studied in this research do not have a single unambiguous meaning and therefore are conceptualized. Considering these concepts of the variables, this research defined nominal definitions which are applicable for this research.

[PI] - In this research purchase intentions will be used as a dependent variable to measure several relationships concerning the proposed concept. Purchase intentions, instead of actual behavior is often used to measure marketing effectiveness (Hoch and Ha, 1986). According to Bagozzi et al. (1979) and Ostrom (1969) are purchase intentions or behavior intentions the tendencies of personal actions relating to an object or brand. A widely used definition concerning purchase intentions is '*the person's motivation in the sense of his or her conscious plan to exert effort to carry out a behavior'* (Eagly and Chaiken, 1993, p.168). In relation to this research, purchase intention is the willingness or motivation to purchase a product in the future.

[CBBE] - CBBE can be viewed from different perspectives, however, researchers commonly agreed the multidimensional concept of CBBE. One of the few researchers that include both attitudinal and behavioral dimensions of CBBE is Aaker (1991) and defined awareness, associations, perceived quality, loyalty and other proprietary assets as core dimensions of CBBE. Combining both consumer perceptions and actions into one CBBE measure has its advantages because attitudes alone are a less powerful predictor of marketplace behavior (Cobb-walgren, 1995). However, consumer behavior is driven by the perception of a brand and because behavioral measurements lack in analyzing what actually drives brand equity in the mind of a consumer, this research will only focus on the perceptual dimensions of CBBE. Therefore, this research determine perceived quality, social image, brand attachment and (brand) trustworthiness as dimension of brand equity based on the studies of Yoo et al. (2000) and Lassar et al. (2000). Because brand awareness has an indirect effect on purchase intentions and, considering the arguments of Yoo et al. (2000) to measure brand awareness and brand associations together due to the relative unimportance of brand awareness when examining marketing activities, this research will not examine brand awareness.

[CBBE-PQ] - According to Zeithaml (1988, p.3) perceived quality can be defined as *'the consumers' judgment about a product's overall excellence or superiority'.* Perceived quality is a judgment made within a consumer's evoked set, that is, these evaluations often take place in a comparison setting. The advantage of perceived quality, as a higher level of abstraction, is that it can be generalized to category products. In relation to this research, perceived quality is the overall judgment about a product in relation to a brand that takes place at the point of purchase.

[CBBE-SI] - Lassar et al. (1995 p.13) defined social image as '*the consumer's perception of the esteem in which the consumer's social group holds the brand. It includes the attributions a consumer makes and a consumer thinks that others make to the typical user of the brand.'* In relation to this research, social image is conceptualized as the consumers' perception about the brand in relation with the social group that would use or consume this brand.

[CBBE-BA] - This research considers brand commitment as a feeling towards a brand. Lassar et al. (1995) uses the same concept of attitudinal loyalty by separate commitment as a feeling and commitment as an action. Brand attachment is the relative strength of a consumers' feeling towards a brand. Brand attachment is defined as an emotional target-specific bond between a person and a specific object (Bowlby, 1979, 1980). In line with this research, brand attachment is the emotional bond between a consumer and a brand and this bond involves special feelings.

[CBBE-BT] - Lassar et al. (1995 p. 13) defined trustworthiness as '*the confidence a consumer places in the firm and the firm's communications and as to whether the firm's actions would be in the consumer's interests'.* In line with this research, trustworthiness is the consumers' perception about the confidence and trust towards the company that stand behind the product and brand.

[PINV] - There are many definitions of consumer purchase involvement. However, many researchers indicate that high involvement implies the personal relevance or importance (Greenwald and Leavitt, 1984). Bloch and Richins (1983) adjusted involvement into perceived importance. Therefore, this research defined consumer involvement as the perceived importance of a particular purchase. This implies that, when consumers think the purchase is unimportant, they are uninvolved.

[PD] - In this research a product demonstration is conceptualized as a promotional tool in which a person demonstrates a product at the point of purchase. The purpose of facilitating product demonstration is to enhance or maintain brand value and brand sales. During that product demonstration, consumers can see and even try the product, which ordinarily only can be seen on the shelf. The demonstrator can be recognized by the clothing, because of the labeled shirt. Mainly the product demonstration is strategically located inside the store near to the stock and store traffic. The product demonstrator approach consumers to demonstrate the product and to provide extra information on the use of that particular product.

This research examines the influences of consumer characteristics concerning the suggested relationship between product demonstration and purchase intentions. This includes the Age **[AGE],** Income **[INC]** and Education **[EDU]** variables. Logic category scales were developed in which respondents can indicate their characteristics.

OPERATIONALIZATION

Previous section elaborated in the (in) dependent variables and specified the concepts to be studied. The meaning of these variables in this study are partly determined on how these are measured. This study used a field-based survey and this research instrument will be discussed in next section. In order to operationalize the research variables, questionnaire items has been determined. Because prior research already explored the relationship between CBBE and purchase intentions using a questionnaire, the operationalization of the variables have been based on these valid multi-item scales. Table 3 represents these multi-item scales.

Table 3: Operationalization of (in) Dependent Variables

Variable	*Multi-Item Scale*	*Alpha*	*Study*
[PI]	I will buy this brand/product in the near future If I need this product I will choose this brand If I had needed this product, I would not have choose this brand (r) Next year, I will buy this brand when I need this product	0.934	Taylor and Baker (1994)
[CBBE-PQ]	This brand has high quality This brand gives high value for money This product is very functional I think that this brand is very reliable This brand is of very low quality (r)	0.93	Lassar et al. (1995)
[CBBE-SI]	The brand/ product fit my personality I would be proud to own a product of this brand This brand will be well regarded by my friends or/and relatives This brand will negatively affect my image (r) In its status and style, this brand matches my personality	0.77	Lassar et al. (1995)
[CBBE-BA]	Seeing this brand, I am very likely to grow fond of it I will choose another brand if this one is out of stock For this brand I have positive personal feelings With time, I will develop a warm feeling towards this brand	0.83	Lassar et al. (1995)
[CBBE-BT]	In regard to consumer interests, this company seems to be very caring I believe that this company does not take advantage of consumers I consider the company and the people who stand behind this brand to be very trustworthy	0.79	Lassar et al. (1995)
[PINV]	This type of product is very important to me For me, this product does not matter (r) This product is an important part of my life I choose this type of product very carefully Which type of product I buy, matters to me a lot Choosing this product is an important decision for me	0.80	Mittal (1995)

INSTRUMENTS

To measure the different variables, this research conducted a field-based questionnaire as can be seen in Appendix D-1**.** This questionnaire exists of multi-item scales and measured using a 7 – point Likert scale. The measurement scales in this questionnaire are adopted from prior academic studies and are checked on their reliability and valid ability (Table3). The use of a paper-pencil questionnaire was based on the flexibility of data collection procedure inside the store. To collect relevant data, it is important to ask consumers' perceptions direct after the participation of a product demonstration.

FIELD OF RESEARCH

This study has been executed in cooperation with a giant retailer situated in Rotterdam. This retailer is the largest retailer specialized in consumer electronic goods and facilitated the most in-store product demonstrations compared with other electronic retailers in the Netherlands. Because of this, valuable data for this study has been collected in this company. In order to accomplish cooperation, this retailer has been convinced of the need of this study. In return for the final results of this study, in addition the managerial implications, this study gained access concerning the collection of the data inside the store. In August 2013, the retailer granted access to collect the data inside the store. This research carefully explored the field of research and considered two types of product demonstrations. (1) Product demonstrations on a frequent basis in a shop-in-shop[iii]. The first picture in Appendix D-2 displays a permanent shop-in-shop of Acer, Sony and HP. (2) Product demonstrations facilitated on a non-frequent basis in which a product is removed from the store shelve and demonstrated near to the stock of that product. In order to collect valuable data concerning the effectiveness of a product demonstration, this study considers only the second type of in-store product demonstration. In addition, to capture the effect of a pure product demonstration in which a product normally cannot be experienced.

[iii] A concept in which a retailer rents a part of the retail space to be used by a different company to run another independent store.

PRODUCT DEMONSTRATION

In August 2013, no in-store product demonstration took place. Therefore, this research faced some difficulties in the collection of data and the amount of respondents. However, in the first week of September 2013, BabyLiss, a manufacturer of curling irons, facilitated product demonstrations of a new product type the Babyliss Secret Pro. The second picture in Appendix D-2 displays the product demonstration. As can be seen in the picture, the product has been removed from the shelve and consumers can try the product with the help of a demonstrator.

RESPONDENTS

Primary data has been collected from random customers in this product category. Consumers, who entered the store, did not know if, and when there was a product demonstration. Participants of a product demonstration were approached and asked to fill in the questionnaire. The respondents who did not participated in a product demonstration were approached in the same product category on the days when there was no product demonstration. These two groups filled in the same questionnaire and in total fifty respondents have been collected. Twenty-five respondents that have participated in the product demonstration have answered all the questions in the survey. In order to capture the effectiveness of this product demonstration, twenty-five respondents that have not participated in a product demonstration answered the same questionnaire.

DATA PROCESSING

The filled in paper-based surveys have been digitalized and processed using statistical software IBM-SPSS. First the individual effect of the product demonstration on purchase intentions has been analyzed using an ANOVA and a Simple Linear Regression test. Hereafter the individual effect of brand equity on purchase intentions have been analyzed using a Multiple Linear Regression test. The interaction effect of product demonstration between brand equity and purchase intentions have been analyzed using a Multiple Linear Regression test including the variable product demonstration as a dummy variable. The analysis and results are extensively described in the next chapter.

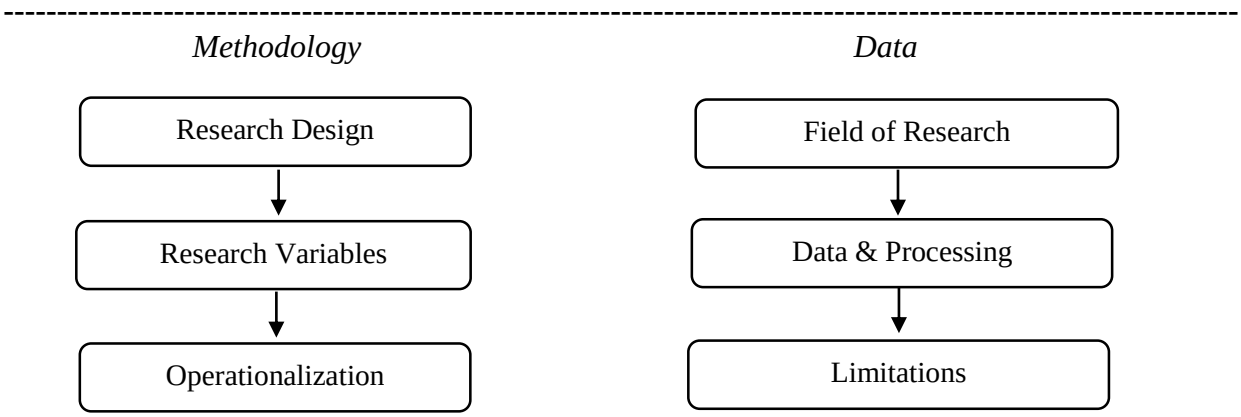
LIMITATIONS

The methods and data collection used in this study has been subjected to considerable limitations. First, this research used a cross-sectional research design. Measuring the brand equity perceptions of consumers before and after an event would measure the effect on an individual level that increase the validation of the generalizations. Second, due to the limited product demonstrations during this study related to the timeframe of this thesis, a small sample size has been collected. Third, the product of the demonstration in this study was focused on young female customer. Because of this, no male respondents have been collected.

3.2 STUDY 2

The purpose of study 2 was to test the hypotheses that incorporates the effect of in-store product demonstration related to brand sales of the promoted brand and competitors brands. This section describes the research design, variable measurement, operationalization and research instruments. Hereafter, data collection of study 1, including field of research, product of the demonstration and respondents, data processing and limitations are discussed. In order to outline the implementation of this study, Figure 7 visualizes the steps that have been followed.

Figure 7: Study 2: Methodology & Data



RESEARCH DESIGN

The purpose of this study is a descriptive research to describe the effect of a product demonstration. As suggested, product demonstration has a positive effect on brand sales of the demonstrated product and a negative effect on brand sales of competitors. In order to measure this effect, internal sales data have been used to examine the differences in amount of sales with and without the presence of a product demonstration.

RESEARCH VARIABLES

Table 4: Study 2: (In) Dependent Variable Description

Dependent Variable	*Description*	*Measure*
[Sales (i)(t)]	Actual Sales	Scaled
Independent Variables		
[Price (i)(t)]	Av. Price in € Brand i	Scaled
[CPrice (i)(t)]	Av. Price in € Brand ≠ i	Scaled
[PD (i)(t)]	Product Demonstration	Dichotomous
Dummy Variables		
[PD(t)]*[Price (i)(t)]	Interaction effect	Yes or No
[PD(t)]*[Com_Price (i)(t)]	Interaction effect	Categorical

OPERATIONALIZATION

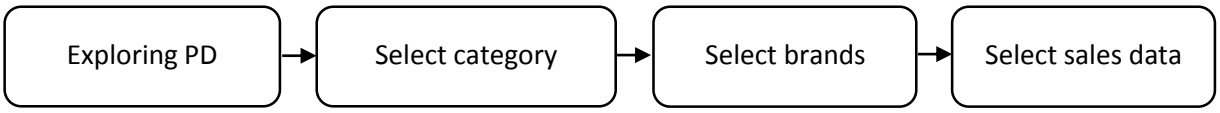
Previous section displayed the (in) dependent variables. In order to operationalize the research variables, point of sales data has been used. As can be seen in Table 7, this study used the logarithm of the scaled variables. The use of logarithm scales prevents the misinterpretation of the change in sales due to product demonstration. In addition, a sales increase of one unit does not show if this is an expensive or inexpensive product. This study use a logarithm with a base value of ten.

Using brand price and competitors brand price as independent variables enables this study to incorporate interaction effects of product demonstration and these prices. These interaction effects provides the impact that product demonstration has on brand sales.

FIELD OF RESEARCH

This study has been executed in cooperation with the same retailer as study 1. In August 2013, the retailer granted access to collect internal point of sales data. Because this retailer did not archived information of the conducted product demonstration, this data alone was not sufficient enough to execute this study. Also, choosing appropriate point of sales data without this knowledge was not possible. Because of this, data concerning the dates of conducted product demonstrations in this store has been accomplished via the support of the largest sales promotion company in the Netherlands. This company facilitates promotional activities for manufacturers inside the store. According to their data, in-store product demonstrations took place in several product categories. In order to select appropriate data for this research, the following steps have been followed as can be seen in Figure 8.

Figure 8: Field of Research: Preliminary Steps



The first step that has been followed was the exploration of conducted in-store product demonstrations. This dataset contained a large set of dates, types of product demonstrations and many different types of demonstrated products and brands. Each product demonstration has been analyzed and weighted on the usefulness for this study. The selection during this step was mainly based on the amount of conducted product demonstrations and the type of demonstration. Recalling from previous study, product demonstrations inside the shop-in-shop are not appropriate for this study. Hereafter, product demonstrations have been selected based on the product category. In addition, some product categories are not valuable to examine the effect of a product demonstration. For example, when many different brands demonstrate their products at the same time in the same product category, the effect of a product demonstration is difficult to examine. Another selection criterion was related to the product, because consumers can try the product also without the presence of a demonstration, for example a television. After the selection of the product categories, brands have been selected. In addition, there are many different brands in a product category, however, some brands are not interested to incorporate in this study. Therefore, the four main brands in a product category have been used in this study. Finally, previous steps enabled this study to select appropriate internal point of sales data.

DATA & PROCESSING

Previous section formulated the steps that have been followed in order to select appropriate data related to study 2. Ultimately, this study selected the product category navigation systems with the four main brands Garmin, Mio, Navigon and TomTom. Because product demonstrations mainly took place at Saturdays, weekly point of sales data has been collected in 2010, 2011 and 2012. During this timeframe, products of Mio and TomTom have been demonstrated.

Point of sales data are collected in September 2013. The data have been pulled from ERP – SAP system, software widely used in many businesses. A limitation of this customized software program was the acquisition of weekly sales data. In practice each Saturday has been drawn from the system separately. This study developed a single Excel document including the original datasets of 2010, 2011 and 2012. In order to use the data in this study, hundred-twenty data points have been deleted because of zero sales value. Hereafter twelve extra data points have been deleted

from the dataset, because of a yearly price promotion (21 percent discount), which finally leads to a dataset of 488 data points. The remaining dataset has been analyzed using a Multiple Linear Regression to test the hypotheses related to study 2.

LIMITATIONS

The methods and data collection of this study contains considerable limitations. First, this study used internal sales data of a giant retailer that have been selected by exploring the dates of product demonstrations that took place inside this store. However, examining also other retailers would provide a better analysis of the effect of in-store product demonstrations. Second, the product category navigation systems was the best selection in this situation, however, examining the effect in different product categories would provide a deeper understanding of this effect.

CHAPTER 4 ANALYSIS & RESULTS

4.1 STUDY 1

DATA DESCRIPTION

In order to provide a comprehensive overview concerning the data used in this study, a frequency table has been conducted (Appendix E). This table provides a deeper insight on the data collection concerning the characteristics of the respondents. In addition, all forty-four respondents were female this was not really strange, because a curling iron was demonstrated. 50% of these females participated in a product demonstration and 50% did not. Almost 80% of all the respondents were younger than thirty. This explains the income level, because almost 50% of the respondents had a salary of less than 20.000 euro a month. The same relation can be drawn from the education level, more than 50% of all respondents had an education level below bachelor. Altogether, 70% of the respondents did not planned to purchase a product in the manipulated product category.

RESULTS & ANALYSIS

Several statistical tests have been conducted to test the theoretical framework presented in Chapter 3. The purpose of this section is to analyze and interpret the data in an accurate, reliable, comprehensive and verifiable manner. In order to insure these requirements, each paragraph includes a heading that represents the meaning of the conducted statistical test. The statistical test has been performed using statistical software SPSS. Before the statistical test are performed, all necessary assumptions are measured. Each paragraph elaborates on the analysis and describes the interpretation of the measurement results in an adequate and comprehensive way.

First, some simple statistical tests were conducted in relation to the mean, sums of squares, variance, standard deviations and covariance. These measurements provide a deeper insight concerning the relation between CBBE and purchase intentions within and between two groups. Second, this research conducted a normality test, to test whether both groups were normal distributed. Third, a Levene's test and an Independent Two Sample T-test have been conducted to measure if the means of both groups were significant different. Hereafter a Simple Linear regression model has been performed to support the previous findings. Fifth, a Multiple Linear Regression has been conducted to explore the relationship between CBBE and purchase intentions. Hereafter an Explanatory Factor Analysis has been conducted to measure underlying

relationships between the independent variables. Finally, regression measurements are used to determine the proposed interaction effects.

SIMPLE STATISTICAL TESTS

As can be seen in Appendix F, the covariance between brand equity and purchase intention is positive, this indicates that as one variable deviate from the mean, in this case CBBE, the other variable deviates in the same direction, in this case purchase intentions. Moreover, the correlation coefficient, or in other words the standardized covariance, is positive and near to +1. This indicates that brand equity and purchase intentions are positively correlated with a large effect. This research examines the effect of a product demonstration, therefore this study carried out the same statistical measurements in both groups. Table 5 provides a comprehensive overview of the simple tests concerning both groups.

Table 5: Simple Statistical Measures

Measurement	*Participated*		*Not Participated*	
	[CBBE]	[PI]	[CBBE]	[PI]
Mean	5.87	6.06	4.57	3.84
Sum of squared errors	10.07	10.74	10.81	28.07
Variance	0.51	0.51	0.51	1.34
Sample Standard Deviation	0.71	0.72	0.72	1.16
Population Standard Deviation	0.15	0.15	0.15	0.25
Covariance	0.32		0.59	
Correlation Coefficient R	0.62		0.70	

Table 5 displays an extremely different mean of purchase intention in both groups, which indicates that consumers who participated in a product demonstration, on average, indicate higher intentions to buy that product. The covariance in both groups are positive, however, the covariance in group 1 seems to be lower than group 2. This implies that brand equity and purchase intentions are positively correlated, however this effect is larger in the group that did not participated in a product demonstration.

TESTING NORMALITY

Before examining the differences between the mean of both groups, first both groups need to be tested on their normality, which is, testing whether their distribution is normal. This research used a Kolmogorov-Smirnov and a Shapiro-Wilk test to examine if the distribution of the groups as a whole differentiates from the mean. In Appendix G the output of these tests concerning CBBE and purchase intentions are presented. The test results indicate that only for purchase intentions in group 2 (Participation) the p-value is below 0.05 for the Kolmogorov-Smirnov test, however, the Shapiro-Wilk test indicates a p-value > 0.05. The Shapiro-Wilk test is a good measure in relation with a small sample size, therefore this research assumes both variables in both groups to be normal. Because both tests examine the null hypothesis of a normal distribution, the measurements indicate a normal distribution of CBBE and purchase intentions of both groups. Also the Q-Q plots of both variables in both groups indicates a normal distribution, the observed values are plotted around the straight line. These tests have satisfied the assumption of a normal distribution and therefore parametrical test can be used.

COMPARING MEANS

Previous test indicated that both groups of both dependent variables have a normal distribution. However it would be interesting to test if the spread of scores of CBBE and purchase intentions is the same when the mean of both groups increases. To test the equality of the means of both groups and both variables, a pretest concerning the homogeneity of variances is necessary. There is a rule of thumb to examine the homogeneity of variances by calculating the highest variance and divide this with the lowest variance. When this ratio is smaller than two, it is safe to assume both variances are equal. As can be seen in Table 3 the variance ratio of group 1 (0.51/0.15) would be one and the ratio of group 2 would be more than two (1.34/0.51). Therefore the variances of both groups concerning CBBE and purchase intentions have been tested using a Levene's Test for Equality of Variances measure.

This test have been conducted together with an Independent Sample T-test and are presented in Appendix H. The test results indicates that the variances of both groups concerning CBBE are not significant different (Appendix H-1). This implies that the null hypothesis of equal variances may not be rejected and equal variances must be assumed. As can be seen in the Independent Sample T-test (equal variances assumed) the mean is significant different in both groups. This implicates that consumers who participated in a product demonstration and consumers who did not participated perceive CBBE significantly different.

The same test has been conducted concerning the mean of purchase intentions. As can be seen in Appendix H-2, the variances of both groups concerning purchase intentions are significant different and thus equal variances are not assumed. As can be seen in the Independent Samples T-test (equal variances not assumed) the mean is significant different in both groups. This implies that consumers who participated in a product demonstration and consumers who did not participated have a significant different intention to buy. These measurements indicate that CBBE and purchase intentions are positively correlated and that product demonstration plays an important role towards perceived brand equity and the intention to buy. The next analysis elaborates on the relation between product demonstration, CBBE and purchase intentions.

LINEAR REGRESSION ANALYSIS

So far, CBBE and purchase intentions concerning consumers who participated and consumers who did not participated in a product demonstration are analyzed and compared. Previous tests indicated that CBBE and purchase intention significantly differ between both groups. Besides comparing means, this study examines the direct relationship between product demonstration, CBBE and purchase intentions. This research suggests that product demonstration and CBBE have a significant individual effect on purchase intentions (H1 & H2). In order to analyze the relationship between product demonstration and purchase intention, a Simple Linear Regression model has been conducted. Furthermore, CBBE consists of multiple dimensions and this research will therefore analyze the individual dimensions on CBBE and purchase intentions. In other words, this research will explain the variation in purchase intentions as much as possible on the basis of the variation of the individual dimensions of CBBE. In order to test this relationship, this research performed a Multiple Linear Regression model. This section will examine if the proposed regression model is a good representation of the collected data.

PRODUCT DEMONSTRATION & PURCHASE INTENTIONS

In order to provide a deeper insight in the relationship of product demonstration on purchase intentions, a Simple Linear Regression has been conducted. The SPSS outputs concerning this test are presented in Appendix I. This study developed two tables that provide a comprehensive overview of the regression test results. Table 6 represents test results concerning the regression model and Table 7 represents the test results concerning the regression coefficients.

H1:	In-store product demonstration has a positive effect on consumers' purchase

As can be seen in Table 6 the variation of product demonstration explains 57.2 % of the variation of purchase intentions. This means that 42.8% of the variation in purchase intentions cannot be explained by product demonstration. There is a good fit between the assumed Simple Linear Regression model and the data: the F-value is 58.453 with a significance level of less than 0.05. The regression model overall predicts consumers' purchase intentions significantly well.

Table 6: Regression Model: Product Demonstration

	Model Summary			*ANOVA*	
	R Square	Adj.R Square	P-value	F-value	P-value
Model 1	*.582*	*.572*	*0.000*	*58.453*	*0.000*

The Pearson correlation and the ANOVA results indicate that the regression model, overall, predicts purchase intentions very well. However, these statistics do not measure the individual contribution of the variables in the model. In this case, there is only one variable, therefore it can be expected that the variable is a good predictor. Because the regression has been based on the original data, the unstandardized regression coefficients are important to consider. In this model, the regression coefficient product demonstration significantly contributes to purchase intentions with a significance level of <.001.

Table 7: Regression Coefficients: Product Demonstration

	Coefficients			*Collinearity indicators*	
	Unst. Coeff.	T-value	P-value	Tolerance	VIF
Constant	*3.841*	*18.741*	*0.000*		
Demonstration	*2.216*	*7.645*	*0.000*	*1*	*1*

*Purchase intentions = 3.841 + 2.216 * Product Demonstration + e*

For the interpretation of this statistical valid model, it is important to consider that the variable product demonstration is a dummy variable. In addition, if consumers participate in a product demonstration, the intention to buy will increase with 2.216 units, which is significantly more than when consumers do not participate in a product demonstration. Based in the results of the Pearsons' correlation and Simple regression analysis, H1 is accepted.

The proposed linear relationship between brand equity and purchase intentions has been decomposed in four sub-hypotheses as can be seen below. A Multiple Linear Regression model has been conducted to examine these relationships. The dataset in which this regression analysis has been performed was structured with the set-up of cross-section data.

H2a	Perceived quality towards a brand has a positive effect on consumers' purchase intentions of that brand.
H2b	Social image of a brand has a positive effect on consumers' purchase intentions of that brand.
H2c	Brand attachment towards a brand has a positive effect on consumers' purchase intentions of that brand.
H2d	Trustworthiness towards a brand has a positive effect on consumers' purchase intentions of that brand.

In order to test how brand equity affects purchase intentions, a Linear Regression Model has been proposed in which individual dimensions of brand equity predict the outcome variable intentions. This study proposed the following regression model:

[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + e

According to the rule of thumb, it is important to have at least five times the numbers of observations as parameters to be estimated. Other researchers argue that a minimum of 15 observations per predictor is sufficient. Green (1991) developed two rules of thumbs for the minimum acceptable sample size for the overall fit of the regression model (R^2) and to test the individual predictors within the model ('beta'). The sample size in this research (44) is not sufficient according both rules, thus, when interpreting the SPSS outputs it is important to take this into account.

As can be seen in the Scatterplot (Appendix J-1) all relevant variables have been taken in consideration. The points are widely divided in the graph and the points in the graph do not display any clusters. In order to test additive relationships between the independent variables, six full models have been examined (Appendix J-2) and no interaction was found significant. Because the data collection has been executed based on paper and pencil manner, the respondents answered the survey questions independently. As can be seen in the Histogram and P-P plot (Appendix J-3), taking into account the limited respondents, this study assumes that the residuals are normal distributed. Although the distribution seems to be negative skewed, previous section (comparing

means) performed a normality test using a Kolmogorov-Smirnov and the Shapiro-Wilk test (Appendix G). These results indicate a normal distribution of both groups. Concerning the homoscedastic assumption, as can be seen in the scatterplot concerning the missing values, this graph does not display a pattern (Appendix J-1). This implies that the residual has the same variance for every value of the independent variable. In Appendix J-4, the partial regression plots provide a better insight on which variable contributes to homoscedasticity. Perceived quality and brand attachment both seems to have the most positive patterns compared to social image and trustworthiness. It is important to account for outliers. Therefore this research performed a table with observations for which the difference between the actual and the predicted value for the dependent variable does not lie in the range of 2.5 standard deviations of the mean residual. As can be seen in the Casewise Diagnostics (Appendix J-6), three observations are out of this range. However, this test determines values with a critical value of +/- 2. Therefore, no outlier has been deleted. Furthermore, the Boxplot does not show any outlier. A bivariate correlation test has been conducted, as can be seen in Appendix J-5, and indicates a large multi-collinearity is a problem. All variables differ significantly from zero and all of them are greater than 0.6. This is important when interpreting the test results, because high correlation between the independent variables can affect the outcome of the regression analysis. This problem will be explored after this section.

REGRESSION MODEL & COEFFICIENTS

The Multiple Linear Regression test results are represented in Appendix K. Important indicators of the estimated regression model can be seen in Table 8. The variations of the individual dimensions of brand equity explain 70 % of the variation of purchase intentions. This means that 30% of the variation in purchase intentions cannot be explained perceived quality, social image, brand attachment and trustworthiness towards a brand. There is a good fit between the assumed Simple Linear Regression model and the data: the F-value is 26.027 with a significance level of less than 0.05. The overall regression model predicts consumers' purchase intentions significantly well.

Table 8: Regression Model: Brand Equity

	Model Summary			*ANOVA*	
	R Square	Adj. R Square	P-value	F-value	P-value
Model 1	*.727*	*.700*	*0.000*	*26.027*	*.000*

Although the test results indicate a good fit between the proposed model and the data, previous section indicated high correlation between the predictor variables. Because multi-collinearity among the variables affects the results of the regression measurement, the individual regression coefficients cannot be interpreted. As can be seen in the collinearity statistics, all variables have a VIF above the 1.5, which implies that the independent variables are highly correlated with each other. The collinearity diagnostics indicates a strong presence of multi-collinearity of brand trustworthiness (condition index >30). Furthermore, the Eigenvalue of social image, brand attachment and brand trustworthiness are extremely low, which implies that these are responsible for the multi-collinearity problem. Finally, all variables have a tolerance level below 0.50, which means that they all are responsible for this problem. In addition, perceived quality, social image and brand attachment have a very low tolerance level of less than 0.30.

Because high correlation between predictors affects the meaning of the regression coefficients, it is necessary to find a statistical solution for this problem. Therefore, an Exploratory Factor Analysis (EFA) has been conducted to see if the correlated variables are driven by a common underlying variable or underlying variance structure. Because the measurement accounts for all of the variance, including the variance in the correlation coefficients and error variance, a Principal Components Analysis (CPA) has been conducted. The EFA with a CPA will be discussed in the next section.

EXPLORATORY FACTOR ANALYSIS

One of the assumptions to run a factor analysis is the size of the research sample. As discussed in step 1, the sample size regarding this study is not large enough. However, in situations where the sample size is small, assigning variables to a specific factor with a large factor loading is sufficient. Because the factor loadings are related to the sample size, in this case forty-four, this research will use a minimum factor loading of 0.7. In addition, variables that do not correlate with other variables need to be excluded before running the analysis. As discussed in previous section considering the multi-collinearity assumption, all variables are correlated with each other.

The independent variables that contain high correlation among each other are grouped variables. Brand equity has been measured using 4 dimensions; perceived quality, social image, brand attachment and brand trustworthiness. Because the EFA has been conducted to incorporate the multi-collinearity problem, this research chooses the orthogonal rotation. This method will create uncorrelated factor scores that can be used in further analysis. The test results concerning the EFA can be found in Appendix K**.** Table 9 represents the key findings concerning this measurement.

Table 9: EFA: KMO & Bartlett's Test

KMO Measure of Sampling Adequacy	*Bartlett's Test of Sphericity*		
	Approx. Chi- Square	DF	P-value
0.809	*139.153*	*6*	*.000*

As can be seen in Table 9, the value of the KMO measure is above the 0.5 which indicates that a factor analysis would be an appropriate measurement. The significance level of the Bartlett's test of sphericity indicates relationships between the variables (Sign < 0.05). Furthermore, the Correlation Matrix in Appendix K displays a determinant that is higher than 0.0001 (0.33), which implies that there is no high correlation among the variables and that conclusions can be drawn from the analysis.

Table 10: EFA: Total Variance Explained

Component	*Eigen Values*			*Extraction Sums of Squared Loadings*		
	Total	% of Var.	Cum.	Total	% of Var.	Cum.
1	*3.296*	*82.395*	*82.395*	*3.296*	*82.395*	*82.395*
2	*.366*	*9.151*	*91.546*			
3	*.203*	*5.071*	*96.617*			
4	*.135*	*3.383*	*100.000*			

Table 10, displays the test results of the EFA measure and indicates one underlying factor after extracting all factors with eigenvalues greater than 1. This factor explains 82.4% of the total variances in the four variables. Appendix K represents the Communalities, Component matrix and Screeplot. As can be seen in the Communalities table after extraction, the values are higher than 0.7, which implies that the retained factor explains at least 70% of the variance of the variables. All values seem to be relevant for the definition of the factors (lowest value is 0.749), thus, no value need to be eliminated. The Screeplot displays the elbow above the two factors. However, the EFA, with Kaisers Criteria of Eigenvalues >1, indicated 1 underlying dimension. Because the second factor is 0.366 and is close to the third factor, it can be concluded that the four dimensions of brand equity have 1 underlying factor which implies that the individual brand equity dimensions measuring the same thing. Although this study contains a low sample size, the higher the loadings on a factor the smaller the sample size can be (Field, 2000).

LINEAR REGRESSION BASED ON FACTORS

Earlier Multiple Regression measurement, concerning the relationship between the four dimensions of CBBE and purchase intentions, indicated high multi-collinearity. Therefore an EFA with a PCA has been conducted and one underlying dimension has been found. To analyze the relationship between CBBE and purchase intentions a Linear Regression has been performed based on the underlying factor. The Factor score has been saved using the Anderson-Rubin method. The SPSS outputs concerning this measurement are presented in Appendix M.

Before testing the linear relationship between the factor and purchase intentions, first the reliability of the variables has been examined. In addition, a Cronbach's alpha has been determined to measure the extent to which the scale measures one underlying factor or construct. As can be seen in the 'Reliability Statistics', the alpha contains a value above the 0.8 which implies a strong underlying factor.

As can be seen in Table 11 the variation of factor 1 explains 68.8% of the variation of purchase intentions. This means that 31.2% of the variation in purchase intentions cannot be explained by the underlying factor. There is a good fit between the assumed Simple Linear Regression model and the data: the F-value is 95.719 with a significance level of less than 0.05. According to the significance level of the F-test, the coefficients other than the intercept are significant different from zero. The regression model overall predicts consumers' purchase intentions significantly well.

Table 11: Regression Model Based on Factors: Brand Equity

	Model Summary			*ANOVA*	
	R Square	Adj.R Square	P-value	F-value	P-value
Model 1	*.695*	*.688*	*.000*	*95.719*	*.000*

In this case, there is only one Factor, therefore it can be expected that the variable is a good predictor. In this model, the regression coefficient product demonstration significantly contributes to purchase intentions with a significance level of <.001.

Table 12: Regression Coefficients: The Factor Brand Equity

	Unst. Coeff.	*Stan. Coeff.*	*T-value*	*P-value*
Constant	*3.841*		*39.985*	*.000*
Brand Equity	*2.216*	*0.834*	*9.784*	*.000*

*Purchase intentions = 3.841 + 2.216 * Brand Equity + e*

For the interpretation of this statistical valid model, it is important to consider that the independent variable which is the underlying factor of the dimensions of brand equity. Because these dimensions of brand equity seem to measure the same thing, these have been taken together. In addition, if brand equity perceptions increases by 1 unit, than the intention to buy will significantly increase with 2.216 units. Based on the results of the Pearsons' correlation and Simple regression analysis, H2 is accepted.

PRODUCT DEMONSTRATION AS MODERATOR

Previous tests indicated that product demonstration significant and positively affect purchase intentions. Previous section indicated that one underlying factor incorporates all four dimensions of brand equity. This study examines the interaction effect of product demonstration between the relationship of CBBE and purchase intentions.

H3	*In-store product demonstration has a positive interaction effect between brand equity and consumers' purchase intentions.*

Previous tests determined a significant and meaningful regression model of brand equity and purchase intentions, based on one factor. To measure the interaction effect, a restricted and a full model has been performed. The restricted model (model 1) includes the independent variable brand equity (factor 1) and the independent variable product demonstration. The interaction effect of the latent factor and product demonstration has been added in the full model (model 2). In addition, the independent variable Factor 1 has been standardized (Factor scores are saved using the Anderson-Rubin method). The test SPSS test results are represented in Appendix N and Table 13 and 14 represent important findings.

Table 13: Regression Model: Brand Equity & Product Demonstration

	Model Summary			*ANOVA*	
	R Square	Adj. R Square	P-value	F-value	P-value
Model 1	*.763*	*.752*	*.000*	*66.130*	*.000*
Model 2	*.779*	*.762*	*.102*	*46.959*	*.000*

As can be seen in Table 13 the variation of model 1 explains 75.2% of the variation of purchase intentions. In relation to previous test, this implies that the model including product demonstration and brand equity explains more of the variation of purchase intentions than the single effects. There is a good fit between the assumed Simple Linear Regression model and the data: the F-value is 66.130 with a significance level of less than 0.05. According to the significance level of the F-test, the coefficients other than the intercept are significant different from zero. The regression model overall predicts consumers' purchase intentions significantly well. The full model (model 2) that includes the interaction between product demonstration and brand equity, explains 76.2 % of the variation of purchase intentions, however, not significant. In addition, the variation of purchase intentions cannot significantly explained by the variation of product demonstration, brand equity and the interaction between these variables. The ANOVA indicates that the model, overall, predicts the outcome variable significant well (p-value < .05). However, model 1 includes a higher significant F-value meaning that the initial model significantly improved the ability to predict the outcome variable better than the new model.

Table 14: Regression Coefficients: Brand Equity & Product Demonstration

Model 1	Unst. Coeff.	St. Coeff.	T-value	P-value
Constant	*4.426*		*23.576*	*.000*
Brand Equity	*.862*	*.586*	*5.607*	*.000*
PD	*1.045*	*.360*	*3.441*	*.001*
Model 2	Unst. Coeff.	St. Coeff.	T-value	P-value
Constant	*4.596*		*21.898*	*.000*
Brand Equity	*1.111*	*.756*	*5.245*	*.000*
PD	*1.048*	*.361*	*3.524*	*.001*
*Brand Equity * PD*	*-.503*	*-.211*	*-1.674*	*.102*

In model 1, the regression coefficients brand equity (factor 1) and product demonstration significantly contributes to purchase intentions with a significance level of <.05. Therefore, the unknown factors in the proposed regression model are determined and the model can be filled in.

*Purchase intentions = 4.426 + 0.862 * Brand Equity + 1.045 * PD + e*

The first value is the constant term and gives the predicted value of purchase intentions when all predictors are zero. The second coefficient is significant and indicates that an increase of 1 unit in brand equity perceptions would positively increase purchase intentions with 1.290 units, while holding the other coefficients constant. The third coefficient is also significant and indicates that participating in a product demonstration positively increase the intention to buy the product with 0.885 units, while holding brand equity constant. In model 2, the interaction effect between product demonstration and brand equity is not significant, however the regression coefficients product demonstration and Factor 1 remains significant. Therefore H3 is rejected.

INVOLVEMENT AS MODERATOR

This study suggests that the strength of the relation between product demonstration and purchase intention depends on the level of purchase involvement.

H4	*In-store product demonstration has a higher positive effect on consumers' purchase intentions for high involved than for low involved consumers.*

To measure the interaction effect, a restricted and a full model has been performed. The restricted model (model 1) includes the independent variables brand equity (factor 1), product demonstration and purchase involvement. The interaction effect of the product demonstration and purchase involvement has been added in the full model (model 2). In addition, the independent variable brand equity has been standardized (Factor scores are saved using the Anderson-Rubin method). The test SPSS test results are represented in **Appendix O** and Table 15 and 16 represent important findings.

Table 15: Regression Model: Product Demonstration & Involvement

	Model Summary			*ANOVA*	
	R Square	Adj. R Square	P-value	F-value	P-value
Model 1	*.792*	*.777*	*.000*	*50.884*	*.000*
Model 2	*.803*	*.778*	*.354*	*31.057*	*.000*

As can be seen in Table 15 the variation of model 1 explains 77.7% of the variation of purchase intentions. In relation to previous test, this implies that the model including product demonstration, brand equity and purchase involvement explains more of the variation of purchase intentions than the single effects. There is a good fit between the assumed Simple Linear Regression model and the data: the F-value is 50.884 with a significance level of less than 0.05. The regression model overall predicts consumers' purchase intentions significantly well. The full model (model 2) that includes the interaction between product demonstration and brand equity and between product demonstration and purchase involvement, explains 77.8 % of the variation of purchase intentions, however, not significant. In addition, the variation of purchase intentions cannot significantly explained by these independent variables and the interactions. The ANOVA indicates that the model, overall, predicts the outcome variable significant well (p-value < .05). However, model 1 includes a higher significant F-value, meaning that the initial model significantly improved the ability to predict the outcome variable better than the new model.

Table 16: Regression Coefficients: Product Demonstration & Involvement

Model 1	*Unst. Coeff.*	*St. Coeff.*	*T-value*	*P-value*
Constant	*6.075*		*8.441*	*.000*
Brand Equity	*1.290*	*.233*	*5.547*	*.005*
PD	*.885*	*.296*	*2.992*	*.000*
Involvement	*-.342*	*.145*	*-2.364*	*.023*
Model 2	*Unst. Coeff.*	*St. Coeff.*	*T-value*	*P-value*
Constant	*6.254*		*7.212*	*.000*
Brand Equity	*1.502*	*.1.022*	*5.263*	*.000*
PD	*.397*	*.137*	*.284*	*.778*
Involvement	*-.351*	*-.316*	*-1.967*	*.057*
*Brand Equity * PD*	*-.564*	*-.237*	*-1.130*	*.266*
*Involvement * PD*	*.114*	*.214*	*-.368*	*.715*

In model 1, the regression coefficients brand equity (factor 1), product demonstration and purchase involvement significantly contributes to purchase intentions with a significance level of <.05. Therefore, the unknown factors in the proposed regression model are determined and the model can be filled in:

*Purchase intentions = 6.075 + 1.290 * Brand Equity + 0.885* PD – 0.342* Involvement + e*

The first value is the constant term and gives the predicted value of purchase intentions when all predictors are zero. The second coefficient is significant and indicates that an increase of 1 unit in brand equity perceptions would positively increase purchase intentions with 1.290 units, while holding the other coefficients constant. The third coefficient is also significant and indicates that participating in a product demonstration positively increase the intention to buy the product with 0.885 units, while holding brand equity constant. The fourth variable is also significant and indicates that an increase in purchase involvement with 1 unit decreases the intention to buy the product with 0.342 units.

In model 2, the interaction effects between product demonstration and brand equity and between product demonstration and purchase involvement are not significant. The regression coefficients product demonstration and Factor 1 remains significant, after including an interaction effect between in the model. Therefore H4 is rejected.

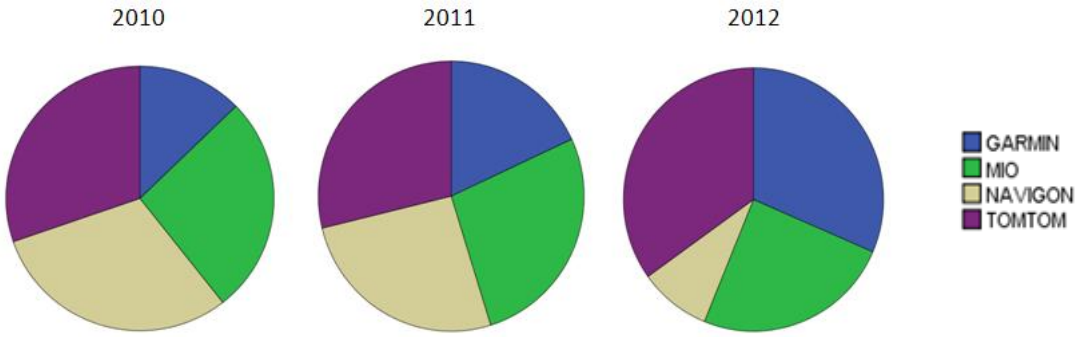
4.2 STUDY 2

Study two examines the effect of in-store product demonstration on actual brand sales. As can be seen in Chapter 3, a positive relationship has been proposed between product demonstration and the amount of sales. Also, it has been suggested that product demonstration decreases the sales of competitive brands in the same product category. This chapter will test these two propositions with point of sales data on a weekly basis.

DATA DESCRIPTION

Test results of the data exploration can be seen in Appendix P**.** After the adjustments the dataset contained 488 data points which are the sales of four brands in the product category Navigation Systems on all Saturdays during 2010, 2011 and 2012 in the Mediamarkt Rotterdam. In total, one out of ten Saturdays there was a product demonstration. The dataset contains sales of Garmin, Mio, Navigon and Tomtom. As can be seen in Figure 9, the Pie charts indicate the market share of each brand in each year.

Figure 9: Percentage of Total Sales



The Pie Charts display the four brands and their sales in comparison with the total sales of these four brands. In 2010 and 2011, all four brands seem to have approximately the same amount of sales. In 2012, the amount of sales of Navigon decreased, whereas Garmin and TomTom sold more products. In relation to the price, Descriptive Statistics have been conducted to give analyze the differences in price level between the four brands. Garmin (193.211) and TomTom (158.810) have the highest average price and sold the most products in 2012. Boxplots have been performed representing the distribution of sales per brand. The Boxplots of Garmin, Mio and Navigon do not display a symmetrical distribution and their values are more clustered at the low and of the distribution.

Figure 10: Brand Sales Over Time

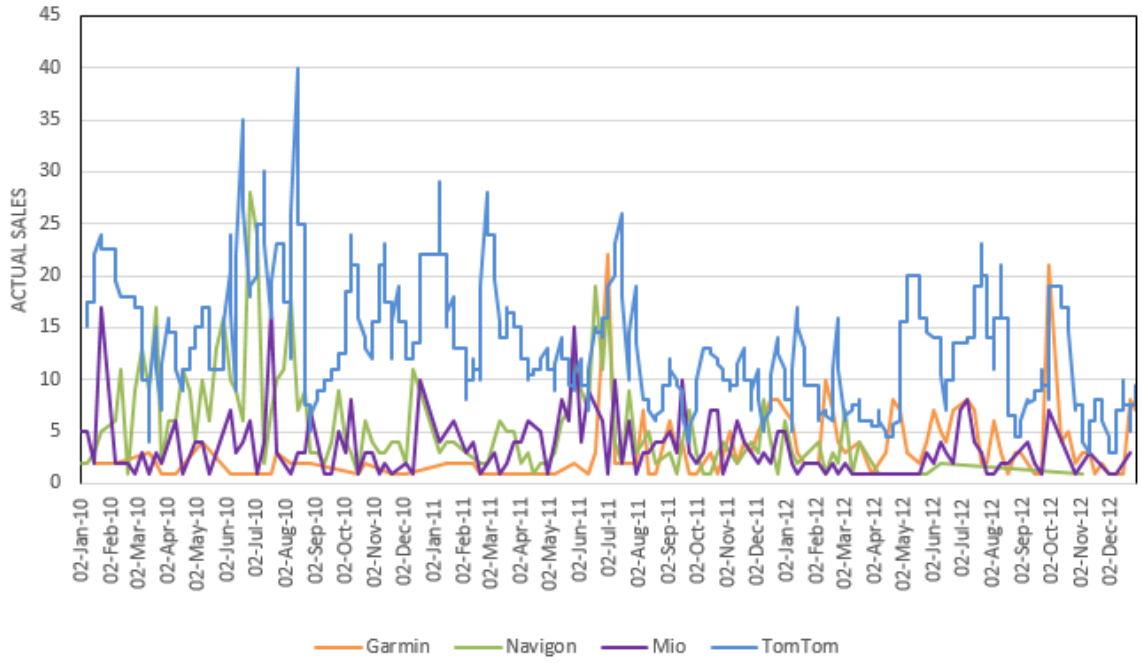


Figure 10 displays the sales of each brand over time, which provides another view of the sales directions. As can be seen in the pie charts TomTom has the highest amount of sales in percentage in 2012, however, when viewing the graph the sales of TomTom seems to drop over time. It is interesting to see how the sales of Navigon and TomTom both drops in parallel.

Table 17 : Mean Price & Sales in 2010-2012

	Garmin	Mio	Navigon	TomTom
Mean Price	*189.4*	*114*	*136.9*	*159*
Mean Sales	*3.42*	*3.60*	*5.77*	*12.88*

As can be seen in Table 17, Mio is the lowest priced brand whereas Garmin is the highest prices brand. It is noteworthy to see that both of these brands have the lowest mean sales over the three years of data. TomTom has the highest mean sales.

RESULTS & ANALYSIS

Several statistical tests have been conducted to test the theoretical framework presented in Chapter 3. The purpose of this section is to analyze and interpret the data in an accurate, reliable, comprehensive and verifiable manner. In order to insure these requirements, each paragraph includes a heading that represents the meaning of the performed statistical test. The statistical test has been performed using statistical software SPSS. Before the statistical test has been performed, all necessary assumptions are measured. Each paragraph elaborates on the analysis and describes the interpretation of the measurement results in an adequate and comprehensive way.

First, several normality test has been conducted to test whether the distribution of log-sales on brand, year and group level are normal. The results of these analyses indicate whether the assumption of normality can be fulfilled. Second, a Levene's test and an Independent Two Sample T-test have been conducted to measure if the sales during the presence of a product demonstration significantly differ compared with sales without the presence. After this, a Linear Regression Analyses have been performed to support the relationship between the presence of a product demonstration on brand sales and competitors' sales.

TESTING NORMALITY

A normal distribution is an assumption for many parametrical tests. This research examines the effect on brand sales and therefore tests whether the distribution is normal. The results of the normality tests are represented in Appendix Q**.** This study first tested the normality of the original variable actual sales.

In order to analyze the distribution of total sales a Histogram, Boxplot, Q-Q Plot and Frequency table have been conducted (Appendix Q-1). The Histogram indicates a positively skewed distribution. The Boxplot indicates an asymmetric and positively skewed distribution, in which the sale scores are more clustered on the low end of the distribution. As can be seen in the Q-Q Plot, the observed values are not plotted around the straight line, indicating non normality. The Frequency Table provides a deeper insight concerning the distribution of the variable sales. The table indicates a skewness with a z-value of 14.15 (1.604/.111) and a kurtosis with a z-value of 13.33 (2.945/0.221). Both values are higher than 1.96 and indicate a significant positive skew distribution. Considering the normality, both the Kolmogorov-Smirnov (K-S) and a Shapiro-Wilk (S-W) test indicate that the distribution of actual sales is not normal.

LOG TRANSFORMATION

In order to enhance a better distribution, this study took the logarithm of the sales variable. In addition, the Log10 was the best method in comparison with the LN, Squared Root and Reciprocal method. This transformation reduces positive skewness. The results of the normality tests concerning the transformed variable are presented in Appendix Q-2.

A Histogram, Boxplot, Q-Q Plot and Frequency table has been conducted in order to provide a deeper understanding of the distribution of the logarithmic variable sales. The Histogram still indicates positive skewness, however less than before the transformation. The Boxplot shows a better distribution, without any possible outliers. The Q-Q Plot of the logarithmic variable presents a better distribution; the observed values are better plotted around the straight line in comparison with the Q-Q Plot of actual sales. As can be calculated from the Frequency test results, the z-score of the skewness is 1.85 (0.205/0.111) and the kurtosis is 4.34 (-0.937/0.221). This implies that at a significance level of 0.05, this distribution does not contain a significant skewness (1.85<1.96). The results of the K-S and S-W tests still indicate a normality problem (p-value <.05).

EXPLORING NORMALITY

Previous section tested the normality of actual sales and indicated a non-normal distribution. Also after the transformation, the distribution of sales remained not normal. This section elaborates on several tests that have been conducted to provide a deeper insight into the distribution of log-sales related to brands and years. A comprehensive table has been developed that provides a clear overview.

As can be seen in the upper side of Table 18 (next page), the test results still indicate that the distribution of sales of the four brands together is not normal in 2010, 2011 and 2012. Looking at the individual brands, only the sales of TomTom is normal distributed in each year separately and in all years together. Sales of Mio is normal distributed when considering the year 2011 and Navigon when considering 2010 and 2011.

Table 18: Normality Tests Results: P-values of Sales

SALES	*2010*		*2011*		*2012*		*All Years*	
	K-S	S-W	K-S	S-W	K-S	S-W	K-S	S-W
ALL BRANDS	*.000*	*.000*	*.001*	*.000*	*.000*	*.000*	*.000*	*.000*
GARMIN	*.000*	*.000*	*.002*	*.002*	***.079***	*.012*	*.000*	*.000*
*MIO**	*.016*	*.002*	*.032*	***.102***	*.000*	*.000*	*.000*	*.000*
NAVIGON	*.032*	***.326***	*.037*	***.068***	***.074***	***.060***	*.000*	*.003*
*TOMTOM**	***.085***	***.294***	***.200***	***.911***	***.200***	***.764***	***.090***	***.251***

SALES	*All Years*							
	Mio Group 1		Mio Group 2		TomTom Group 1		TomTom Group 2	
	K-S	S-W	K-S	S-W	K-S	S-W	K-S	S-W
TOMTOM	***.200***	***.996***	***.200***	***.071***	***.200***	***.359***	***.200***	***.071***
MIO	***.200***	***.982***	*.000*	*.000*	***.200***	***.128***	*.000*	*.000*
GARMIN	***.075***	***.122***	*.000*	*.000*	***.200***	***.138***	*.000*	*.000*
NAVIGON	***.115***	***.692***	*.001*	*.012*	***.200***	***.706***	*.001*	*.012*

**Associated with product demonstrations | Group 1: Treated | Group 2: Not Treated |*

In the lower end of the table the normality test results concerning the sales of each brand are represented. In addition, only Mio and TomTom facilitate product demonstrations. As can be seen in the table, the amount of sales during product demonstration (group 1) of each brand is normal distributed. Furthermore, the sales of TomTom is normal distributed in both groups. This implies that sales during the presence of a product demonstration and without the presence of TomTom is normal distributed. Altogether, this table provides an overview of the normality test results and further analysis will refer to this table.

COMPARING MEANS

In order to test whether sales significantly differs during a product demonstration, Independent Sample T-tests has been conducted. This study suggests that sales are higher for promoted brands and lower for non-promoted brands, during an in-store product demonstration. In order to capture a pure effect of a product demonstration related to one of the brands, this study controls for the promotion of another brand. In other words, this study considers the possibility that, for example when examining sales of Mio, it could be that when Mio does not promote their brand, during that time TomTom does. This would affect the test results and therefore variables have been created that controls for the presence of a promotion of one brand, when examining the other.

This study suggests that the presence of an in-store product demonstration shows significant differences in amount of sales of the promoted and non-promoted brands. A Simple Linear Regression has been performed based on the category independent variable product demonstration and sales of each brand as dependent variable. The test results are represented in **Appendix R.**

H5:	*Sales of promoted brands are higher during the presence of an in-store product demonstration of that brand.*
H6:	Sales of non-promoted brands are lower during the presence of an in-store product demonstration of competitive brands.

Eight Simple Linear Regression models have been conducted in order to examine the differences in sales of TomTom, Mio, Garmin and Navigon during a product demonstration of TomTom and Mio. Table 19 provides a comprehensive overview of the test results.

Table 19: Simple Linear Regression: The effect of PD on sales

	MIO DEMONSTRATION			TOMTOM DEMONSTRATION		
	Intercept	*Coefficient*	*P-value*	*Intercept*	*Coefficient*	*P-value*
GARMIN	*.568*	*-.066*	*.433*	*.568*	*.056*	*.468*
MIO	***.565***	***.301***	***.000***	*.565*	*-.081*	*.259*
NAVIGON	*.740*	*-.012*	*.892*	*.740*	*.114*	*.319*
TOMTOM	*1.074*	*.021*	*.734*	***1.074***	***.191***	***.003***

As can be seen in the table above, the p-value indicates if the regression coefficient is significantly different than zero and thus have an effect on the outcome variable. This tables indicates that the average sales of the promoted brands (Mio and Tomtom) are significantly different when that brand has been promoted. In addition, regression coefficients of both brands are significant positive, which implies that the presence of a product demonstration increase sales of that brand. Another interesting finding is that the effect of a product demonstration for Mio is higher (.301) compared with TomTom (.191).

The amount of sales of the non-promoted brands are not significantly different during the presence of a product demonstration. In fact, the average sales of Garmin and Navigon seems to be higher during a product demonstration of TomTom. Previous section indicated that sales concerning Garmin, Mio and Navigon do not contain a normal distribution. The violation of the normality assumption can affect the test results. However, because sales of TomTom is normal distributed,

this study find reliable evidence for both hypotheses. Therefore, this study accepts H5 and rejects H6.

LINEAR REGRESSION ANALYSIS

Previous tests showed that the amount of sales significantly differs of promoted brands during a product demonstration. Besides comparing means, this study examines the relationship between product demonstration, brand sales and competitor sales. This study suggests that product demonstrations increase brand substitution. That is, drawing consumers from one brand to another brand using promotional tools. This substitution effect has been measured using a regression model that determines price-elasticity.

SUBSTITUTION EFFECT

This study suggests that the presence of an in-store product demonstration decrease the price sensitivity of promoted brands. A Multiple Linear Regression Analysis has been used and test results are represented in Appendix S.

H7	*The presence of an in-store product demonstration decrease price sensitivity for promoted brands*

The choice to use market-share as dependent variable instead of sales can be explained by the usefulness of the model. It is important that the model and the coefficients, based on theoretical groundings, are appropriate to test the hypothesis. As can be seen in **Appendix S**, regression coefficients concerning the dependent variable sales do not follow these theoretical arguments, even when controlling for brands. In addition, the regression coefficient of price (L_Price) should not be positive. Because, when price increases, the sales should decrease. The coefficients concerning market-share do follow these theoretical arguments and therefore market-share has been used as dependent variable that enables to test the hypothesis.

$$\begin{aligned}(\text{Market-share}, i, t) = {} & B0 + B1*\text{Log}(\text{Price}, i, t) + B2*\text{Log}(\text{Price}, j, t) + B3*(\text{PD}, i, t) + \\ & B4*[\text{Log}(\text{Price}, i, t)*(\text{PD}, i, t)] + B5*[\text{Log}(\text{Price}, j, t)*(\text{PD}, i, t)] + \\ & B6*\text{GARMIN} + B7*\text{MIO} + B8*\text{NAVIGON} + e\end{aligned}$$

Table 20: Variable Explanation

(Market-share, i, t)	Market – share of Brand (i) on Time (t)
Log (Price, i, t)	Price of Brand (i) on Time (t)
Log (Price, j, t)	Average Price of Competitors of Brand (i) (CPrice) on Time (t)
(PD, i, t)	Presence of Product Demonstration of Brand (i) on Time (t)
GARMIN	Dummy variable of the brand Garmin: 0 no 1 yes
MIO	Dummy variable of the brand MIO: 0 no 1 yes
NAVIGON	Dummy variable of the brand NAVIGON: 0 no 1 yes

The advantage of this model is that it measures the effect of a product demonstration on market-share, taking the prices into account. In addition, if the price of a brand increase, market-share of that brand will decrease and if the price of competitors increase, the market-share of a brand will increase. These relationship also apply vice versa. In relation to product demonstration, when the interaction effect with brand price is significant, it implies that the effect of brand price on brand sales differs depending on the presence of a product demonstration. In other words, this study suggests that consumers are less price sensitive during the presence of a product demonstration. The other interaction effect works vice versa, in which this study suggest that consumers are more price sensitive towards competitors when a product demonstration is present. This gives the opportunity to explain the substitution effect in light of price elasticity. Furthermore, three dummy variables have been added into the model. These dummy variables control for the brands. This is necessary because different brands have different effects. In addition, it can be expected that the price sensitivity for Mio is much higher than for TomTom, because the brand TomTom is much stronger.

As can be seen in Appendix S, the Scatterplot indicate that all relevant variables has been taken in consideration. The points are not widely divided in the graph and the points in the graph display no groups or clusters. In relation to the residuals, this study assumes that the observations have been made independently of the others. As can be seen in the Histogram and Normal P-P-plot, the residuals are more of less normal distributed. However, the normality test results of the standardized residuals indicate that the standardized residuals are not normal distributed (sign. < 0.05). Considering the partial graphs, all variables seem to violate the assumption of linearity. As can be seen in the Collinearity Diagnostics and the first Correlation Matrix, the absence of multi-collinearity assumption has been violated. In addition, the Collinearity Statistics in the Coefficients table indicates extreme high VIF values for product demonstration and the interaction terms. This is a problem, because the interaction variables are important in this study.

ADJUSTMENTS

In order to solve the correlation problem, this study standardized the independent variables using the subtract-mean method. The advantage of this method is that it does not affect the interpretation of the coefficients. A Bivariate Matrix has been conducted concerning these adjusted variables and indicate a significant drop in correlation between the independent variables. In addition, this problem has been solved. Furthermore, three extra data points have been deleted from the dataset because of non-useful or unrealistic values: (1) Price of Garmin was unrealistic (570 euro) on 12 May 2012, (2) competitor average sales was 0 of brand TomTom on 24 March 2012, (3) competitor average sales was 0 of brand TomTom on 6 October 2012.

REGRESSION MODELS & COEFFICIENTS

The proposed regression model has been tested and the result are presented in Appendix T. In order to explore the contribution of the interaction effects, a restricted and a full model has been performed. The restricted model includes the independent variables product demonstration, price and competitor price including the dummy variables that control for the brands. The interaction effect of product demonstration and both prices have been added in the full model. Table 21 and 22 displays important findings regarding the model appropriateness and the regression coefficients.

Table 21: Regression Model: Market-Share

	Model Summary			*ANOVA*	
	R Square	Adj. R Square	P-value	F-value	P-value
Restricted	*.674*	*.670*	*.000*	*164.666*	*.000*
Full	*.676*	*.670*	*.000*	*123.715*	*.000*

As can be seen in Table 21 the variation of model 1 explains 67% of the variation of sales. There is a good fit between the assumed regression model and the data: the F-value is 164.666 with a significance level of less than 0.05. According to the significance level of the F-test, the coefficients other than the intercept are significant different from zero. The regression model overall predicts the sales significantly well. The full model (model 2) that includes the interaction between product demonstration and price, explains also 67% of the variation of sales. The ANOVA indicates that the model, overall, predicts the outcome variable significant well (p-value < .05). Altogether, the proposed models seems to be a good fit. This study is more interested in the individual regression coefficients because the significance level of these coefficients indicate whether the hypothesis should be accepted or rejected.

Table 22: Regression Coefficients: Market-Share

Restricted Model	Unst. Coeff.	St. Coeff.	T-value	P-value
Constant	*.582*		*50.448*	*.000*
PD	*.073*	*.087*	*3.212*	*.001*
Log (Price)	*-.100*	*-.060*	*-1.791*	*.074*
Log (CPrice)	*.052*	*.018*	*.641*	*.522*
Garmin	*-.395*	*-.694*	*-22.154*	*.000*
Mio	*-.447*	*-.862*	*-23.622*	*.000*
Navigon	*-.363*	*-.663*	*-20.689*	*.000*
Full - Model	**Unst. Coeff.**	**St. Coeff.**	**T-value**	**P-value**
Constant	*.583*		*50.305*	*.000*
PD	*.067*	*.079*	*2.849*	*.005*
Log (Price)	*-.101*	*-.060*	*-1.781*	*.075*
Log (CPrice)	*.026*	*.009*	*.316*	*.752*
Garmin	*-.397*	*-.697*	*-22.124*	*.000*
Mio	*-.449*	*-.865*	*-23.596*	*.000*
Navigon	*-.364*	*-.664*	*-20.694*	*.000*
*Log (Price) * PD*	*.414*	*.036*	*1.318*	*.188*
*Log (CPrice) * PD*	*-.088*	*-.010*	*-.358*	*.720*

As can be seen in Table 22, the main independent variables product demonstration and brand effects in the restricted model seem to have a significant effect on market-share. The variable product demonstration (PD) significantly predicts the dependent variable market share. The positive sign indicates that when product demonstration is present, market share will increase with .067 units. The regression coefficients price and competitor price do not significantly contribute in this model. The full model 2 includes the interaction variable of product demonstration and price. The test results indicate that the interaction of product demonstration and price (.188>0.05), and product demonstration and competitor price are not significant (.720>0.05). The coefficients concerning the brands Garmin, Mio and Navigon are significant in both models. The negative sign of these coefficients implicates that these brands negatively contributes to market-share compared with TomTom. Because the interaction effects are not significant, this study rejects H7.

CHAPTER 5 GENERAL DISCUSSION & IMPLICATIONS

This research examined the effect of product demonstration, as an in-store promotional tool, on brand value and brand sales. The findings are extremely valuable for the academic and practical field, since the consequences of this tool have never been examined before. Two different research designs have been used to measure the effect on brand sales and brand value and several findings can be drawn from the analysis. These findings contribute as an answer towards the main question and hereafter, managerial implications will be described.

MAIN QUESTION & HYPOTHESES

What is the effect of product demonstration, as an in-store marketing tool, on brand value and brand sales?

Table 23 :	**Hypothesis**	**Supported**
H1	In-store product demonstration has a positive effect on consumers' purchase intention towards the demonstrated brand.	Yes
H2	Customer-based brand equity towards a brand has a positive effect on consumers' purchase intentions towards that brand.	Yes
H3	In-store product demonstration has a positive interaction effect between customer-based brand equity and consumers' purchase intentions.	No
H4	Purchase involvement has a positive interaction effect between in-store product demonstration and consumers' purchase intentions.	No
H5	Sales of promoted brands are higher during the presence of an in-store product demonstration of that brand.	Yes
H6	Sales of non-promoted brands are lower during the presence of an in-store product demonstration of competitive brands.	No
H7	The presence of an in-store product demonstration decrease price sensitivity for promoted brands	No

THEORETICAL INTERPRETATION

There are a number of important conclusions that can be drawn from this study. Since the main question consists of two facets, the conclusion has been separated into brand value and brand sales. It is important to consider the findings within the context and boundaries of this research.

BRAND VALUE

A product demonstration is a valuable promotional tool to influence consumers at the point of purchase. The analysis presented in this research indicates that participating in a product demonstration significantly increase consumers' purchase intentions, however, does not affect the level of perceived brand equity.

The analysis have been based on an actual field experiment where twenty-two consumers participated in a product demonstration and twenty-two consumers did not. The variables were measured in a giant electronic store, during and without the presence of a product demonstration in the product category curling irons.

Brand value perceptions were measured using a customer-based brand equity approach with four dimensions: perceived quality, social image, brand attachment and trustworthiness towards a brand. The analysis clearly identified one underlying dimensions and grouped the four dimensions of CBBE into one factor. This research revealed that the level of brand equity perceptions determines the level of purchase intentions. In other words, consumers' brand equity perceptions are positively related to consumers' purchase intentions.

Product demonstration is a valuable and powerful tool to affect consumers' purchase intentions inside the store. Although product demonstration and brand value perceptions positively relates to purchase intentions, participating in a product demonstration does not affect brand value perceptions.

Furthermore, the analysis indicated that the level of purchase involvement does not have a significant interaction effect between product demonstration and purchase intentions. In other words, participating in a product demonstration increases the intention to buy the demonstrated brand, regardless of the level of purchase involvement.

BRAND SALES

This research confirms that the presence of a product demonstration increases sales of the promoted brand in the same product category. However the analysis did not support the negative relationship between the presence of a product demonstration and sales of non-promoted brands. In addition, a decrease in price sensitivity was not found significant in this research.

The analysis have been based on three years weekly sales data of four brands in the product category navigation systems. Sales of the brands Garmin, Mio, Navigon and TomTom have been analyzed during and without the presence of a product demonstration in that product category. In addition, Mio and TomTom facilitated product demonstrations on an occasional basis.

The test results indicate that the average sales of the promoted brands are significantly higher during the presence of a product demonstration of that brand. Moreover, the increase in sales differs among promoted brands. This implies that a product demonstration in general increases sales, but the effectiveness differs among brands. It is not a surprise that the effectiveness of promotional activities are higher for Mio than for TomTom, because it can be expected that promotional tools are more effective for less known brands than for strong brands.

Another interesting conclusion is that the presence of product demonstration of a brand does not affect the sales of non-promoted brands. In fact, although the findings were not significant, the some non-promoted brands sold even more products during the presence of a promotion. This is noteworthy, because it can be expected that the sales of non-promoted brands should drop when facing a promotion. Finally, it can be conclude that the presence of a product demonstration of a particular brand, does not negatively affect the sales of non-promoted brands.

Finally, this research tried to find the price-elasticity during the presence of an in-store product demonstration. Including the presence of a product demonstration, the price of a brand, the competitors prices and the interaction between these variables enables to measure the substitution effects during the presence of a product demonstration. Unfortunately, the interactions in the proposed model were not significant. This implies that the presence of a product demonstration does not affect price sensitivity and thus does not affect the relation between price and sales. In other words, this tool does not influence consumers' behavior towards price.

COMPARISON WITH PRIOR RESEARCH

The propositions that have been tested in both studies are based on prior research. It is therefore important to compare the rejected hypotheses in this study that have been find significant in prior studies.

This research proposed a positive interaction effect of product demonstration on brand value and purchase intentions, because prior research indicated that high advertising expenditure significant affect brand value perceptions. Because product demonstration is a very expensive in-store marketing tool, it can be expected that this tools also affect brand value perceptions. Yoo et al. (2000) indicated that high advertising spending are positively related to high brand equity perceptions. This study examined the differences in brand equity by analyzing consumers' brand equity perceptions with and without the presence of a product demonstration. Therefore, it could be expected that consumers perceive a product demonstration, facilitated by manufactures increase their value perceptions of that brand. There are two overall differences which may cause the different research outcomes. (1) This research used three product categories with twelve different brands, which is a broader research array and therefore the outcome is more reliable. (2) This research argued that frequent advertising leads to an increase in brand equity, whereas this research used a cross-sectional analysis where only one point in time has been considered. Cobb-walgren et al. (1995) also indicated that high advertisings spending are positively related to brand value perceptions and purchase intentions. Their research used two different brands in from a service category. Also, they examined the effect of advertising spending over a time period of ten years. These main differences may cause the differences in the outcome.

Another proposition that has been rejected in this current research is the proposed promotional elasticity of in-store product demonstrations. In addition, the presence of a product demonstration increase sales of the demonstrated brand and decrease sales of non-promoted brand, but differs in its effect when taking the price of the products into account. According to Blattberg and Wisniewski (1989) and Narasimhan et al. (1996) differs the effect of sales promotion between brands. One main difference between this research and their research is the fact that they examined price promotions and display accompanied with price discounts. Next to this difference, they also use impulsive products and a wide variety of products and brands.

PRACTICAL IMPLICATIONS

There is a great lack of evidence concerning the effectiveness of in-store product demonstration in relation to consumers' purchase intentions. The findings of this study provide a deeper understanding towards in-store product demonstration and is of great value to manufacturers and retailers. The findings of this study determine sufficient insights that can be used in the practical field.

Managerially, within the context of the study's limitations, the findings suggests that the deployment of product demonstration as a promotional tool increases consumers' purchase intentions towards the demonstrated product. This is a valuable conclusion, especially because a pure product demonstration is not associated with any price incentives. As can be seen in the literature review, price promotions contain long-term negative effects. Therefore, in-store product demonstration is proven to be a valuable sales promotion tool.

Prior research already indicated that brand value perceptions, using a customer-based brand equity measure, are positively related to consumers' purchase intentions. This study supports this notion, however indicates that product demonstration does not have an interaction effect between this relation. Brand managers can take this valuable fact into account when implementing a product demonstration as an in-store marketing tool.

The analysis of this study revealed that sales increase during the presence of a product demonstration for the promoted brands. Therefore this research confirms that product demonstration satisfies the original objective, to increase sales. Furthermore, this result is valuable for manufactures because it supports their choice to facilitate product demonstrations.

The presence of a product demonstration does not affect sales of non-promoted brands. For manufactures this outcome is very important, because in many cases manufacturers use sales promotions to defend their competitive position inside the store. If this tool does not affect non-promoted brands in the same product category, than the choice to facilitate product demonstration is purely based on sales enhancement and not based on defending a competitive position. This finding is also important for retailers. In addition, if a product demonstration decrease sales of non-promoted brands and if these non-promoted brand contain higher margins, the risk exist that the total profits for the retailer would be lower due to the presence of this tool. The findings indicate that this is not the fact and therefore retailers can be less careful in selecting product demonstrations in their store.

CHAPTER 6 LIMITATIONS & FURTHER RESEARCH

Although this research provides useful findings, generalizations from this study are limited in several ways. In order to overcome these limitations, further research concerning the effect of in-store product demonstration is required. Before elaborating on future research implications, first the limitations will be discussed. Because this research used two different research designs with different datasets, limitations concerning these studies will be

LIMITATIONS

STUDY 1

In this study the effect of in-store product demonstration on brand value has been explored. In order to measure the effect of this tool, a field-based survey has been used to measure consumers' perceptions concerning brand equity and purchase intentions. The presence of a product demonstration inside the store is necessary to incorporate the effect on purchase intentions and brand value perceptions. To satisfy this requirement, this study collected data inside the store of a giant retailer where many product demonstrations take place. During the collection period, not many product demonstration took place and therefore the amount of respondents was limited. Due to time restrictions, data has been collected concerning a product demonstration of a curling iron and therefore, only female respondents filled in the survey. Analyzing the effect of this tool across a broader array of stores and product categories will provide a more diverse context.

Also, the multi-item scale used in the survey was based on prior research that validate the measurement scale concerning brand equity, purchase involvement and purchase intentions. The researcher of this study believes that developing a customized multi-item scale to measure the effect could be more effective.

STUDY 2

This study examined the effect of product demonstration on brand sales, competitor sales and cross-product sales. In order to measure these effect, weekly point of sales data has been analysed. The secondary data has been provided by a giant retailer that used product demonstrations in 2010, 2011 and 2012. Dates concerning the presence of a product demonstration in that store was provided by a giant company that facilitates these promotional tools. In order to select appropriate data for this research, both datasets have been compared. This research took into account the different product categories inside that store, because some product categories were associated with other promotional tools in 2010, 2011 and 2012, which could affect the examination. Altogether, the product category navigation systems have been analysed. However, in order to generalize the effect of this tool, a broader array of stores and product categories would provide better insights in the effect of this tool.

The weekly point of sales data has been explored and several cases have been deleted because of yearly discounts in that store. However, the fact remains that in that product category during that time other promotional activities or incentives could be present. Due to the lack of knowledge, this has not been taken into account. Furthermore, no information was available on the product demonstration itself. In addition, this study did not control for the gender, cultural differences or experience level of the demonstrator. It could be that a female demonstrator with a lot of experience is more effective. Also the data analysis was subjected to several limitations. First of all, the dependent variable sales was not normal distributed. This study conducted several parametrical test and therefore violated the normality assumption.

FURTHER RESEARCH

This research made the first small step in examining the effect of product demonstration, as an in-store promotional tool, on brand value and brand sales. Since this tool is widely used by many manufacturers and retailers and because this tool counts the most costs per consumer, further research concerning this tool is necessary.

First of all, although the findings provide theoretical and substantive explanations, they should be considered in context of the limitations and boundaries of this study. The limited sample size of the first study can easily overcome by taking into account the periods in which the most product demonstrations take place. In addition, the presence of product demonstrations are very limited in January, February, July, August and September.

In order to generalize the effectiveness of this tool, it is better to analyse the effect in different stores and different product categories. However, it is very important to consider the fact that stores are subjected to various in-store marketing tools and to measure a pure effect of product demonstrations, further research should control for these influential factors. This is the reason why this research examined a small product category including a few brands.

It would be interesting to measure the effect of product demonstration with different types of demonstrators. It can be expected that differences in gender, cultural or the level of experiences of the demonstrator moderates the effect on brand value and brand sales. Furthermore, examining the effectiveness of product demonstrations on different days would provide a deeper understanding of the usefulness. Finally, it would be interesting to explore the effectiveness of product demonstration in combination with other promotional tools such as price promotions.

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APPENDIX A: TEMPORAL EFFECTS OF PRICE PROMOTIONS

Table 1
EMPIRICAL RESEARCH ON THE TEMPORAL EFFECTS OF PRICE PROMOTIONS

	Brand Choice	*Purchase Quantity*	*Category Incidence*
Immediate Effects	Gupta 1988 Chiang 1991 Krishnamurthi, Mazumdar, and Raj 1992 Chintagunta 1993 Bucklin, Gupta, and Siddarth 1998 Bell, Chiang, and Padmanabhan 1999 This study (choice share)	Gupta 1988 Chiang 1991 Krishnamurthi, Mazumdar, and Raj (1992) Chintagunta 1993 Bucklin, Gupta, and Siddarth 1998 Bell, Chiang, and Padmanabhan 1999 This study (average quantity)	Gupta 1988 (timing) Chiang 1991 Chintagunta 1993 Bucklin, Gupta, and Siddarth 1998 Bell, Chiang, and Padmanabhan 1999 This study (category consumers)
Adjustment Effects	Lattin and Bucklin 1989 Greenleaf 1995 Erdem 1996 Papatla and Krishnamurthi 1996 Mela, Gupta, and Lehmann 1997 Ailawadi and Neslin 1998 Foekens, Leeflang, and Wittink 1999 (brand sales) Jedidi, Mela, and Gupta 1999 Van Heerde, Leeflang, and Wittink 2000a (brand sales) Ailawadi, Lehmann, and Neslin 2001 (market share) This study (choice share)	Mela, Jedidi, and Bowman 1998 Ailawadi and Neslin 1998 Ailawadi, Lehmann, and Neslin 2001 (market share) This study (average quantity)	Mela, Jedidi, and Bowman 1998 Jedidi, Mela, and Gupta 1999 This study (category consumers)
Permanent Effects	Dekimpe, Hanssens, and Silva-Risso 1999 (brand sales) Bronnenberg, Mahajan, and Vanhonacker 2000 (market share) This study (choice share)	Dekimpe, Hanssens, and Silva-Risso 1999 (category sales) Nijs et al. 2001 (category sales) This study (average quantity)	This study (category consumers)

Figure 1 – Pauwels, Hanssens and Siddarth (2002)

APPENDIX B: DIMENSIONS OF BRAND KNOWLEDGE

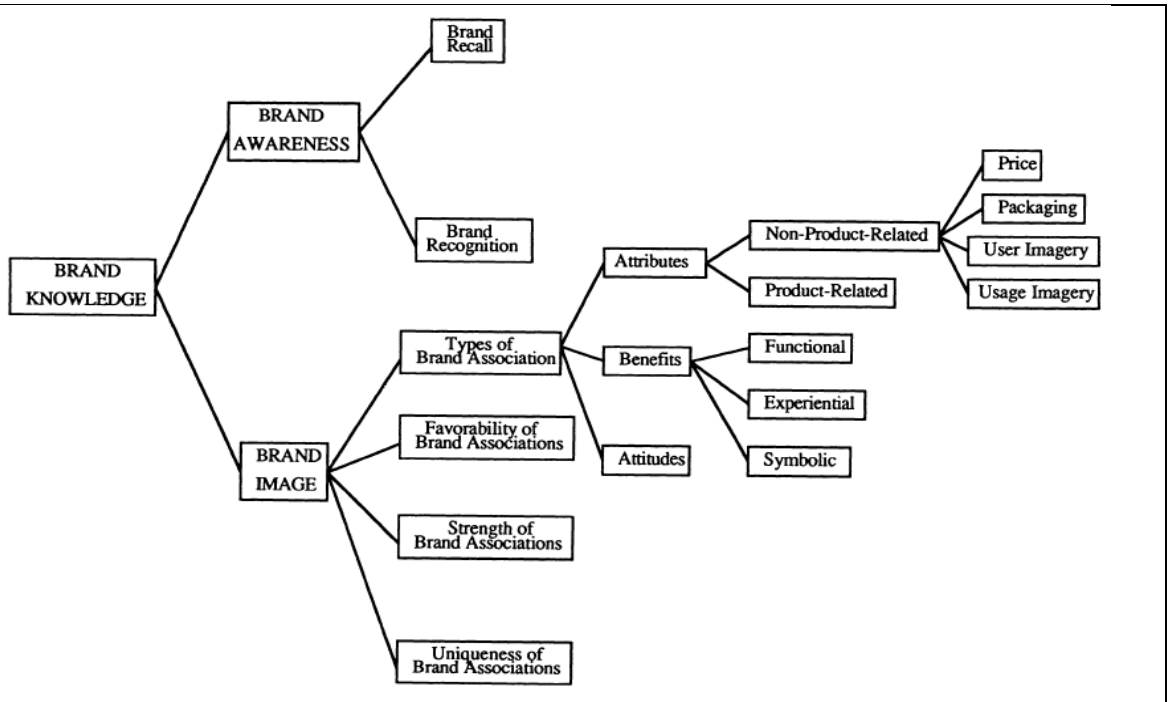


Figure 1 – Keller (1993)

APPENDIX C: HOW BRAND EQUITY GENERATES VALUE

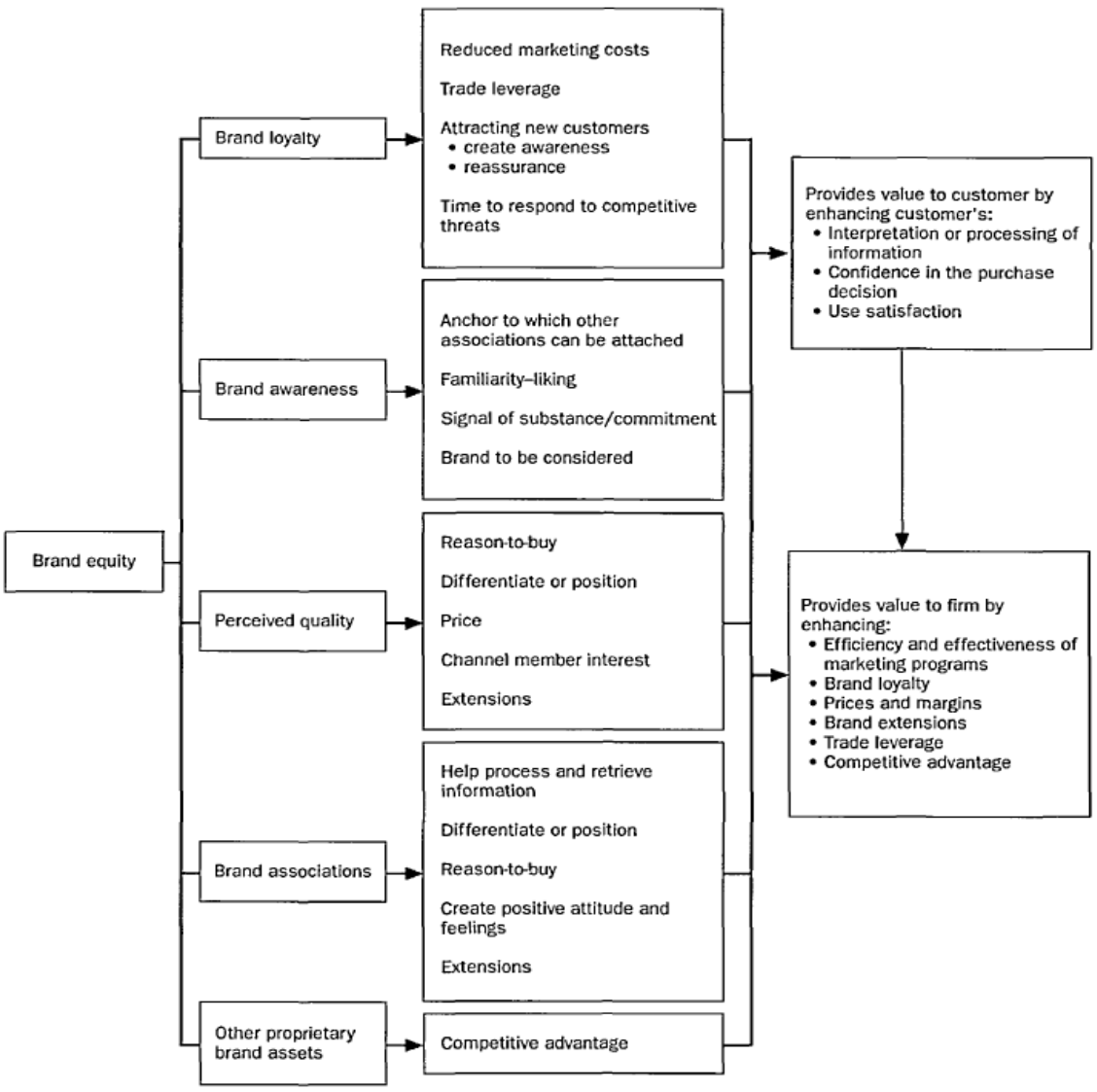


Figure 1 – Aaker 1992

APPENDIX D: FIELD-BASED QUESTIONNAIRE

D-1

The following statements and questions are related to 'The Babyliss Curling Iron'
Please indicate (encircle) whether you agree or disagree

	Disagree ←-→ Agree						
I will buy this brand/product in the near future?	1	2	3	4	5	6	7
If I need this product I will choose this brand	1	2	3	4	5	6	7
If I had needed this product, I would not have choose this brand	1	2	3	4	5	6	7
Next year, I will buy this brand when I need this product	1	2	3	4	5	6	7
	Disagree ←-→ Agree						
This brand has high quality	1	2	3	4	5	6	7
This brand gives high value for money	1	2	3	4	5	6	7
This product is very functional	1	2	3	4	5	6	7
I think that this brand is very reliable	1	2	3	4	5	6	7
This brand is of very low quality	1	2	3	4	5	6	7
	Disagree ←-→ Agree						
The brand/ product fits my personality	1	2	3	4	5	6	7
I would be proud to own a product of this brand	1	2	3	4	5	6	7
This brand will be well regarded by my friends or/and relatives	1	2	3	4	5	6	7
This brand will negatively affect my image	1	2	3	4	5	6	7
In its status and style, this brand matches my personality	1	2	3	4	5	6	7
	Disagree ←-→ Agree						
Seeing this brand, I am very likely to grow fond of it	1	2	3	4	5	6	7
I will choose another brand if this one is out of stock	1	2	3	4	5	6	7
For this brand I have positive personal feelings	1	2	3	4	5	6	7
With time, I will develop a warm feeling towards this brand	1	2	3	4	5	6	7
	Disagree ←-→ Agree						
In regard to consumer interests, this company seems to be very caring	1	2	3	4	5	6	7
I believe that this company does not take advantage of consumers	1	2	3	4	5	6	7
I consider the company and the people who stand behind this brand to be very trustworthy	1	2	3	4	5	6	7
	Disagree ←-→ Agree						
This type of product is very important to me	1	2	3	4	5	6	7
For me, this product does not matter	1	2	3	4	5	6	7
This product is an important part of my life	1	2	3	4	5	6	7
I choose this type of product very carefully	1	2	3	4	5	6	7

Which type of product I buy, matters to me a lot	1	2	3	4	5	6	7
Choosing this product is an important decision for me	1	2	3	4	5	6	7

Did you participate in a product demonstration?

O Yes *O No*

Did you planned to purchase this product?

O Yes *O No*

What is you gender?

O Man *O Woman*

What is your age?

O Younger than 18 *O 19-29* *O 30-39* *O 40-49* *O 50-59* *O Older than 60*

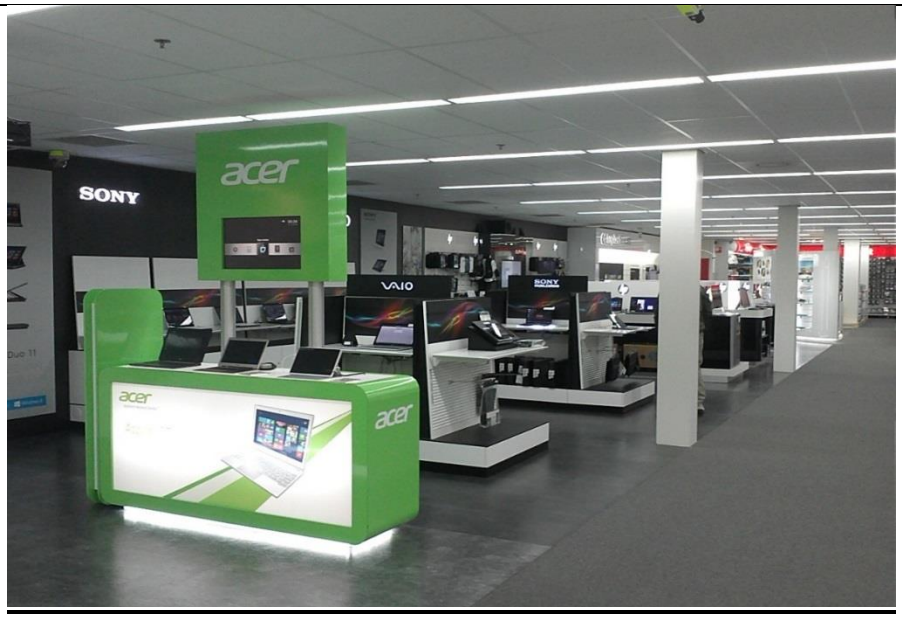
What is your income on a yearly base?

O Less than 10.000 *O 10.001 – 20.000* *O 20.001 -30.000* *O 30.001- 40.000*
O 40.001 -50.000 *O More than 50.001* *O No answer*

What is you highest level of education?

O High school *O Bachelor* *O Master* *O Higher than Master*

D-2



APPENDIX E: FREQUENCY TABLE

EDUCACTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Middelbare	13	29.5	29.5	29.5
	MBO	10	22.7	22.7	52.3
	HBO	16	36.4	36.4	88.6
	WO	3	6.8	6.8	95.5
	>WO	2	4.5	4.5	100.0
	Total	44	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<18	12	27.3	27.3	27.3
	19-29	23	52.3	52.3	79.5
	30-39	4	9.1	9.1	88.6
	40-49	4	9.1	9.1	97.7
	50-59	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

INCOME

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10.000	16	36.4	36.4	36.4
	10.001-20.000	5	11.4	11.4	47.7
	20.001-30.000	4	9.1	9.1	56.8
	30.001-40.000	4	9.1	9.1	65.9
	40.001-50.000	1	2.3	2.3	68.2
	>50.001	2	4.5	4.5	72.7
	No Answer	12	27.3	27.3	100.0
	Total	44	100.0	100.0	

PD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Participate	22	50.0	50.0	50.0
	Participate	22	50.0	50.0	100.0
	Total	44	100.0	100.0	

PLANNED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Planned	31	70.5	70.5	70.5
	Planned	13	29.5	29.5	100.0
	Total	44	100.0	100.0	

APPENDIX F: **PRE-ANALYSIS**

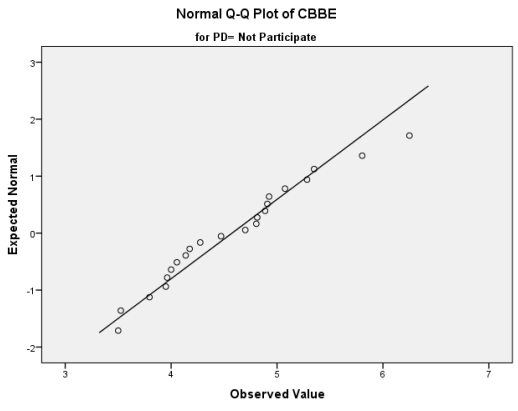
Measurement	Equation	[CBBE]	[PI]
Mean - μ	$\frac{\Sigma x}{N}$	5.23	4.95
Sum of squared errors – SS	$\Sigma(x-\bar{x})^2$	40.44	92.82
Variance – S^2	$\frac{\Sigma(x-\bar{x})^2}{n-1}$	0.94	2.16
Sample Standard Deviation - S	$\sqrt{\frac{\Sigma(x-\bar{x})^2}{n-1}}$	0.97	1.47
Population Standard Deviation - SE	$\sqrt{\frac{\Sigma(x-\mu)^2}{N}}$	0.15	0.22
Covariance BE*PI	$\frac{1}{n-1}\Sigma(x-\bar{x})(y-\bar{y})$	1.16	
Correlation Coefficient R	$\frac{\frac{1}{n-1}\Sigma(x-\bar{x})(y-\bar{y})}{s_x s_y}$	0.81	

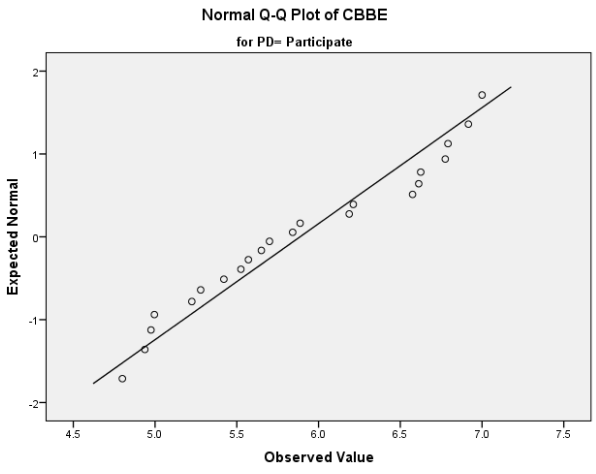
APPENDIX G: **TESTING NORMALITY**

Tests of Normality

	PD	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
CBBE	Not Participate	.120	22	.200*	.960	22	.484
	Participate	.151	22	.200*	.933	22	.139

a. Lilliefors Significance Correction
*. This is a lower bound of the true significance.

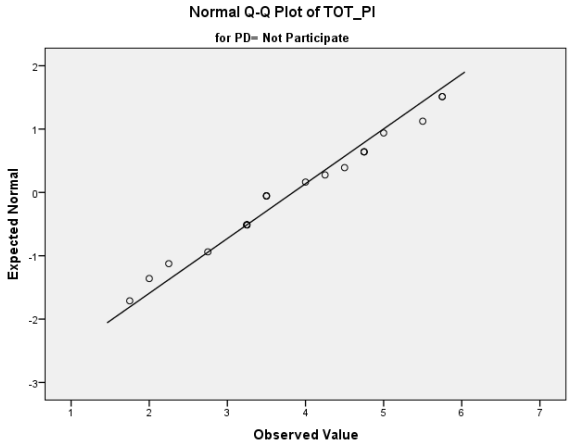


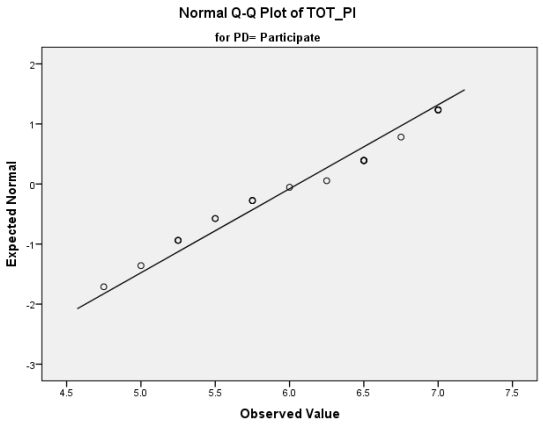


Tests of Normality

	PD	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
TOT_PI	Not Participate	.161	22	.141	.955	22	.395
	Participate	.187	22	.044	.925	22	.095

a. Lilliefors Significance Correction





APPENDIX H: COMPARING MEANS

H-1

Group Statistics

	PD	N	Mean	Std. Deviation	Std. Error Mean
CBBE	Not Participate	22	4.5748	.71746	.15296
	Participate	22	5.8866	.71397	.15222

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
CBBE	Equal variances assumed	.039	.845	-6.079	42	.000	-1.31174	.21580	-1.74724	-.87625
	Equal variances not assumed			-6.079	41.999	.000	-1.31174	.21580	-1.74724	-.87625

H-2

Group Statistics

	PD	N	Mean	Std. Deviation	Std. Error Mean
TOT_PI	Not Participate	22	3.8409	1.15611	.24648
	Participate	22	6.0568	.71519	.15248

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TOT_PI	Equal variances assumed	5.368	.025	-7.645	42	.000	-2.21591	.28983	-2.80082	-1.63100
	Equal variances not assumed			-7.645	35.020	.000	-2.21591	.28983	-2.80429	-1.62753

APPENDIX I: SIMPLE LINEAR REGRESSION

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.763[a]	.582	.572	.96127	.582	58.453	1	42	.000

a. Predictors: (Constant), PD

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.013	1	54.013	58.453	.000[b]
	Residual	38.810	42	.924		
	Total	92.822	43			

a. Dependent Variable: TOT_PI

b. Predictors: (Constant), PD

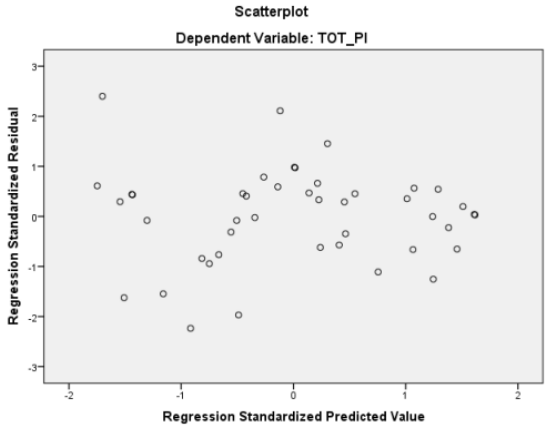
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.841	.205		18.741	.000		
	PD	2.216	.290	.763	7.645	.000	1.000	1.000

a. Dependent Variable: TOT_PI

APPENDIX J: CHECKING ASSUMPTIONS

J-1



J-2

[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + e

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Dependent Variable: TOT_PI

*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5[CBBE-PQ] *[CBBE-SI] + e*

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.854[b]	.729	.693	.81367	.001	.208	1	38	.651

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_PQ__TOT_SI
c. Dependent Variable: TOT_PI

*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5[CBBE-PQ] *[CBBE-BA]+ e*

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.854[b]	.730	.694	.81256	.002	.312	1	38	.579

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_PQ__TOT_BA
c. Dependent Variable: TOT_PI

*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5[CBBE-PQ] *[CBBE-BT]+ e*

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.853[b]	.727	.692	.81589	.000	.000	1	38	.999

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_PQ__TOT_BT
c. Dependent Variable: TOT_PI

*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5 [CBBE-SI] *[CBBE-BA]+ e*

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.856[b]	.732	.697	.80908	.005	.643	1	38	.428

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_SI__TOT_BA
c. Dependent Variable: TOT_PI

*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5 [CBBE-SI] * [CBBE-BT] + e*

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.853[b]	.728	.692	.81557	.000	.030	1	38	.864

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_SI__TOT_BT
c. Dependent Variable: TOT_PI

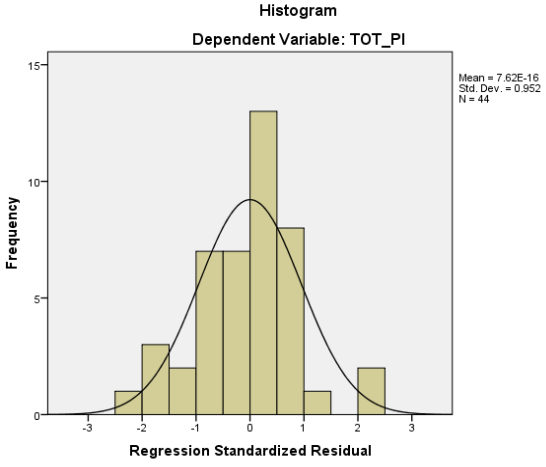
*[PI] = B0 + B1[CBBE-PQ] + B2[CBBE-SI] + B3[CBBE-BA] + B4[CBBE-BT] + B5 [CBBE-BA] *[CBBE-BT]+ e*

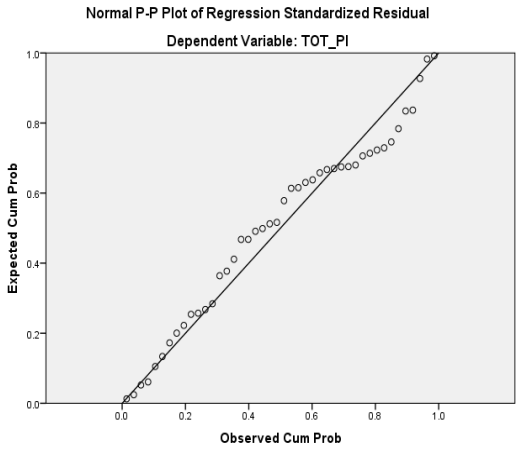
Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000
2	.856[b]	.733	.698	.80767	.005	.778	1	38	.383

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ
b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ, TOT_BA__TOT_BT
c. Dependent Variable: TOT_PI

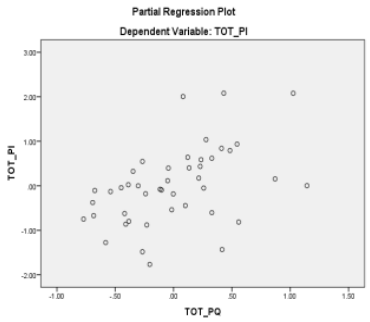
J-3



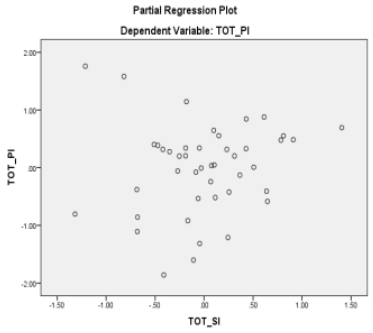


J-4

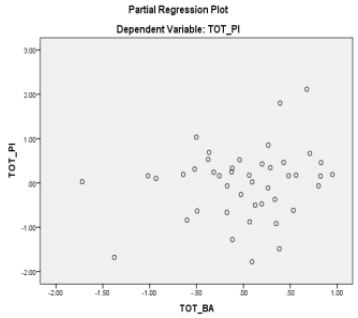
Perceived Quality



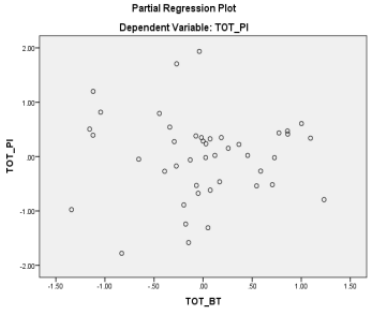
Social Image



Brand Attachment



Brand Trustworthiness



J-5

Correlations

		TOT_PQ	TOT_SI	TOT_BA	TOT_BT
TOT_PQ	Pearson Correlation	1	.821**	.789**	.786**
	Sig. (2-tailed)		.000	.000	.000
	N	44	44	44	44
TOT_SI	Pearson Correlation	.821**	1	.821**	.658**
	Sig. (2-tailed)	.000		.000	.000
	N	44	44	44	44
TOT_BA	Pearson Correlation	.789**	.821**	1	.711**
	Sig. (2-tailed)	.000	.000		.000
	N	44	44	44	44
TOT_BT	Pearson Correlation	.786**	.658**	.711**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	44	44	44	44

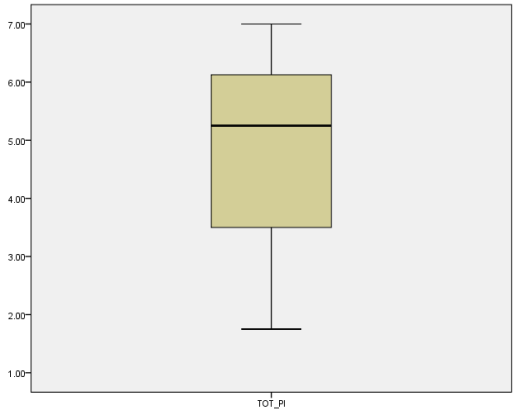
**. Correlation is significant at the 0.01 level (2-tailed).

J-6

Casewise Diagnostics[a]

Case Number	Std. Residual	TOT_PI	Predicted Value	Residual
10	2.110	6.50	4.8009	1.69906
33	2.401	4.75	2.8164	1.93356
43	-2.236	2.00	3.8005	-1.80052

a. Dependent Variable: TOT_PI



APPENDIX K: MULTIPLE LINEAR REGRESSION ANALYSIS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.853[a]	.727	.700	.80537	.727	26.027	4	39	.000

a. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ

b. Dependent Variable: TOT_PI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.526	4	16.882	26.027	.000[b]
	Residual	25.296	39	.649		
	Total	92.822	43			

a. Dependent Variable: TOT_PI

b. Predictors: (Constant), TOT_BT, TOT_SI, TOT_BA, TOT_PQ

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.935	.715		-2.706	.010		
	TOT_PQ	.885	.267	.599	3.307	.002	.213	4.694
	TOT_SI	.143	.224	.108	.639	.526	.244	4.103
	TOT_BA	.269	.211	.207	1.277	.209	.267	3.751
	TOT_BT	-.025	.197	-.018	-.128	.899	.356	2.807

a. Dependent Variable: TOT_PI

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	TOT_PQ	TOT_SI	TOT_BA	TOT_BT
1	1	4.944	1.000	.00	.00	.00	.00	.00
	2	.029	13.164	.70	.00	.03	.10	.00
	3	.014	18.796	.12	.00	.15	.05	.65
	4	.008	24.136	.13	.10	.36	.83	.00
	5	.005	32.588	.04	.89	.46	.02	.35

a. Dependent Variable: TOT_PI

APPENDIX L: EFA: PRINCIPAL COMPONENT ANALYSIS

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	139.153
	df	6
	Sig.	.000

Correlation Matrix[a]

		TOT_SI	TOT_BA	TOT_BT	TOT_PQ
Correlation	TOT_SI	1.000	.821	.658	.821
	TOT_BA	.821	1.000	.711	.789
	TOT_BT	.658	.711	1.000	.786
	TOT_PQ	.821	.789	.786	1.000

a. Determinant = .033

Anti-image Matrices

		TOT_SI	TOT_BA	TOT_BT	TOT_PQ
Anti-image Covariance	TOT_SI	.244	-.128	.029	-.108
	TOT_BA	-.128	.267	-.079	-.039
	TOT_BT	.029	-.079	.356	-.139
	TOT_PQ	-.108	-.039	-.139	.213
Anti-image Correlation	TOT_SI	.786[a]	-.501	.099	-.474
	TOT_BA	-.501	.840[a]	-.255	-.165
	TOT_BT	.099	-.255	.826[a]	-.504
	TOT_PQ	-.474	-.165	-.504	.791[a]

a. Measures of Sampling Adequacy(MSA)

Communalities

	Initial	Extraction
TOT_PQ	1.000	.878
TOT_SI	1.000	.830
TOT_BA	1.000	.839
TOT_BT	1.000	.749

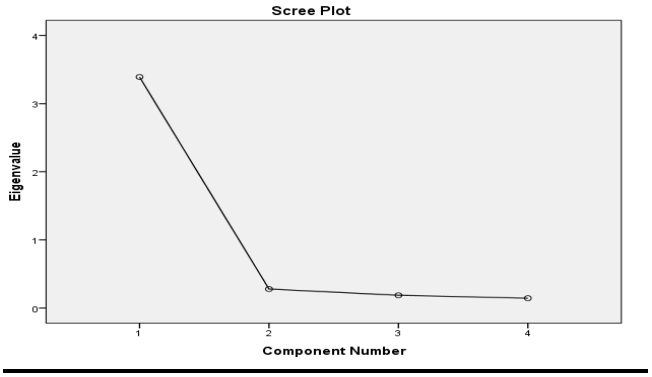
Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
TOT_PQ	.937
TOT_SI	.911
TOT_BA	.916
TOT_BT	.866

Extraction Method: Principal Component Analysis.

a. 1 components extracted.



Reproduced Correlations

		TOT_PQ	TOT_SI	TOT_BA	TOT_BT
Reproduced Correlation	TOT_PQ	.878[a]	.853	.858	.811
	TOT_SI	.853	.830[a]	.834	.788
	TOT_BA	.858	.834	.839[a]	.793
	TOT_BT	.811	.788	.793	.749[a]
Residual[b]	TOT_PQ		-.032	-.069	-.025
	TOT_SI	-.032		-.013	-.131
	TOT_BA	-.069	-.013		-.082
	TOT_BT	-.025	-.131	-.082	

Extraction Method: Principal Component Analysis.

a. Reproduced communalities
b. Residuals are computed between observed and reproduced correlations. There are 3 (50.0%) nonredundant residuals with absolute values greater than 0.05.

APPENDIX M: LINEAR REGRESSION BASED ON FACTORS

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.927	.928	4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.834[a]	.695	.688	.82097	.695	95.719	1	42	.000

a. Predictors: (Constant), A-R factor score 1 for analysis 1

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.514	1	64.514	95.719	.000[a]
	Residual	28.308	42	.674		
	Total	92.822	43			

a. Predictors: (Constant), A-R factor score 1 for analysis 1
b. Dependent Variable: TOT_PI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.949	.124		39.985	.000		
	REGR factor score 1 for analysis 1	1.225	.125	.834	9.784	.000	1.000	1.000

a. Dependent Variable: TOT_PI

APPENDIX N: MODERATION: PRODUCT DEMONSTRATION

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.874[a]	.763	.752	.73194	.763	66.130	2	41	.000
2	.883[b]	.779	.762	.71637	.015	2.802	1	40	.102

a. Predictors: (Constant), PD, A-R factor score 1 for analysis 1
b. Predictors: (Constant), PD, A-R factor score 1 for analysis 1, Factor1_Demo

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.857	2	35.429	66.130	.000[a]
	Residual	21.965	41	.536		
	Total	92.822	43			
2	Regression	72.295	3	24.098	46.959	.000[b]
	Residual	20.527	40	.513		
	Total	92.822	43			

a. Predictors: (Constant), PD, A-R factor score 1 for analysis 1
b. Predictors: (Constant), PD, A-R factor score 1 for analysis 1, Factor1_Demo
c. Dependent Variable: TOT_PI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.426	.188		23.576	.000
	A-R factor score 1 for analysis 1	.862	.154	.586	5.607	.000
	PD	1.045	.304	.360	3.441	.001
2	(Constant)	4.596	.210		21.898	.000
	A-R factor score 1 for analysis 1	1.111	.212	.756	5.245	.000
	PD	1.048	.297	.361	3.524	.001
	Factor1_Demo	-.503	.301	-.211	-1.674	.102

a. Dependent Variable: TOT_PI

APPENDIX O: MODERATION: INVOLVEMENT

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.890[a]	.792	.777	.69413	.792	50.884	3	40	.000
2	.896[b]	.803	.778	.69299	.011	1.066	2	38	.354

a. Predictors: (Constant), TOT_PINV, PD, A-R factor score 1 for analysis 1
b. Predictors: (Constant), TOT_PINV, PD, A-R factor score 1 for analysis 1, Factor1_Demo, Pinv_Demo
c. Dependent Variable: TOT_PI

ANOVA[c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.550	3	24.517	50.884	.000[a]
	Residual	19.272	40	.482		
	Total	92.822	43			
2	Regression	74.574	5	14.915	31.057	.000[b]
	Residual	18.249	38	.480		
	Total	92.822	43			

a. Predictors: (Constant), TOT_PINV, PD, A-R factor score 1 for analysis 1
b. Predictors: (Constant), TOT_PINV, PD, A-R factor score 1 for analysis 1, Factor1_Demo, Pinv_Demo
c. Dependent Variable: TOT_PI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.075	.720		8.441	.000
	PD	.885	.296	.305	2.992	.005
	A-R factor score 1 for analysis 1	1.290	.233	.878	5.547	.000
	TOT_PINV	-.342	.145	-.308	-2.364	.023
2	(Constant)	6.254	.867		7.212	.000
	PD	.397	1.398	.137	.284	.778
	A-R factor score 1 for analysis 1	1.502	.285	1.022	5.263	.000
	TOT_PINV	-.351	.178	-.316	-1.967	.057
	Pinv_Demo	.114	.309	.214	.368	.715
	Factor1_Demo	-.564	.499	-.237	-1.130	.266

a. Dependent Variable: TOT_PI

APPENDIX P: DATA EXPLORATION

Brand

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GARMIN	99	20.3	20.3	20.3
	MIO	128	26.2	26.2	46.5
	NAVIGON	109	22.3	22.3	68.9
	TOMTOM	152	31.1	31.1	100.0
	Total	488	100.0	100.0	

Price

Brand	Mean	N	Std. Deviation
GARMIN	189.366	98	48.1934
MIO	113.969	128	39.2947
NAVIGON	136.915	109	41.3340
TOMTOM	159.033	149	19.6124
Total	148.276	484	45.7345

Statistics[a]

Sales

N	Valid	99
	Missing	0
Mean		3.42
Std. Error of Mean		.345
Median		2.00
Mode		1
Std. Deviation		3.435
Variance		11.798
Skewness		3.216
Std. Error of Skewness		.243
Kurtosis		14.133
Std. Error of Kurtosis		.481
Range		21
Minimum		1
Maximum		22
Sum		339

a. Brand = GARMIN

Statistics[a]

Sales

N	Valid	128
	Missing	0
Mean		3.60
Std. Error of Mean		.262
Median		3.00
Mode		1
Std. Deviation		2.960
Variance		8.761
Skewness		2.224
Std. Error of Skewness		.214
Kurtosis		6.715
Std. Error of Kurtosis		.425
Range		16
Minimum		1
Maximum		17
Sum		461

a. Brand = MIO

Statistics[a]

Sales

N	Valid	152
	Missing	0
Mean		12.88
Std. Error of Mean		.538
Median		12.00
Mode		7
Std. Deviation		6.629
Variance		43.946
Skewness		1.100
Std. Error of Skewness		.197
Kurtosis		1.822
Std. Error of Kurtosis		.391
Range		38
Minimum		2
Maximum		40
Sum		1958

a. Brand = TOMTOM

Statistics[b]

Sales

N	Valid	109
	Missing	0
Mean		5.77
Std. Error of Mean		.476
Median		4.00
Mode		2[a]
Std. Deviation		4.973
Variance		24.734
Skewness		1.925
Std. Error of Skewness		.231
Kurtosis		4.600
Std. Error of Kurtosis		.459
Range		27
Minimum		1
Maximum		28
Sum		629

a. Multiple modes exist. The smallest value is shown
b. Brand = NAVIGON

Descriptive Statistics[a]

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Price	99	103.1	570.0	19127.9	193.211	61.3381
Valid N (listwise)	99					

a. Brand = GARMIN

Descriptive Statistics[a]

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Price	128	28.0	299.0	14588.0	113.969	39.2947
Valid N (listwise)	128					

a. Brand = MIO

Descriptive Statistics[a]

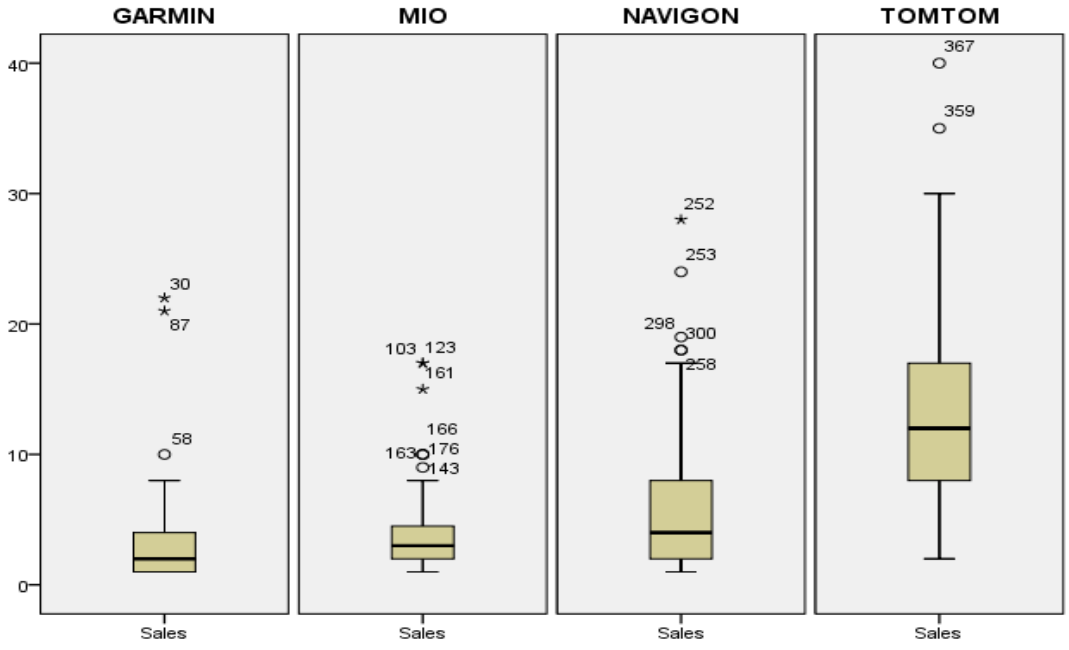
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Price	109	70.0	377.0	14923.7	136.915	41.3340
Valid N (listwise)	109					

a. Brand = NAVIGON

Descriptive Statistics[a]

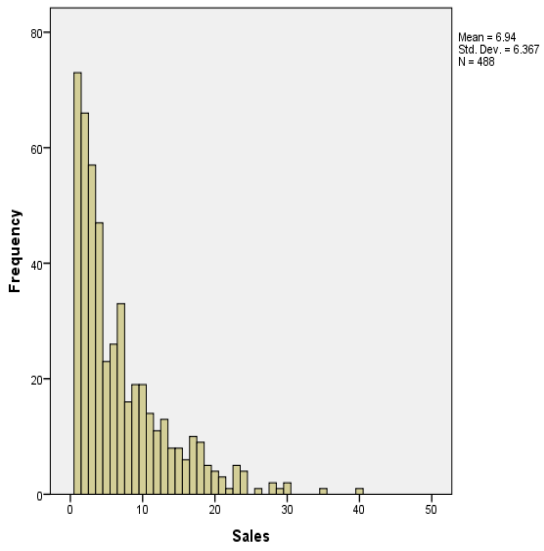
	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Price	152	107.9	233.5	24139.1	158.810	20.1307
Valid N (listwise)	152					

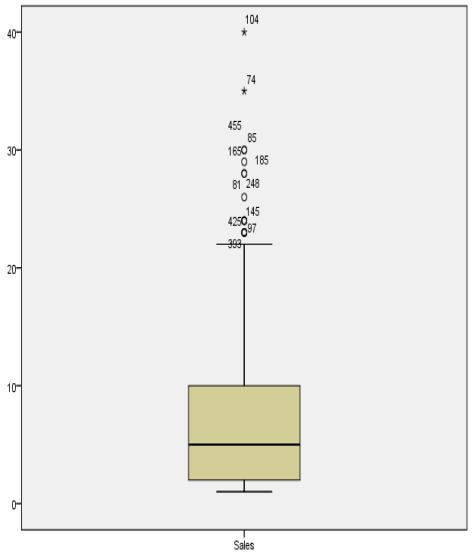
a. Brand = TOMTOM



APPENDIX Q: **TESTING NORMALITY**

Q-1

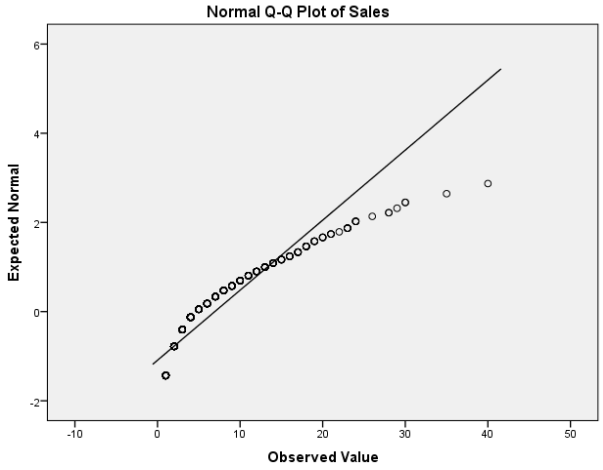




Statistics

Sales

N	Valid	488
	Missing	0
Mean		6.94
Std. Error of Mean		.288
Median		5.00
Mode		1
Std. Deviation		6.367
Variance		40.537
Skewness		1.604
Std. Error of Skewness		.111
Kurtosis		2.945
Std. Error of Kurtosis		.221
Range		39
Minimum		1
Maximum		40
Sum		3387

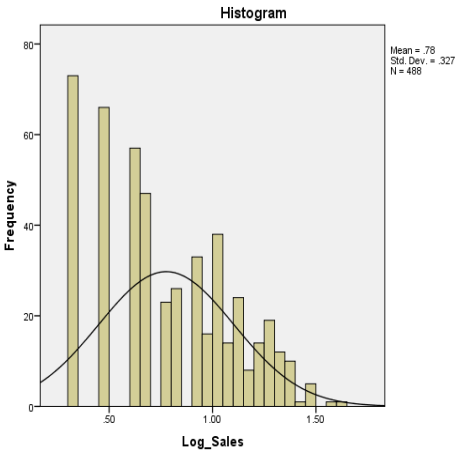


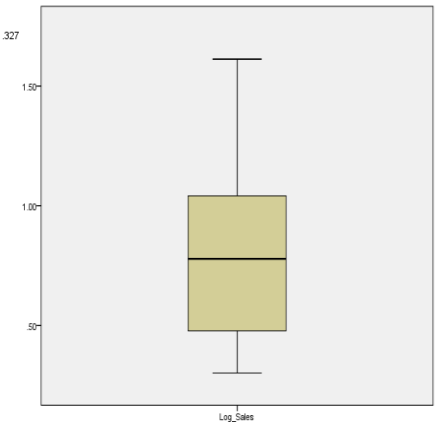
Tests of Normality

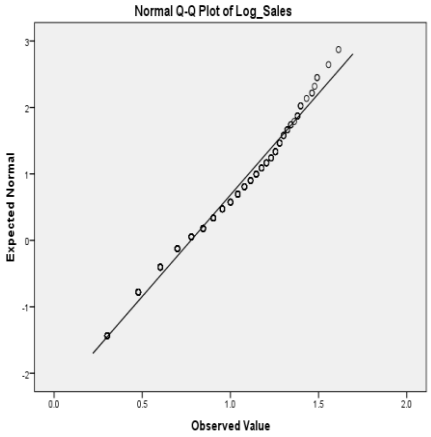
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Sales	.176	488	.000	.830	488	.000

a. Lilliefors Significance Correction

Q-2







Statistics

Log_Sales

N	Valid	488
	Missing	0
Mean		.7762
Std. Error of Mean		.01481
Median		.7782
Mode		.30
Std. Deviation		.32725
Variance		.107
Skewness		.205
Std. Error of Skewness		.111
Kurtosis		-.937
Std. Error of Kurtosis		.221
Range		1.31
Minimum		.30
Maximum		1.61
Sum		378.77

Q-3

TOTAL LOG-SALES IN EACH YEAR

2010

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.110	165	.000	.941	165	.000

a. Lilliefors Significance Correction
b. Year = 1

2011

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.092	177	.001	.966	177	.000

a. Lilliefors Significance Correction
b. Year = 2

2012

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.133	146	.000	.941	146	.000

a. Lilliefors Significance Correction
b. Year = 3

TOTAL LOG-SALES IN ALL YEARS

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.104	488	.000	.954	488	.000

a. Lilliefors Significance Correction

LOG-SALES OF EACH BRAND IN EACH YEAR

2010

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.351	21	.000	.750	21	.000

a. Lilliefors Significance Correction
b. Year = 1, Brand = GARMIN

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.148	44	.016	.906	44	.002

a. Lilliefors Significance Correction
b. Year = 1, Brand = MIO

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.131	50	.032	.974	50	.326

a. Lilliefors Significance Correction
b. Year = 1, Brand = NAVIGON

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.117	50	.085	.973	50	.294

a. Lilliefors Significance Correction
b. Year = 1, Brand = TOMTOM

2011

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.203	32	.002	.878	32	.002

a. Lilliefors Significance Correction
b. Year = 2, Brand = GARMIN

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.133	48	.032	.960	48	.102

a. Lilliefors Significance Correction
b. Year = 2, Brand = MIO

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.134	46	.037	.954	46	.068

a. Lilliefors Significance Correction
b. Year = 2, Brand = NAVIGON

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.083	51	.200*	.989	51	.911

a. Lilliefors Significance Correction
*. This is a lower bound of the true significance.
b. Year = 2, Brand = TOMTOM

2012

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.123	46	.079	.934	46	.012

a. Lilliefors Significance Correction
b. Year = 3, Brand = GARMIN

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.214	36	.000	.845	36	.000

a. Lilliefors Significance Correction
b. Year = 3, Brand = MIO

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.224	13	.074	.874	13	.060

a. Lilliefors Significance Correction
b. Year = 3, Brand = NAVIGON

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.088	51	.200*	.985	51	.764

a. Lilliefors Significance Correction
*. This is a lower bound of the true significance.
b. Year = 3, Brand = TOMTOM

LOG-SALES OF EACH BRAND IN ALL YEARS

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.175	99	.000	.885	99	.000

a. Lilliefors Significance Correction
b. Brand = GARMIN

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.138	128	.000	.926	128	.000

a. Lilliefors Significance Correction
b. Brand = MIO

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.123	109	.000	.962	109	.003

a. Lilliefors Significance Correction
b. Brand = NAVIGON

Tests of Normality[b]

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.067	152	.090	.989	152	.251

a. Lilliefors Significance Correction
b. Brand = TOMTOM

NORMALITY OF BRAND SALES WITH AND WITHOUT PROMOTION

LOG-SALES TOMTOM – TOMTOM PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.182	13	.200*	.932	13	.359

*. This is a lower bound of the true significance.
a. Brand = TOMTOM, Demo_D_TomTom_controlforMio = Demo
b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.067	119	.200*	.980	119	.071

*. This is a lower bound of the true significance.
a. Brand = TOMTOM, Demo_D_TomTom_controlforMio = No_Demo
b. Lilliefors Significance Correction

LOG-SALES TOMTOM – MIO PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.121	12	.200*	.985	12	.996

*. This is a lower bound of the true significance.
a. Brand = TOMTOM, Demo_D_Mio_controlforTom = Demo
b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.067	119	.200*	.980	119	.071

*. This is a lower bound of the true significance.
a. Brand = TOMTOM, Demo_D_Mio_controlforTom = No_demo
b. Lilliefors Significance Correction

LOG-SALES MIO – MIO PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.126	12	.200*	.979	12	.982

*. This is a lower bound of the true significance.
a. Brand = MIO, Demo_D_Mio_controlforTom = Demo
b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.160	98	.000	.907	98	.000

a. Brand = MIO, Demo_D_Mio_controlforTom = No_demo
b. Lilliefors Significance Correction

LOG-SALES MIO – TOMTOM PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.197	10	.200*	.879	10	.128

*. This is a lower bound of the true significance.
a. Brand = MIO, Demo_D_TomTom_controlforMio = Demo
b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.160	98	.000	.907	98	.000

a. Brand = MIO, Demo_D_TomTom_controlforMio = No_Demo
b. Lilliefors Significance Correction

LOG-SALES GARMIN - MIO PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.251	10	.075	.878	10	.122

a. Brand = GARMIN, Demo_D_Mio_controlforTom = Demo

b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.167	73	.000	.881	73	.000

a. Brand = GARMIN, Demo_D_Mio_controlforTom = No_demo

b. Lilliefors Significance Correction

LOG-SALES GARMIN - TOMTOM PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.188	12	.200*	.895	12	.138

*. This is a lower bound of the true significance.

a. Brand = GARMIN, Demo_D_TomTom_controlforMio = Demo

b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.167	73	.000	.881	73	.000

a. Brand = GARMIN, Demo_D_TomTom_controlforMio = No_Demo

b. Lilliefors Significance Correction

LOG-SALES NAVIGON – MIO PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.219	12	.115	.954	12	.692

a. Brand = NAVIGON, Demo_D_Mio_controlforTom = Demo

b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.134	83	.001	.961	83	.012

a. Brand = NAVIGON, Demo_D_Mio_controlforTom = No_demo

b. Lilliefors Significance Correction

LOG-SALES NAVIGON – TOMTOM PROMOTED

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.226	7	.200*	.947	7	.706

*. This is a lower bound of the true significance.

a. Brand = NAVIGON, Demo_D_TomTom_controlforMio = Demo

b. Lilliefors Significance Correction

Tests of Normality[a]

	Kolmogorov-Smirnov[b]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Sales	.134	83	.001	.961	83	.012

a. Brand = NAVIGON, Demo_D_TomTom_controlforMio = No_Demo

b. Lilliefors Significance Correction

APPENDIX R: COMPARING MEANS

GARMIN – DEMO MIO

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.087[b]	.008	-.005	.24854	.008	.621	1	81	.433

a. Brand = GARMIN

b. Predictors: (Constant), Demo_D_Mio_controlforTom

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.038	1	.038	.621	.433[c]
	Residual	5.003	81	.062		
	Total	5.042	82			

a. Brand = GARMIN

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_Mio_controlforTom

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.568	.029		19.512	.000		
	Demo_D_Mio_controlforTom	-.066	.084	-.087	-.788	.433	1.000	1.000

a. Brand = GARMIN

b. Dependent Variable: L_Sales

GARMIN – DEMO TOMTOM

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.077[b]	.006	-.006	.25275	.006	.490	1	82	.486

a. Brand = GARMIN

b. Predictors: (Constant), Demo_D_TomTom_controlforMio

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.031	1	.031	.490	.486[c]
	Residual	5.238	82	.064		
	Total	5.269	83			

a. Brand = GARMIN

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_TomTom_controlforMio

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.568	.030		19.187	.000		
	Demo_D_TomTom_controlforMio	.057	.082	.077	.700	.486	1.000	1.000

a. Brand = GARMIN

b. Dependent Variable: L_Sales

MIO – DEMO MIO

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.398[b]	.159	.151	.21824	.159	20.359	1	108	.000

a. Brand = MIO

b. Predictors: (Constant), Demo_D_Mio_controlforTom

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.970	1	.970	20.359	.000[c]
	Residual	5.144	108	.048		
	Total	6.114	109			

a. Brand = MIO

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_Mio_controlforTom

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.565	.022		25.617	.000		
	Demo_D_Mio_controlforTom	.301	.067	.398	4.512	.000	1.000	1.000

a. Brand = MIO

b. Dependent Variable: L_Sales

MIO - DEMO TOMTOM

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.110[b]	.012	.003	.21439	.012	1.288	1	106	.259

a. Brand = MIO

b. Predictors: (Constant), Demo_D_TomTom_controlforMio

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.059	1	.059	1.288	.259[c]
	Residual	4.872	106	.046		
	Total	4.931	107			

a. Brand = MIO

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_TomTom_controlforMio

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.565	.022		26.076	.000		
	Demo_D_TomTom_controlforMio	-.081	.071	-.110	-1.135	.259	1.000	1.000

a. Brand = MIO

b. Dependent Variable: L_Sales

NAVIGON – DEMO MIO

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.014[b]	.000	-.011	.27439	.000	.019	1	93	.892

a. Brand = NAVIGON

b. Predictors: (Constant), Demo_D_Mio_controlforTom

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	.019	.892[c]
	Residual	7.002	93	.075		
	Total	7.003	94			

a. Brand = NAVIGON

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_Mio_controlforTom

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.740	.030		24.560	.000		
	Demo_D_Mio_controlforTom	-.012	.085	-.014	-.137	.892	1.000	1.000

a. Brand = NAVIGON

b. Dependent Variable: L_Sales

NAVIGON– DEMO TOMTOM

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.106[b]	.011	.000	.28967	.011	1.005	1	88	.319

a. Brand = NAVIGON

b. Predictors: (Constant), Demo_D_TomTom_controlforMio

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.084	1	.084	1.005	.319[c]
	Residual	7.384	88	.084		
	Total	7.468	89			

a. Brand = NAVIGON

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_TomTom_controlforMio

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.740	.032		23.264	.000		
	Demo_D_TomTom_controlforMio	.114	.114	.106	1.002	.319	1.000	1.000

a. Brand = NAVIGON

b. Dependent Variable: L_Sales

TOMTOM – DEMO MIO

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.030[b]	.001	-.007	.20829	.001	.116	1	127	.734

a. Brand = TOMTOM

b. Predictors: (Constant), Demo_D_Mio_controlforTom

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.005	1	.005	.116	.734[c]
	Residual	5.510	127	.043		
	Total	5.515	128			

a. Brand = TOMTOM

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_Mio_controlforTom

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.074	.019		55.755	.000		
	Demo_D_Mio_controlforTom	.021	.063	.030	.340	.734	1.000	1.000

a. Brand = TOMTOM

b. Dependent Variable: L_Sales

TOMTOM - DEMO TOMTOM

Model Summary[a]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.257[b]	.066	.059	.21049	.066	8.964	1	127	.003

a. Brand = TOMTOM

b. Predictors: (Constant), Demo_D_TomTom_controlforMio

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.397	1	.397	8.964	.003[c]
	Residual	5.627	127	.044		
	Total	6.024	128			

a. Brand = TOMTOM

b. Dependent Variable: L_Sales

c. Predictors: (Constant), Demo_D_TomTom_controlforMio

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.074	.019		55.172	.000		
	Demo_D_TomTom_controlforMio	.191	.064	.257	2.994	.003	1.000	1.000

a. Brand = TOMTOM

b. Dependent Variable: L_Sales

APPENDIX S: CHECKING ASSUMPTIONS

DEPENDENT SALES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.740	.389		1.901	.058
	Demo	-.531	1.576	-.442	-.337	.736
	L_CPrice	.149	.149	.036	1.002	.317
	L_Price	.007	.101	.003	.065	.948
	L_Price_PD	-.509	.440	-.910	-1.158	.248
	L_CPrice_PD	.833	.561	1.515	1.485	.138
	Garmin	-.505	.032	-.621	-15.722	.000
	Mio	-.522	.034	-.705	-15.350	.000
	Navigon	-.342	.031	-.438	-10.888	.000

a. Dependent Variable: L_Sales

DEPENDENT MARKET-SHARE

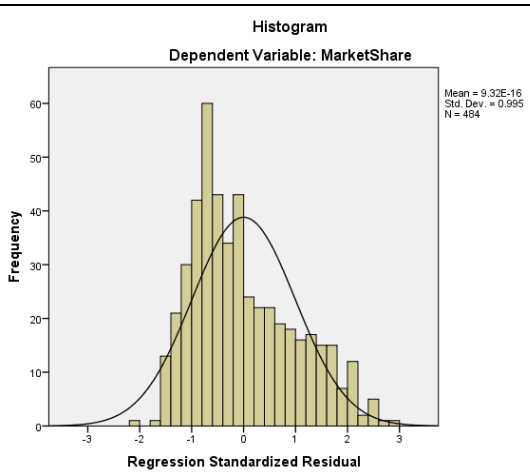
Coefficients[a]

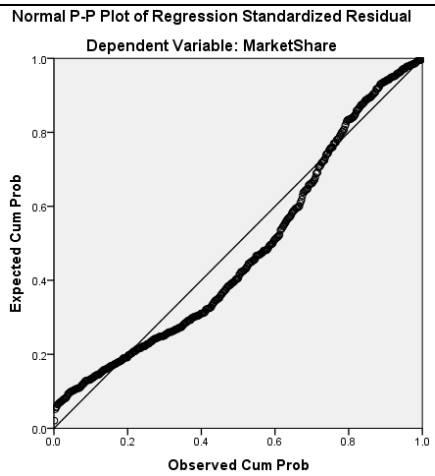
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.743	.218		3.411	.001
	Demo	-.639	.882	-.760	-.725	.469
	L_CPrice	.026	.083	.009	.316	.752
	L_Price	-.101	.056	-.060	-1.781	.075
	L_Price_PD	-.088	.246	-.225	-.358	.720
	L_CPrice_PD	.414	.314	1.073	1.318	.188
	Garmin	-.397	.018	-.697	-22.124	.000
	Mio	-.449	.019	-.865	-23.596	.000
	Navigon	-.364	.018	-.664	-20.694	.000

a. Dependent Variable: MarketShare

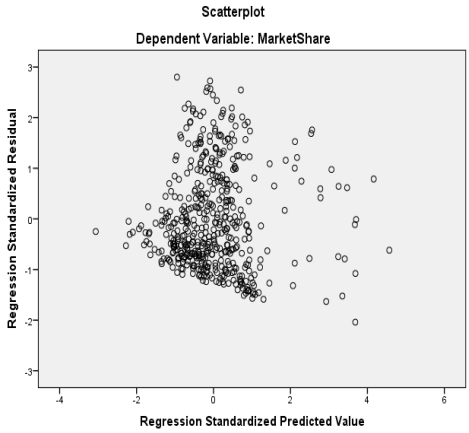
Correlations

		MarketShare	Demo	L_CPrice	L_Price	L_Price_PD	L_CPrice_PD
Pearson Correlation	MarketShare	1.000	.155	-.111	.165	.160	.154
	Demo	.155	1.000	.055	-.024	.999	.999
	L_CPrice	-.111	.055	1.000	-.201	.055	.064
	L_Price	.165	-.024	-.201	1.000	-.016	-.024
	L_Price_PD	.160	.999	.055	-.016	1.000	.998
	L_CPrice_PD	.154	.999	.064	-.024	.998	1.000
Sig. (1-tailed)	MarketShare	.	.000	.007	.000	.000	.000
	Demo	.000	.	.113	.302	.000	.000
	L_CPrice	.007	.113	.	.000	.115	.082
	L_Price	.000	.302	.000	.	.364	.300
	L_Price_PD	.000	.000	.115	.364	.	.000
	L_CPrice_PD	.000	.000	.082	.300	.000	.
N	MarketShare	484	484	484	484	484	484
	Demo	484	484	484	484	484	484
	L_CPrice	484	484	484	484	484	484
	L_Price	484	484	484	484	484	484
	L_Price_PD	484	484	484	484	484	484
	L_CPrice_PD	484	484	484	484	484	484



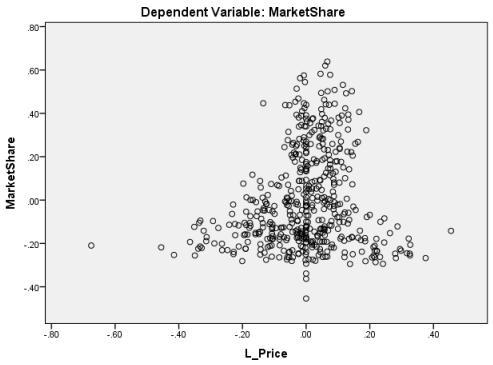


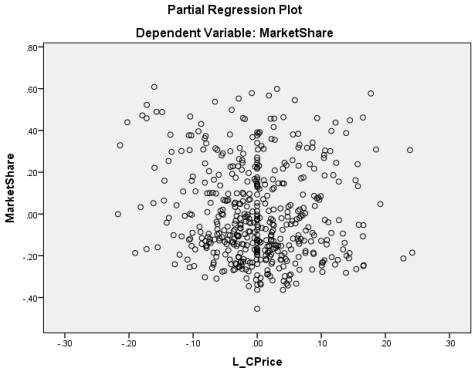
MARKET- SHARE



PRICE

COMPETITOR PRICE





Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.370	.365		1.014	.311					
	Demo	-1.263	1.491	-1.502	-.847	.397	.155	-.039	-.037	.001	1607.871
	L_CPrice	-.261	.135	-.090	-1.931	.054	-.111	-.088	-.085	.894	1.118
	L_Price	.228	.077	.136	2.958	.003	.165	.134	.131	.924	1.082
	L_Price_PD	.730	.413	1.861	1.766	.078	.160	.081	.078	.002	568.343
	L_CPrice_PD	-.075	.529	-.194	-.141	.888	.154	-.006	-.006	.001	966.509

a. Dependent Variable: MarketShare

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.069	484	.000	.984	484	.000

a. Lilliefors Significance Correction

AFTER CENTRALIZING

Correlations

		MarketShare	Demo	CN_L_Price	CN_L_CPrice	CN_L_CPrice_PD	CN_L_Price_PD
Pearson Correlation	MarketShare	1.000	.155	.165	-.111	-.002	.087
	Demo	.155	1.000	-.024	.055	.200	-.118
	CN_L_Price	.165	-.024	1.000	-.201	-.012	.184
	CN_L_CPrice	-.111	.055	-.201	1.000	.256	-.017
	CN_L_CPrice_PD	-.002	.200	-.012	.256	1.000	-.065
	CN_L_Price_PD	.087	-.118	.184	-.017	-.065	1.000
Sig. (1-tailed)	MarketShare	.	.000	.000	.007	.485	.028
	Demo	.000	.	.302	.113	.000	.005
	CN_L_Price	.000	.302	.	.000	.393	.000
	CN_L_CPrice	.007	.113	.000	.	.000	.354
	CN_L_CPrice_PD	.485	.000	.393	.000	.	.076
	CN_L_Price_PD	.028	.005	.000	.354	.076	.
N	MarketShare	484	484	484	484	484	484
	Demo	484	484	484	484	484	484
	CN_L_Price	484	484	484	484	484	484
	CN_L_CPrice	484	484	484	484	484	484
	CN_L_CPrice_PD	484	484	484	484	484	484
	CN_L_Price_PD	484	484	484	484	484	484

APPENDIX T: MULTIPLE REGRESSION ANALYSIS

RESTRICTED MODEL

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.821[a]	.674	.670	.13159	.674	164.666	6	477	.000

a. Predictors: (Constant), Navigon, CN_L_CPrice, Demo, CN_L_Price, Garmin, Mio

b. Dependent Variable: MarketShare

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.108	6	2.851	164.666	.000[b]
	Residual	8.260	477	.017		
	Total	25.368	483			

a. Dependent Variable: MarketShare

b. Predictors: (Constant), Navigon, CN_L_CPrice, Demo, CN_L_Price, Garmin, Mio

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.582	.012		50.448	.000					
	Demo	.073	.023	.087	3.213	.001	.155	.146	.084	.927	1.078
	CN_L_Price	-.100	.056	-.060	-1.791	.074	.165	-.082	-.047	.615	1.625
	CN_L_CPrice	.052	.081	.018	.641	.522	-.111	.029	.017	.873	1.145
	Garmin	-.395	.018	-.694	-22.154	.000	-.296	-.712	-.579	.695	1.438
	Mio	-.447	.019	-.862	-23.622	.000	-.388	-.734	-.617	.513	1.950
	Navigon	-.363	.018	-.663	-20.689	.000	-.201	-.688	-.541	.664	1.505

a. Dependent Variable: MarketShare

FULL MODEL

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.822[a]	.676	.670	.13160	.676	123.715	8	475	.000

a. Predictors: (Constant), CN_L_Price_PD, CN_L_CPrice, Navigon, Demo, CN_L_Price, CN_L_CPrice_PD, Garmin, Mio

b. Dependent Variable: MarketShare

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.141	8	2.143	123.715	.000[b]
	Residual	8.227	475	.017		
	Total	25.368	483			

a. Dependent Variable: MarketShare

b. Predictors: (Constant), CN_L_Price_PD, CN_L_CPrice, Navigon, Demo, CN_L_Price, CN_L_CPrice_PD, Garmin, Mio

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.583	.012		50.305	.000					
	Demo	.067	.023	.079	2.849	.005	.155	.130	.074	.884	1.131
	CN_L_Price	-.101	.056	-.060	-1.781	.075	.165	-.081	-.047	.603	1.659
	CN_L_CPrice	.026	.083	.009	.316	.752	-.111	.015	.008	.821	1.218
	Garmin	-.397	.018	-.697	-22.124	.000	-.296	-.712	-.578	.687	1.455
	Mio	-.449	.019	-.865	-23.596	.000	-.388	-.735	-.617	.508	1.970
	Navigon	-.364	.018	-.664	-20.694	.000	-.201	-.689	-.541	.663	1.509
	CN_L_CPrice_PD	.414	.314	.036	1.318	.188	-.002	.060	.034	.892	1.121
	CN_L_Price_PD	-.088	.246	-.010	-.358	.720	.087	-.016	-.009	.937	1.068

a. Dependent Variable: MarketShare