



LUND UNIVERSITY
School of Economics and Management

Master Degree Project, 15 ECTS- Credits

International Marketing and Brand Management

CONSUMER CHARACTERISTICS

- IMPACT ON PURCHASE DECISION IN AN E-COMMERCE CONTEXT-



Farida Baha

Sebastian Sedeki

Aino Suijkerbuijk

ABSTRACT

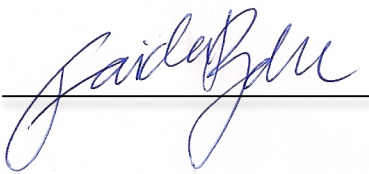
Title:	Consumer Characteristics – Impact on Purchase Decision in an E-Commerce Context
Seminar date:	2010-06-03
Course:	BUSM08, Master Thesis in International Marketing and Brand Management, 15 University Credit Points.
Authors:	Farida Baha, Sebastian Sedeki and Aino Suijkerbuijk
Supervisor:	Cecilia Cassinger
Key words:	Consumer characteristics, product complexity, instrument of scaling, correlation, hypothesis testing, e-tailing and e-commerce.
Aim:	Measure the impact of consumer characteristics and overall attitudes toward online complexity dimensions as well as tendencies of purchasing complex products online.
Methodology:	Initially, this thesis starts with reviewing prior research and theories about the relevant domains in order to deduce hypotheses about consumer characteristics and their relation to complexity dimensions. Secondly, linear regressions have been conducted with the purpose of examining the consumer characteristics' impact on purchasing tendency.
Theoretical Framework:	The theoretical framework is composed of previous research in each of the complexity dimensions as well as in each of the determinants i.e. consumer characteristics.
Empirical Foundation:	Mean values, correlations and linear regression analysis made in SPSS are the empirical foundation in this thesis.
Conclusion:	Aligned with prior research, correlations and regressions have been found showing that there is a statistical relationship between consumer characteristics and purchasing tendency of complex products online as well as attitudes toward complexity dimensions.

ACKNOWLEDGEMENTS

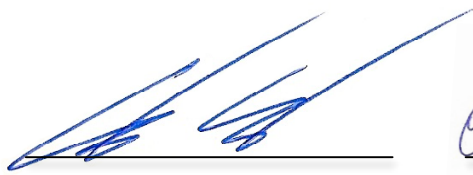
This Master Thesis was written as part of International Marketing and Brand Management Master Programme at Lund University, Sweden.

First of all, we would like to express our gratitude towards our supervisor Cecilia Cassinger for all the help and support. Furthermore, we want to thank Herman Rikken, International Project Manager at Thule International Group, for all the help and guidance every week.

Sincerely,



Farida Baha



Sebastian Sedeki



Aino Suijkerbuijk

TABLE OF CONTENTS

1. INTRODUCTION	8
1.1 DEFINITION OF ELECTRONIC BUSINESS, COMMERCE & RETAILING	8
1.2. BACKGROUND.....	9
1.3 PREVIOUS RESEARCH.....	10
1.3.1 Technology Acceptance Model	10
1.3.2 Product Types and Online Purchasing	12
1.3.3 Consumer Knowledge.....	13
1.3.4 Online Trust	14
1.3.5 Interactivity.....	15
1.3.6 Touch and Feel.....	16
1.4 DETERMINANTS: CONSUMER CHARACTERISTICS.....	16
1.4.1 Impulse Buying and Impulsive Behavior	17
1.4.2 Computer Skill.....	18
1.4.3 Frequency of Purchase.....	19
1.4.4 Age and Gender.....	19
1.5 RESEARCH ISSUES.....	20
1.6 AIMS OF STUDY	21
1.7 DELIMITATIONS.....	22
1.8 DISPOSITION.....	23
2. CONCEPTUAL FRAMEWORK OF PRODUCT COMPLEXITY	24
2.1 PRODUCT COMPLEXITY	24
2.2. A RATING INSTRUMENT FOR PRODUCT COMPLEXITY.....	25
2.3 EXAMINED PRODUCTS.....	25
2.3.1 Scaling Method.....	27
2.3.2 Ratings.....	29
3. METHODOLOGY	30
3.1 RESEARCH APPROACH	30
3.2 CONSTRUCTING THE SCALING METHOD FOR PRODUCT COMPLEXITY.....	31
3.3 CHOICE OF DATA COLLECTION	31
3.4 CONSTRUCTING THE QUESTIONNAIRE.....	32

3.4.1 Part one: Independent Variables	32
3.4.2 Part two: Dependent Variables.....	33
3.4.3 Part three: The Product Specific part.....	33
3.4.4 Piloting and Pre-Testing Questions	33
3.4.5 The Sample	34
3.5 PROCESSING THE EMPIRICAL DATA.....	36
3.5.1 Descriptive Statistics.....	36
3.5.2 Inferential Statistics.....	37
3.6 THE QUALITY OF THE RESEARCH DESIGN.....	41
3.6.1 Validity	41
3.6.2 Reliability	42
3.7 CRITIQUE AGAINST CHOSEN METHOD	42
4. EMPIRICAL FINDINGS	44
4.1 INTRODUCTION TO EMPIRICAL FINDINGS.....	44
4.2 COMPLEXITY DIMENSIONS AND DESCRIPTIVE STATISTICS	44
4.2.1 The Nature of the Product	44
4.2.2 Consumer Knowledge.....	46
4.2.3 Trust.....	47
4.2.4 Interactivity.....	47
4.2.5 Touch and Feel.....	48
4.3 CONSUMER CHARACTERISTICS AND CORRELATIONS.....	48
4.3.1 Consumer Characteristic: Perception of Computer Skill	48
4.3.2 Consumer Characteristic: Perception of Impulsiveness.....	50
4.3.3 Consumer Characteristic: Frequency of Online Purchase.....	50
4.3.4 Age Means	51
4.4 CONSUMER CHARACTERISTICS AND TENDENCY.....	53
4.4.1 Assessment of the Total Sample.....	53
4.4.2 Assessment of Computer Skill and Purchasing Tendency	56
4.4.3 Assessment of Impulsiveness and Purchasing Tendency	58
4.4.4 Assessment of Online Purchasing Frequency and Purchasing Tendency.....	59
4.4.5 Assessment of Gender and Online Purchasing Tendency	61
4.4.5 Assessment of Age Groups and Purchasing Tendency.....	62
5. REVISION OF THEORY.....	64

5.1 PERCEPTION OF IMPULSIVENESS	64
5.2 PERCEPTION OF COMPUTER SKILL.....	65
5.3 ONLINE PURCHASING FREQUENCY.....	67
5.4 GENDER.....	70
5.5 AGE.....	70
5.6 TENDENCIES.....	70
6. CONCLUSION	72
6.1 OVERVIEW.....	72
6.2 CONCLUSIONS.....	72
6.3 CONTRIBUTION TO PRIOR RESEARCH.....	73
6.4 MANAGERIAL IMPLICATIONS	73
6.5 PROPOSITIONS FOR FURTHER RESEARCH	74
6.6 RESEARCH LIMITATIONS	74
6.7 SUMMARY	74
7. REFERENCES.....	75
7.1 BOOKS.....	75
7.2 ARTICLES.....	76
7.3 E-SOURCES.....	79
8. APPENDIX.....	81
8.1 THE QUESTIONNAIRE	81
8.1.1 Part One: Independent Variables	81
8.1.2 Part Two: Dependent Variables.....	82
8.1.3 Part Three: Product Complexity.....	84
8.1.4 Results	85
8.2 CORRELATIONS.....	87
8.2.1 Computer Usage	87
8.2.2 Impulsiveness.....	88
8.2.3 Frequency of Purchase.....	89
8.3 PRODUCT RATINGS	91
8.4 DIVERSITY AMONG BUYERS.....	97
8.5 REGRESSIONS.....	99
8.5.1 Variable: Low Computer Skill.....	99
8.5.2 Variable: High Computer Skill.....	100

8.5.3 Variable: Low Impulsiveness.....	100
8.5.4 Variable: High Impulsiveness.....	101
8.5.5 Variable: Low Frequency.....	102
8.5.6 Variable: High Frequency.....	103
8.5.7 Variable: Age Group 1.....	104
8.5.8 Variable: Age Group 2.....	105
8.5.9 Variable: Age Group 3.....	105
8.5.10 Variable: Age Group 4.....	106
8.5.11 Variable: Age Group 5.....	107
8.5.12 Variable: Men.....	107
8.5.13 Variable: Women.....	108

1. INTRODUCTION

This chapter will present a framework of the chosen research area, including previous research and hypotheses that will be examined throughout the thesis. Furthermore, the aims of study, delimitations and disposition will be presented.

1.1 DEFINITION OF ELECTRONIC BUSINESS, COMMERCE & RETAILING

Electronic business, or e-business, can be defined as the conducting of business on the Internet, including buying and selling, as well as serving customers and collaborating with other partners or suppliers (McGoldrick, 2002). E-business consists of components such as logistics and business-to-business (B2B) procurement of supplies and services (McGoldrick, 2002). On the other hand, the definition of electronic commerce, or e-commerce, is limited to only include the buying and selling of goods over the Internet and can thus be considered as one of the elements composing e-business (McGoldrick, 2002). However, it must be kept in mind that e-commerce is an ambiguously used term with no widely accepted definition. Most European governments define e-commerce by the method of which an order is placed rather than how payment is made or which delivery channels are employed (McGoldrick, 2002). The US Bureau of the Census defines e-commerce as “*sales of goods and services over the Internet, an extranet, Electronic Data Interchange or other online systems. Payment may or may not be made online*” (McGoldrick, 2002:587). This definition is also shared by Houghton & Winklhofer (2004), defining e-commerce as something including both the buying and selling of goods online, as well as with Du, Li and Chou (2005), defining e-commerce as a business practice associated with buying and selling information, products, and services on the Internet. Ghauri & Cateora (2006) define e-commerce as a tool that can be used to market business-to-business services, consumer services and consumer and industrial products via the Internet. A technical definition is highlighted, as they argue that e-commerce is a form of direct selling, having a unique and new form of distribution. Aligned with the definition of McGoldrick (2002) is the notion that the point of payment does not need to take place on the Internet, as consumers may search for products and services online, but then buy in another way (Ghauri & Cateora, 2006).

E-tailing, or Internet retailing, is the process of buying and selling products, services and information over computer networks. This definition lies very close to the definition of e-commerce. However, e-tailing refers to business-to-consumer (B2C) transactions, and does not include B2B transactions as in the case of e-commerce (Prasad & Aryasri, 2009). In this thesis, when referring to e-commerce, e-tailing, online shopping and shopping on the Internet, it will be referred to the selling and/or buying of physical products in a B2C context. Services are hence not included in our definition. However, when referring to e-business, McGoldrick’s (2002) definition is applied.

1.2. BACKGROUND

During the year 2009, total e-tailing sales added up to 22.1 billion SEK, growing with 8.1 percent compared to the sales in 2008 (www.hui.se, 2010). Online sales also constituted 4.2 percent of total Swedish retail sales in 2009 (www.hui.se, 2010). According to research from the Swedish Statistical Central Bureau (Privatpersoners användning av datorer och Internet 2009) on e-shopping in European countries, the Nordic countries are at the top. Norway is the leading country where 70 percent of the population had bought or ordered products or services online during April 2008 - March 2009 (www.scb.se, 2010). Sweden takes a fourth place where 63 percent of the population had shopped products or services online (www.scb.se, 2010).

Even though the Internet is a promising channel for commerce, consumer behavior research has shown poor results regarding the overall use of the Internet for online shopping. One of the reasons for this unused potential is that companies often lack sufficient understanding of how consumers use the Internet (Rhee et al., 2009). It is claimed that one of the important reasons for e-business success is the type of product available through e-commerce (Jahng et. al., 2001; Li & Gery, 2000; Turban, 2001) and that a product's particular features will influence the choice of shopping channel (Li & Gery, 2000). Thus, in order to make the most of the full features of the Internet as a commerce channel, it is critically important that companies make a careful assessment of consumers' acceptance of e-commerce and their interactions with different product types (Rhee et al., 2009).

Li and Gery (2000) were among the first to ask whether or not all types of products could be and should be sold on the Internet, as they noticed that some products seemed to be more successful on the Internet than other. Li and Gery (2000) also question if it is possible that perhaps some products inherently are more suitable for Internet shopping, claiming that it is important for marketers to understand and develop appropriate expectations about the e-tailing performance of their products.

1.3 PREVIOUS RESEARCH

In order to investigate the suitability of various products on the Internet, a literature review was conducted. The prior research presented below serves as a foundation for deducing hypotheses that will be tested in this thesis. Firstly, we will present the Technology Acceptance Model, which constitutes a basis for consumer characteristics, especially in regards to frequency and computer skill. Secondly, each of the dimensions and characteristics will be presented more thoroughly in forthcoming sections.

1.3.1 Technology Acceptance Model

Perea y Monsuwé et al. (2004) have constructed the “Framework for consumers intention to shop online”, based on the influential Technology Acceptance Model (TAM) in the information systems field. The framework is highly applicable to the e-commerce environment as it is an extension of the original TAM, incorporating additional factors associated with consumer attitudes toward online shopping. Davis (1989), who first introduced the TAM, aimed to provide a general clarification of the determinants of computer acceptance and explain user behavior across different computing technologies and user populations. According to Davis (1989), behavioral intention is affected by two main determinants, which are *perceived usefulness* and *perceived ease of use*. Perceived usefulness can be defined as the consumers’ perception that using the new technology will improve his or her performance, while ease of use refers to the degree to which a consumer finds an information system to require only a minimum of effort (Davis et al., 1989). Thus, ease of use is a process-focused determinant, highlighting how consumers perceive the process leading up to the final outcome of a purchase, while perceived usefulness refers only to the outcome of an online purchase experience (Perea y Monsuwé et al., 2004).

Perea y Monsuwé et al. (2004) have based their framework on the notion that consumers’ attitude toward Internet shopping initially depends on the functional and emotional effects that arise through online features, such as perceived ease of use, perceived usefulness and enjoyment. In addition to these basic determinants of consumers’ attitudes and intention to use a technology, relevant external factors are also integrated in the framework, including consumer traits, situational factors, product characteristics, previous shopping experience and trust in online shopping. By doing so, the framework is applicable to the online shopping context and provides a foundation for understanding consumers’ intention to purchase products on the Internet (Perea y Monsuwé et al., 2004). The external factors will be explained in more detail in forthcoming sections.

Consumers’ motivation to engage in online shopping is dual, including both utilitarian and hedonic dimensions. Some Internet shoppers can be described as “problem-solvers”, focusing on the functional advantages of Internet shopping, such as convenience, low price, broad assortment etc. Others can on the contrary be described as seekers of fun,

sensory stimulation and enjoyment, focusing on the hedonic aspects of online shopping. The aspects of usefulness and ease of use reflect the utilitarian dimension, while enjoyment characterizes the hedonic dimension (Perea y Monsuwé et al., 2004).

According to TAM, ease of use directly affects consumers' intention to shop on the Internet because consumers attempt to minimize their effort in behavioral decision-making. Thus, the easier a technology is and the less effort consumers need to devote, the more likely are the consumers to use this technology. When consumers gain more experience with a certain system, they adjust their ease of use, implying that when consumers get more experience with the Internet, they will adjust their perception in a positive direction regarding the ease of use of the Internet as a channel for shopping. (Perea y Monsuwé et al., 2004)

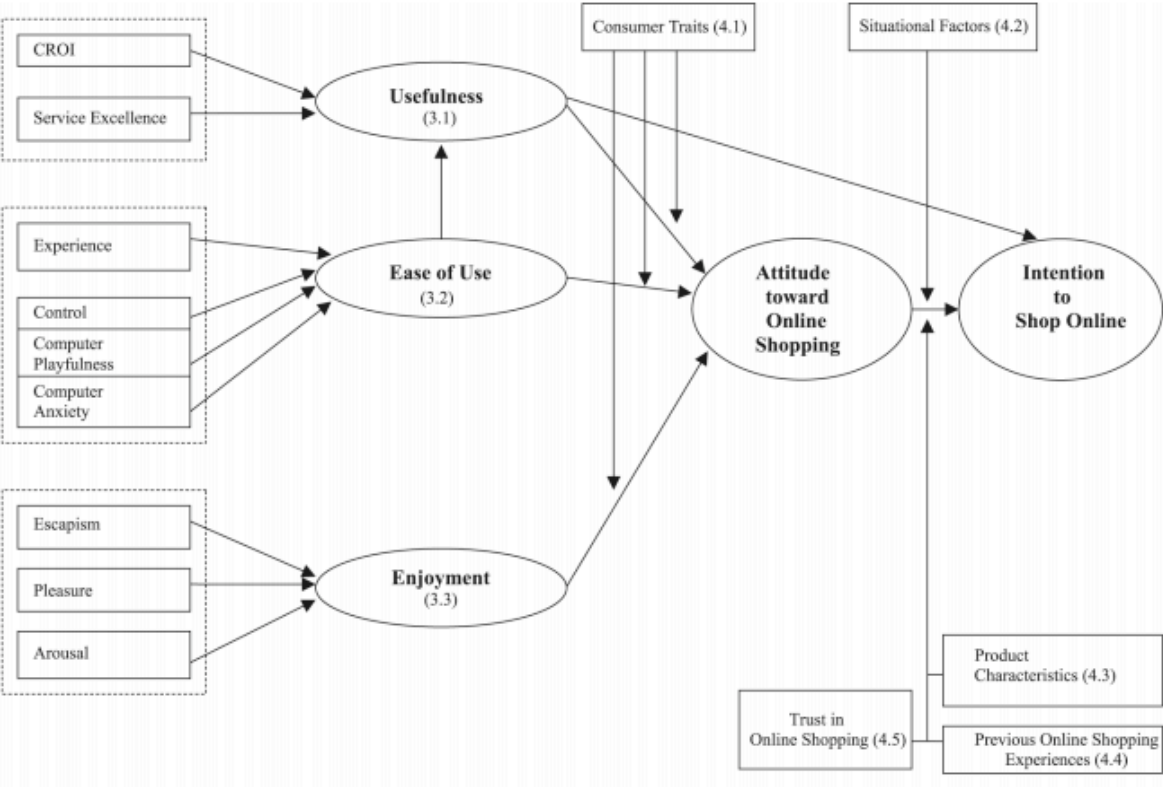


Figure 1: Framework for consumers' intentions to shop online (Source: Perea y Monsuwé et al., 2004)

1.3.2 Product Types and Online Purchasing

When drawing upon previous literature, researchers suggest that consumers' buying behavior shifts depending on product type and product attributes, such as brand image, reliability, styling and availability of service (Tulay et al., 2002). Furthermore, consumers' shopping efforts vary depending on product type, resulting in a classification of various products into categories (Tulay et al., 2002; Klein, 1998). Products have previously been categorized based on search, experience, and credence factors (Tulay et al., 2002; Klein, 1998). A *search product* is e.g. a book or a computer for which information regarding the product's characteristics and qualities can be determined easily and cost-effectively by consumers prior to purchase (Tulay et al., 2002). These types of products are also said to be most suitable for online purchase (Tulay et al., 2002). *Experience products* on the other hand, are those for which qualities and characteristics cannot be determined before the actual purchase, and for which information search is more costly or difficult compared to direct product experience (Tulay et al., 2002; Klein, 1998). Experience products are further classified into two groups divided by how costly or difficult it is to obtain information e.g. clothing require more direct experience as compared to cell phones or television sets (Tulay et al., 2002). When shopping online, the experience product category has been proven to affect the purchase intention negatively since consumers feel a greater need to touch and try the good before purchasing it (Tulay et al., 2002). *Credence goods* are those that are difficult for the consumer to evaluate in terms of quality or attributes, before as well as after, purchase/consumption (eg. vitamins or anti-age products), and are therefore mostly taken on trust (Tulay et al., 2002; Klein, 1998). According to the research of Tulay et al. (2002), products of the latter type are the less preferred for online purchase.

Previous research has also classified different types of products along three dimensions: Cost and frequency of purchase, value proposition, and degree of differentiation (Peterson et al., 1997). Phau and Phoon (2000) investigated the online suitability of products within the three dimensions above. Attributes such as: low-priced frequently purchased goods were measured against high-priced infrequently purchased goods, tangible or physical good versus intangible or informational goods, and low differentiation versus high differentiation (Phau & Phoon, 2000). Their results show that low-priced and frequently purchased goods were preferred by shoppers compared to high-priced and infrequently purchased goods. Likewise, intangible or informational goods are more preferred by online shoppers than tangible or physical goods, while products with high differentiation are more suitable to be sold on the Internet than products with low differentiation (Phau & Phoon, 2000).

Furthermore, Kwak et al. (2002) investigated the purchase popularity of different products online versus the information required for these products. Music products were among the most popular to purchase online and required the least information. Books and computers were in the high-information segment, but were also popular items. Entertainment products with low information requirement, scored low in

popularity together with education, travel, Internet, communication, and electronic products even though the latter ones require high information rate. (Kwak et al., 2002)

1.3.3 Consumer Knowledge

Different types of products require different levels of product research. For instance, infrequently purchased goods require more research and examination than frequently purchased goods. Consumers who buy certain products on a regular basis are able to learn about different product alternatives and where the best place to purchase them is. However, goods such as cars and software are items that require pre-purchase information search. Only when consumers are aware of the relative advantages of online shopping and when the consumers perceive the Internet as being relatively easy, will the shopping activities be enhanced for infrequently purchased items. (Rhee et al., 2009)

The more information and knowledge a consumer has regarding a product, the lower will the level of perceived uncertainty be. An established product thus has a lower degree of complexity than a new product, as consumers need to acquire adequate information regarding a new product before purchasing it, compared to an already established product. This is even more evident in the case of comparing previously purchased products to products that are purchased for the first time. Consumers are familiar with a previously utilized product and thus perceive it as less complex. An initial purchase is more likely to be perceived with uncertainty, creating a need for acquiring information, and is thus more complex in the mind of the consumer. Consumer knowledge varies depending on the product in two ways; frequency of purchase and frequency of use. If a product is purchased often, consumers are more likely to have the required knowledge about the product. Frequency of use also affects the consumers' knowledge; if the product is of the daily use kind then consumer will gather greater knowledge through trial and error. (Hill, 1972)

Consumers have a tendency to conduct transactions that minimize transaction costs, such as those related to searching for product information, evaluating alternative products, receiving after sales service etc. Thus, goods that require limited examination, such as books, are perceived to have a lower acquisition cost than so-called experience goods, such as shoes and apparel, which require inspection and more thorough evaluation prior to purchase. Besides the category of the product, variables connected to consumer characteristics and media attributes also play a central role in influencing information-seeking behavior. For instance, a consumer's knowledge of a certain product, prior experience, attitude toward shopping and social influence from peers, may affect the degree of Internet search. The same applies for media attributes, including factors such as information presentation format and interactivity. (Shim et al., 2001)

Shim et al. (2001) suggests that prior experience with Internet shopping, as well as prior experience with the use of personal computers, are significant predictors of online

search behavior. Previous experience may decrease consumer's perceived risk level and uncertainty associated with Internet shopping, and it may have a direct effect on the intention to use the Internet for shopping. Studies have found that shoppers who use electronic shopping technologies have more experience with these or with related technologies. Furthermore, evidence indicates that knowledge and experience may also be related to the extent of search. Consequently, search intention via the Internet varies by consumers' Internet shopping history, which might directly influence a consumers' choice of search mode (Shim et al., 2001). Previous online purchase experience affects consumer attitudes and purchase decision in a positive way, making these consumers more likely to purchase goods on the Internet again (Zhou et al., 2007).

1.3.4 Online Trust

To generate trust online is a major challenge in e-commerce, since lack of trust is the main factor for consumers to avoid online purchases (Gefen & Straub, 2004). Consumers often perceive risks involved in online transactions (Hahn & Kim, 2008). Such risks can be financial, product risks, concern for privacy and security, uncertainty due to lack of interactivity in the sales process, and lack of crucial tangible aspects of an offline experience (Gefen et al., 2003; Stewart, 2003; Winch and Joyce, 2006). There is a lack of rules and customs on the Internet, which generally are functions that decrease people's perceived uncertainty and make them feel like they are in control of their environment. Thus, trust becomes a crucial factor in e-commerce (Gefen & Straub, 2004). Researchers in consumer behavior and information systems have identified the concept of perceived risk regarding privacy, security and financial transactions as a key antecedent to online purchasing behavior and claim that it may be a primary factor that negatively affect the transfer from a browser to a regular online shopper (Lee et al. 2002; Rhee et al., 2009).

One of the main reasons for why online shopping is associated with various issues of uncertainty and perceived risk is due to the information asymmetry between buyers and sellers in the online context (Zhang et al. 2010; Zhu et al. 2009). As consumers feel vulnerable and perceive a heightened risk of exposing themselves to loss, they will be reluctant to purchase in online environments (Zhu et al. 2009). In general, the greater the risks consumers perceive, the more extensive is their information search prior to purchase (Shim et al. 2001). In order to enhance consumers' purchase intention and attenuate their perceived risk, establishing trust is of utmost importance. Trust is a psychological state where consumers have the intention to accept a certain degree of vulnerability based on their belief that the transactions, which they involve in with sellers, will meet their expectations due to the seller's reputation, competence and predictability (Zhu et al. 2009). For this reason, it is hypothesized by researchers that trust plays a key role in consumers' decision-making concerning Internet shopping. (Zhang et al. 2010; Zhu et al. 2009).

When consumers for the first time engage in shopping at a particular website or for a specific product, they may not be able to evaluate the purchasing outcome based only on

their own knowledge and examination of the website. Consequently, a search for information from other sources is required, such as online discussion forums or other peers. Consumers will not engage in any purchasing behavior before they perceive the online seller as trustworthy (Zhang et al. 2010). In the absence of adequate information, consumers will evaluate trustworthiness based on information such as appearance. Appearance in this case, would work as a heuristic that in the mind of the consumer reflects the e-tailers efforts to commit to B2C relationships. It is also suggested by research that consumers' familiarity reduces uncertainty and enhances trust. Familiarity is a prediction process corresponding to how well a consumer comprehends a previously visited website and browsing experience. The higher familiarity a consumer has, the lower will the uncertainty and perceived risk be. The reason for this is that a consumer has to exert less cognitive effort to utilize a website if he or she is already familiar with the procedures and the structure of a website. Adaption to a website's features will lower the mistake rate and increase efficiency of finding a solution to a consumer's problem. This in turn, will lower the level of perceived risk and uncertainty (Zhu et al. 2009).

Furthermore, the brand is another aspect of trust. Brands that possess consumer trust in an offline mode are also more likely to be trusted online by consumers (Hahn & Kim, 2008). Brand trust is closely related to customers' satisfaction levels and repeat purchase intentions (Zboja and Voorhees, 2006). Moreover, brand familiarity has been proven to have a strong positive effect on consumers' intentions to shop online (Park & Stoel, 2005). In the non-standard product categories, the Internet offers limited amounts of crucial information to the customer. In such cases, only the seller knows about the true quality of the product and this leads to an 'information asymmetry' as well as to which extent the consumer would like to touch and feel the product before buying (Turban, 2004).

1.3.5 Interactivity

Yoo et al. (2010) highlight interactivity as one of the most important factors for effective communication. Their studies report that interactivity increase perceived quality and consumers' satisfaction levels, as it creates more value for consumers. Interactivity is defined based on either interpersonal communication or on user-machine communication (Yoo et al., 2010). In traditional retailing, face-to-face interaction with sales staff is the most common way to facilitate interactivity. In this sense, e-tailers have more constraints when interacting with consumers, as no salesperson can be provided in the online shopping process. The foremost reason for online shopping has for a long time been that it provides a more convenient and time-efficient shopping experience, as well as economical benefits. However, the importance of interactivity in e-commerce has also been widely recognized. The quick-paced growth of e-commerce in the last decade together with changed consumer shopping patterns, has forced e-tailers to facilitate interactive features on their websites. E-interactivity covers everything from computer-

mediated human interaction to media interaction, including features such as real-time chats, bulletin boards, search engines, responding to consumer requests and inquires etc. It is argued that high interactivity leads to better consumer decision-making, as well as greater consumer relationship marketing and personalized marketing strategy. This in turn, leads to increased consumer satisfaction and generates higher consumer retention. (Yoo et al., 2010)

High-complexity products are anticipated to require a greater level of interaction between both consumers and products and between consumers and sales representatives. On the other hand, in the context of purchasing products of more simple characteristics, high levels of interaction would not be required, as interactivity is not a component of critical importance in consumers' purchase decisions for simple products. Thus, the influence of interactivity on consumer's attitudes, behavioral patterns and purchase intention is expected to differ depending on the degree of complexity of the products and purchase process that consumers are involved in. (Jahng et al., 2007)

1.3.6 Touch and Feel

In a traditional shopping environment consumers can check the quality of the good, whereas in e-commerce, implications arise for many of the online shoppers regarding the quality, service and possession, as shoppers cannot touch and feel the actual product. Neither can they receive the instant gratification of it, which is considered to be a very important factor for many shoppers (Markham et al., 2006). Consumers who engage in shopping at brick and mortar stores benefit from accessing rich amount of information that comes from personal evaluation of the desired product. Sensory stimulation in regard to touching, smelling, listening, feeling and trying-on products help them make what they perceive as a more rational purchase decision (Inks & Mayo, 2002). According to research by Inks & Mayo (2002), the inability to touch and try-on products is the second most frequent reason for not shopping on the Internet. Consumers prefer to have such interaction with a product before deciding to purchase it (Inks & Mayo, 2002). Consequently, as it is difficult for consumers to predict whether the ordered product is really what they want, they perceive a high risk when purchasing products online (Liu & Wei, 2003).

1.4 DETERMINANTS: CONSUMER CHARACTERISTICS

In this section, prior research on several consumer characteristics that influence purchase intention will be presented. These characteristics form the basis for the hypotheses that will be tested in this study.

1.4.1 Impulse Buying and Impulsive Behavior

Researchers have discussed the definition of impulse buying, and there is no clear consensus between researchers on that matter. Madhavaram and Laverie (2004) state that impulse buying is a result of a purchaser's immediate reaction to external stimuli, and not just an unplanned purchase. An impulse buying episode denotes a change in the purchaser's intention to buy that particular product before and after the exposure to stimuli. The frequency of impulse buying, even for relatively expensive products, has resulted in studies looking at impulse buying as an intrinsic individual characteristic, moving away from the early theories stating that impulse purchase is limited to a certain product or product type. (Madhavaram & Laverie, 2004)

The commonness of e-tailing has further confounded impulse purchasing since online retailing eliminates the constraints of time and space, making it easier to shop (Kalakota & Whinston 1997). In the research conducted by Donthu and Garcia (1999), Internet shoppers were categorized into different profiles. The results showed that e-shoppers are more impulsive than in-store shoppers due to the stimuli they are exposed to. Online stimuli can consist of graphics, text, pop-up windows, search engine configuration, audio, color and streaming video (Childers et al., 2001). The study carried out by Madhavaram and Laverie (2004) confirm that impulse purchasing is not restricted to certain products or product types and results show that images, banner advertisements, price etc. can all be stimuli for impulse purchases. The study also indicated that online retailing makes it easier to purchase on impulse since it offers convenience and ease. However, online security is a concern that constrains impulsive behavior (Madhavaram & Laverie, 2004).

According to the research of LaRose and Eastin (2002), impulsiveness is positively related to online shopping activity. Furthermore, impulsiveness was a more important predictor for online purchasing behavior than convenience, low price and personal characteristics. Their research suggests that shoppers between 18-24 years of age have the highest level of impulsiveness and that this characteristic is formed in late adolescence. Moreover, previous Internet experience and impulsive shopping behavior online is positively related, meaning that people who have Internet experience are more prone to impulsive behavior online.

Research also shows that women are more likely to be involved in and engage in impulsive shopping behavior (Walsh & Mitchell, 2004). Lee (2007) concluded in his findings that impulsive consumers are more positive to purchasing through online stores and that impulsive tendencies are positively related to purchase intention.

The following hypotheses about impulsiveness, product nature, interactivity, consumer knowledge, touch and feel, and online trust have been deduced:

- H₁:** *There is an association between the respondents' perception of their impulsiveness and the variables of product nature.*
- H₂:** *There is an association between the respondents' perception of their impulsiveness and their comfort with shopping online without a salesperson.*
- H₃:** *There is an association between the respondents' perception of their impulsiveness and the consumer knowledge variables.*
- H₄:** *There is an association between the respondents' perception of their impulsiveness and the importance of touch and feel before buying a product online.*
- H₅:** *There is an association between the respondents' perception of their impulsiveness and their online trust.*

1.4.2 Computer Skill

It is important to comprehend that different adopters of technology might perceive attributes of a technology in different ways. Therefore, behavior related to use of the technology might be different depending on the adopter (Perea y Monsuwé et al., 2004). Experience with the Internet is a determining factor when considering online purchases (George, 2002). Research shows that consumers' concern over control of personal information increases along with their Internet experience. On the other hand, consumers' concern over the functional aspects of shopping online decreases (Hoffman et al., 1999). Furthermore, the research conducted by George (2002) compares new and old Internet users (up to six months respectively over three years of experience). Results show that new Internet users are less likely to purchase online as well as they worry more about online credit card theft than old users (George, 2002).

The following hypotheses about computer skill, product nature, interactivity, consumer knowledge, touch and feel and online trust have been deduced:

- H₆:** *There is an association between the respondents' perception of their computer skill and the variables of product nature.*
- H₇:** *There is an association between the respondents' perception of their computer skill and their comfort with shopping online without a salesperson.*
- H₈:** *There is an association between the respondents' perception of their computer skill and the consumer knowledge variables.*
- H₉:** *There is an association between the respondents' perception of their computer skill and the importance of touch and feel before buying a product online.*

H₁₀: *There is an association between the respondents' perception of their computer skill and their online trust.*

1.4.3 Frequency of Purchase

Numerous theories and models suggest that buyers go through distinct stages before, during and after the purchasing process. Although being called differently by researchers, the different steps of the buying process are indicating the same aspects. Initially, a consumer becomes aware of a problem and search for information regarding how to solve this problem. Different options are usually presented, forcing the consumer to evaluate the proposed solutions before deciding to purchase any of them. Finally, there will be a post purchase evaluation of whether the solution accomplished what was anticipated. Many of the decisions in the buying process are of a repetitive nature. Consumer predispositions, knowledge and actions dictate future decision-making, thus causing a cyclical effect in their behavior. (Markham et al., 2006)

The following hypotheses are formed from the part above:

H₁₁: *There is an association between the respondents' perception of their purchasing frequency and the variables of product nature.*

H₁₂: *There is an association between the respondents' perception of their purchasing frequency and their comfort with shopping online without a salesperson.*

H₁₃: *There is an association between the respondents' perception of their purchasing frequency and the consumer knowledge variables.*

H₁₄: *There is an association between the respondents' perception of their purchasing frequency and the importance of touch and feel before buying a product online.*

H₁₅: *There is an association between the respondents' perception of their purchasing frequency and their online trust.*

1.4.4 Age and Gender

The Swedish Statistical Central Bureau reported that younger people (16-24 years old) are the most frequent Internet users, followed by the middle-aged 45-54 year olds (www.scb.se, 2009). The World Internet Project reports that the usage of Internet increases as age decreases (www.worldinternetproject.net, 2010). The above mentioned study also reports that in 32 of the 33 participating countries 79 percent of the adults between 18 and 24 years of age log on to the Web (www.worldinternetproject.net, 2010). Sweden and the U.S. were the only countries where more than 40 percent of the senior population (65 years old or more) were active online (www.worldinternetproject.net, 2010). Furthermore, in Sweden the increase of

Internet use is the highest among 18-24 year olds and retired people between 65-74 years of age (www.worldinternetproject.net, 2007).

According to the Swedish Statistical Central Bureau, there is little difference between men and women regarding purchasing patterns and habits online. Women mostly shop apparel, sports gear, books or magazines. Men, on the other hand, typically shop computers, electronics, film and music, financial services, and insurance services. The major difference between the genders concerns personal safety and payment issues. Women are more concerned with these issues, which are the foremost reasons why women do not shop online. (www.scb.se, 2009)

In accordance with Belanger et al. (2002) men are more likely to intend to purchase products or services online and perceive Internet shopping more positively than women. Moreover, men perceive the Internet as more reliable and less complex than women do (Belanger et al., 2002). In the study by Harris and Rodgers (2003) women were less emotionally satisfied with online shopping than men and were also more skeptical. Females are reported to perceive information with more confusion than males, misunderstand it more often and engage in more detailed elaboration that involves extended decisions based on product attributes (Meyers-Levy & Maheswaran, 1991; Elliott & Speck, 1998). This is claimed to be because women are less likely to simplify decisions or to consult a sales assistant when accessing limited information (Laroche et al., 2000; Meyers-Levy & Maheswaran, 1991). Also, findings suggest that women may be more likely to expose themselves to more information; making purchase decisions more difficult (Lee, 2007). According to the research of Zhou et al. (2007) male consumers make more online purchases and spend more money online than females. Furthermore, males are equally or more likely to shop online in the future, and are equally or more favorable of online shopping (Zhou et al., 2007). Women have a higher-level of distrust regarding the web and are more skeptical of e-business than men (Zhou et al., 2007).

1.5 RESEARCH ISSUES

Existing research on products in an e-commerce context has mostly investigated the suitability and popularity of various product types, attributes characteristics and shopping efforts for buying a certain type of product. The central concept is that products are categorized thereafter, and purchase intention or probability is studied. However, consumer behavior is a changing phenomenon. Ten years ago most people would probably not have considered buying a book or a computer online even if they had the opportunity. The pace of technology acceptance can explain the shift in behavior and attitudes. As the usage of technology increases in our everyday life, it is likely that attitudes towards purchasing different items online will change due to more experience, making consumers more confident with purchasing on the Internet. Therefore one can

question whether the product essentially is the cause for not purchasing. Furthermore, one can argue that it is rather the technological level and acceptance that motivates certain behavior. Thus, previous research has been unsuccessful to see beyond product categories and look into different dimensions that constitute a product's complexity level and how that affects purchase intention. Today's commodities available online seem to have evolved from simple products, e.g. books, to fully customized complex items such as complete kitchen solutions. Products like the latter are becoming commonplace in the virtual marketplace; therefore not knowing how consumers perceive product complexity and how it affects their purchase decision is a current issue.

Prior research further suggests several determinants for online purchase: impulsiveness, frequency of purchase, computer skills, age and gender. These factors all affect the consumer's attitude towards e-tailing and can be seen as individual characteristics that define a consumer's profile regarding purchase behavior, which is the outlook of this thesis. Prior research has investigated the relationship between a determinant and purchase behavior, but has not combined several determinants with product complexity in order to investigate how these interplay and affect purchase intention. This is important to highlight since complexity alone does not determine whether a consumer intends to purchase a certain product or not. It has been proven that consumer characteristics influence attitudes and purchasing behavior, and it is consequently a need to investigate how consumer characteristics, such as perception of technological skill as well as impulsiveness and frequency of purchase, relate to product complexity.

The following inadequacies have been identified in existing research:

- Shifts in attitudes and behavior contra product suitability online have not been studied extensively.
- Product types/categories are examined rather than complexity levels.
- Prior research does not investigate several determinants versus product complexity.

1.6 AIMS OF STUDY

The aim of this study is to examine if consumer characteristics such as experience of online shopping (in terms of purchasing frequency), level of impulsiveness and perception of computer knowledge define attitudes towards buying complex products online. Furthermore, product complexity and the intention of purchasing complex products online will be investigated. Thus, this study intends to scrutinize consumer characteristics and their influence on perceived product complexity by looking at both the variance in the tendency of buying complex products and the variance in complexity dimensions.

In summary, this study aims to:

- Examine product complexity and its' relation to purchase decision
- How consumer characteristics relate to product complexity
- Attitudes towards product complexity

This will be done by investigating the determinants computer skill, purchasing frequency and impulsiveness in relation to factors that constitute complexity: the nature of the product, touch and feel, consumer knowledge, online trust and interactivity.

More explicitly, two research objectives will be studied:

1. The determinants of consumer characteristics and the different complexity dimensions.
2. The determinants of consumer characteristics and the tendency of purchasing complex products online.

1.7 DELIMITATIONS

This study is focused on investigating online purchase decision regarding complex products. Product complexity is defined and calculated on the basis of a framework, constructed by the researchers. Moreover, eight products have been chosen in order to investigate the purchase tendency of products with different levels of complexity. Only a B2C relationship is regarded in this study, as well as the purchase decision for new products. Furthermore, factors affecting the purchase decision are limited to the determinants of consumer characteristics. The hedonic aspects of online shopping are not taken into consideration since they are not relevant for this study.

This study is limited to its convenience sample; 174 online shoppers of which 52 percent are women and the biggest age group is 15-24 years of age. Moreover, the study is restricted to its' location (Swedish consumers in Lund) and the type of products used in the questionnaire (book, computer, trailer, car, cargo box, kitchen, backpack and towing hitch).

1.8 DISPOSITION

- Chapter One:** In this chapter the determinants and consumer characteristics is presented by previous research.
- Chapter Two:** This chapter explains the theoretical framework for understanding product complexity and how the products were measured in this study.
- Chapter Three:** This chapter is methodology and contains the methods used in this thesis, describing what research approach, data collection and statistical measurements were used.
- Chapter Four:** Here the empirical findings are presented through means, plots, charts, correlations and regression analysis.
- Chapter Five:** This chapter is called revision of theory and compares the empirical data with the theories presented in previous research.
- Chapter Six:** Conclusions and contribution chapter are presented as well as managerial implications, further research and research implications.
- Chapter Seven:** Appendix; contains all the data from the data collection and presentation of the survey questions.

2. CONCEPTUAL FRAMEWORK OF PRODUCT COMPLEXITY

The intention with this chapter is to clarify the product complexity measures used in this thesis, including the measuring framework as well as the ranking of our chosen products.

2.1 PRODUCT COMPLEXITY

During the literature review, it became obvious that product complexity is a hard-to-define concept. Different dimensions of product complexity have been highlighted in the world of academia, and it can thus be said that product complexity is a multi-dimensional concept. Product complexity refers to the extent of which a product is perceived to be complex and can be defined as being composed of three key aspects: multiplicity, variability, and interdependence of product attributes. *Multiplicity* relates to the variety or amount of product attributes that may facilitate or limit flexibility in consumer choice (Jahng et al., 2000; Jahng et al., 2007). For example, in the case of a mixing console, there are numerous features to be considered, such as channel equalization, frequencies, amplitude, input faders, peak meters etc. Furthermore, many of these features can take on a separate range of values. This is the aspect of *variability*, implying the range of values that each of these product attributes can assume (Jahng et al., 2000; Jahng et al., 2007). For instance, frequencies may be in the form of bass, midrange or treble, and effects controlling a signal's amplitude may be noise gates, expanders or compressors. Finally, *interdependence* indicates the extent to which one or more product attributes are dependent on other product attributes that may facilitate or limit flexibility in consumer choice (Jahng et al., 2000; Jahng et al., 2007). A mixing console for example, would be rather useless without compatible microphones, speakers and amplifiers. A consumer needs to evaluate the importance of each feature to his or her situation and decide on the desired minimum acceptable value of each product attribute. Moreover, depending on the degree of interdependence between different product attributes, a consumer also needs to make a trade-off between alternative products (Jahng et al. 2000; Jahng et al., 2007).

Besides the aspects of multiplicity, variability and interdependence, which are rather technical aspects of products complexity, there are also more peripheral aspects. According to Kotteaku et al., (1995) the definition of product complexity also includes factors such as differentiation, ease of installation and existence of after-sales service. It is reasonable to assume that differentiated products may require more cognitive effort by consumers than standardized products with fewer attributes. Thus, differentiated products are assumed to have a higher degree of complexity attached to its utilization (Jahng et al., 2000). Furthermore, if a product is easy to install or is not in need of any installation, it is less complex than a product that requires specialized installation or use. Connected to this is the aspect of after sales service. If a product requires after sales

service or other post-purchase activities, it is considered being a product of more complex nature than a product for which after sales service is not necessary (Hill, 1972; McCabe, 1987; Kotteaku, 1995).

2.2 A RATING INSTRUMENT FOR PRODUCT COMPLEXITY

In order to measure the complexity of the chosen products, the ratings are only applied on the first dimension, the nature of the product. These ratings consist of interdependence, product standardization, and amount of pre-purchase and post-purchase activity.

In this thesis, interdependence entails to what extent the product is dependent on another product or good in order to fulfill its purpose e.g. a cargo box is dependent on a roof rack and a car in order to fulfill its purpose.

Standardization indicates that there is low variety in the product when changing from one brand to another. For example, a can of soda or a book, in most cases, function the same way regardless from whom you buy it. Products that need more information than others, e.g. products that need customizing when ordering, implying that the sales process is more complex for the customer, has been measured according to pre-purchase activity derived from Hill (1972), concerning consumer knowledge about a product and the information needed before the purchase.

Post-purchase activity refers to whether or not one can use the product right away and to what extent it needs to be installed, assembled or manipulated in other ways. This factor is derived from the Kotteaku (1995) definition above, regarding the technical complexity of the product.

2.3. EXAMINED PRODUCTS

The following products have been selected in this research:

- *A book*

This product has been selected to represent the lowest level of complexity on our complexity scale. A book is standardized, can be utilized without any other products and does not involve any significant pre- or post-purchase activities.

- *A backpack*

This product has been selected to represent a slightly increased level of complexity compared to a book. Even though a backpack can be utilized without depending on other products and does not involve any post-purchase activity, it is not as standardized as a

book. Backpacks come in many sizes, designs and colors and have a wider range of usage than a book. Besides this, some pre-purchase activity may be necessary in form of trying out the backpack before purchasing it.

- *A laptop*

This product has been selected to represent a moderately complex item. Besides being dependent on other items, such as an operating system, the purchase of a laptop involves both pre- and post-purchase activities, ranging from evaluation of information concerning the capacity of alternative laptops, to the installation of software and an operating system. Also, a computer is not a standardized product in terms of design, capacity and functionality, leading to a further increase on the complexity scale.

- *A towing hitch*

We have selected this product because it lies in the same complexity range as a laptop and it would be interesting to compare two products with different usage frequency. Even though a towing hitch is more standardized than a laptop, it involves more extensive pre-purchase activity in the form of acquiring information regarding compatibility with the car model and other model specific attributes.

- *A car*

A car has been chosen since it is infrequently purchased but frequently used. It is also a complex product in terms of touch and feel and price resulting in warranties, loans etc.

- *A cargo carrier*

A cargo-carrier has been selected since it is also an infrequently purchased product, being highly dependent on car model and roof racks, which require post-purchase activity.

- *A trailer*

The trailer was chosen since it is not a frequently purchased product nor frequently used by the average consumer. Furthermore, it requires post-purchase activity and an inspection in most cases.

- *A kitchen*

This product has been selected to represent a very high level of complexity on the complexity scale. A kitchen involves both considerable pre- and post purchase activity, and is dependent on multiple products in order to be utilized.

2.3.1 Scaling Method

The aim is to determine the degree of complexity of a product through a number of statements of product fulfillment characteristics. The complexity that is incorporated in the disposition of the product has been investigated in terms of standardization, pre-purchase activity, post-purchase activity and interdependence. The level of complexity will be rated on a Likert scale from one to five (Bryman & Bell, 2007). Five stands for high complexity and one for low complexity. Each question has five statements that characterize the level of complexity.

1. Interdependence: *To what extent is the product dependent on another product or good in order to fulfill its purpose?*

1. No interdependence.
2. The product is dependent on one other product in order to fulfill its purpose.
3. The product is dependent on two additional products in order to fulfill its purpose.
4. The product is dependent on three additional products in order to realize its purpose.
5. The product is dependent on four or more additional products in order to realize its purpose.

2. Level of standardization in terms of function: *To what extent is the product standardized across the industry?*

1. The product offered is almost identical throughout the industry. Some variation in size or quality may exist.
2. Medium standardization resulting in minor product features and design changes.
3. The product is relatively differentiated in terms of design, products features, quality or size.
4. Very high differentiation between products resulting in unique product features and design variations.
5. Every product bought is custom made and hence rather unique.

3. Level of pre-purchase activity: *Does the product require a lot of pre-purchase activity such as measuring, customization and/or other types of knowledge acquiring activities?*

1. The customer needs to register on the website and choose a ready-made product.
2. Except registration, the minimum level of pre-purchase activity requires choosing up to two extra product attributes e.g. size measurements and color.
3. Except registration, the minimum level of pre-purchase activity requires choosing multiple product attributes e.g. color size measurements, material, product model, design etc.
4. Except registration and selecting product attributes, the minimum level of pre-purchase activity requires measuring or assessing external attributes in order to customize the product e.g. when buying new software the computer should have a certain capacity or when buying furniture online physical space needs to be measured.
5. Except registration, selecting product as well as external attributes, the minimum level of pre-purchase activity requires choosing external services e.g. insurance, bank loans etc.

4. Level of post-purchase activity: *How much post-purchase activity is needed before utilizing the product, e.g. installation etc.?*

1. No post-purchase activity needed.
2. The minimum level of post-purchase activity requires reading product manuals or registration of the product.
3. The minimum level of post-purchase activity requires simpler installation with one attribute e.g. software.
4. The minimum level of post-purchase activity requires installation and assembling of multiple attributes in order to function.
5. The minimum level of post-purchase activity requires multiple installation and external assistance in order for the product to function e.g. installing electricity or plumbing.

2.3.2 Ratings

In the table below the ratings for each product are summarized. The meanings behind each of the ratings are presented in the Appendix.

Complexity Factors	Kitchen	Car	Backpack	Computer	Book	Cargo carrier	Drill	Trailer	Camera	Hitch
Interdependence	5	3	1	2	1	3	2	3	3	2
Standardization	3	3	2	3	1	3	3	3	3	2
Pre-Purchase Activity	5	5	2	3	1	4	3	4	3	3
Post-Purchase Activity	5	2	3	3	1	4	1	3	2	4
Mean complexity value	4.5	3.25	2	2.75	1	3.5	2.25	3.25	2.75	2.75

Table 1: Rating of Complexity

The aim with this scale is to get a wide range of products with different complexity values. The kitchen being the most complex product has a complexity mean of 4.50 whereas the book and backpack represents low complexity with a mean of 1.00 and 1.50. Additionally, products with the same complexity mean were also of interest seeing as they would indicate differences depending on other factors than product complexity scale, such as interactivity, consumer knowledge and trust.

3. METHODOLOGY

The intention with this chapter is to clarify the methods used in this thesis to explore the influence of product complexity on online decision-making. Henceforth, an explanation of the chosen variables, statistic methods and analysis are presented.

3.1 RESEARCH APPROACH

When conducting research, two different approaches can be adopted. The researcher can choose to apply a deductive approach, which entails that on the basis of what is known about a particular domain constructs a hypothesis. The hypothesis must then be examined through empirical data. It must then be translated into operational terms and be specified as to how data can be collected in relation to the concepts that constitutes the hypothesis. Deduction entails an element of induction as well as induction is likely to entail a little bit of deduction. An inductive researcher observes the reality, then forms hypotheses, thus with an inductive approach theory is the outcome of research. Once the phase of theoretical reflection on collected data has been carried out, the researcher may have to collect further data to determine whether or not a theory will hold. (Bryman & Bell, 2007).

To put it simply:

A deductive approach entails a process in which: Theory → Observations and findings

An inductive approach entails a process in which: Observations and findings → Theory
(Bryman & Bell, 2007).

This study is of an abductive character since it incorporates different relationships between theory and research. Firstly, this thesis starts from reviewing prior research and theories about the relevant domains, and then the research object is defined and subjected to empirical investigation. In this thesis prior research constitutes the basis for defining the various dimensions of complexity and the determinants of consumer characteristics. Furthermore, prior research serves as a standing point for deducing the hypotheses that will be examined throughout the thesis. These are later on scrutinized in the empirical findings. Secondly, this study investigates empirical data in order to develop general principles about a theoretical domain. The consumer characteristics derived from the empirical findings are further investigated through correlations with purchasing tendency of complex products. This will generate new knowledge about how characteristics affect purchasing tendencies. (Bryman & Bell, 2007)

It should be noted that this study is of a quantitative approach with an aim to study the relationship between product complexity and variables affecting online purchase decision.

3.2 CONSTRUCTING THE SCALING METHOD FOR PRODUCT COMPLEXITY

The scaling method has been constructed to measure the complexity of the products in part three in the survey. Thus the scaling focuses on only measuring the product-specific complexity i.e. product nature and how it affects purchase decision. This particular dimension has been chosen since the factors standardization, post- and pre-purchase activity, and interdependence can be quantified and measured. The ratings of product nature serve as an indicator of respondent's purchase intention (by looking at if they chose to buy the product or not). The average score of the ratings for each product is compared to the choice of 'yes' or 'no' answers. It is however difficult to rate and quantify consumer knowledge and trust in the same way. The researchers cannot themselves rate consumer knowledge or interactivity since these dimensions consist of the respondent's own perceptions. Furthermore, it is difficult to quantify abstracts concepts such as knowledge and need for interactivity. Products are tangible and the different attributes can be identified and assessed according to established criteria somewhat objectively. Therefore it is more relevant to measure consumer knowledge and interactivity by questions where the respondents point out the extent to which they perceive these dimensions as important (part two in the survey).

The scaling method was constructed on the basis of prior research presented in chapter two. When the products included in the questionnaire were chosen (see Appendix), a scaling framework was constructed in order to rate the complexity of these products. The products were rated according to criteria in the scaling method, also presented in chapter two. Each one of the researchers rated the products individually in order to gain broadness in the ratings. When the products had been rated three times, mean values were calculated for each product, resulting in an average complexity score.

3.3 CHOICE OF DATA COLLECTION

Primary data was collected through a survey with the intention of investigating the effect of complexity on purchase decision. A closed-question survey method was chosen since it enables to easily process answers, which is required in order to test hypotheses. The answers are also more comparable and easily show the relationship between variables and to make comparisons between respondents (Bryman & Bell, 2007). Since the intention of this study is to measure consumer attitudes in a quantitative way this type of survey seemed suitable to collect huge amount of data. Considering the time frame of ten weeks, this was the most appropriate method of data collection.

3.4 CONSTRUCTING THE QUESTIONNAIRE

When constructing the survey, general rules of thumb for designing questions were followed (Bryman & Bell, 2007). Firstly, the questions were posed to be as short and simple as possible, avoiding double-barreled questions, technological terms and ambiguous terms like *'often'* and *'regularly'*. In order to have respondents with the requisite knowledge only people who had experience with online shopping were asked to fill out the survey. However, since the survey was extensive (five pages) some compromises have been made regarding the touch and feel factors (see appendix), which are seen as a unit of combined factors. (Bryman & Bell, 2007).

The survey is divided into three parts: the independent variables, dependent variables and the complex products and online purchase intention. These three parts are constructed in order to investigate the stated assumptions as well as give general information about the attitudes toward product complexity dimensions when purchasing online. To more specifically illustrate what survey questions we have formulated and explain for what reasons we have chosen to include these specific questions in our survey, we have attached an appendix covering all questions of the survey independently. In order for a concept to be used in a quantitative study, it has to be measured in some sort of way. When these requirements are met, the concepts can take a dependent or independent form.

3.4.1 Part one: Independent variables

An independent variable is a variable that has a causal impact on another variable. In the first part of the questionnaire, general questions are asked regarding our respondents profile. These questions constitute the foundation of our independent variables. According to the proposed hypotheses, independent variables to be tested include characteristics such as perceived impulsiveness, computer skill and online purchase frequency. The consumer characteristics defining our variables were measured on fixed-response alternative questions that required the respondent to choose from a predetermined set of responses on an ordinal scale, with the intention of testing the correlations between the independent variables and dependent variables (Bryman & Bell, 2007).

This section also includes more general questions of a nominal and ordinal character about gender and age as a way of determining the variance within the sample group. Control questions regarding, price intervals, brand recognition and car ownership were also posed. By receiving answers to these questions, a moderate profile of all the respondents was acquired, consequently enabling to distinguish and categorize between the respondents.

3.4.2 Part two: Dependent variables

The second part of the survey is constructed to measure consumers' online purchase decision. The dependent variables are used in order to measure the impact of complexity on the respondents' purchase decision. A Likert scale has been applied, allowing respondents to select, on a scale from 1-5, their level of agreement to a statement. Selecting number 1 on the scale means that the respondent strongly disagrees while 5 mean that they strongly agree (Bryman & Bell, 2007). The questions asked in this part of the survey cover the different dimensions of product complexity, focusing on the nature of the product, consumer knowledge, trust, interactivity and touch and feel. Each dimension was investigated by a set of questions. The dependent variables were tested against the independent variables according to the hypotheses.

3.4.3 Part three: The Product Specific Part

The third part of the survey is product specific. It looks into the purchase decision regarding complex products. Eight different products, with different levels of complexity, rated according to the scaling in chapter two were chosen. The percentage of respondents willing to buy each product online constitutes the measurement of product complexity purchasing tendency. These values (percentages of buyers) are seen as dependent on the complexity score given in the previous part as a way of investigating a possible correlation.

The negative answers, those who were not willing to buy the different products online, were also measured. Here, the respondent could choose between four different boxes. These were; the lack of interactivity, the lack of touch and feel and the amount of post-purchase activity required as well as space were they could write other reasons for not buying the product. Besides enabling to determine the purchase decision of a certain product with a certain complexity rating, it is also possible to map the main reasons for not being willing to buy a certain product.

3.4.4 Piloting and Pre-Testing Questions

After the construction of the survey, ten people were asked to fill out the questionnaire and give feedback regarding clarity, ease of understanding, misleading questions, misunderstandings and possible weaknesses. After the testing, each participant was individually asked to give feedback on every question. Most participants commented on questions 15, 20, 21, 22 and 27. Regarding question 15, the participants in the pilot testing commented on the requirement of '*professional installation*', which they perceived as unclear. This problem was avoided by explaining in the question that professional installation refers to the work of a carpenter, mechanic or electrician. In questions 20-22 similar comments were made about clarity and understanding. These were also avoided by giving examples of what was intended. In question 27 possible weaknesses were pointed out in the construction of the question. This resulted in

several changes. Firstly, a brief explanation of requirements was written for each product such as the need for installation, assembly, dependence on another product and other information was added that could clarify the complexity of the products. Secondly, the alternatives for 'no' answers had to be changed in order to avoid misunderstandings and weaknesses. After all changes were made, a second pilot testing was made with the same participants in order to confirm the quality of the survey. Furthermore, the survey that was originally constructed in English had to be translated into Swedish so that all respondents would have equal chances in answering it. (Bryman & Bell, 2007)

3.4.5 The Sample

A sample group is a subset of a population, which means that the investigator collects data on a smaller group of subjects (Pagano, 1994). The sample group of this study falls into the category of non-probability sampling, more precisely convenience sampling (Bryman & Bell, 2007). The target group of this study was e-shoppers of all ages (minimum 15 years of age). In order to secure the target group, a control question was asked to all potential respondents whether they have shopped online. If this one criterion was fulfilled the chosen respondent was asked to fill out the survey. Furthermore, the respondents were selected from different locations on a given day and time. The first day of data collection took place in the shopping center Nova Lund from 11 am to 16 pm on the 3rd of May 2010. During the second day (4th of May 2010) data was collected at The School of Economics and Management at Lund University between 10 am to 13 pm, as well as at café Athen in Lundagård (14-16 pm). The third day of data collection took place in Saluhallen, Lund, between 11 am and 14 pm on the 5th of May 2010. During the afternoon the same day, data was collected at the train station in Lund. The last day (the 6th of May 2010), data was collected first at Saluhallen in Lund (11 am to 14 pm) and later at the train station in Lund (15-17 pm).

One can argue that this sample is not scientifically generalizable regarding the total population because responses were limited to those present at the specific locations given a certain time and date. However, this study examines product complexity among e-shoppers only, taking demographic factors into consideration but not generalizing them. Thus, the choice of subjects was designed to maximize response rates among e-shoppers and therefore the convenience sample is related to the objects of study. As a result, generalizations can be made about e-shoppers and their attitudes towards product complexity.

The sample size consists of 174 respondents. This size is regarded as adequate in order to give a good variance of responses.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Men	83	47,7	47,7	47,7
	Women	91	52,3	52,3	100,0
	Total	174	100,0	100,0	

Table 2: Gender distribution

		Frequency	Percent
Valid	15-24	57	32,8
	25-35	33	19,0
	36-45	32	18,4
	46-55	25	14,4
	56-65	20	11,5
	66+	7	4,0
	Total	174	100,0

Table 3: Age distribution

The sample is skewed since the majority of the respondents are within the 15-24 age group and only seven were within the age group 66+. Furthermore, there are more female than male respondents.

3.5 PROCESSING THE EMPIRICAL DATA

In order to process the data collected from the 174 surveys, the statistical computer program SPSS was used. All of the surveys were given a classification number from one to 174.

The questions in the survey contained different scales that were taken into consideration when creating the variables for calculation. In the first part of the survey, both nominal and ordinal scales were used. Nominal variables were used when the answers could not be ranked such as in the case of gender (Bryman & Bell, 2007). The question "Gender?" had two possible answers; Male or Female which were given the value labels: Male=1 and Female=2 or "Would you purchase this product online?" were yes=1 and no=2.

An ordinal variable describes a ranking order; however the distances between the numbers (1-5) are not equal across the assortment (Bryman & Bell, 2007). For example, in question 5; "To what extent do you agree that you have good computer skills?" where respondents could choose to what extent they disagreed or agreed. The number 1, was given the value label strongly disagree, 2 was given the label disagree, 3=neither disagree nor agree, 4= agree and 5= strongly agree.

The same method was applied to all questions in the survey.

When the data had been processed into SPSS, the third part of the survey regarding purchase-decision of the products could be calculated into percentage. This was used as the tendency measurement for the complexity scale allowing interval scales, where the distance between the categories are identical (Bryman & Bell, 2007). For instance the backpack with a complexity mean of 2 had a purchasing tendency of 82.7%. This could then be used to calculate the regressions between product complexity and purchasing tendency.

3.5.1 Descriptive statistics

Descriptive statistics describe or summarize the characteristics of the data set. For example, describing the average score of the participants' answers by reporting the mean. Then variability describes how much variety exists around the mean in each set of the scores, which can be reported by the standard deviation. However, descriptive statistics do not allow too many hypotheses, but provides useful descriptive information and should always be reported in any research article. Different descriptive statistical measurements are: mean, median, mode, standard deviation, variance and range. (Kerr et. al., 2003) In this thesis, mean, median, standard deviation and variance were used.

The arithmetic mean of a list of numbers is the sum divided by the number of items in the list. When the list is a statistical sample, the result is called a sample mean (Pagano,

1994). In this thesis the mean was used as a way of comparing the score for dependent variables and to investigate if there is a difference between genders and to make sense of how people perceive complexity.

The standard deviation of a statistical population or a data set is the square root of its variance. It is a widely used measure of the variability and shows how much variation there is from the "average" (mean). A low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data are spread out over a large range of values (Pagano, 1994; Bryman&Bell, 2007). The standard deviation was used to see how much variance there was in the mean values. The intention was to see the spread in the collected data.

3.5.2 Inferential statistics

Inferential statistics are much more complex. They are used to test hypotheses, and make inference about a sample to larger populations. Different inferential statistical measurements include: t-test, Analysis of variance (ANOVA), Correlation, Multiple regression, factor analysis, discriminant analysis, Chi square and repeated measures ANOVA (Kerr et al., 2003). This thesis examined regressions, analysis of variance and correlations.

A hypothesis is an assumption about how two or more concepts are related to each other (Bryman & Bell, 2007; Körner & Wahlgren, 2006). The basic idea behind hypothesis testing is that one does an empirical test to see if the hypothesis gives a true or false reflection of reality. A null hypothesis (H0) and an alternative hypothesis (H1) are formulated to verify or falsify the assumption (Bryman & Bell, 2007; Körner & Wahlgren, 2006). The hypotheses in this study will demonstrate if there is a statistical significant relationship between:

- The determinants of consumer characteristics and the different complexity dimensions.
- The determinants of consumer characteristics and the tendency of purchasing complex products online on a linear statistical significant relationship.

Given that a large number of observations have been given a p-value of 5% is appropriate, but p-values of 1% and 0.1 % are also taken into account. P-values represent that the probability of getting at least that big of a difference, as the one between the samples value and the value according to the null hypothesis. Two types of errors can occur at a statistical significance level. Type I error occurs when the null hypothesis is rejected when it is true. The risk of type I error increases the higher the alpha, thus this error is more common at a higher level of significance such as $\alpha = 0.05$ than when $\alpha = 0.01$. The second error occurs when one fails to reject the null hypothesis

when it is false. In other words, this is the error of failing to observe a difference in truth when there is one (A two-tailed test was used in the hypothesis testing since the null hypothesis can take both a negative and positive correlation). (Bryman & Bell, 2007; Körner & Wahlgren, 2006)

However, the hypotheses concerning the determinants of consumer characteristics and the different complexity dimensions are measured on ordinal scales. This implies that a regular parametric hypothesis test is inadequate. Therefore, a non-parametric test, Spearman's rho, which does not make any assumptions regarding the distributions or the homogeneity of variance in the sample, has been conducted. The only assumption in this non-parametric test is that the scale on which the dependent variable is measured is measured on an ordinal scale. This is an alternative to the traditional Pearson r correlation, which also measures the correlation between two variables, but instead of metrics Spearman's rho is based on rank. (Pagano, 1994; Kerr et al., 1993; Bryman & Bell, 2007).

The measured values of the variables in the sample are ranked separately from minimum to maximum value and then receive rank values (1.2... n) so that a higher test value receives a higher rank than a lower reading. Spearman's rho measures the covariance, how much two variables change together, between the ranked variables and not the linear relationship (Körner & Wahlgren, 2006; Pagano, 1994). The coefficient is standardized and is limited to assume values between -1 and +1. If there is a perfect negative conjunction, all the differences are 0 and the correlation is -1, and +1 indicates the same as above for a perfect positive correlation of ranked variables. (Körner & Wahlgren, 2006)

The hypotheses for Spearman's rho (two-sided test) are constructed as following:

- H₁:** *There is an association between the respondents' perception of their impulsiveness and the variables of product nature.*
- H₂:** *There is an association between the respondents' perception of their impulsiveness and their comfort with shopping online without a salesperson.*
- H₃:** *There is an association between the respondents' perception of their impulsiveness and the consumer knowledge variables.*
- H₄:** *There is an association between the respondents' perception of their impulsiveness and the importance of touch and feel before buying a product online.*
- H₅:** *There is an association between the respondents' perception of their impulsiveness and their online trust.*

- H₆:** *There is an association between the respondents' perception of their computer skill and the variables of product nature.*
- H₇:** *There is an association between the respondents' perception of their computer skill and their comfort with shopping online without a salesperson.*
- H₈:** *There is an association between the respondents' perception of their computer skill and the consumer knowledge variables.*
- H₉:** *There is an association between the respondents' perception of their computer skill and the importance of touch and feel before buying a product online.*
- H₁₀:** *There is an association between the respondents' perception of their computer skill and their online trust.*
- H₁₁:** *There is an association between the respondents' perception of their purchasing frequency and the variables of product nature.*
- H₁₂:** *There is an association between the respondents' perception of their purchasing frequency and their comfort with shopping online without a salesperson.*
- H₁₃:** *There is an association between the respondents' perception of their purchasing frequency and the consumer knowledge variables.*
- H₁₄:** *There is an association between the respondents' perception of their purchasing frequency and the importance of touch and feel before buying a product online.*
- H₁₅:** *There is an association between the respondents' perception of their purchasing frequency and their online trust.*

For these hypotheses no regression has been conducted and therefore lacks the traditional statistical significance associated with hypotheses testing. On the other hand, the determinants of consumer characteristics and the tendency of purchasing complex products online have been investigated through the traditional Pearson's r correlation. The independent variable; the product complexity scale discussed in chapter 3, and the dependent variable; tendency of purchasing complex products online measured by percentage, are measure on interval scales.

Pearson's r is one of the most used correlation coefficient that measures the linear relationship between two interval/ratio variables (x, y). It measures the strength and direction of the correlation between the two variables. Pearson's r investigates the covariance between x and y, divided by the product of x and y standard deviations and consequently forcing the coefficients to assume a value between -1 and +1 (Körner &

Wahlgren, 2006; Bryman&Bell, 2007). A negative value of the coefficient implies a negative correlation, e.g. high x value of an entity shows a low y-value of the same entity. A coefficient of -1 means a perfect negative correlation i.e. all observations are situated in a negative sloping line. A positive coefficient means the opposite i.e. positive correlation with a high value on one variable tend to be followed by a high value on the other and where +1 means a perfect positive linear relationship in which all observations are at a positive sloping straight line. Using hypothesis testing with Pearson's r does include distribution assumptions for x and y. The variables should be independent observations drawn from a normal distribution. (Pagano, 1994; Körner&Wahlgren, 2006; Wahlgren, 2008)

The Pearson's r has been used in order to investigate the relationship between the percentage of buyers that is the *suitability* and the products perceived *complexity*. Since the population is normally distributed and the dependent variable is on an interval scale, the Pearson's r could be used. (Pagano, 1994). However, the samples only consist of eight values even though they are based on a sample of over 174 participants. Therefore, the statistical significance can be questioned. Bearing the limited values in mind, the researchers have concluded that the findings will be seen as indications of the respondents and will need further research in order to be concluded.

As a way of determining whether or not the different determinants affect the tendency of purchasing complex products online, the participants with a high score and a low score on the determinants (computer skill, impulsiveness and frequency) was singled out to see if their tendency of buying complex products online differed from the total and from each other. This was studied through comparing correlations and linear regressions.

It is also important to point out that even though there is a strong negative or positive correlation it cannot be stated that there is causality between the two variables. For example, if there is a strong correlation between age and online trust in a survey questionnaire, it cannot be stated that people are more or less more likely to trust because of their age it is only a relationship that gives space for explanation. (Kerr et al, 2003)

Regression is strongly connected with correlations and indicates how a variable depends on one or more variables. This is shown in a function, which is an average value in form of a linear line between the various observations. There are several types of regression. However, the most common one is the linear function, which has been used in this thesis since it is the most suitable one for this kind of research with only one dependent variable (Pagano, 1994).

Using the least squares method, a straight line i.e. a regression line, can be adapted into a statistical material consisting of n observation pairs (x_i, y_i) . This method means that the values, a and b , in the straight-line equation: $y=a + b x$, are determined so that the sum of

squares is as small as possible. The value a confirms where the regression line intersects the y-axis and is sometimes perceived as the conditional mean of the y-variable when the variable x is equal to zero. The gradient of a line b indicates how much y changes in average when x increases by one unit. (Körner & Wahlgren, 2006)

The ANOVA- tableau reciprocates to the questions; how strong is the relationship between these two variables? It measures the total variance around the regression line by dividing the variance into two categories; explained and unexplained. (Körner & Wahlgren, 2006)

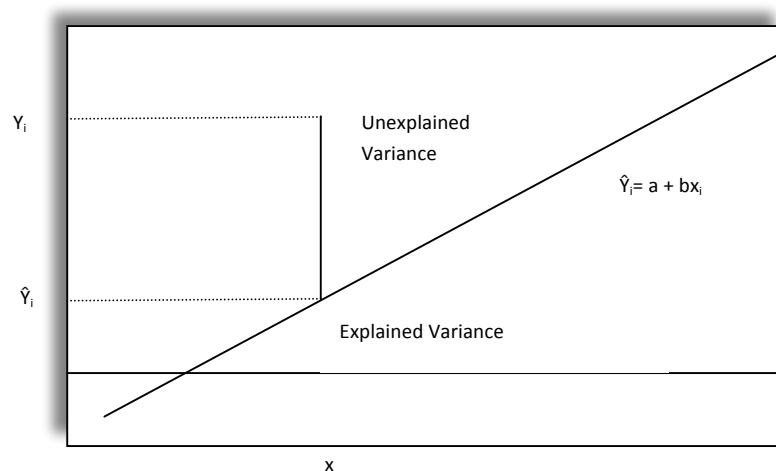


Figure 3: Explained and unexplained variation in regression (Körner & Wahlgren, 2006:363)

3.6 THE QUALITY OF THE RESEARCH DESIGN

This section aims to investigate the validity and reliability of the research design. Furthermore critique against the study is discussed.

3.6.1 Validity

Validity concerns the ability to measure what is implied to measure. The concept can be divided into external and internal validity. Internal validity deals with the study itself, its composition and division, and its direct link with the theory and data collection. The internal validity is typically weak since it is difficult to establish causal direction from the resulting data. The simplest form of internal validity is face validity, which is limited to the researchers' personal assessments whether or not there appears to be harmony between theory and data collection. Content validity is another variant of the internal validity and is intended to capture all aspects of the research question. External validity, also called generalizability, is strong when the sample from which data was collected has been randomly selected. When non-random methods of samplings have been used, external validity can be questioned. The research design is of great importance since the

study must meet these requirements to the project as a whole to achieve validity. Asking the right questions, using a sufficient number of indicators and accurate measurement is critical to the investigation. (Bryman & Bell, 2007)

Since our sample was not randomized according to criteria, external validity can be questioned. However randomized sampling from the data has been done by SPSS.

3.6.2 Reliability

Reliability measures how reliable the results are. For quantitative studies, the requirement for high reliability is that a study that is carried out a repeated number of times with the same objective and methods to achieve the same results, given that the object being studied have not changed, will carry the same result. Errors can occur that derives from all stages of the investigation in selection, formulated questions, misinterpretation, etc. To increase the degree of reliability in a study, clear definitions should be formulated. It is also advantageous to use several indicators that may capture the complexity and ensure the reliability of the data used (Bryman & Bell, 2007). In this study, the survey will always affect the reliability. Even though, preparations were made including a pilot testing, it gives no guarantee that the respondents understood or that they genuinely filled in what they feel or do since people do not tend to do what they say. These are factors that any researcher must consider before generalizing (Bryman & Bell, 2007). On the other hand, many of the results were in line with prior research, thus reliability can be confirmed to a certain extent.

3.7 CRITIQUE AGAINST CHOSEN METHOD

This study can be discussed regarding sampling and generalization, investigated products, respondents' reliability, measures and causality. Because of the convenience sampling, the results are limited in terms of generalizability to a larger population. The results are only valid for the particular sample group used in this thesis - the Internet shoppers. Thus, the results can only indicate tendencies of purchasing complex products online within the sample group. This should especially be kept in mind when reading through the empirical findings that concern age and gender. Moreover, the products used in this survey can be criticized with regard to their type and quantity. Since several products are linked to automobiles, one could argue that some products are more relevant for certain age groups e.g. the age group of 15-24 may not have the same approach to a cargo-box or a trailer as the age group of 55-64 because they are not in need of such products or have no experience with them. Furthermore, it could be said that the mix of products enhance the masculine character of some products e.g. the cargo box, trailer and towing hitch, creating a bias in the answers. However it would be wrong to presume such gender differences since these products can be equally bought and utilized by men as well as women (compare to e.g. make up that is mostly used by one of the genders). The results and conclusions about attitudes towards complexity are

only valid for the products used in the survey. Moreover, the quantity of the products is quite small (eight products in total). Thus, correlations and other findings may be questioned. If this study had examined e.g. 50 products, the scope of complexity and the results would perhaps have been broader with greater variations. Any correlations found would also be stronger indications. With eight products measured on a five point Likert-scale there is little room for extreme values and high variation in the result. Thus a strong correlation in this study might be different when taking into account a larger sum of products. The researchers did the ratings of complexity according to the scaling method, thus the average complexity scores are subjective. Even though criteria were constructed to minimize the effect of subjectivity, it cannot completely be omitted. The respondents' trustworthiness and consistency when completing the survey should also be taken into account. There is always a risk that respondents' are not honest when filling out the survey, that they perceive certain questions negatively e.g. impulsiveness in perceived as a negative characteristic and therefore answers are purposely biased. Furthermore, the way in which questions are posed may also affect the respondents' answers, as well as the presence of the researchers at the location. (Bryman & Bell, 2007)

Also, critique against the quantitative nature of this study has to be considered. Quantitative research *"fails to distinguish people and social institutions from the world of nature"* (Bryman & Bell, 2007:174). This implies that quantitative research treats the social world as if it were no different from the natural order, ignoring the fact that people interpret the world differently, making self-reflection difficult. In the case of this study, questions about trust, knowledge and other personal characteristics are in fact difficult to assess since people perceive these very differently and may not always be conscious of these. Moreover, the reliance on measures and instruments in quantitative studies hinders the connection between research and everyday life, as stated by Bryman and Bell (2007: 632) *"Quantitative research frequently involves the study of meanings in the form of attitude scales (such as the Likert scaling technique) and other techniques...many of the techniques with which quantitative research is associated, most notably survey research based on questionnaires and interviews, have been shown to relate poorly to people's actual behavior"*. Thus, one cannot say that actual behavior is measured, only tendencies towards certain factors. Furthermore, the causality in this research can be discussed. The results can show that there is a relationship between the dependent and the independent variables, but the researchers cannot state for sure in what way the one causes the other. The relationships between variables provide a static view of social life and behavior that is independent of people's lives i.e. it is unknown how a relationship between two variables really looks like. It should be noted that consumer behavior and attitudes change constantly over time and therefore the present study can only give a snapshot of tendencies towards buying complex products.

4. EMPIRICAL FINDINGS

This chapter presents the empirical findings: descriptive statistics, correlations and regressions. Explanations for the charts and values in this chapter are further explained in the appendix.

4.1 INTRODUCTION TO EMPIRICAL FINDINGS

This thesis aims to study primarily two objectives within product complexity:

1. The determinants of consumer characteristics and the different complexity dimensions.
2. The determinants of consumer characteristics and the tendency of purchasing complex products online on a linear statistical significant relationship.

The *first* objective is researched through mean values, medians and correlations within each of the complexity dimensions: nature of the product, consumer knowledge, online trust and interactivity. Firstly, the answers to the questions about the complexity dimensions are analyzed (see appendix) by looking at the average score of answers on the Likert scale (mean values). This also includes how the dimensions affect the choice of which products respondents have or have not chosen to purchase online. Secondly correlations are investigated in order to prove or disprove the hypotheses.

The *second* research objective is to show the relationship between product complexity and the tendency of purchasing the chosen products online. This will be conducted by comparing each of the consumer characteristics influence on purchasing tendency in linear regression models.

4.2 COMPLEXITY DIMENSIONS AND DESCRIPTIVE STATISTICS

In this section the complexity dimensions will be described in terms of mean comparisons and differences within the consumer characteristic, gender and age. The variables gender and age are inadequate for correlations hence mean comparison have been conducted instead.

4.2.1 The Nature of the Product

The nature of the product is investigated with a focus on the level of post- and pre-purchase activity involved in the purchase. The means of each questionnaire answer has been calculated as an indicator of the level of agreement for each of the statements.

Post-purchase activity seemed to affect the purchase decision negatively, meaning that the respondents seemed to perceive this as a problem when deciding to make an online purchase. The mean for post-purchase activity scored a low 2.37 with a median at 2. Only 18 % of the respondents did not consider post-purchase activity e.g. installation etc. to be an issue. This result was also confirmed by the third part of the survey, where many of those who answered 'no' chose post-purchase activity as a reason for not buying. Out of all products, the kitchen (50%) and the towing hitch (62%) scored the highest on post-purchase activity, making it the main reason for not buying the products online. Empirical findings indicate that post-purchase activity is perceived as less problematic the older people are. The only exception is the age group 56-65, where post-purchase activity is perceived as more problematic than for the previous age group 46-55. A possible explanation for this may be that people in the age group 56-65 have a decreased ability to install a product themselves due to their rather high age. This can be assumed to be especially valid regarding products that require physical installation.

In terms of pre-purchase activity, the respondents purchase decision was affected more negatively by the fact that they needed to register on the website (mean 3.09) than that they needed to customize the product before purchasing (mean 3.25). This was also confirmed by the question about whether their purchase decision was affected by the need of choosing the product size, color, design etc. This question gained an even higher mean (3.42) and a high median (4) indicating that it did not negatively affect the purchase. Worth noticing is that these questions were control questions but they received different results. In the latter question 77 % of the respondents chose to circle a 3, 4 or a 5 on the Likert scale. Only 49 % chose the same numbers in the first question. One aspect that may have affected the outcomes of these questions is the manner in which these two questions are posed. For example, the first question can be perceived as more negative, where the constraint of customization is stressed more explicitly. In the latter question, on the other hand, the statement is more positive, suggesting the need of choosing color material etc. This may have biased the answers since both questions ask the same thing and should therefore score similarly. However, it still indicates that respondents are positive to customizing products online when required customization is considered necessary.

Respondent in the age group 56-65 see customization as more problematic than the younger age groups. They scored a mean value of 2.85, which is lower than the mean value for the other age groups. The reason for this may be that respondents in older age groups perceive customization as something that demands more effort as well as more acquisition of information. In today's online shopping environment, we believe that customization in general is perceived as a positive option for most customers. However, as older age groups have not kept up with such developments in the online shopping context, it would be valid to assume that customization is perceived as requiring for this age group.

Furthermore, the difference between female and male respondents is interesting. In general, women as a group had a lower mean than men. On the question whether the need of customization affected their purchase intention, women scored a low 2.93 and men 3.59. However, on the second question about pre-purchase activity men scored 3.58, and women 3.29, indicating that men did not see a difference between these two questions but women did. This could simply mean that men are more confident when answering the survey. Nevertheless, that does not explain the fact that women as age group perceived the control questions differently.

4.2.2 Consumer Knowledge

The dimension consumer knowledge i.e. having knowledge about a product prior to purchase is overall important (mean score of 4.24) only 2% did not agree (scored 1 or 2 on the Likert scale) with this statement. Respondents also seem to feel more confident buying a product online, if they have purchased it in a physical store the first time (4.22). Only 6 % did not agree with this statement. Since this thesis measured consumer knowledge as frequency of purchase/use, e.g. the more you use a product the more knowledge you possess, two questions were posed regarding frequent purchase and use, as well as two control questions about infrequent purchase and use.

The respondents seem to be more confident with buying products (online) that they frequently use (mean 3.60) and products that they frequently shop (mean 3.53) than with products they rarely use (mean 3.12). However, products that respondent's rarely shop scored 3.36, this is in line with the belief that products that are rarely purchased still can be used often e.g. a computer and therefore people feel confident buying it. The results indicate that people feel quite confident with buying both types of products. Products that are *shopped* infrequently have a higher degree of confidence over products that are *used* infrequently yet overall the level of confidence for these types of products is pretty even. However in general, the results give the impression that prior knowledge is perceived as important when making purchase decisions online.

Consumers in younger age groups are more comfortable with buying products that they often use than consumers in older age groups. The older a consumer is, the less comfortable is he or she with buying products that are used often. For instance, the age group 15-24 has a mean value of 4.00, while the age group 56-65 has a mean value of only 3.00. Also, older age groups are less comfortable with buying products that they rarely use, indicated by a mean value of 2.95 for the age group 56-65 compared to 3.39 for the age group 15-24 and a mean value of 3.73 for the age group 25-35. This data suggests a behavioral shift in attitudes toward online shopping. It can be assumed that older people have less experience with certain product types that are commonly sold on the Internet, such as computers, cell phones and other technological appliances.

Regarding consumer knowledge and gender, women are less confident with buying products online that they frequently use (women scored 3.29 and men 3.89) as well as products that they seldom use (men scored 3.41 for infrequent use and women 2.84). This indicates that women are more negatively set towards online purchases than men.

4.2.3 Trust

The respondents scored fairly high on the following: trust in payment systems, brand familiarity. The most important issues were trust in the reseller (4.18). Men's trust in payment systems scored high (4.00), women on the other hand scored low on trust in payment systems (3.42).

Regarding perceived product risk when shopping online, the age group 36-45 had a distinguishing lower mean value (2.31) than the other age groups, meaning that they were more trustful regarding the product description online.

The empirical findings also indicate that the online purchase intention in the age group 56-65 is less likely to be influenced by recommendations of websites by others. This age group had a considerably lower mean value than other age groups, indicating that consumers in older age groups are more skeptical towards online shopping than younger age groups regardless if the website has been recommended or not. These findings suggest a behavioral shift in attitudes toward online shopping. The younger respondents have more experience with technological applications such as computers and cell phones and are thus more likely to trust their peers regarding recommendations of websites.

4.2.4 Interactivity

In the survey, interactivity was only measured by one question in part two (mean score 3.17) and in part three by the question if the absence of a sales person does not constitute a problem (mean score 3.10). For the different products, the computer, the kitchen and the car had the highest interactivity scores. The computer had a low amount of 'no' answers, 47 respondents would not consider buying a computer online. But out of those who answered 'no', lack of interactivity was one of the main reasons (24). Compared to the car (150 no) and the kitchen (154 no) interactivity scored high but was not the main reason for not purchasing the product online. As the results show, the respondents that did not consider buying a kitchen, car and computer online found interactivity to be important. Those who did not consider buying a computer chose interactivity as the most important factor in their purchase decision. The main reason for not purchasing the car online was the touch and feel factor, for the kitchen the main reason was post-purchase activity. Thus, as stated in previous research, purchase decision varies depending on different product types. Some types of products affect purchase intention negatively e.g. when information is difficult or costly to obtain. As

stated in prior research, experience products need the touch and feel aspect to a greater extent. A car can in this case be seen as an experience product, since it had the highest score on touch and feel as the main reason for not purchasing the product online. One can argue that the various complexity dimensions are more relevant for some product types than others.

4.2.5 Touch and Feel

The touch and feel aspect was measured by one question in part two and further researched in the third part regarding products. This shows that it is not significantly important when purchasing online, even if it does impact the purchase decision the same goes concern about the product not meeting the description on the website. Although looking at the answer for the product question, touch and feel played a big part as the reason for not considering buying certain products online. For the car, kitchen, trailer, backpack and cargo box the touch and feel aspect scored at least as the second most important reason for not purchasing. It seems like it affects the decision making more than the question showed. A notable fact is that in the majority of the survey questions men tend to have a higher mean than women. But when it comes to touch and feel women scored (3.23) to men's (2.96) signifying that women have a higher score on the importance of touch and feel in this survey than men. Also, women tend to worry more that the product will not mach the description online, they also find it easier to shop if the website has been recommended.

4.3 CONSUMER CHARACTERISTICS AND CORRELATIONS

In order to study if the chosen consumer characteristics in this study: perception of computer skill and impulsiveness as well as online purchasing frequency, the following correlations were found.

4.3.1 Consumer Characteristic: Perception of Computer Skill

A positive correlation was found between post-purchase activity and computer skill, showing a correlation (0.175*). This presents an association between the two variables indicating a relationship between respondents' perception of computer skills and the level of effect that post-purchase activity has on their purchase intention. In other words, respondents who have a high perception of computer skills are not as affected by post-purchase activity when making purchase decisions as respondents with low perception of computer skill.

There is a correlation for perception of computer skill and pre-purchase activity on both questions regarding customization before purchasing. The first question has a lower mean and a stronger correlation (0.414**) whereas the second question has a higher mean and a lower correlation (0.310**). This is probably linked with women's lower score on both computer skill and pre-purchase activity. This indicates an association

between the two variables and shows that respondents who have a high perception of their computer skills are not as affected by pre-purchase activity as those with low perception. However this study does not acknowledge registration as pre-purchase activity, although it is something one has to do prior to purchase, it is not related to a product per se. No association with having to register on a website before purchasing was found. This indicates that respondents, regardless of computer skill, had a similar level of agreement.

When it comes to the respondents' perception of their computer skills positive correlations were found regarding the questions; prior knowledge (0.197**), frequent use (0.312**) and purchase (0.259**) as well as with the control questions, infrequent use (0.282**) and purchase (0.184*). First of all, this indicates that there is a relationship between the level of perceptual computer skill and the need of having prior knowledge about a product. This indicates that respondents with high perception of computer skill also concluded that it is of importance to have prior knowledge about a product, to a higher extent than the respondents with low perception of computer skill. Moreover, the correlations found between perception of computer skill and frequency implies that respondents with a high perception of computer skill tend to have no problem with purchasing products that they use and shop often as well as products they do not use and buy often. Likewise respondents with a low perception of their computer skill are not comfortable with buying products that they use and shop often or with products that they use and rarely shop. Thus, they are not comfortable with buying products online regardless. If they had bought the product before did not show any correlation with computer skill.

There is a positive correlation (0.155*) between the respondents' perception of their computer skills and their trust in the online payment system which indicates that respondents' who have a higher perceptual computer skill would also trust payment systems more than respondents with a low perceptual computer skill. However, no correlations were found between the remaining factors of trust.

Another correlation (0.162*) between the respondents' perception of computer skill and the effect of lack of interactivity on purchase decision was presented. This indicates that the respondents who consider having good computer skill are not as affected by the absence of interactivity when purchasing online compared to those with low perception of computer skill. Thus, the respondents with a lower perception of computer skill are more affected by not having access to a salesperson. There is also a negative correlation (-0.200**) between the respondents' perceptual computer skill and the importance of touch and feel before purchasing. Thus, for the respondents with a high perception of computer skill, the touch and feel element is of less importance and for the respondents with a low level of computer skill, touch and feel is of greater importance.

4.3.2 Consumer Characteristic: Perception of Impulsiveness

There is a negative correlation (- 0.168*) between the respondents' perception of impulsiveness and the need for prior knowledge about a product before purchasing. A negative relationships between the two variables indicate that the more impulsive the respondents consider themselves the less affected they are with not having prior knowledge about the product and the less impulsive the respondents are the more they need to have knowledge about a product before purchasing it online. No other correlations were found between impulsiveness and the remaining questions of consumer knowledge.

4.3.3 Consumer Characteristic: Frequency of Online Purchase

Three negative correlations were found between respondents' frequency of online purchase and needed for consumer knowledge when purchasing. A correlation (-0.198**) between the respondents online purchasing frequency and products used often showed that respondents who often shop online are more comfortable with purchasing products that they use often than respondents who rarely shop online. This result is consistent with the remaining correlations: products purchased often (-0.151*) and products rarely used (-0.182*). Overall, respondents that purchase products online more frequently are not affected by the need of consumer knowledge, i.e. they feel more comfortable with purchasing products shopped and used often as well as products rarely used. This is also in line with high perception of computer skill and not having as much need for consumer knowledge as respondents with low perception computer skill. No correlations with products rarely shopped were found. A correlation of -0.138* was presented between frequency of online purchase and trust online indicating that there is an association between respondents who shop often and those that trust the online payment systems and vice versa. The same correlation could be observed regarding touch and feel with a correlation of 0.246**. This relationship between, how frequent the respondents purchase items online and to what extent touch and feel affect the respondents purchase intention, indicates that the respondents who often purchase items online are less affected by the touch and feel element than those who purchase items seldom.

4.3.4 Age Means

Age	15-24	25-35	36-45	46-55	56-65	Total
Q9	3,79	3,94	3,56	3,44	3,58	3,69
Q10	3,61	3,97	3,63	3,71	3,60	3,74
Q11	3,11	2,88	2,31	2,75	2,85	2,80
Q12	3,23	3,21	3,47	3,04	2,75	3,17
Q13	4,20	4,24	4,00	4,29	4,10	4,18
Q14	4,27	3,97	3,78	4,08	3,25	3,97
Q15	2,11	2,21	2,69	2,91	2,50	2,37
Q16	3,31	3,45	3,19	3,46	2,85	3,25
Q17	4,20	4,48	4,13	4,00	4,35	4,24
Q18	3,25	3,06	3,03	3,17	2,75	3,09
Q19	3,41	3,58	3,56	3,21	3,35	3,42
Q20	4,00	3,94	3,63	3,22	3,00	3,60
Q21	3,65	3,82	3,53	3,25	3,25	3,53
Q22	3,07	3,33	3,16	3,33	2,85	3,12
Q23	3,39	3,73	3,25	3,50	2,95	3,36
Q24	4,32	4,39	4,13	4,04	4,15	4,22
Q25	3,16	3,48	3,19	2,80	3,05	3,13
Q26	3,05	3,30	2,90	3,16	3,05	3,10

Table 4: Means for different age groups concerning each of the questions in part two of the survey. (Please note that the age group 66+ has been omitted, since only 7 people participated in the survey in that specific age group.)

Questions:	Means	Median	Standard	Means	Means	Difference	Correlations:	Correlations:	Correlations:
	total		deviation	Men	women		computer skill	Impulsiveness	Frequency of purchase
Q9	3.69	4	0.979	4	3.42	0.58	0.155*		-0.138*
Q10	3.74	4	1.006	3.75	3.73	0.02			
Q11	2.8	3	1.001	2.57	3.02	-0.45			
Q12	3.17	3	1.196	3.18	3.17	0.01	0.162*		0.168*
Q13	4.18	4	0.916	4.18	4.18	0			
Q14	3.97	4	1.028	3.87	4.07	-0.2			
Q15	2.37	2	1.22	2.66	2.09	0.57	0.175*		
Q16	3.25	3	1.187	3.59	2.93	0.66	0.414**		0.227**
Q17	4.24	4	0.83	4.33	4.16	0.17	0.197**	-0.168*	
Q18	3.09	3	1.23	3.11	3.08	0.03			-0.193*
Q19	3.42	4	1.26	3.58	3.29	0.29	0.310**		
Q20	3.6	4	1.222	3.89	3.33	0.56	0.312**		-0.198**
Q21	3.53	4	1.154	3.7	3.37	0.33	0.259**		-0.151*
Q22	3.12	3	1.186	3.42	2.84	0.58	0.282**		-0.182**
Q23	3.36	3	1.141	3.49	3.23	0.26	0.184*		0.223**
Q24	4.22	4	0.969	4.34	4.11	0.23			
Q25	3.13	3	1.333	3.65	2.65	1			-0.210**
Q26	3.1	3	1.105	2.96	3.23	-0.27	-0.200**		0.246**

*=significance on 5 % alpha level

**= Significance on a 1% alpha level

-Please note that the correlations concerning frequency are negative since high frequency got low numbers on the ordinal scale and low frequency got high numbers. This is opposite to the other scales (Impulsiveness and Computer Knowledge) and therefore indicates negative instead of positive

Table 5: Overview of correlations between consumer characteristics and determinants of purchase intention, together with means, medians and standard deviations.

4.4 CONSUMER CHARACTERISTICS AND TENDENCY

In this section, the results to the second research objective will be presented:

- The determinants of consumer characteristics and the tendency of purchasing complex products online on a linear statistical significant relationship.

The aim was to see whether or not the different determinants will affect the purchasing tendency of complex products. The tendency of respondents with low perception of computer skill will be compared with respondents having a high perception of computer skill. The same have been done for the determinants; frequency and impulsiveness. Since it is hard to state a causal relationship between two correlating variables, linear regressions have been conducted in order to prove the existence of a link between the measurements. In the forthcoming graphs, the value on the Y-axis will represent percentage of buyers among respondents, whereas the value on the X-axis will represent product complexity.

4.4.1 Assessment of the Total Sample

In order to compare the result with the consumer characteristics an assessment of the total sample was made. Below are the results for correlations between product complexity, rated according to the complexity framework of this thesis (see chapter two), and the percentage of positive answers to part three in the questionnaire (the answer *yes* to question: *"would you consider buying this product online?"*). The percentage is based on the total amount of answer, which are 174. Here, Pearson's correlation has been used since the two variables are both interval scales. The correlation is a strong negative correlation (-0.904), which indicates that people are more likely to buy less complex products online e.g. books. However, it cannot be stated that the respondents are less willing to buy complex products online e.g. cars or kitchen solutions because of their high complexity level seeing that a third variable has to be taken into consideration. This may affect the decision to purchase a certain product online more heavily than product complexity.

Correlations			
		Product complexity	Percentage
Product complexity	Pearson Correlation	1	-,904**
	Sig. (2-tailed)		,002
	N	8	8
Percentage	Pearson Correlation	-,904**	1
	Sig. (2-tailed)	,002	
	N	8	8

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

Table 6: Correlation between product complexity and total purchasing tendency.

The regression analysis shows that 81.8 % of the variation in the dependent variable (percentage of yes answers) can be explained by the different levels of complexity.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,904 ^a	,818	,787	15,62440

a. Predictors: (Constant), Product complexity

Table 7: Model Summary of conducted regression.

The standard deviation indicates that the dispersion of the scores around the mean is 15.62 at the highest. Approximately 6 % of the dots in the scatter plots lie no higher than 15.62 units from the regression line. This signifies a strong correlation. However, we are conscious about that there are only eight values (product complexity), which is a small amount. If this study had e.g. a hundred values in the scatter plot, the standard deviation would more strongly indicate the robustness of the correlation. The coefficient of determination (D) of a linear regression equation, for instance, if $D = 0.49$, $S=0.7$. BTW, $D = 0.49$ means that 49% of the variations can be explained by the regression model, but 51% cannot be explained by the model.

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6573,627	1	6573,627	26,928	,002 ^a
	Residual	1464,732	6	244,122		
	Total	8038,359	7			
a. Predictors: (Constant), Product complexity						
b. Dependent Variable: percentage						

Table 8: ANOVA tableau of total purchasing tendency.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	122,926	15,813		7,774	,000
	Product complexity	-27,038	5,210	-,904	-5,189	,002
a. Dependent Variable: percentage						

Table 9: Coefficients of total purchasing tendency

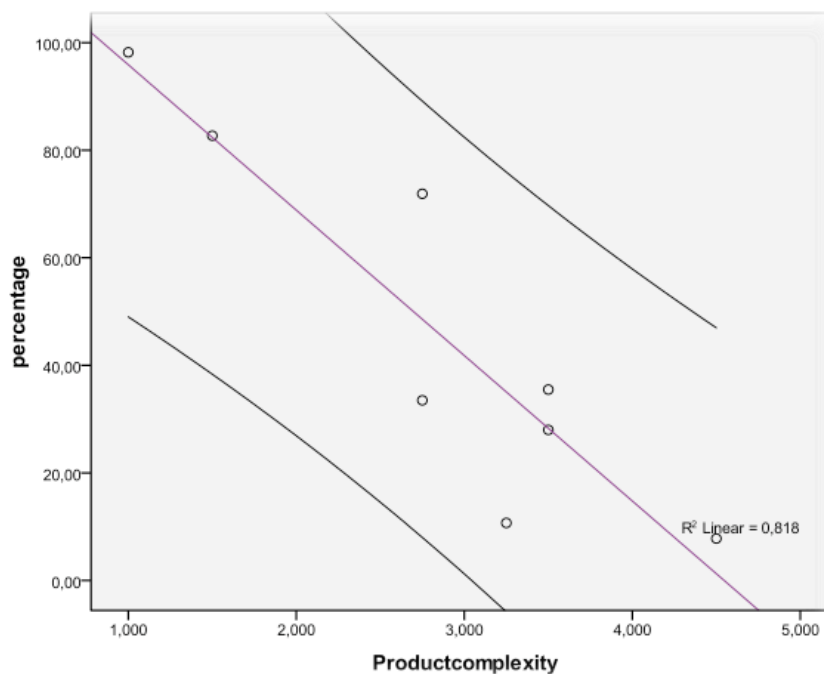


Figure 4: Linear regression of total purchasing tendency.

4.4.2 Assessment of Computer Skill and Purchasing Tendency

The first diagram shows the differences in each of the separate cases and the second diagram presents the regression line indicating the linear relationship focusing on the conditional probability distribution of y given X .

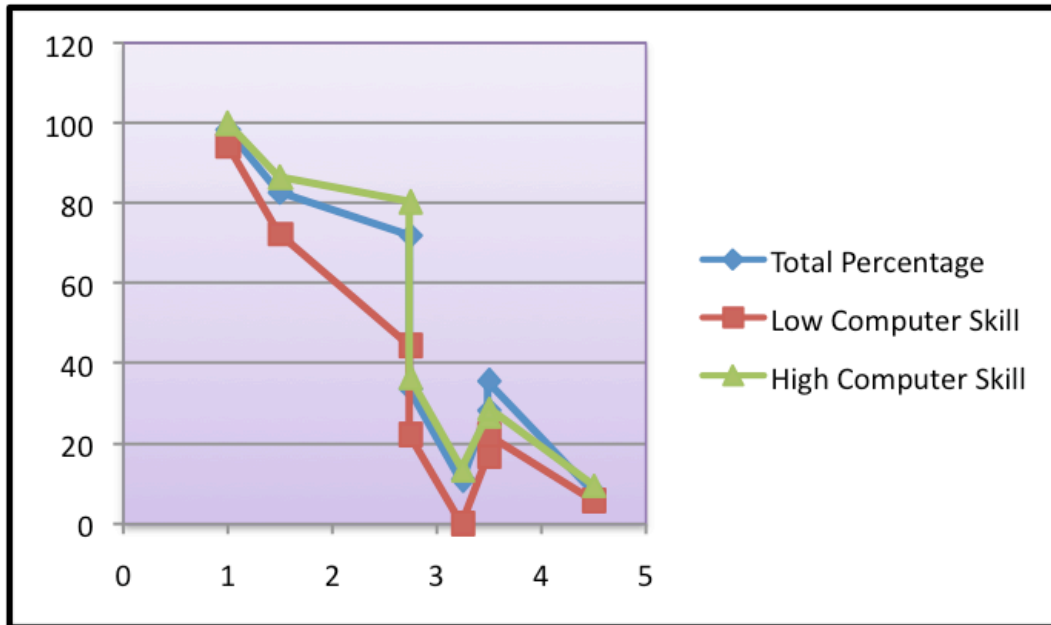


Figure 5: Graph illustrating difference in low and high computer skill.

As seen in the diagram above and below, there seems to be a difference in purchasing tendency regarding products that have a complexity level below 2.5. However, when looking at the difference between tendency of purchasing products above complexity level 3, both the respondents with low computer skills as well as high seem to be more similar, and the total percentage is higher indicating another variable is affecting the outcome. Nevertheless, the respondents with high computer skill have a higher tendency of buying products of high complexity.

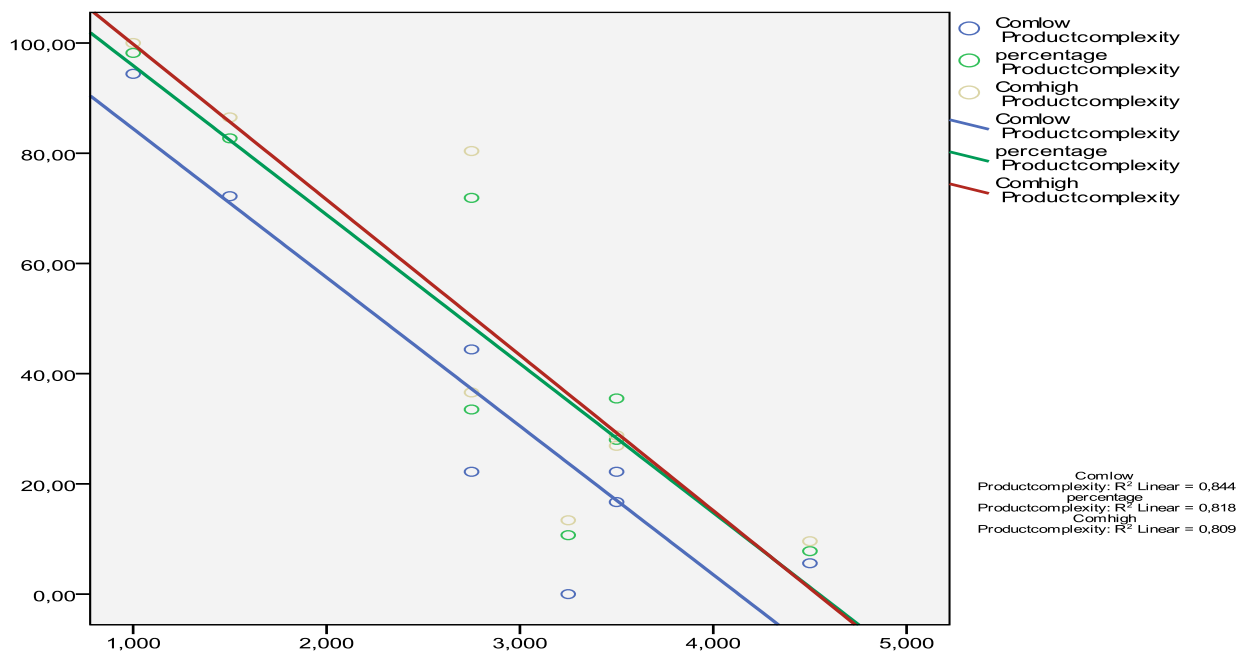


Figure 6: Linear regression between computer skill and purchasing tendency.

The correlations show that the relationship between low computer skill and product complexity is -0.919^{**} that is a very strong correlation on 1% alpha level. High computer skill and product complexity has a 0.899^{**} correlation, also indicating a strong linear relationship between the two.

The regression lines for low computer skill had an R-square of $R^2 = 0.844$ where approximately 6 % of the dots in the scatter plots lie no higher than 14.21 units from the regression line. High computer skill had an $R^2 = 0.809$ with a spreading of 16.80 indicating that the respondents with a low perception of computer skill has an 84.4% of the variation can be explained by the different levels of complexity versus high perception of computer skill having 80.9%.

In summary, this is consistent with the findings in the first research objective where respondents with low perception of computer skill were more influenced by complexity. The regression line for the total indicates that for products with high complexity there are other factors than computer skill interfering.

4.4.3 Assessment of Impulsiveness and Purchasing Tendency

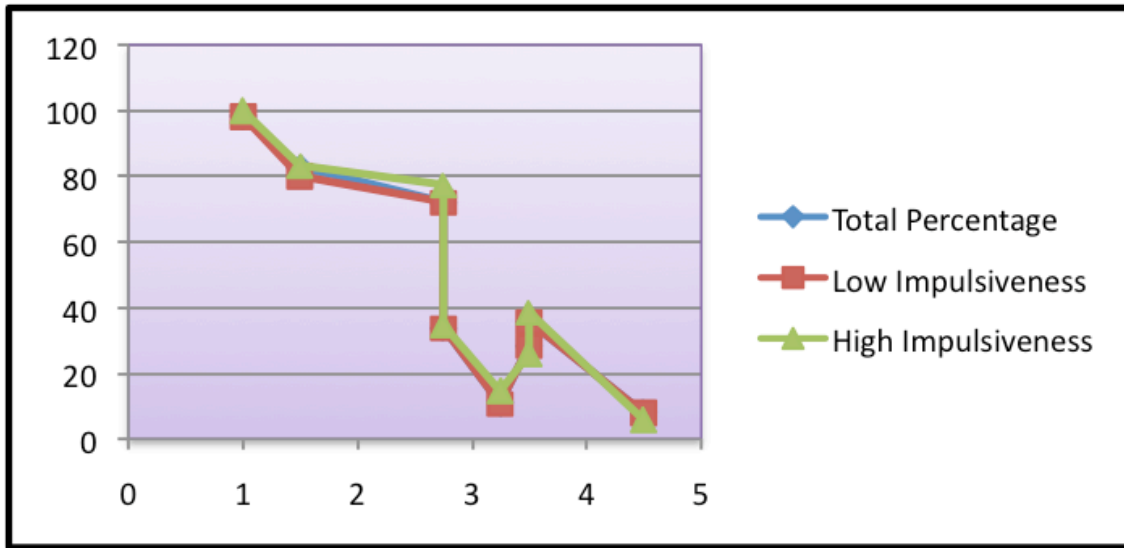


Figure 7: Graph illustrating difference between low and high impulsiveness.

This diagram indicates that the respondents' impulsiveness, whether or not it is high or low. Impulsiveness does not in this diagram seem to affect the tendency in any drastic way. The only notable difference lies in the products ranging from a 2 complexity level to 2.75 level where the impulsive respondents have a higher purchasing tendency.

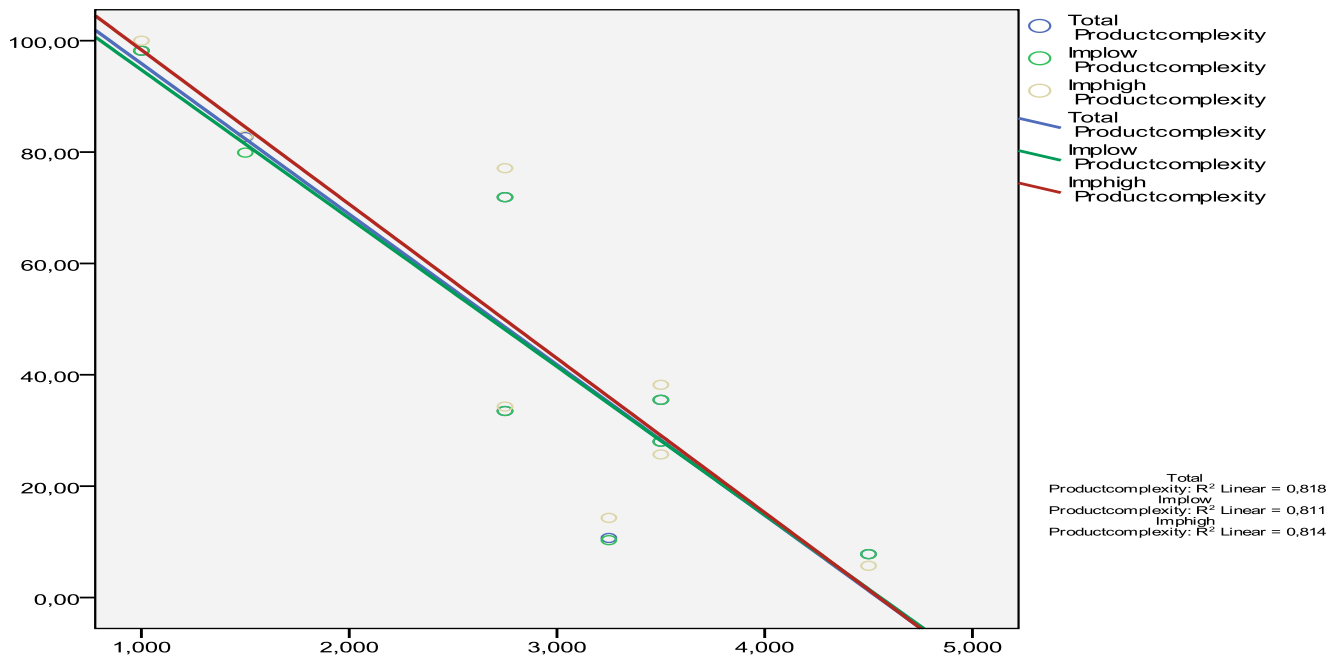


Figure 8: Linear regression between impulsiveness and purchasing tendency.

This can also be shown in the linear regression diagram above, where the lines are very similar except regarding complex products below 3.5 level, where high impulsiveness has a slope at 0.814 with a standard error of the estimate of 16.19 units versus low impulsiveness with a slope of 0.811 and the dispersion around the mean is 15.70 units. The correlations also illustrated a very similar result, low impulsiveness had a correlation -0.901** and high impulsiveness had at -0.902**. This also gives further strength to the correlations regarding consumer characteristic and complexity dimensions shown previously, where impulsiveness did only correlate with the need of having prior knowledge about a product before purchase. In both cases 81% can be explained by product complexity.

4.4.4 Assessment of Online Purchasing Frequency and Purchasing Tendency

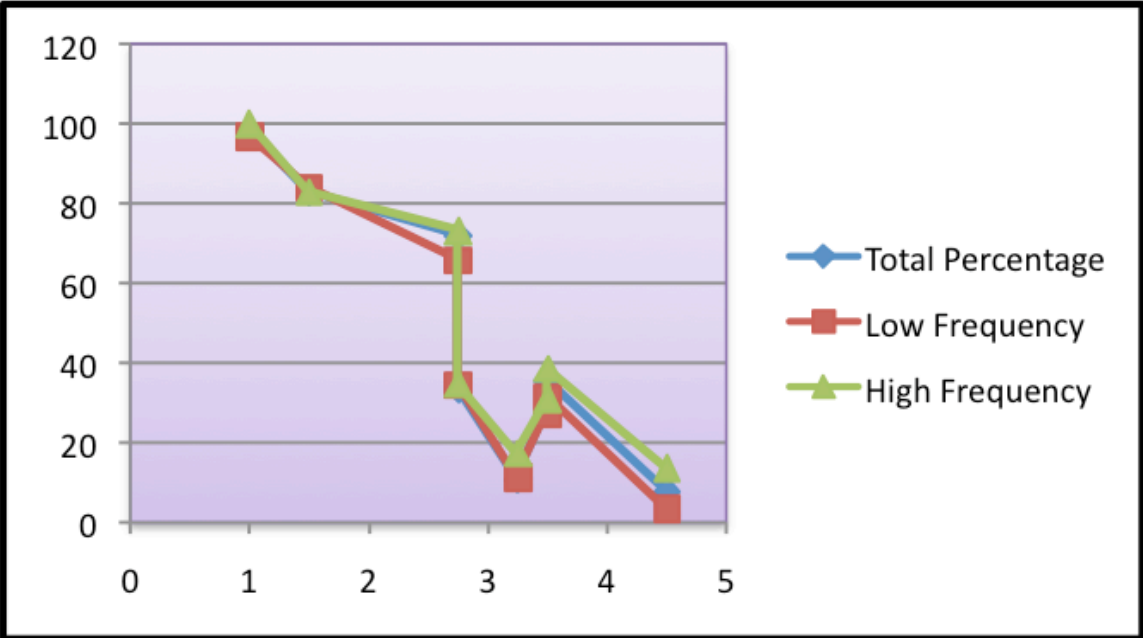


Figure 9: Graph illustrating difference between low and high purchasing frequency.

High frequency had in general a slightly higher purchasing tendency than the participants with low frequency, which was also very similar to the total. One noteworthy difference lies in high complexity products where respondents with high online purchasing activity were more comfortable with buying complex products online than both low frequency respondents as well as the total.

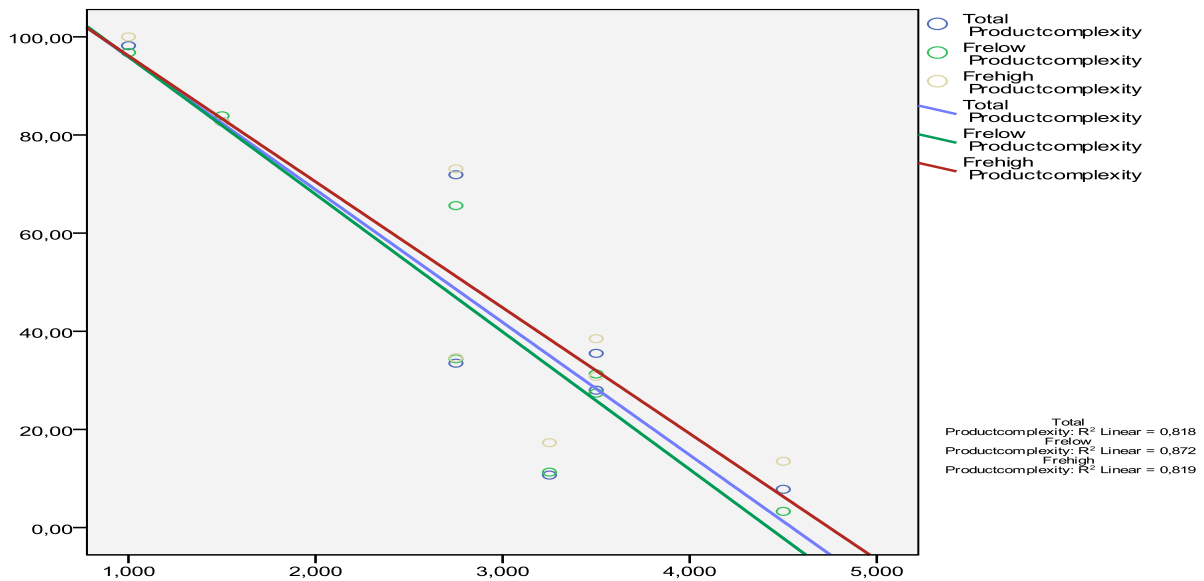


Figure 10: Linear regression between purchasing frequency and purchasing tendency.

As seen in the diagram of the regression lines above, where low frequency lies under the total with a slope of 0.872 and estimated error of 13.15 units and high frequency with a slope of 0.819 and 14.80 units, frequency makes a difference when buying products of complex nature. There seems to be a difference between low and high frequency respondents being that respondents that purchase items online more often are also more prone to buying complex products than both the total and low frequency. Respondents that do not buy items often are less prone than the total to buy complex products. However, there seems to be no difference when buying less complex products such as the book and back-pack. In addition, there were strong correlations between the both of them, low frequency had -0.924^{**} and high frequency had -0.905^{**} indicating that the two variables are associated with each other.

4.4.5 Assessment of Gender and Online Purchasing Tendency

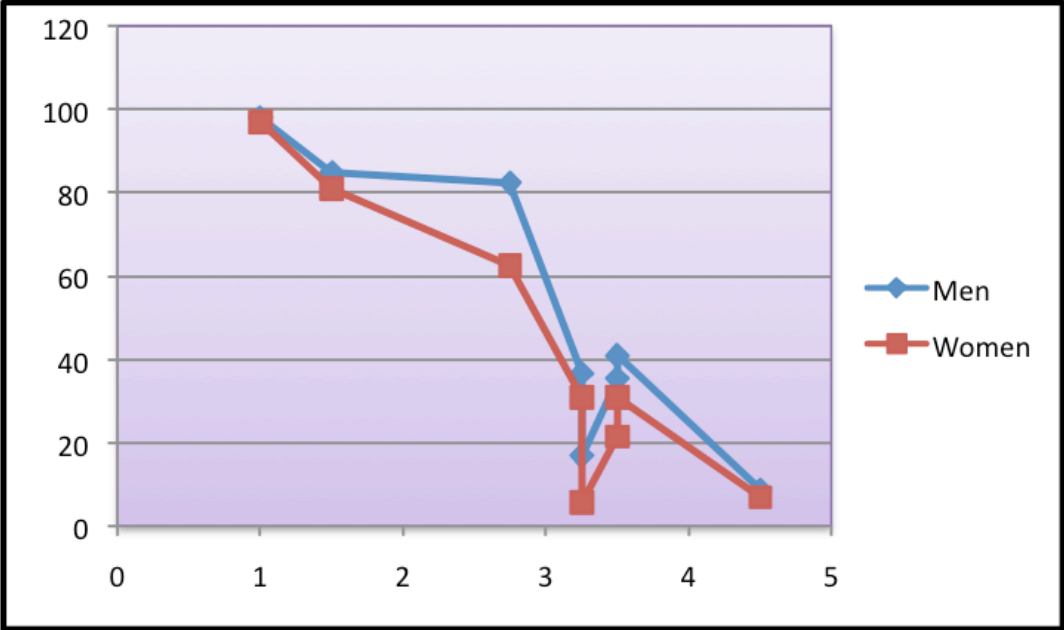


Figure 11: Graph illustrating difference between genders and purchasing tendency.

This diagram illustrates what was found in the first research objective meaning that women are less willing to purchase product online. Above it is also apparent that men and women did not differ that much on the product *kitchen*; however the products between product complexity range 3 and 4 showed significant differences.

Both men (0.883**) and women (0.915**) had correlations with product complexity.

The differences between men and women regarding online purchasing tendency seems to follow the same patterns as previously found in research objective one. Men are more likely to purchase all types of products and the difference is especially large with products of high complexity. Men had a regression slope of 0.780, with 78 % of the variance being dependent on product complexity and an estimated error 16.93 units of which is lower than the regression line representing women with 0.839 where 83.9% can be explained by product complexity and an error of 14.89 units.

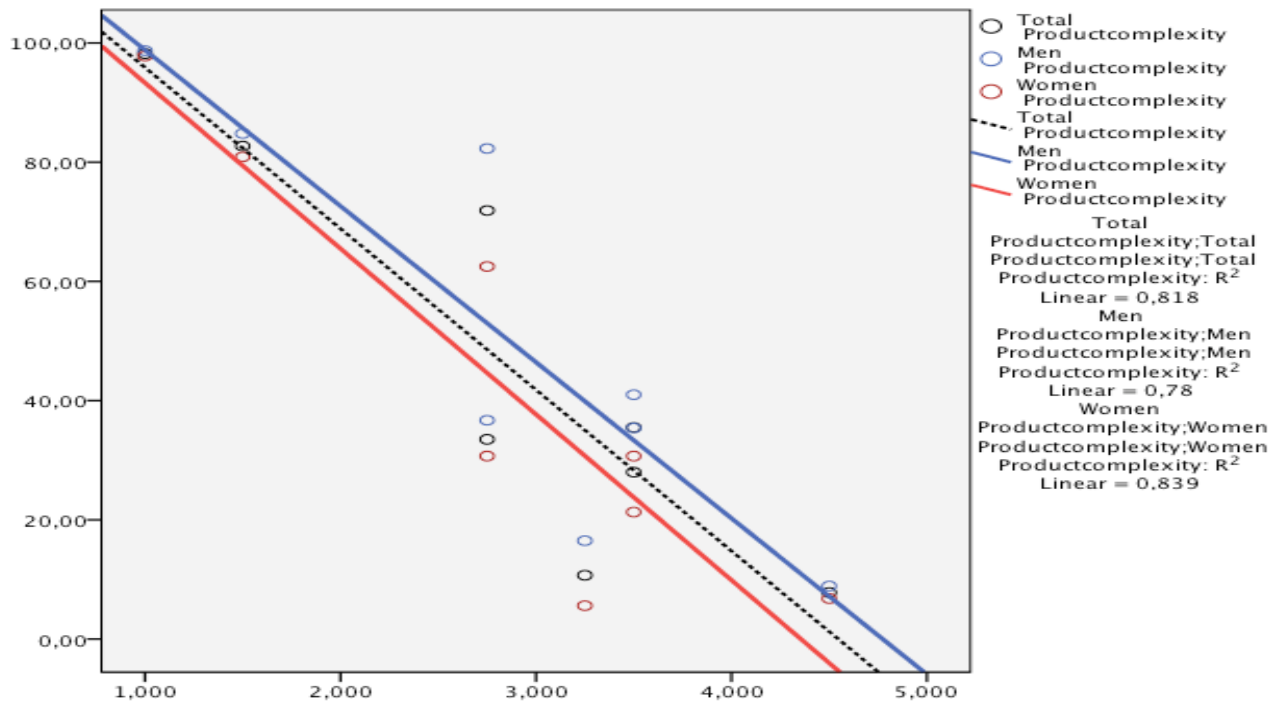


Figure 12: Linear regression between genders and purchasing tendency.

4.4.5 Assessment of Age Groups and Purchasing Tendency

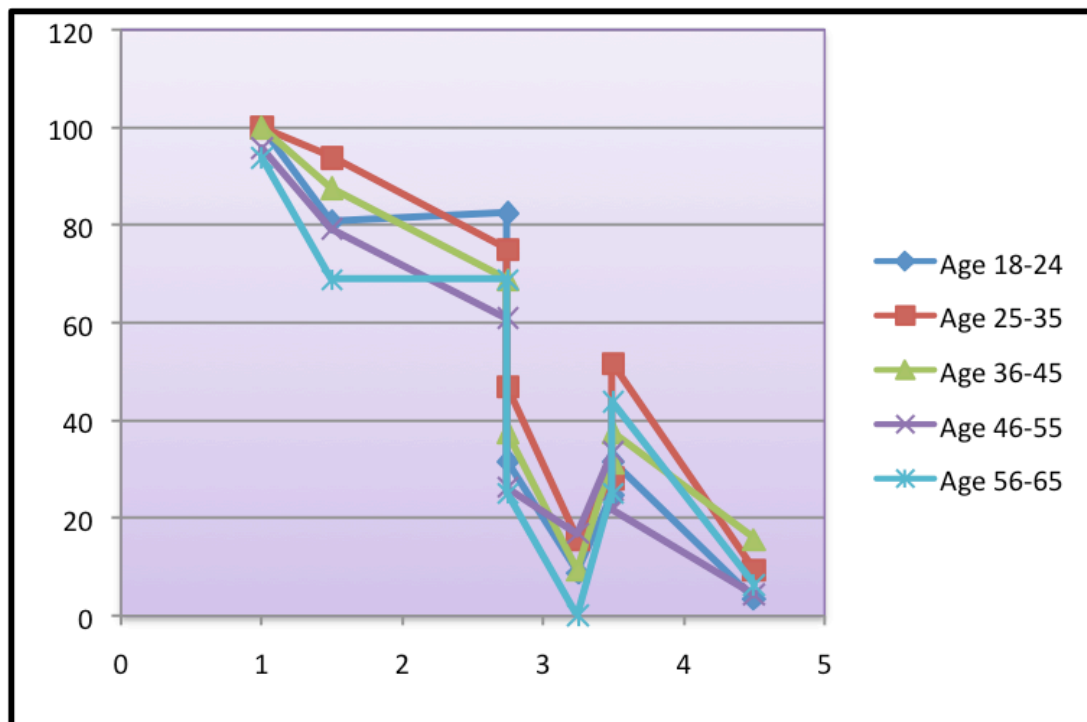


Figure 13: Graph illustrating difference between age groups and purchasing tendency.

All of the following age groups had high correlations with product complexity: Age Group One (0.880**), Age Group Two (0.906**), Age group Three (0.899**), Age Group Four (0.933**) and Age Group 5 (0.829**).

These regression lines indicate that the age group (25-34) is the one most prone to buying all of the products online, including high complexity products, with a slope of 0.820. The next age group that is likely to buy high complex products is the 35-44 year olds with a slope of 0.808. They are however less likely than age group one when it comes to purchasing low complexity products. Also, worth noting is that age group 5 (55-64) intercepts both age group one and four (0.870) regarding tendency to purchase high complexity goods. Age group four also had the lowest variation 68.7 % that could be explained by product complexity.

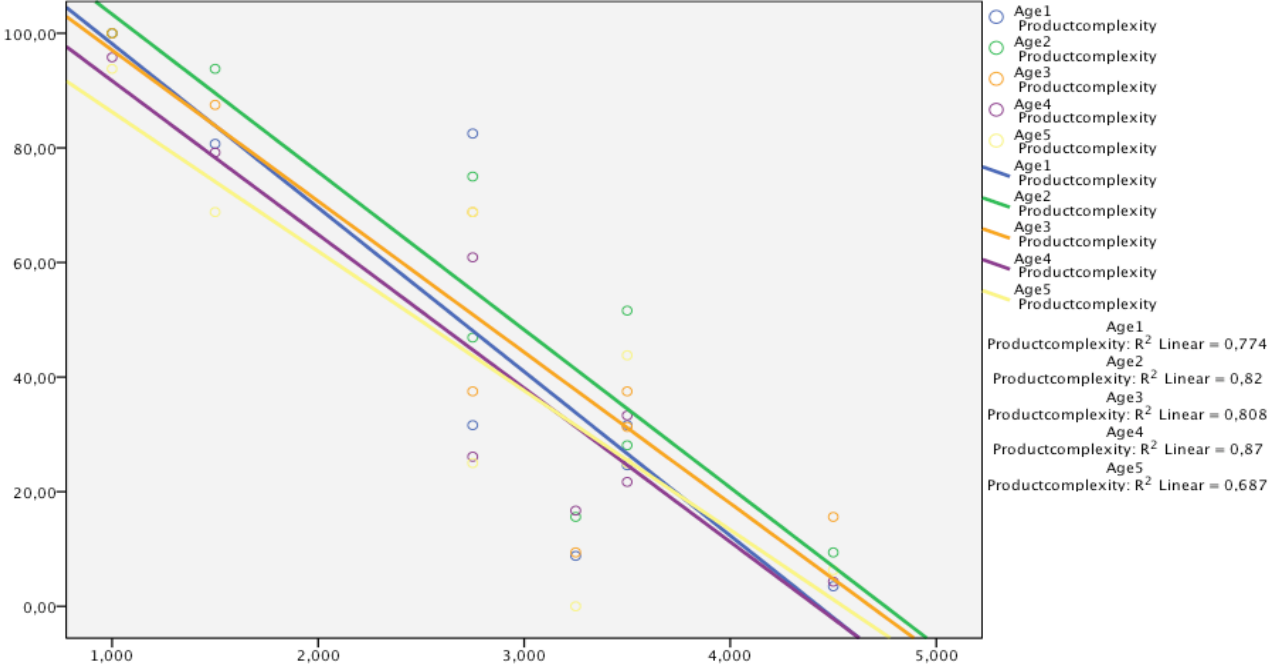


Figure 14: Linear regression between age groups and purchasing tendency.

5. REVISION OF THEORY

This chapter will further discuss the empirical findings presented in previous chapter. The object of focus is to evaluate the consumer characteristics impact on complexity dimension and discuss the relevance of our findings.

5.1 PERCEPTION OF IMPULSIVENESS

H₁: *There is an association between the respondents' perception of their impulsiveness and the variables of product nature. (Question: 15, 16, 18, 19)*

No correlation was found between impulsiveness and nature of the product, indicating that impulsiveness does not influence the purchase decision of products requiring post- and pre-activity.

H₂: *There is an association between the respondents' perception of their impulsiveness and their comfort with shopping online without a salesperson. (Question: 12)*

No correlation was found between impulsiveness and interactivity.

H₃: *There is an association between the respondents' perception of their impulsiveness and the consumer knowledge variables. (Question: 17, 20, 21, 22, 23)*

The findings show that there is a negative correlation between impulsiveness and having prior knowledge about a product before purchase, meaning that respondents that perceive themselves as having a high degree of impulsiveness require less product knowledge than those perceiving themselves as having a low degree of impulsiveness. This indicates that the prior ones are more prone to buying low complexity products on impulse. According to several studies, impulse buying is more common on the Internet, has also been linked to convenience and ease (Madhavaram & Laverie, 2004). People who perceive themselves as impulsive are perhaps not as much in need of planning before purchasing as people who are non-impulsive.

H₄: *There is an association between the respondents' perception of their impulsiveness and the importance of touch and feel before buying a product online. (Question: 24, 26)*

No correlation was found between impulsiveness and the touch and feel aspect.

H₅: *There is an association between the respondents' perception of their impulsiveness and their online trust. . (Question: 9, 10, 11, 13, 14)*

No correlation was found between impulsiveness and trust, which is in line with the research of Madhavarani & Laverie (2004), stating that online security is a concern that constrains impulsive behavior online.

5.2 PERCEPTION OF COMPUTER SKILL

Our findings suggest that one of the most significant factors influencing tendency and attitudes toward complexity dimensions and products are the respondents' perception of computer skill. In this thesis, perception of computer skill is seen as a measurement of respondent's technological adoption and acceptance regarding the Internet, and resulted in having an impact on all of the complexity dimensions and a higher purchasing tendency.

H₆: *There is an association between the respondents' perception of their computer skills and the variables of product nature. (Question: 15, 16, 18, 19)*

The respondents' general perception and confidence of computer skill indicates a general acceptance regarding the different types of complexity. This may be due to the fact that many of the products are technology based. Given that there is a connection between perceived computer skill and general technology adoption/acceptance it is not unlikely that these associations simply indicate that the respondents with high perception of computer skill are also more accepting of having to customize the product online or purchasing an item that requires installation online.

As argued by Jahng et al. (2000), differentiated products, which have a higher degree of complexity, require more cognitive effort in terms of e.g. information search. It can therefore be assumed that consumers with high computer skills find it more convenient and time efficient to find adequate information regarding a complex product compared to consumers with lower computer skills. Hence, as information can be acquired more efficiently, they do not perceive products to be complex to the same extent as consumers with low computer skills.

H₇: *There is an association between the respondents' perception of their computer skills and their comfort with shopping online without a salesperson. (Question: 12)*

Interactivity had a correlation with perception of computer skill, indicating that the need of a salesperson is less important for consumers that have high computer skills. A plausible explanation may be that respondents with high computer skills may, in an

efficient manner, acquire adequate information in order to make a rational purchase without having to consult a salesperson. However, only one question measured interactivity and concerned the interactivity arising through interaction with a sales person. According to Yoo et al. (2010), interactivity also includes user-machine communication, including features such as real-time chats, bulletin boards, search engines, etc. Thus, the indicating result that the absence of a salesman when shopping online is perceived as less problematic for respondents with high computer skills, may be an effect of these respondents ability to utilize interactive features on the Internet to a superior extent.

H₈: *There is an association between the respondents' perception of their computer skills and the consumer knowledge variables. (Question: 17, 20, 21, 22, 23)*

The empirical data suggests that there is a correlation between computer skills and consumer knowledge. The respondents that perceived their computer skills as being high where also more confident with buying products online that they frequently use and purchase, and products that they seldom use and purchase. This correlation confirms research conducted by Rhee et al. (2009), stating that when consumers are aware of the relative advantages of online shopping and perceives the Internet as being relatively easy, the shopping activities are enhanced for infrequently purchased items. Thus, if the respondent have adopted computer and technology they are more comfortable with using a computer, as well as with purchasing all kinds of goods online. Respondents who perceive themselves as not having good computer skill are therefore not as accepting of the Internet as an e-commerce channel and will not be as comfortable with purchasing products online.

Furthermore, these findings are aligned with the theory of Shim et al. (2001), suggesting that prior experience with the use of personal computers are significant predictors of online search behavior, and that previous experience may decrease consumer's perceived risk level and uncertainty associated with Internet shopping. Hence, it can be assumed that respondents with a high level of computer skills are aware of, and comfortable with, the fact that they can find adequate information on the Internet regarding products that they normally do not purchase, and are consequently more likely to engage in online purchase behavior. These findings are also aligned with Davis et al. (1989), suggesting that behavior related to technology might be different depending on the adopter, and with George (2002), stating that there are differences between new and old Internet users.

H₉: *There is an association between the respondents' perception of their computer skills and the importance of touch and feel before buying a product online. (Question: 24, 26)*

A negative correlation was found between computer skills and touch and feel, indicating that respondents that perceive their computer skills as being high do not consider the touch and feel aspect of a purchase as important as respondents with lower computer skills. Inks & Mayo (2002) suggested that the inability to touch and try-on products is the second most frequent reason for not shopping on the Internet. However, the question why it is considered to be such an important factor still remains. We would argue that the importance of touch and feel, besides fulfilling what Perea y Monsuwé et al., (2004) described as hedonic needs, is strongly connected to trust. Gefen & Straub (2004) described lack of trust as the main factor for consumers to avoid online purchases. Consequently, it is plausible that consumers want to touch and feel a product in order to decrease the perceived risk and uncertainty of online purchasing. According to Zhu et al. (2009), consumers will, in the absence of adequate information, evaluate trustworthiness based on information such as appearance. Thus, it is plausible that respondents that perceive themselves as having low computer skills consider the touch and feel aspect as a more important factor of trustworthiness than respondents with a high level of computer skills. Appearance found online, such as the construction and interactive features of a website, may be regarded as a more important source of information by respondents that perceive themselves as having high computer skills. Thus, this group of respondents may find this information as adequate in order to make a rational purchase decision, and are less influenced by the touch and feel aspect.

H₁₀: *There is an association between the respondents' perception of their computer skills and their online trust. . (Question: 9, 10, 11, 13, 14)*

Perception of computer skills had a significant impact on all of the complexity dimensions mentioned above. However, the impact on the dimension of trust is an exception. Even though a correlation was found regarding online payment systems in one of the questions, it did not follow the same patterns concerning online trust in general.

This correlation that was found regarding payment system is in line with the research of Zhu et al. (2009), who stated that the more familiar consumers are with previously utilized technology and visited websites, the more likely they will trust online procedures. Since no other correlations were found, it can be stated there is no distinguished relationship between familiarity/adoption of technology and trust. These findings indicate that no matter how high consumers' perceptions of computer skills are, the lack of trust will always be an obstacle that makes them reluctant to engage in online shopping.

5.3 ONLINE PURCHASING FREQUENCY

Many articles in previous research have acknowledged frequency as one of the major influences regarding purchase decisions online (Phau & Phoon, 2000; Peterson et al.,

1997; Rhee et. al 2009; Zhu et al., 2009; Markham et al., 2006; Zhang et al., 2010). However, the results from the questionnaire indicate that purchase decisions online are more influenced by frequency of usage rather than frequency of purchase.

H₁₁: *There is an association between the respondents' perception of their purchasing frequency and the variables of product nature. (Question: 15, 16, 18, 19)*

A negative correlation was found between purchasing frequency and nature of the product in regards to one of the questions concerning the nature of the product. Respondents that perceived themselves as frequent online shoppers were less affected in their decision to purchase a product on the Internet if they had to register on the website, compared to respondents that perceived themselves as infrequent online shoppers. These results are aligned with the research of Markham et al. (2006), stating that repetitive nature of the buying process generates knowledge and act as a predictor of future decision-making. Hence, online purchasing frequency is seen as a determinant of how comfortable and to what extent the respondents have embraced Internet as sales channel. Since a correlation was found between online purchasing frequency and pre-purchase activity it can be stated that a relationship between knowledge and adoption to Internet as a sales channel affects the respondents' level of agreement with the statements in the survey.

H₁₂: *There is an association between the respondents' perception of their purchasing frequency and their comfort with shopping online without a salesperson. (Question: 12)*

No correlation was found between frequency and interactivity.

H₁₃: *There is an association between the respondents' perception of their purchasing frequency and the consumer knowledge variables. (Question: 17, 20, 21, 22, 23)*

According to the empirical data, a negative correlation was found between frequency and consumer knowledge. Respondents that considered themselves as frequent online shoppers were more confident with purchasing products online which they seldom use and products that they seldom purchase. These findings support the theories of Markham et al. (2006) regarding the repetitive nature of the buying process and its impact on future behavior.

Furthermore, the research of (Rhee et. al., 2009) is also supported by this correlation. They argued that infrequently purchased goods require more research and examination than frequently purchased goods. Thus, as consumers who buy certain products on a

regular basis are able to learn about different product alternatives and where the best place to purchase them is. It is hence plausible that respondents that consider themselves as frequent online shoppers have greater knowledge regarding such where to find relevant information compared to respondents that consider themselves as infrequent online shoppers, making them more comfortable with buying products that they normally do not purchase or seldom use.

H₁₄: *There is an association between the respondents' perception of their purchasing frequency and the importance of touch and feel before buying a product online.* (Question: 24, 26)

There was a positive correlation between frequency and the touch and feel aspect, indicating that respondents that consider themselves as frequent online shoppers are less concerned about inspecting the product before purchasing it than respondents that consider themselves as infrequent online shoppers. For this correlation, it is assumed that the touch and feel aspect is strongly connected to trust, as it is aligned by research of Zhang et al. (2010). They argued that when consumers engage in searching for a specific product for the first time, a search for information from other sources may be required as they may not be able to evaluate the purchasing outcome based only on their own knowledge and examination of the website. Furthermore, they argued that consumers would not engage in any purchasing behavior before they perceive the online seller as trustworthy (Zhang et al. 2010). In addition, Zhu et al. (2009) stated that consumers also evaluate trustworthiness based on information such as appearance. Thus, it is plausible that respondents that are frequent online shoppers are able to evaluate the purchasing outcome by examining a website to a better extent than respondents that are infrequent online shoppers, and consequently do not need the touch and feel aspect as an additional source of information. Also, frequent online shoppers can be assumed to have more online shopping experience and are therefore also assumed to be more confident in the outcome of their purchase in terms of product appearance.

H₁₅: *There is an association between the respondents' perception of their purchasing frequency and their online trust. .* (Question: 9, 10, 11, 13, 14)

A negative correlation was found between frequency and trust regarding one of the questions above, indicating that respondents that consider themselves as frequent online shoppers are more trustful of the Internet as a sales channel than respondents that consider themselves as infrequent online shoppers. These findings are supporting previous research stating that consumers' familiarity reduce uncertainty and enhances trust (Zhu et al. 2009). It is plausible that the respondents that are frequent online shoppers also are more adapted to a website's features and payment systems, which in

turn lowers their level of perceived risk and uncertainty more than for respondents that are infrequent online shoppers.

5.4 GENDER

Women had a lower purchasing tendency than men for each of the eight products: ranging from a difference of 2.1 % (the kitchen) to 20 % (the computer). This difference between men's and women's purchasing tendency as presented in the survey, was not unexpected since prior research suggested that women were less prone to buy products online (Lee, 2007; Zhou et al., 2007; Harris & Rodgers, 2003). However, the figures pointing out that the highest difference between the genders was in regards of the computer were quite surprising result since products that are more masculine, such as the trailer (9.3%) or the hitch (6%) had much lower difference (see appendix). A computer on the other hand, is a product with a rather modest level of complexity that is used often by both genders, and thus a lower difference was expected. Furthermore, the findings in the survey suggest that women are not as positive as men regarding pre-purchase activity and that they were more skeptical towards and influenced by the requirement of customization and information search. In addition, aligned with prior research (www.scb.se, 2009; Belanger et al., 2002; Zhou et al., 2007), our study confirms that women have more concern regarding trusting the Internet as a sales channel.

5.5 AGE

Respondents in the age group 36-45 perceived a lower risk with online shopping than the other age groups. The findings suggest that the age group 25-35 is most prone to buy all of the products online. The Technology Acceptance Model (TAM) suggests that the more experience with the Internet a consumer obtains, the higher will the perceived ease of use of the Internet as a channel for shopping be (Perea y Monsuwé et al., 2004). According to prior research, younger people (16-24 years old) are the most frequent Internet users and that the usage of Internet increases as age decreases (www.scb.se, 2009; www.worldinternetproject.net, 2010). The empirical findings of this study show that there might be other factors influencing the decision to purchase, not just Internet usage, skill or trust. Regarding age group two, the products may have biased the results for purchasing tendency of complex products since people within this age group do not find the kitchen, car, etc. as relevant as older age groups.

5.6 TENDENCIES

The relationships shown in the linear regression models of the online purchasing tendency and consumer characteristics indicate the same results as found in the

correlations between the complexity dimensions. These findings are aligned with the prior theories in terms of age and gender differences, as well as perception of computer skill and online purchasing frequency. Impulsiveness, on the other hand, showed very little variety. Furthermore, respondents' level of impulsiveness did not have any affect concerning their purchase decision of complex products. Impulsive people also seem to need less product information in order to make purchase decisions. Only products with low complexity were somewhat related to the level of impulsiveness. Furthermore, this could indicate that even if you are impulsive, you do not choose to buy a car or a kitchen, since these products are two extremes. Purchasing frequency had an impact on the tendency of purchasing complex products online, which is supporting prior research. As stated in theory, women are more skeptical towards online purchase. The probability of women buying complex products online is less than men's probability of purchase. In general, the age group 25-35 is more prone to buying complex products. Moreover, 35-45 year olds are also more prone to buying complex products, the 55-65 year olds had a lower purchase tendency regarding low complexity but for high complexity goods they had a higher probability than age group one and four.

6. CONCLUSION

In this chapter the main conclusions that were found in the empirical data will be discussed and presented. Furthermore, the contributions, implications and limitations of this research are presented as well as suggestions for future research.

6.1 OVERVIEW

In this research, the role of consumers' characteristics in online shopping was measured. This was investigated by the following research objectives:

- *The determinants of consumer characteristics and its impact on attitudes toward complexity dimensions.*
- *The determinants of consumer characteristics and the tendency of purchasing complex products online.*

6.2 CONCLUSIONS

The consumer characteristic with the most impact regarding attitudes toward online product complexity dimensions was perception of computer skill. This determinant had correlations with variables in all of the complexity dimensions indicating that respondents with high perception of computer knowledge were not as affected by the complexity dimensions as the respondents with a low perception. This was also confirmed in the regression analysis with computer skill which indicated that respondents with high perception were much more likely to purchase complex products but also products in general online.

Online purchasing frequency also influenced the attitude toward complexity dimensions. This determinant was seen as the acceptance of Internet as a sales channel correlating with all of the complexity dimensions, except interactivity, indicating that the respondents who are more frequently purchasing items online are also more likely to purchase complex products online. The regression line however showed that the probability of purchasing a complex product were more likely if the respondent was a frequent buyer, however the tendency to purchase products like the book and backpack did not vary regarding on frequency.

The determinant with the least correlations was perception of impulsiveness. The only correlation was with the need of prior knowledge before purchasing, in the consumer knowledge dimension, indicating that the respondents answered truthfully. One of the reasons for the poor results may be that the impulsive characteristic is something many respondents are not aware of being or not wanting to acknowledge or it could simply

mean that the characteristic does not affect complexity dimensions in any significant way.

There was also a significantly vast difference between men and women, as indicated by previous research. The women in the study were more affected by all of the complexity dimensions and their purchasing tendency was considerably lower than among the men.

Age also showed interesting results, where the age group 25-36 was the most likely to purchase complex products online.

Furthermore, very few correlations were found regarding trust factors in this study. This may be that the determinants used are inadequate for studying trust or that trust was measured incorrectly. It can also be possible that there is no difference in attitudes in trust, meaning that it has no relation with the determinants used in this study. Even if one scores high on computer skill and trust in payment systems the other trust factors may still be equally important e.g. resellers reputation and recommendation. Thus, trust will not differ with the determinants.

6.3 CONTRIBUTION TO PRIOR RESEARCH

- *Purchasing tendency examined through a complexity scaling rather than through product categories.*
- *Prior research does not investigate several determinants versus product complexity.*

Even though research had been conducted regarding the suitability of various products being sold through the Internet. None of the researcher presented in chapter one had investigated that the results might differ depending on consumer characteristics.

6.4 MANAGERIAL IMPLICATIONS

For companies this implies investigating the characteristics of the target group and the products being planning to be sold online. The following courses of actions are recommended for managers who aim to sell more complex products online:

- It is important to assess the target group and investigate their purchasing patterns and attitudes toward the complexity level. The impact of the complexity dimensions can vary depending on product, for instance, a cargo-box is an infrequently purchased product but does not need the same amount of interactivity and touch and feel as e.g. a car.
- Trust is one of the key dimensions regardless of product and complexity, therefore managers should always strive to minimize the uncertainty of the online consumers.

6.5 PROPOSITIONS FOR FURTHER RESEARCH

Researchers are recommended to focus on the following issues to enhance their contributions to studies of online behavior:

- *If there has been a shift in attitudes toward product complexity online affected by technology acceptance model.*
- *If there has been a shift in purchasing tendency of complex products depending on technology acceptance model.*
- *A more extensive study regarding consumer characteristics and their affect on online purchasing behavior in a complexity context.*
- *A more extensive study of product complexity based on a large amount of products of different ranges to achieve broader and more significant results.*

6.6 RESEARCH LIMITATIONS

- Some of the measurements regarding consumer characteristics as well as complexity dimensions were perhaps inadequate in terms of measuring behavior.
- Some of the measurements were not made on randomized samples.
- Additional products would have given a better indication of the purchasing tendencies of the respondents.

6.7 SUMMARY

Prior research has examined the suitability of products online through product features, focusing on different product categories varying in terms of price, standardization, interdependence and prior knowledge. This study focuses on the complexity within a product and measures each item separately, which made it possible to see if there is a relationship between the complexity and purchasing tendency. Our research indicates that even though it is clear that some products have a higher purchasing tendency than others as a result of their complexity, it is also about the person behind the computer. For instance, the respondents who have accepted and adopted the Internet as sales channel and are comfortable and secure when using it are also more likely to purchase products online that are of higher complexity. Even though product categories are still relevant, some products will never fit into a specific category or be consistent with it. Therefore not only should product complexity be taken into consideration but also the target group of the product.

7. REFERENCES

7.1 BOOKS

Bryman, A.; Bell, E. (2007) *Business Research Methods*, 2nd edition, Oxford University Press.

Ghauri, P.; Cateora, P. (2006). *International marketing*. Berkshire: McGraw-Hill, 2nd edition.

Grönroos, C. (2007). *Service Management and Marketing*. 3rd Edition. John Wiley & Sons Ltd.

Hofacker, C.F., (2001), *Internet Marketing*, 3rd edition, New York: Wiley, pp.85-8

Kalakota, R.; Whinston, B. A. (1997). *Electronic Commerce: A Manager's Guide*. United States of America: Addison Wesley Longman, Inc.

Kerr, A. W.; Hall, H. K.; Kozub S.A. (2003). *Doing Statistics with SPSS*. Sage Publications Ltd, London

Körner, S.; Wahlgren, L. (2006). *Statistiska Dataanalyser* 4th ed. Studentlitteratur

McGoldrick, P. (2002). *Retail Marketing*, 2nd edition, McGraw Hill, Berkshire.

Pagano, R., (1994). *Understanding Statistics in the Behavioral Sciences*, 4th edition. West Publishing Company

Turban, E. (2004). *Electronic commerce 2004: a managerial perspective*. Pearson Prentice Hall

Wahlgren, L. (2008) *SPSS steg för steg*, 2nd edition. Studentlitteratur

7.2 ARTICLES

Belanger, F.; Van Slyke, C.; & Comunale, C. (2002). "Gender differences in perceptions of web-based shopping". *Communication of the ACM*, 45, 82-86.

Childers, T.L.; Carr, C.L.; Peck, J.; Carson, S. (2001). "Hedonic and utilitarian motivations of online retail shopping behaviour". *Journal of Retailing*. Vol., 77, No. 4, pp. 511-535

Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989). "User acceptance of computer technology: A comparison of two theoretical models". *Management Science*, Vol. 35, No. 8, 982-1003.

Donthu, N.; Garcia, A. (1989). "The Internet Shopper". *Journal of Advertising Research*. Vol. 39, No. 3, pp. 52-59

Du, T.C.; Li, E.Y.; Chou, D. (2005). "Dynamic vehicle routing for online B2C delivery". *Omega*. Vol. 33, No. 1, pp. 33-45

Elliott, M.T; Speck, P.S. (1998). "Consumer perceptions of advertising clutter and its impact across various media". *Journal of Advertising Research*. Vol. 38 No. 1, pp. 29-41.

Gefen, D.; Karahanna, E.; Straub, D. (2003), "Trust and TAM in online shopping: an integrated model". *MIS Quarterly*, Vol. 27 No. 1, pp. 51-90.

Gefen, D.; Straub, D. (2004). "Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services". *Omega*. Vol. 32, No. 6, pp 407-425

George, F. Joey (2002). "Influences on the intent to make Internet purchase". *Internet research: electronic networking applications and policy*. Vol.12 No. 2 pp 165-180

Hahn, K. H. and Kim, J. (2009). "The effect of offline brand trust and perceived internet confidence on online shopping intention in the integrated multi-channel context". *International Journal of Retail & Distribution Management*. Vol. 37 No. 2, pp. 126-141

Harris, M.; & Rodgers, S. (2003). "Gender and E-Commerce: An Explanatory Study". *Journal of Advertising Research*. Vol. 43, No.3, pp 322-329.

Hill, Roy W. (1972). "The Nature of Industrial Buying Decisions". *Industrial Marketing Management*. Vol. 2, No. 1, pp 45-66.

Houghton, Kathryn A.; Winklhofer, Heidi (2004). "The Effect of Website and E-Commerce Adoption on the Relationship between SMEs and Their Export Intermediaries". *International Small Business Journal*. Vol. 22, No 4, pp. 369-388.

Inks, Scott A.; Mayo, Donna T. (2002). "Consumer Attitudes and Preferences Concerning Shopping On-Line". *Journal of Internet Commerce*. Vol. 1, No. 4, pp 89-110.

Jahng, J., Jain, Hemant; Ramamurthy, Keshavamurthy (2007). "Effects of interaction richness on consumer attitudes and behavioral intentions in e-commerce: some experimental results". *European Journal of Information Systems*. Vol. 16, No. 3, pp. 254-270.

Jahng, Jungjoo; Jain, Hemant; Ramamurthy, Keshavamurthy (2000). "Effective design of electronic commerce environments: A proposed theory of congruence and an illustration". *IEE/IEEE*. Vol. 30, No. 4, pp 456-471.

Klein, L.R. (1998). "Evaluating the potential of interactive media through a new lens; search versus experience goods". *Journal of Business Research*. Vol. 41, No. 3, pp. 195-203

Kwak, Hyokjin; Fox, J. Richard; Zinkhan, M. George, (2002). "What Products Can Be Successfully Promoted and Sold via the Internet?" *Journal of Advertising Research*. Vol. 42, No. 1, pp 23-39

Kotteaku, A.G.; Laios, L.G.; Moschuris, S.J. (1995) "The Influence of Product Complexity on the Purchasing Structure". *Omega*. Vol. 23, No. 1, pp 27-39

LaRose, Robert; Matthew S. Eastin (2002). "Is online buying out of control? Electronic commerce and Self-regulation". *Journal of broadcasting and electronic media*. Vol. 46, No. 4, pp. 549-564

Laroche, M.; Saad, G.; Cleveland, M.; Browne, E. (2000). "Gender differences in information search strategies for a Christmas gift". *Journal of Consumer Marketing*. Vol. 17, No. 6, pp. 500-24.

Lee, B.C.Y. (2007). "Consumer attitude toward virtual stores and its correlates". *Journal of Retailing and Consumer Services*. Vol. 14, No.3, pp. 182-191

Lee, P.M., (2002). "Behavioural model of online purchaser in e-commerce environment". *Electronic Commerce Research*. Vol 2, No.1-2, pp. 75-85

Li, L; Gery. N, (2000) "E-tailing—for all products?" *Business Horizons*. Vol 43, No.6 pp. 49-54

Liu, Xiao; Wei, K.K. (2003) "An empirical study of product differences in consumers' E-commerce adoption behavior". *Electronic Commerce Research and Applications*. Vol. 2, No. 3, pp. 229-239

Markham, S.; Gatlin-Watts; Cangelosi, J. (2006). "The Internet and Its Relationship to Buyer Behavior Theory". *Journal of Internet Commerce*. Vol.5, No.1, pp 69-87

McCabe, D. L. (1987). "Buying Group Structure: Constriction at the Top". *Journal of Marketing*, Vol. 51, No. 4, pp 89-99.

Meyers-Levy, J.; Maheswaran, D. (1991). "Exploring differences in males' and females' processing strategies". *Journal of Consumer Research*. Vol. 18 No. 6, pp. 63-70.

Park, J., Stoel, L. (2005), "Effect of brand familiarity, experience and information on online apparel purchase". *International Journal of Retail & Distribution Management*. Vol. 33, No. 2, pp. 148-160.

Perea y Monsuwé, T.; Dellaert, Benedict G.C.; Ruyter, Ko de (2004). "What drives consumers to shop online? A literature review". *International Journal of Service Industry Management*. Vol. 15, No. 1, pp 102-121.

Peterson, R. A., Balasubramanian S., Bronnenberg, B. J. (1997). "Exploring the implications of the Internet for consumer marketing". *Journal of the Academy of Marketing Science*. Vol. 25, No. 4, pp. 329-346

Phau, I., Poon, S. (2000). "Factors influencing the types of product and services purchased over the Internet". *Internet Research: Electronic Networking Applications and Policy*. Vol. 10, Nr. 2, pp. 102-113

Prasad, Ch. J.S.; Aryasri, A.R. (2009). "Determinants of Shopper Behaviour in E-tailing: An Empirical Analysis". *Paradigm (Institute of Management Technology)*. Vol. 13 No. 1, pp. 73-84.

Rhee, H.; Riggins, F.; Kim, C., (2009) "The impact of product type and perceived characteristics of the Web on Multifaceted Online Behavior". *Journal of Organizational Computing and Electronic Commerce*. Vol. 19, No1, pp 1-30

Rodgers, S.; Harris M., A. (2003). "Gender and E-Commerce: An Exploratory Study". *Journal of Advertising Research*. Vol. 43 No.3, pp. 322-329

Shim, S.; Eastlick, M.; Lotz, S. L.; Warrington, P. (2001). "An online prepurchase intentions model: The role of intention to search". *Journal of Retailing*. Vol. 77, No. 3, pp 397-417.

Steinfeld, C. (2002). "Understanding click and mortar e-commerce approaches: a conceptual framework and research agenda". *Journal of Interactive Advertising*. Vol. 2 No. 2 (Spring 2002), pp 1-10

Stewart, K. (2003), "Trust transfer on the world wide web", *Organizational Science*. Vol. 14, No. 1 pp. 5-17.

Tulay, G.; Korgonkar P.; Silverblatt, R (2002) "Relationship of Type of Product, Shopping Orientations, and Demographics with Preference for Shopping on the Internet" *Journal of Business & Psychology*. Vol.18 No.1, pp. 101-121

Yoo, Weon-Sang; Lee, Yunjung; Park, JungKun (2010). "The role of interactivity in e-tailing: Creating value and increasing satisfaction". *Journal of Retailing and Consumer Service*. Vol. 17, No. 2, pp. 89-97.

Walsh, G.; Mitchell, V. (2004). "Demographics characteristics of consumers who find it difficult to decide". *Marketing Intelligence & Planning*. Vol. 23 No. 3, 2005 pp. 281-295

Winch, G.; Joyce, P. (2006), "Exploring the dynamics of building and losing consumer trust in B2C e-business". *International Journal of Retail & Distribution Management*. Vol. 34 No. 7, pp. 541-55

Zboja, J.J.; Voorhees, C.M. (2006). "The impact of brand trust and satisfaction on retailer repurchase intentions". *Journal of Services Marketing*. Vol. 20 No. 5, pp. 381-90.

Zhou, Lina; Liwei, Dai; Dongsong, Zhang (2007). "Online shopping acceptance model, a critical survey of consumer factors in online shopping". *Journal of Electronic Commerce Research*. Vol. 8, No.1

Zhu, D.S.; O'Neal, G.S.; Lee, Z.C.; Chen, Y.H. (2009). "The Effect of Trust and Perceived Risk on Consumers' Online Purchase Intention". *2009 International Conference on Computational Science and Engineering*. Vol. 4, pp 771-776

7.3 E-SOURCES

Handelns Utredningsinstitut, (2010) <http://www.hui.se/web/E-barometern.aspx>, Quarterly report: 4 for 2009, Accessed: 2010-05-20

Statistiska Centralbyrån, (2010) http://www.scb.se/Pages/PublishingCalendarViewInfo___259923.aspx?PublObjId=10199 Report "Privatpersoners användning av datorer och Internet 2009", Accessed: 2010-05-20

World Internet Project (2010) <http://www.worldinternetproject.net/> "*The World Internet Project Report 2010: Press Release and Report Highlights*" Accessed: 2010-06-09

World Internet Project (2007) <http://www.worldinternetproject.net/> "*The Internet in Sweden 2007*" Accessed: 2010-06-09

8. APPENDIX

8.1 The Questionnaire

The questionnaire has been designed to make the measurement of consumer attitudes towards complexity possible. Aligned with the conceptual framework of complexity, the questions asked cover the dimensions of complexity: the nature of the product, consumer knowledge and the constant uncontrollable elements. Moreover, questions about gender, age and online shopping habits are asked.

8.1.1. Part One: Independent Variables

The questions in this section of the survey aim to provide a picture of the respondent's profile, which will later be checked against the answers in latter questions regarding complexity and purchase decision of complex products. Questions about e.g. gender, age and online buying habits are examined here.

Question 1: Gender

Question one is an interesting aspect to take into consideration since it indicates whether there is a difference in online decision-making between men and women.

Question 2: Age

Question two shows the age variations within the sample group. The age groups in this questionnaire were: 15-24, 25-35, 36-45, 46-55, 56-65, and 66+. The different age groups can affect the results of this study, if complexity turns out to be a question of generation. Therefore it is important to assess the dispersion of ages.

Question 3: Do you have a car?

Some of the products in question 27 are only relevant if one has a car, has access to a car or has knowledge about automobiles. Therefore the question if the respondents have a car is relevant. Also this question is interesting because we want to know if this affects people's buying decisions when it comes to products such as the cargo-box, the trailer and the towing hitch.

Question 4: To what extent do you agree that you are often impulsive in your purchase decisions?

This question aims to investigate the relation between impulsive buying behavior and product complexity. Impulsiveness shapes ones buying behavior, which determines a persons view on what is a complex product. It is interesting to see whether consumers with higher impulsiveness are inclined to buy more complex products online.

Question 5: To what extent do you agree that you have good computer skills?

It is interesting to investigate whether the respondent's level of computer skills is a determining characteristic for the respondent's purchase behavior and experience with e-tailing.

Question 6: How often do you purchase products on the Internet?

The purchase frequency is of importance when considering the respondent's profile in relation to the answers in latter questions about complexity and products. The frequency of purchase affects complexity dimensions such as trust, perceived risk, and consumer knowledge.

Question 7: In what of the following price range is the most expensive item that you have bought online?

This question aims to compare the amount of money previously spent on shopping online with the purchase intention of the products in question 27.

Question 8: Which of the following brands do you recognize?

This question looks at the respondent's familiarity with the brands Apple, DeWalt Volvo, Thule and HTH. For the products: cargo box, towing hitch, backpack and trailer, this is a control question of purchase decision. It looks at consumer that are familiar with Thule have higher purchase tendency for these products.

8.1.2 Part Two: Dependent Variables

In this section the questionnaire measures purchase decision and covers the three dimensions of complexity: the nature of the product, consumer knowledge and trust issues.

Question 9: "When I shop online I completely trust the payment systems"

In this question the issue of trust is examined by asking about the perceived risk of e-shopping, which has an impact on purchase behavior.

Question 10: "When I shop online, it is important to me that I know the brand"

The brand aspect of trust is investigated in this question. This question is linked with question eight and question 27.

Question 11: "When I shop online I worry that the product will not match the description on the website"

This question looks at trust issues and the perceived product risk when shopping online.

Question 12: "When I shop online, the absence of a salesman is not a problem for me"

Here, the need for interactivity is measured, which is a trust issue.

Question 13: " When I shop online it is important that I am confident with the reseller"

This question raises the issue of trust regarding the importance of trusting the reseller.

Question 14: "I find it easier to shop on a website that has been recommended"

This question is also targeting the trust issue when shopping online.

Question 15: "I see no problem with buying products that require professional installation or assembly e.g. by a carpenter, mechanic or electrician"

Here, the attitude towards post-purchase activity is measured. This question is linked with some of the products in question 27 that require post-purchase activity.

Question 16: "I see no problem with having to customize my product when shopping online"

Here the attitude towards pre-purchase activity is measured. This question is a control question for question 19. Furthermore, this question is linked with some of the products in question 27 that require pre-purchase activity.

Question 17: "It is important to me to have prior knowledge about the product before purchasing it"

This question is linked to questions 20-24 about consumer knowledge. This question is checked against the questions regarding frequency of purchase and frequency of use.

Question 18: "Having to register on a website does not affect my decision to purchase the product on the Internet"

Here, pre-purchase activity is investigated. This question is linked with some of the products in question 27 that require pre-purchase activity.

Question 19: "Having to choose the product's color, design, size and material does not affect my decision to purchase the product online"

This question is a control question for number 16, it both investigates pre-purchase activity in terms of customization. Also, this question is linked with some of the products in question 27 that require pre-purchase activity.

Question 20: "When I shop online, I am comfortable with buying products that I use often e.g. a cell phone or a computer"

Here, consumer knowledge is investigated through asking about the frequency of use. This question is linked with some of the products in question 27 where consumer knowledge might affect the respondent's answer.

Question 21: "When I shop online, I am comfortable with buying products that I shop often e.g. hygienic products"

Here, consumer knowledge is investigated by asking about frequency of purchase. This question is linked with some of the products in question 27 where consumer knowledge might affect the respondent's answer.

Question 22: "When I shop online, I am comfortable with buying products that I seldom use"

Consumer knowledge is investigated by asking about frequency of use. This question is linked with some of the products in question 27 where consumer knowledge might affect the respondent's answer.

Question 23: “When I shop online, I am comfortable with buying products that I rarely purchase”

Consumer knowledge is investigated by asking about frequency of purchase. This question is linked with some of the products in question 27 where consumer knowledge might affect the respondent’s answer.

Question 24: “If I have previously bought a product in a physical store, I have no problem buying it online the next time”

This question looks at consumer knowledge about the product and its importance for purchase decision.

Question 25: “I feel comfortable with buying expensive products online (2000 SEK or more)”

This question is linked to question seven and question 27. The aim is to check the price relation and it’s consistency between these questions.

Question 26: “It is important for me to try, touch and see the product before purchasing it”

This question is linked to question 27 in order to see the consistency of the answers to the touch and feel questions.¹

8.1.3 Part three: Product Complexity “ Would you consider buying the following products online?”

In this section product complexity is investigated by asking about the purchase intention of products rated with different levels of complexity. The respondent has two choices, answering *yes* or *no*. In cases where the respondent answers *no*, follow-up questions are asked in the manner below:

If you answered No, what is/are the main reason/reasons for this?

- I want to be able to personally communicate with a salesman
- I want to touch, feel and try the product at a reseller
- The installation/assembly of the product is too extensive for me in order to do it myself

These follow-up questions cover the complexity dimensions in regard to interactivity (complexity of pre-purchase activity), touch and feel aspects (knowledge), and post-purchase activity.

The products in this section were: a car, a backpack, a cargo box, a book, a kitchen, a trailer, a computer and a towing hitch.

8.1.4 Results

The means of the answers to questions 9, 10, 11, 12, 13 and 14 (the uncontrollable factor trust) are presented in the tables below.

Q9 Q10 Q11 Q12 Q13 Q14 * Impulsive							
Impulsive		Q9	Q10	Q11	Q12	Q13	Q14
Strongly disagree	Mean	3,38	4,13	2,73	2,87	4,07	4,07
	N	16	15	15	15	15	15
	Std. Deviation	1,147	,834	1,100	1,246	,704	,961
Disagree	Mean	3,70	3,76	2,71	3,04	4,20	3,96
	N	44	45	45	45	45	45
	Std. Deviation	1,069	,981	,895	1,186	,944	,976
Undecided	Mean	3,61	3,73	2,83	3,29	4,30	4,03
	N	77	77	77	77	77	77
	Std. Deviation	,948	,982	1,031	1,110	,828	,973
Agree	Mean	3,93	3,50	2,82	3,25	4,00	3,79
	N	29	28	28	28	28	28
	Std. Deviation	,799	1,072	,905	1,323	1,018	1,197
Strongly agree	Mean	4,29	3,86	3,14	3,14	3,71	4,00
	N	7	7	7	7	7	7
	Std. Deviation	,756	1,464	1,574	1,676	1,496	1,528
Total	Mean	3,69	3,74	2,80	3,17	4,18	3,97
	N	173	172	172	172	172	172
	Std. Deviation	,979	1,006	1,001	1,196	,916	1,028

Q9 Q10 Q11 Q12 Q13 Q14 * Car owner							
Car owner		Q9	Q10	Q11	Q12	Q13	Q14
YES	Mean	3,62	3,78	2,64	3,09	4,13	3,99
	N	99	99	99	99	99	99
	Std. Deviation	1,047	1,016	,974	1,230	,933	1,025
NO	Mean	3,79	3,67	3,01	3,28	4,24	3,94
	N	73	72	72	72	72	72
	Std. Deviation	,881	,993	1,000	1,153	,896	1,047
3	Mean	4,00	5,00	4,00	4,00	5,00	4,00
	N	1	1	1	1	1	1
	Std. Deviation
Total	Mean	3,69	3,74	2,80	3,17	4,18	3,97
	N	173	172	172	172	172	172
	Std. Deviation	,979	1,006	1,001	1,196	,916	1,028

Q9 Q10 Q11 Q12 Q13 Q14 * Age							
Age		Q9	Q10	Q11	Q12	Q13	Q14
15-24	Mean	3,79	3,61	3,11	3,23	4,20	4,27
	N	57	56	56	56	56	56
	Std. Deviation	,750	,947	,908	,972	,840	,726
25-35	Mean	3,94	3,97	2,88	3,21	4,24	3,97
	N	33	33	33	33	33	33
	Std. Deviation	,899	,883	1,053	1,341	,830	1,075
36-45	Mean	3,56	3,63	2,31	3,47	4,00	3,78
	N	32	32	32	32	32	32
	Std. Deviation	1,105	1,100	,965	1,344	1,047	1,184
46-55	Mean	3,44	3,71	2,75	3,04	4,29	4,08
	N	25	24	24	24	24	24
	Std. Deviation	1,121	1,083	,897	1,122	,955	,830
56-65	Mean	3,58	3,60	2,85	2,75	4,10	3,25
	N	19	20	20	20	20	20
	Std. Deviation	1,216	1,046	1,137	1,293	1,071	1,333
66+	Mean	3,57	4,71	2,29	2,86	4,43	4,14
	N	7	7	7	7	7	7
	Std. Deviation	1,134	,756	,756	1,345	,787	,900
Total	Mean	3,69	3,74	2,80	3,17	4,18	3,97
	N	173	172	172	172	172	172
	Std. Deviation	,979	1,006	1,001	1,196	,916	1,028

Q9 Q10 Q11 Q12 Q13 Q14 * Gender							
Gender		Q9	Q10	Q11	Q12	Q13	Q14
Man	Mean	4,00	3,75	2,57	3,18	4,18	3,87
	N	82	83	83	83	83	83
	Std. Deviation	,770	1,010	,965	1,289	,926	1,124
Woman	Mean	3,42	3,73	3,02	3,17	4,18	4,07
	N	91	89	89	89	89	89
	Std. Deviation	1,065	1,009	,988	1,110	,912	,927
Total	Mean	3,69	3,74	2,80	3,17	4,18	3,97
	N	173	172	172	172	172	172
	Std. Deviation	,979	1,006	1,001	1,196	,916	1,028

8.2. CORRELATIONS

8.2.1 Computer usage

Computer usage is regarded as an independent variable.

According to Spearman's test correlations between computer usage and Q9*, Q12*, Q15*, Q16**, Q17**, Q19**, Q20**, Q21**, Q22**, Q23*, Q25**, Q26** (Trust, interactivity and post-purchase activity)

According to Pearson's: Q12, Q16, Q17, Q19, Q20, Q21, Q22, Q25, Q26

		Computer Skill	
Spearman's rho	Computerskill	Correlation Coefficient	1,000
		Sig. (2-tailed)	.
		N	174
	Q9	Correlation Coefficient	,155*
		Sig. (2-tailed)	,042
		N	173
	Q12	Correlation Coefficient	,162*
		Sig. (2-tailed)	,033
		N	172
	Q15	Correlation Coefficient	,175*
		Sig. (2-tailed)	,022
		N	170

Q16	Correlation Coefficient	,414**
	Sig. (2-tailed)	,000
	N	170
Q17	Correlation Coefficient	,197**
	Sig. (2-tailed)	,010
	N	171
Q19	Correlation Coefficient	,310**
	Sig. (2-tailed)	,000
	N	172
Q20	Correlation Coefficient	,312**
	Sig. (2-tailed)	,000
	N	172
Q21	Correlation Coefficient	,259**
	Sig. (2-tailed)	,001
	N	173
Q22	Correlation Coefficient	,282**
	Sig. (2-tailed)	,000
	N	172
Q23	Correlation Coefficient	,184*
	Sig. (2-tailed)	,015
	N	173
Q25	Correlation Coefficient	,273**
	Sig. (2-tailed)	,000
	N	174
Q26	Correlation Coefficient	-,200**
	Sig. (2-tailed)	,008
	N	173

8.2.2 Impulsiveness

Impulsiveness is regarded as an independent variable and correlates with Q17* according to Spearman's.

(According to Pearson's: Q9 and Q17)

		Impulsiveness	
Spearman's rho	Q17	Correlation Coefficient	1,000
		Sig. (2-tailed)	.
		N	171
	Impulsive	Correlation Coefficient	-,168*
		Sig. (2-tailed)	,028
		N	171

8.2.3 Frequency of purchase

Frequency is regarded as an independent variable and correlates with:

According to Spearman's correlation the following questions are correlated with frequency of purchase: Q9*, Q18*, Q20**, Q21*, Q22*, Q25** and Q26**.

(According to Pearson's: Q12, Q16, Q18, Q20, Q21, Q22, Q25 and Q26.)

		Frequency	
Spearman's rho	Frequency	Correlation Coefficient	1,000
		Sig. (2-tailed)	.
		N	174
	Q9	Correlation Coefficient	-,183*
		Sig. (2-tailed)	,016
		N	173
	Q18	Correlation Coefficient	-,193*
		Sig. (2-tailed)	,011
		N	172
	Q20	Correlation Coefficient	-,198**
		Sig. (2-tailed)	,009
		N	172
	Q21	Correlation Coefficient	-,151*
		Sig. (2-tailed)	,048
		N	173
Q22	Correlation Coefficient	-,182*	
	Sig. (2-tailed)	,017	
	N	172	
Q25	Correlation Coefficient	-,210**	
	Sig. (2-tailed)	,005	
	N	174	
Q26	Correlation Coefficient	,246**	
	Sig. (2-tailed)	,001	
	N	173	

Research objective two:

	Pearson Correlation	1
	Sig. (2-tailed)	
Product complexity	N	8
Age1	Pearson Correlation	-,880**
	Sig. (2-tailed)	,004
	N	8
Age2	Pearson Correlation	-,906**
	Sig. (2-tailed)	,002
	N	8
Age3	Pearson Correlation	-,899**
	Sig. (2-tailed)	,002
	N	8
Age4	Pearson Correlation	-,933**
	Sig. (2-tailed)	,001
	N	8
Age5	Pearson Correlation	-,829*
	Sig. (2-tailed)	,011
	N	8
Men	Pearson Correlation	-,883**
	Sig. (2-tailed)	,004
	N	8
Women	Pearson Correlation	-,916**
	Sig. (2-tailed)	,001
	N	8

8.3. PRODUCT RATINGS

HTH KITCHEN SOLUTIONS



HTH offers complete kitchen solutions online, white goods excluded. The customer can design and order the kitchen, doing all the necessary work by him or herself (measurements, drawings, installation etc). (www.hth.se)

Interdependence: 5

The kitchen solution is highly dependent on products such as an oven, a sink and a fridge in order to fulfill its purpose.

Level of standardization: 3

Kitchen equipment consists of roughly the same types of products that differ in regard to kitchen cabin design and features. Since the customers design their entire kitchen, the product will, in most cases, be rather unique.

Level of pre-purchase activity: 5

The kitchen needs to be designed from scratch by the customer, which requires careful planning and measuring of physical space, drawing the kitchen design/structure online, and selecting from a wide range of product attributes and features. Furthermore, an expensive purchase of a kitchen may require a bank loan.

Level of post-purchase activity: 5

The kitchen consists of multiple components that need to be assembled and installed before the final product can be used. Also, professional help is needed with electricity and plumbing.

A CAR



Interdependence: 3

The car is dependent on oil and gasoline in order to be utilized. These are external components that the car is dependent on. Components such as electricity, wheels and engine are already integrated in the car and hence do not contribute to a higher rating on interdependence. The requirement of having a driver's license does not influence the rating of interdependence.

Level of standardization: 3

There are differences in the design of a car. Product features can vary and can be customized e.g. the interior of a car can be changed in line with a customer's liking. In addition, the engine and other attributes of the car can be customized.

Level of pre-purchase activity: 5

A car purchase requires adequate assessment of car model, design, functions, car attributes and features. Furthermore, payment options need to be considered as a car purchase may require a bank loan in order to complete the purchase.

Level of post-purchase activity: 2

After the purchase, a car needs to be insured and automobile taxes need to be paid.

A LAPTOP**Interdependence: 2**

The laptop is dependent on an operating system in order to be utilized. As the hardware is already integrated in the laptop at the time of purchase, the laptop does not receive a higher rating on interdependence.

Level of standardization: 3

Product and design features can vary and can be customized in terms of hardware capacity and format. As it is the capacity of the hardware that can be customized and not the part itself, it can be stated that a laptop is rather standardized after all. For instance, you cannot omit the processor in the construction of a laptop, as it would not function without it. However, you can customize the performance of the processor in terms of GHz.

Level of pre-purchase activity: 3

The purchase of a laptop requires assessment of information regarding capacity, format, software compatibility etc. No external attributes need to be assessed in order to customize the product, and hence a higher rating in terms of pre-purchase activity is not given.

Level of post-purchase activity: 3

In most cases, software is not pre-installed on laptops and must thus be installed by the consumer. In addition, a laptop does not require assemble of multiple attributes in order to function, and hence does not receive a higher rating in terms of post-purchase activity.

A BACKPACK**Interdependence: 1**

A backpack can be worn without any additional products and is hence not dependent on other products.

Level of standardization: 2

Variety in design features occurs, although not to any wider extent. The straps on different backpacks are rather standardized in terms of function and adjustment.

Level of pre-purchase activity: 2

Pre-purchase activity only includes selecting color and size measurement, hence the low rating of this dimension of complexity.

Level of post-purchase activity: 1

No post-purchase activity is needed concerning registration or installation, hence the lowest level of post-purchase activity is given.

A BOOK



Interdependence: 1

A book can be read without any additional products.

Level of standardization: 1

Besides some minor differences in size and paper quality, books are more or less standardized throughout the whole industry.

Level of pre-purchase activity: 1

A consumer only needs to register on the website before purchasing a ready-to-read book.

Level of post-purchase activity: 1

No post-purchase activity is needed in order to utilize a book.

A CARGO CARRIER



Interdependence: 3

A cargo carrier requires assembly on a car's roof rack. Hence, a cargo carrier is dependent on both a car and a roof rack. The cargo carrier and roof rack must match for a successful installation. This leads to a rating of 3 on the dimension of interdependence.

Level of standardization: 3

A cargo carrier is relatively differentiated in terms of size and area of utilization, as there are cargo boxes for different types of equipment. Furthermore, quality and size may vary.

Level of pre-purchase activity: 4

A cargo carrier must fit with a car's roof racks, thus requiring assessment of a roof rack and measurement before purchase.

Level of post-purchase activity: 4

A cargo carrier requires installation with multiple parts, e.g. with a roof rack.

TRAILER**Interdependence: 3**

To be able to utilize a trailer, one must have a car and a towing hitch. As well as in the case with the car, the requirement of having a driver's license does not influence the rating of interdependence.

Level of standardization: 3

A trailer is relatively differentiated product in terms of size, quality, design and features. For instance, a horse trailer is very different from an ATV-trailer when it comes to size and design, as they are sold for different purposes. However, unique product features and design variations are not common among trailers and hence it is not possible to distinguish trailers as being of very high differentiation.

Level of pre-purchase activity: 4

A trailer requires measurement of total weight together with the car and assessment of information regarding the car's capacity and compatibility with the trailer.

Level of post-purchase activity: 4

A trailer requires assemble of multiple attributes, such as a towing hitch and electrical wires, which must be installed in order for the trailer to be utilized and function. Even though the towing hitch requires external assistance, no external assistance is required to install the trailer per se.

TOWING HITCH



Interdependence: 2

A towing hitch is dependent on a car in order to be utilized. One could argue that a towing hitch also is dependent on a trailer or other equipment, such as towing chains or bicycle holders. Although, we argue that these additional products are dependent of the towing hitch and not the other way around. A towing hitch can be used for different purposes, but is only dependent on a car in order to work as a towing unit.

Level of standardization: 2

At first sight, a towing hitch may be perceived as universal and completely standardized throughout the industry. However, there are different towing hitches for different car models, making this product differentiated to at least some extent in terms of suitability.

Level of pre-purchase activity: 3

In order to purchase a towing hitch that is compatible with a car, one must assess information regarding the product model and capacity of the towing hitch as well as acquire adequate knowledge about attributes of the car.

Level of post-purchase activity: 4

A towing hitch is rather complicated to install yourself and consequently may require external assistance. However, if one chooses to install a towing hitch without professional assistance, it is not mandatory to have the installation controlled and approved by the authorities before it can be utilized. Thus, the towing hitch does not receive the highest rating on post-purchase activity.

8. 4. DIVERSITY AMONG BUYERS

- *Car- total percentage of buyers: 10.7%*

CAR	YES	NO	MALE	FEMALE
Gender			16.9%	5.6%
Car-owner	14.6% (100)	5.5% (74)		
DEWALT	19.6% (58)	6.25% (116)		
THULE	12%	8.3%		
HTH	38.3%	10.3%		

- *Back-pack- total percentage of buyers: 82.7%*

BACK-PACK	YES	NO	MALE	FEMALE
Gender			84.8%	80.9%
Car-owner	82.3% (100)	83.3% (74)		
DEWALT	89.3 % (58)	79.5% (116)		
THULE	87% (111)	75% (63)		
HTH	84.9% (145)	72.4% (29)		

- *Cargo-box- total percentage of buyers: 28%*

CARGO-BOX	YES	NO	MALE	FEMALE
Gender			35.4%	21.3%
Car-owner	30.2 % (100)	25% (74)		
DEWALT	41.1% (58)	21.4% (116)		
THULE	29.6% (111)	25% (63)		
HTH	30.2% (145)	17.2% (29)		

- *Kitchen- total percentage of buyers: 7.8%*

KITCHEN	YES	NO	MALE	FEMALE
Gender			8.9%	6.8%
Car-owner	9.5% (100)	5.6% (74)		
DEWALT	10.7% (58)	6.3% (116)		
THULE	10.8% (111)	3.4% (63)		
HTH	8.6% (145)	3.5% (29)		

- *Trailer- total percentage of buyers: 35.5%*

TRAILER	YES	NO	MALE	FEMALE
Gender			41%	30.7%
Car-owner	36.2% (100)	34.8% (74)		
DEWALT	41.1% (58)	32.7% (116)		
THULE	40.6% (111)	26.7% (63)		
HTH	34% (145)	42.8 % (29)		

- *Computer total percentage of buyers: 71.9%*

COMPUTER	YES	NO	MALE	FEMALE
Gender			82.3%	62.5%
Car-owner	68.4% (100)	76.4% (74)		
DEWALT	56.6% (58)	69.4% (116)		
THULE	81.3% (111)	55% (63)		
HTH	71.2% (145)	75 % (29)		

- *Towing Hitch- total percentage of buyers: 33.5%*

TOWING HITCH	YES	NO	MALE	FEMALE
Gender			36.7%	30.7%
Car-owner	31.6% (100)	36.1% (74)		
DEWALT	37.5% (58)	31.5% (116)		

THULE	38.3% (111)	25% (63)		
HTH	35.3% (145)	25 % (29)		

8.5. REGRESSIONS

8.5.1 Variable: Low Computer Skill

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,919 ^a	,844	,818	14,21043	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6540,210	1	6540,210	32,387	,001 ^a
	Residual	1211,618	6	201,936		
	Total	7751,829	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Comlow						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	111,405	14,382		7,746	,000
	Productcomplexity	-26,969	4,739	-,919	-5,691	,001
a. Dependent Variable: Comlow						

8.5.2 Variable: High Computer Skill

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,899 ^a	,809	,777	16,80505	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7156,676	1	7156,676	25,341	,002 ^a
	Residual	1694,459	6	282,410		
	Total	8851,135	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Comhigh						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	128,001	17,008		7,526	,000
	Productcomplexity	-28,211	5,604	-,899	-5,034	,002
a. Dependent Variable: Comhigh						

8.5.3 Variable: Low Impulsiveness

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,901 ^a	,811	,779	15,74612	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6380,397	1	6380,397	25,734	,002 ^a
	Residual	1487,642	6	247,940		
	Total	7868,039	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Implow						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	121,387	15,936		7,617	,000
	Productcomplexity	-26,637	5,251	-,901	-5,073	,002
a. Dependent Variable: Implow						

8.5.4 Variable: High Impulsiveness

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	Productcomplexity ^a	.	Enter
a. All requested variables entered.			
b. Dependent Variable: Imphigh			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,902 ^a	,814	,783	16,19619
a. Predictors: (Constant), Productcomplexity				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6896,716	1	6896,716	26,292	,002 ^a
	Residual	1573,899	6	262,316		
	Total	8470,615	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Imphigh						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	126,030	16,392		7,689	,000
	Productcomplexity	-27,694	5,401	-,902	-5,128	,002
a. Dependent Variable: Imphigh						

8.5.5 Variable: Low Frequency

Variables Entered/Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	Productcomplexity ^a	.	Enter
a. All requested variables entered.			
b. Dependent Variable: Frelow			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,934 ^a	,872	,851	13,15212
a. Predictors: (Constant), Productcomplexity				

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7062,831	1	7062,831	40,831	,001 ^a
	Residual	1037,869	6	172,978		
	Total	8100,700	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Frelow						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	123,948	13,311		9,312	,000
	Productcomplexity	-28,026	4,386	-,934	-6,390	,001
a. Dependent Variable: Frelow						

8.5.6 Variable: High Frequency

Model Summary					
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate
1		,905 ^a	,819	,789	14,78004
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5920,512	1	5920,512	27,102	,002 ^a
	Residual	1310,697	6	218,449		
	Total	7231,209	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Frehigh						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	121,781	14,959		8,141	,000
	Productcomplexity	-25,659	4,929	-,905	-5,206	,002

a. Dependent Variable: Frehigh

8.5.7 Variable: Age Group 1

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,880 ^a	,774	,736	18,94009	

a. Predictors: (Constant), Productcomplexity

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7359,987	1	7359,987	20,517	,004 ^a
	Residual	2152,361	6	358,727		
	Total	9512,349	7			

a. Predictors: (Constant), Productcomplexity

b. Dependent Variable: Age1

8.5.8 Variable: Age Group 2

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,906 ^a	,820	,790	15,78599	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6819,735	1	6819,735	27,367	,002 ^a
	Residual	1495,185	6	249,198		
	Total	8314,920	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Age2						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	130,865	15,977		8,191	,000
	Productcomplexity	-27,539	5,264	-,906	-5,231	,002
a. Dependent Variable: Age2						

8.5.9 Variable: Age Group 3

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,899 ^a	,808	,776	15,71637	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6252,354	1	6252,354	25,313	,002 ^a
	Residual	1482,026	6	247,004		
	Total	7734,380	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Age3						

8.5.10 Variable: Age Group 4

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,933 ^a	,870	,848	12,69195	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6470,447	1	6470,447	40,168	,001 ^a
	Residual	966,513	6	161,086		
	Total	7436,960	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Age4						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	118,533	12,845		9,228	,000
	Productcomplexity	-26,825	4,232	-,933	-6,338	,001
a. Dependent Variable: Age4						

8.5.11 Variable: Age Group 5

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,829 ^a	,687	,635	20,09396	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5314,316	1	5314,316	13,162	,011 ^a
	Residual	2422,603	6	403,767		
	Total	7736,919	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Age5						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	110,570	20,337		5,437	,002
	Productcomplexity	-24,310	6,701	-,829	-3,628	,011
a. Dependent Variable: Age5						

8.5.12 Variable: Men

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,883 ^a	,780	,743	16,93277	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6091,888	1	6091,888	21,247	,004 ^a
	Residual	1720,312	6	286,719		
	Total	7812,200	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Men						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	124,518	17,137		7,266	,000
	Productcomplexity	-26,028	5,647	-,883	-4,609	,004
a. Dependent Variable: Men						

8.5.13 Variable: Women

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	,915 ^a	,838	,811	14,89907	
a. Predictors: (Constant), Productcomplexity					

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6874,406	1	6874,406	30,968	,001 ^a
	Residual	1331,893	6	221,982		
	Total	8206,299	7			
a. Predictors: (Constant), Productcomplexity						
b. Dependent Variable: Women						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	120,565	15,079		7,995	,000
	Productcomplexity	-27,649	4,969	-,915	-5,565	,001
a. Dependent Variable: Women						