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The Consumers Behind Online Shopping Cart Abandonment

**A Research of the Motivations, Behavior and Consumers
Behind Online Shopping Cart Abandonment**

THE CONSUMERS BEHIND ONLINE SHOPPING CART ABANDONMENT

A RESEARCH OF THE MOTIVATIONS, BEHAVIOR AND CONSUMERS BEHIND
ONLINE SHOPPING CART ABANDONMENT

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Preface

The author declares that the text and work presented in this master thesis is original and that no other sources other than those mentioned in the text and its references have been used for its creation.

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Writing this thesis has been a journey, where the road was not often smooth, but rocky. Some major setbacks that were beyond my control have made writing this thesis a true challenge. The resulting delay and necessary adjustments were a source of frustration and stress, but also provide me with a valuable learning experience.

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Abstract

The abandonment of used online shopping carts has become a common phenomenon in online retailing. With abandonment rates close to 70% this behavior perplexes e-commerce businesses. While research and literature on the topic focuses mostly on checkout abandonment, the real shopping cart abandonment is left somewhat underexplored.

This research identifies the key motivations and behavior underlying shopping cart abandonment that occurs even before the checkout stage. A dichotomy in online shopping motivation between functional and hedonic shoppers provides the framework for this research. It reveals that hedonic shoppers view online shopping as an experiential, fun and adventurous activity, rather than a means to acquire a product. Their shopping behavior is characterized by the search for entertainment, motivated by the need to have fun, escape boredom or for self-gratification. Hedonic shoppers find this entertainment in the shopping experience itself.

An important component of the hedonic online shopping experience is the placing of desired items in the shopping cart. This placing of items in the online shopping cart provides an enjoyable substitute for buying. The (mouse)clicking and active interaction of placing products in the shopping cart provides the consumer with a sense of control and makes the shopping experience enjoyable and entertaining. The placing of the product in the cart is therefore not a means to obtain a particular product, but an experiential activity.

The study in this research shows that hedonic consumers have a different shopping search behavior than functional shoppers. It confirms that functional shoppers are far less likely to use the shopping cart for entertainment than hedonic shoppers. This entertainment use of the shopping cart is significantly less likely to lead to a purchase and more likely to lead to an cart abandonment.

The findings in this research offer an explanation for online shopping cart abandonment. For online retailers the research provides additional suggestions to deal with online cart abandonment and to improve shopping-to-buying conversion rates.

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1. Introduction

In the beginning of the nineties of the last century the World Wide Web was introduced to the public. This technology made it possible for computers all over the world to connect to the internet and to each other through the internet. This innovation marked an era of, what appeared to be, endless opportunities. Many of the new ideas that arose along with the internet, and many ideas which nobody could even think of then, are now everyday reality. The internet and the World Wide Web have changed our daily lives dramatically, mostly for the better. Access to almost any piece of information at any given moment is now just a mouse click away.

Shortly after the arrival of the World Wide Web, commercial business ventured into this new territory. Some brought their offline activities to the online world and some started a new business solely on the internet. It created a new form of business: e-commerce, the business of companies selling products and services through the internet.

Today this online marketplace is no longer the niche segment it was not even that long ago. It has become a substantial component in the whole economic system of buying and selling. The e-commerce business has taken a steep flight in the last decade. Even after the recent financial and the following economic crisis, e-commerce still shows positive revenue growth rates every year¹.

The e-commerce landscape has grown in size as well as in scope. The number of companies with a web-based store, next to a brick-and-mortar store (brick & click) or solely on the internet (pure click), is growing rapidly. The correlated growth of the number of online shoppers is creating a self-reinforcing effect for the e-commerce business. The average spending on online purchases is also increasing, meaning that people are spending more money at online shops every year¹.

Online shopping carts, in short e-carts, are a necessary vehicle for enabling purchases at most e-commerce websites. However, little is known about the consumers' use of these e-carts, as most businesses assume their customers use e-carts in the same manner as they use tangible shopping carts. However, this assumption is not valid. Especially the topic of e-cart abandonment is a relatively undiscovered online behavior phenomenon.

¹ Thuiswinkel Markt Monitor 2012-2, Blauw Research, 2012

For a full understanding of the conducted research and its context, the author will briefly introduce a few of the key components that lie on the basis of the subject matter.

E-commerce

The term e-commerce can be defined quite broadly as the business of companies selling products and services through the internet. The scope of e-commerce stretches from paperclips to all-inclusive holidays and everything in between.

The Thuiswinkel Markt Monitor (translated: Home shopping Market Monitor) is a half-yearly analysis of online consumer spending in the Netherlands. This research is conducted by Blauw Research and GFK Retail and Technology, in collaboration with Thuiswinkel.org. The Market Monitor from the second half of 2012 showed an increase of 9% in online sales volume compared to 2011. Total online sales in the Netherlands went up to € 9.8 billion in 2012. Although the ongoing economic crisis tempers the online sales volume growth, it continues to show positive growth numbers.

Purchase intent

This research uses the following definition for the concept of purchase intention: a cognitive state reflecting the consumer's plan to buy in a specified time period (Howard & Seth, 1969). A consumer with a high purchase intent is more likely to buy a product than a consumer with a low purchase intention. Purchase intention is therefore an important factor in consumer decision making.

When a consumer goes into a store because he needs a new pair of pants (high purchase intention), the chances are high that he will walk out of the store with a pair of pants when the pants meet his requirements (size, price, color, etc.). When a consumer goes into a store not really needing a new pair of pants (low purchase intention), the chances that he will walk out of the store with a pair of pants are lower, even if the pants meet his requirements. This does not mean that a consumer with a low purchase intent will never buy a product, because there are factors that can stimulate a consumer in making an impulsive purchase.

Online shopping cart

Land-based shopping carts, that can be found in supermarkets for example, are a natural part of our offline shopping experience. These tools come in many different forms, sizes and shapes, but the two most predominant ones are the basket and the cart.

The primary and only function of a shopping cart is to assist the consumer in storing items during a shopping session. Since consumers can store more products in a shopping cart than they can physically hold in their hands, the shopping cart drastically increases the amount of items a consumer can buy during a single shopping session.

With the arrival of the internet and e-commerce, consumers can now also shop online. In this online shopping environment products are virtual and therefore a shopping cart might no longer be required. However, at most e-commerce websites an online shopping cart is a necessary vehicle to enable purchasing of items.

To enable an online consumer to buy multiple product at once, the online shopping cart was invented. With this online tool the consumer could browse through all the products that were being offered on the website, virtually store a wanted item in the online shopping cart, and then continue on browsing. Thus, in a sense an online shopping cart functions in exactly the same way as the land-based shopping cart. This is the reason why the same concept of the land-based shopping cart was chosen for the online shopping cart tool. Consumers immediately understand the concept of the online shopping cart, since they immediately associate it with the familiar land-based shopping cart.

The term online shopping cart, or electronic shopping cart, is abbreviated to “e-cart” in the world of e-commerce. Like the land-based shopping cart the e-cart also comes in many “forms”. E-commerce retailers use different names to refer to their electronic shopping cart tool. Gap.com uses the term “your bag”, while Amazon.com uses the term “your shopping cart”. The online Apple store simply uses the term “Cart”, while Zara.com uses the term “Shopping bag”. Nevertheless, they all refer to the same shopping cart tool.

Some retail websites equip their shopping cart tool with an extra feature. Unlike most e-commerce businesses, these retailers will keep the customer’s e-cart full (when they didn’t make a purchase) after the customer logs off. These e-carts are called persistent carts. However, most retail websites automatically empty the e-cart when the customer logs off or exits the website.

E-cart abandonment

The phenomenon of e-cart abandonment is unique to the online retailing world. Authors Close and Kukar-Kinney, who studied e-cart abandonment, define this phenomenon as: consumers’ placement of item(s) in their online shopping cart without making a purchase of any item(s) during that online shopping session.

When a consumer places items in the online shopping cart, does not purchase these items and leaves the website, it is called an e-cart abandonment. This phenomenon is a big concern for online retailers. Industry studies report that 88% of online shoppers have abandoned their e-carts in the past (Forrester Research, 2005). Out of all visitors who placed items in their shopping carts, the percentage that did not place an actual order fluctuates between 60 and 75%, depending on the study. This means that shopping cart abandonment affects well over half of all online shopping carts. These statistics show that this abandoning behavior is very common in the modern e-commerce world. However, very little research is done from an academic perspective. An e-cart abandonment is considered as a lost sale by online retailers.

1.1 Problem statement

When consumers go shopping at a land-based store, it would seem very illogical to see them put items into a shopping cart to then see that they abandon the cart and just leave the store. So why is it that we see this exact behavior happening at online stores? This e-cart abandonment phenomenon is the topic of this research.

This research zooms in on e-cart abandonment that takes place before consumers enter the so-called checkout stage. Shopping cart abandonment that takes place during the checkout stage is a common topic in e-commerce literature and this literature gives very practical solutions for reducing e-cart abandonment during this stage.

However, not a lot is written about the e-cart abandonment that takes place before the checkout stage. Why do consumers abandon their e-cart even before they arrive at the checkout? What are their reasons then for using the e-cart in the first place? Of course there are consumers who visit an online store without any intention to buy anything. They merely enjoy the experience offered by online shopping. These shoppers are called hedonic shoppers. But if they are not planning to buy, why would they fill the shopping cart with products only to abandon it later. This research hopes to explain the reasons underlying this behavior and how to identify those type of consumers.

As a result, the main question of this research is: Why do hedonic shoppers fill and abandon their online shopping cart during the shopping stage and how can you identify those hedonic shoppers?

1.2 Scientific relevance

Whereas e-cart abandonment is often discussed in e-commerce literature, it is a rare topic in academic research. E-cart abandonment in the checkout stage is mostly related to practical, security and process issues and is therefore less interesting as a topic for academic research.

The e-cart abandonment that takes place before the checkout stage has much more complex underlying reasons that stem from consumer behavior. It is part of the more comprehensive online consumer behavior topic in academic literature, but it is an underexplored area from an academic perspective. It is important to academically investigate the e-cart abandonment behavior in order to contribute to the overall online consumer behavior theory. This study will help us understand consumer online decision making even better. It will help to complete the theory on online consumer behavior, which differs from traditional consumer behavior, of which this e-cart abandonment phenomenon is proof.

By studying hedonic online shopping we can differentiate between different types of online shoppers and find ways to identify those different types. This knowledge will provide us with a better understanding of online shopping behavior and will help explain shopping cart abandonment.

1.3 Social relevance

An understanding of consumers' use and abandonment of e-carts is crucial for understanding online shopping behavior and decision-making. It can help e-commerce companies in the optimization of their business, in this relative young branch of commerce. Because of the significant growth in the e-commerce business, online retailers need a deeper understanding of consumers' motivations that underlie online shopping in order to be successful among fierce competition. One of the most important goals in e-commerce is to convert online shoppers into online buyers. The present research provide managerial guidance in order to increase shopper-to-buyer conversion rates.

The non-academic literature discusses the topic of e-cart abandonment in a very limited fashion. They focus only on the cart abandonment that takes place during the checking out at an online store. They fail to see and discuss the deeper motivations and behavior that can underlie e-cart abandonment. With this research, and hopefully other academic research to come, it is possible to study those more profound motivations and behavior. It will help real e-commerce business to better assess if their business is encouraging e-cart abandonment and how to deal with this abandonment.

Nowadays an e-cart abandonment is seen as a negative event, also due to the limited fashion in which e-cart abandonment is being studied. An academic study of the more profound behavior that causes e-cart abandonment can also show that this abandonment might not be as negative as it is now assumed. It might even conceal an opportunity for e-commerce businesses.

2. Theoretical Framework

This chapter presents an overview and synthesis of the existing literature on the topic. It is composed of three main parts, starting with the theory on online shopping behavior with a focus on hedonic online behavior. The second part discusses the theory on online shopping cart behavior, to examine how and why consumers are using the electronic shopping cart tool. Third and last, the theory on shopping cart abandonment behavior will be discussed.

2.1 Online shopping behavior

Consumer behavior conducted during normal, “land-based” shopping is a widely studied topic. When the internet and the following e-commerce were introduced, the behavior theory which was developed for land-based shopping was being used in this new online shopping setting. Not yet knowing the different features of this online setting and their effects, it was an understandable way of thinking. However, we now know that the internet is a unique and incomparable channel. In many areas during the last decade society is adjusting to the new implications entailed by the internet. Scholars began to understand that commerce via the internet was not to be compared with offline traditional commerce and that it needed its own theory.

Theory on online shopping behavior acknowledges the unique features of the internet and the online setting. These unique features, when controlled correctly, can be made beneficial for e-commerce businesses (Weinberg *et al.*, 2007). This part discusses the theory on online shopping behavior and the motivations of consumers to go on the internet to shop.

2.1.1 Shopping motivations

When the internet first entered the scene, it was seen as a suitable tool for pure utilitarian needs (Benjamin & Wigand, 1995), also with regard to shopping. The internet significantly increased the availability of product information, enabling more efficient product comparison, which in turn reduced buyer search costs (Alba *et al.*, 1997). These were perfect conditions for the functional shopper, who is more interested in product information than in store decoration. Therefore, online shopping was seen as a shopping channel for the functional consumer.

The idea that online shoppers are only driven by utilitarian motivations is not valid anymore. With the evolution of the internet, e-commerce evolved and so did the consumer. We know that nowadays consumers are also driven by hedonic motivations when they engage in online shopping. The uncovering of the hedonic shopping motivations is relatively recent, but is widely recognized by researchers on the subject. In addition, Close and Kukar-Kinney (2010) confirm that the motivations for online shopping are different than the motivations for online buying.

So research on online shopping behavior has long focused only on the functional aspects of the shopping process. The online shopping was characterized as goal-oriented, task-related and rational (Batra & Ahtola, 1991). Babin, Darden and Griffin (1994) linked these functional aspects to the goal of whether the product acquisition “mission” was accomplished or not. This perception on online shopping behavior does not hold anymore.

Recent research proves that online buying is no longer driven by functional motivations alone. The evolution of the internet made it possible for online shopping environments to get bigger, more comprehensive and with more and richer visual aspects. These more rich online environments were also more in line with the needs of the hedonic shoppers. Besides, as online consumers become more experienced with the online environment, they increasingly seek hedonic value online (Bridges & Florsheim, 2008). So, at first only functional consumers shopped online, now consumers are shopping online for both utilitarian and hedonic reasons (Wolfenbarger & Gilly, 2001).

Functional or utilitarian shopping motivations are primarily focused on purchasing products in a process-efficient and time-efficient manner, to achieve the shopping goal with minimum effort. In contrast, hedonic motivations are focused on the enjoyment and the entertainment of the shopping process itself. Also escaping from everyday life and the mood altering qualities of the shopping experience are hedonic motivations for consumers to shop online (Sherry, 1990). Hedonic shopping behavior is associated with intrinsically motivated intentions (e.g. to have fun), whereas utilitarian shopping behavior is motivated by extrinsic intentions (e.g. completing a task).

2.1.2 Hedonic shopping motivations

Hedonic motivations have been defined by Hirschman & Hollbrook (1982) as behavior that relates to multisensory, fantasy and emotive aspects. Utilitarian shopping motivations are task-oriented and the consumer is driven by a specific goal. With hedonic shopping motivations the consumer is driven

by the “goal” to find hedonic fulfillment, which can be accomplished by experiencing fun, amusement, fantasy and sensory stimulation (Babin *et al.*, 1994).

A consumer shopping online is rarely completely motivated by utilitarian needs or completely motivated by hedonic needs. Most online consumers exhibit a mix of utilitarian motivations and hedonic motivations (Kim & Forsythe, 2007). Which motivations prevail depends on the type of consumer (Venkatraman & MacInnis, 1985) and might depend on demographic characteristics, such as gender and age. The type of product may also influence the initial motivations to shop. Assuming that, for example, shopping for clothes can be more motivated by hedonic reasons than shopping for a refrigerator.

The research of Chillers *et al.* (2001) has confirmed that hedonic motivations of online shoppers are important predictors of the attitudes of shoppers towards online shopping. When a consumer’s hedonic needs are fulfilled during a shopping session at a specific retail website, the consumer develops a positive attitude towards that website. This significantly increase the chance of return of the consumer. In other words, because of the positive attitude towards the retail website, the consumer is more likely to visit the retail website again in the future. A recurring consumer can be very valuable for a retail website. A returning consumer, who previously had a positive experience, is more likely to buy a product than a first-time visitor. This is the same as in the offline, land-based shopping context.

Since hedonic shopping motivations can have a powerful influence on attitude towards the retail website and attitude is a powerful predictor of chance of return, it is important for retail websites to also cater to hedonic needs and not only to functional needs. The more often the consumer returns to the retail website, the greater the chance of a purchase by the consumer, which is the ultimate objective of the retail website.

2.1.3 Hedonic online experience

Pine and Gilmore (1999) have suggested that consumers are not just expecting a smooth purchasing process in traditional brick and mortar stores, but also expect, more and more, engaging experiences. This same transition can be seen in the online shopping channel. From purely facilitating the purchasing process, towards e-commerce websites that provide an enjoyable online shopping experience.

Online retailers continue to improve features on their website to enhance the shopping experience, which in addition creates more differentiation between shopping websites (Hess 2005; Lohse *et al.*, 2000). Research on the influence of these features confirms the resulting positive effect on online shopping experience (Fiore *et al.*, 2005; Park *et al.*, 2005). This type of online experience results from sensory, emotional and cognitive stimulation, that also satisfies consumer curiosity (Fiore, 2007).

When shopping in brick and mortar stores, each store creates its own ambiance and feeling through lightning, décor, music, colors and other store elements. This store “feeling” is important in the experience of the shopping activity. When these store elements give the consumer a feeling of comfort, excitement or maybe even feelings of aspiration or adventure, it contributes positively to the shopping experience of that particular consumer. Without buying this consumer may have had a pleasant shopping experience, because of these sensory store elements, among other contributing factors. This pleasant experience transforms into a positive attitude toward the store, making it more likely that the consumer will visit the store again in the future.

To illustrate this argument with an example, picture a young woman shopping for a new pair of shoes. She walks into a store that plays the latest and trendy music. The colors on the wall are bright and vibrant and the store is decorated with fashion items and remakes of modern art. Just being in the store and walking around may deliver the young woman a positive shopping experience. This fictional, yet realistic example illustrates the power of hedonic elements in the shopping environment. The key is to then persuade these satisfied hedonic consumers to buy a product, because satisfaction alone does not generate revenue.

The internet can be a very effective channel to deliver such experiential value to the consumer (Jeong, Fiore, Niehm & Lorenz, 2009). Because of the many virtual possibilities that the internet offers, it provides a different type of hedonic experience than physical shopping does (Kim & Forsythe, 2007). Not bound by physical limitations, the internet offers a potentially unlimited building space. By using website design and unique product presentation types the internet has the potential to create truly unique consumer experiences (Constantinides, 2004).

2.1.4 Elements of hedonic experience

The complete hedonic online consumer experience can be broken down into different elements. Pine and Gilmore (1999) constructed the concept of the 4 E’s. These 4 E’s (educational, entertainment, escapist and esthetic experience) would enhance the consumption experience. They proposed that

combining all 4 E's would lead to the most desirable consumption experience, which they termed the "sweet spot". Their concept was designed for the offline world, but can be translated to the online world as will be explained.

The *entertainment* experience occurs when a consumer passively absorbs the events through its senses. Pine and Gilmore defined absorption as "occupying a person's attention by bringing the experiences into the mind". This kind of experience can be easily translated to the online world. All the sensory elements on an e-commerce website contribute to the entertainment experience of the visiting consumer. The richer and more elaborate these sensory elements on the website are, the more richer and positive the entertainment experience of the consumer will be.

The *educational* experience is similar to the entertainment experience, but here the consumer is actively participating in order to actively engage their mind for development of knowledge. When consumers seek information about products, they engage in an educational experience. This element seems to be very utilitarian driven. However, knowledge development or information seeking can be accomplished in a hedonic setting, thus contributing to the overall hedonic experience. To illustrate this argument with an example, think of an image of a human model that wears a piece of clothing. This lets the consumer experience the fit, color and details of the piece of clothing (product information) in a hedonic and sensory stimulated context.

The *escapist* and *esthetic* experiences immerse the consumer in the environment. With the escapist experience the consumer is actively participating, while with the esthetic experience the consumer is passively immersed in the environment. Both can be a part of the overall hedonic shopping experience. Jeong, Fiore, Niehm and Lorenz, in their article "the role of experiential value in online shopping" (2009), give a good summary of the concept of hedonic experience of Pine and Gilmore: "*Consumers within entertainment experiences "sense", within educational experiences "learn", within escapist experiences "do", and those within esthetic experiences just want to "be" in an attractive environment.*"

Jeong, Fiore, Niehm and Lorenz also suggest that elements from an e-commerce website can enhance the 4 E's and therefore enhance the hedonic experience. They give the example of product presentations features. When clothing is shown on a human model it may provide entertainment value to the online shopper. But it can also enhance the escapist value, by allowing the consumer to fantasize about wearing the piece of clothing them self, at a special occasion for example.

The online escapist value is also enhanced by lifestyle-oriented product information. The human model that models the clothes for the consumer can be portrayed in a highly desirable setting, which can capture a “want-to-be” lifestyle. This allows the consumer to imagine them self elsewhere (Miller, 2005). Females appreciate these lifestyle elements of retail websites more than men do (Maguire, 2006). It is also to be expected that younger consumers are more affected by these lifestyle elements than the somewhat older consumer.

According to industry experts of the online apparel industry, consumers stay longer on a website when it has product presentation features, because this offers experiential value (Internet Retailer, 2005). There are many types of product presentation features for online retailers. For online apparel retailers the most successful features include; showing the clothing being worn by a real person, providing a front, back and side view of the item, and provide a zoom-in function that allows to see more details. These features provide effective ways to deliver sensory and aesthetic information to the consumer (Miller, 2005), contributing to the online shopping experience.

A basic and flat image of a product results in low level experiential value, while more rich, detailed and elaborate images of products (e.g. product worn by a model with zoom-in feature) produces higher level of experiential value from product presentation. This higher level of experiential value may be due to increased sensory elements of the product (Burke, 2005). In other research (Fiore & Yu, 2001; Song *et al.*, 2007) they found that (rich) product presentation features enhances consumer fantasy and therefore enhances the enjoyable cognitive experience of the online shopping.

An attractive online environment (because of background, colors, shapes, etcetera) with aesthetic details of products enhances sensory stimulation and creates an aesthetic experience. Miller (2005) found in his research that the aesthetic appeal from an attractive website design provides immediate pleasure to consumers.

When actively searching for information consumers can create an educational experience. This educational experience relates to one of the shopping types constructed by Arnold and Reynolds (2003), namely “idea shopping”. This type of online shopping contains the goal of keeping up with the latest fashion and trends and seeing new products. With idea shopping the consumer can purchase not a single item and still feel arousal and enjoyment during the shopping session. Ryan and Deci (2000) conclude that the educational experience involves the active search for information and this inherently results in feelings of pleasure, which is driven by the consumers’ search for novelty.

It is important to note that “experience” has become an important attribute of online stores (Pine & Gilmore, 1999). The experience adds (economical) value and creates more diversity between online retailers. Making the online shopping experience more hedonically rich can enhance consumer satisfaction and overall attitude towards the retail website.

2.1.5 Hedonic shopping types

In the academic world there is a lack of research on the hedonic reasons of why consumers go shopping online. Arnold and Reynolds (2003) were the first to investigate the multiple dimensions of offline hedonic shopping motivations. They studied shopping consumers in physical brick and mortar stores and they concluded in their research that there are 6 dimensions of hedonic shopping. They differentiated between adventure shopping, social shopping, gratification shopping, idea shopping, role shopping and value shopping.

Adventure shopping

The “adventure” of the shopping experience brings stimulation, adventure and the feeling of being in another world. It entails consumers shopping for the sheer excitement and adventure of the shopping experience (Arnold & Reynolds, 2003). The consumer experiences feelings of stimulation, excitement, adventure and thrills in a setting with special sensory stimulations. Hence, adventure shopping is experiencing sensory stimulation while shopping. To illustrate, in the offline world you can characterize “window shoppers” as adventure shoppers (Jarboe & McDaniel, 1987). This shopping type can also be found in the online world, especially since online shopping is in fact the ultimate form of window shopping.

Social shopping

Social shopping is simply referring to the enjoyment experienced through shopping with friends or family (Arnold & Reynolds, 2003). The socializing and bonding with other people during the shopping adds value to the shopping experience. It is a way to spend time with friend and family and this aspect is more important than the utilitarian aspect of the shopping, i.e. to buy a specific product. This dimension of hedonic shopping is less (of not at all) present in the online environment, since online shopping is an activity mostly done individually.

Gratification shopping

This dimension involves the shopping as a form of stress relief, to alleviate a bad mood or as a treat to oneself (Arnold & Reynolds, 2003). Consumers sometimes go shopping to forget about their

problems, it helps take their mind off things. It is a way to relax and maybe even overcome a negative mood. Some consumers treat themselves to a shopping experience. Babin *et al.* (1994) recognized the value of shopping as a self-gratifying, therapeutic and escapist activity. The research of Lee, Moschis and Mathur (2001) also recognized shopping as a form of coping with stress or to get one's mind off a problem. Hence, gratification shopping is shopping to make yourself feel better. The gratification does not necessarily come from making a purchase during shopping, but also from the shopping experience itself. There is no significant difference between gratification shopping online or offline, since the desired effect is the same in both settings.

Idea shopping

The term idea shopping refers to shopping to keep up with the latest fashion and trends and also to see new products and innovations (Arnold & Reynolds, 2003). Consumers shop to keep themselves informed. This can be motivated by their own interests, but also to keep up with friends. Obtaining information during shopping can be a goal in itself for consumers, without the goal of making a purchase (Bloch, Ridgway and Sherrell, 1989). Idea shopping is also present in the online shopping context. It might be even more present in the online environment, since obtaining information can be done quicker, more efficient and with more ease than in the offline environment.

Role shopping

This dimension of role shopping refers to the enjoyment that shoppers derive from shopping for other people and the influence this has on the consumers' mood and feelings (Arnold & Reynolds, 2003). The consumer feels intrinsic joy when finding the perfect product for another person. It makes the consumer feel good and creates a level of excitement. This dimension of hedonic shopping could also be present in online shopping. It entails some form of goal-oriented task (buying a product for another person), but the shopper derives hedonic or emotional pleasure out of the process.

Value shopping

Value shopping refers to shoppers who shop in search of sales and who are looking for discounts and bargains (Arnold & Reynolds, 2003). The hunt for bargains is something consumers enjoy, like it is some kind of challenge or game that can be "won". The excitement and sensory involvement creates the hedonic benefits (Babin *et al.*, 1994). Value shopping relates to choice optimization, since finding a bargain leads to the satisfaction of finding the best possible choice (Arnold & Reynolds, 2003). Value shopping may be especially apparent with online shopping, since the internet makes it much easier to compare prices and products and looking for the best possible deal.

Distinguishing between different types of hedonic shoppers is useful for targeting consumers. It can be valuable input for the designing of online store elements and marketing communications. Certain store elements can be tailored to target particular hedonic shopper groups. The value shopper can be targeted by providing him with a price comparison tool for example.

2.1.6 Identifying hedonic shoppers

The loads of click-stream data nowadays available can help e-commerce businesses categorize their customers with more precision than ever before. The way consumers navigate through the pages of the website can tell e-commerce companies something about their intentions, behavior and the type of shopper they are (Moe, 2003). Through click-stream data online retailers can make a distinction between two main types of search behavior. On one hand there is the goal-directed search and on the other hand the exploratory search.

Goal-directed search can be attributed to utilitarian shoppers, since the search patterns for utilitarian consumers are characterized by a focus and direction toward the goal of making a purchase decision (Janiszewski, 1998). A goal-directed search pattern found in click-stream data is therefore most likely to reveal a consumer with a functional shopping motivation.

Exploratory search is generally attributed to hedonic shoppers, but there are some exceptions to this. The general hedonic consumer has a search behavior that is more undirected and more stimulus-driven (Janiszewski, 1998). "Browsing" is a term often used to refer to this exploratory search. The browsing consumers does not necessarily derive utility from reaching the goal of the search (e.g. a purchase of an item), but derives utility from the shopping experience itself (Bloch, Sherrell and Ridgway, 1986). While this browsing behavior can be attributed to most hedonic shoppers, there are some exceptions. The best example of this is the value shopper described by Arnold and Reynolds (2003). This hedonic shopper enjoys the "hunt for a bargain" and might shop on different websites simultaneously, which allows him to find the best possible deal on the internet. This behavior, however, can be translated into search behavior within a particular website which is directed towards a specific goal, i.e. to find a good deal. Also the hedonic role shopper described by Arnold and Reynolds (2003) might show goal-directed search, since the shopper is looking for a product for someone else. So in essence this shopper has a functional need, but the hedonic fulfillment comes from the joy and feeling of finding the perfect product for another person. As a result, exploratory search patterns will not expose all types of hedonic shopping.

So, clear differences in search patterns can already be revealed through click-stream data. Allocating these patterns to different shopping motivations is a logical next step. This allocation can help to identify most hedonic shoppers through their navigation behavior. This logic leads to the first hypothesis of this research:

H1: The more the consumer is motivated by browsing rather than purchasing, the more likely the consumer shows non-focused shopping search behavior

Analyzed click-stream data suggest that the utilitarian goal-directed shopper focuses on a small number of products pages within a certain product category, and views several product pages multiple times during one shopping session. This functional shopper looks at a small number of products within his consideration set and reviews them thoroughly. This search behavior can be characterized as focused search behavior.

A hedonic shopper browses through many and also many different product pages, also across different product categories. This type of navigation pattern shows that the hedonic shopper is not looking for a specific product (goal), but is merely browsing. This leads to a non-focused search pattern in the click-stream data. Just as in a brick and mortar store it can be wise to approach the goal-directed shopper and let the hedonic shoppers browse for themselves. In addition, it is a lot harder to distinguish between the different types of hedonic shoppers, as described by Arnold and Reynolds (2003).

However, this does not mean that hedonic shoppers who exhibit exploratory search behavior never purchase a product. Although they are not driven by the goal to buy a specific product, the right stimulus may incite an impulsive purchase (Moe, 2003). Moe also states that the exploratory search may contribute to future purchase decisions, because of positively formed attitudes for example.

Consumers can have a mixture of both hedonic and functional motivations. A female consumer who needs a new pair of shoes can decide to spend the afternoon enjoying herself by visiting online shops looking for the perfect shoes to buy. This consumer therefore has a mixture of functional (goal: buying new shoes) and hedonic (goal: enjoying the experience of shopping) motivations. But in order to study the behavior differences between the two different types of shoppers, we need to look at the extremes of the spectrum.

E-commerce businesses can use their click-stream data to uncover the search patterns of their consumers. This is the first step in identifying your customers. A better understanding of the customers, their motivations (hedonic versus functional) and their behavior, helps e-commerce businesses to make better informed decisions.

2.2 Online shopping cart use

Prior to examining the abandonment of electronic shopping carts it is crucial to understand why consumers use online shopping carts in the first place. Close and Kukar-Kinney, who studied electronic shopping cart behavior and abandonment in 2010, define electronic shopping cart use as: an online behavior in which a consumer places item(s) in an online shopping cart. The placing of items in the online shopping cart is not only motivated by a functional purchase intent. The online shopping cart tool is used by consumer for purposes beyond the initial purpose for which it was designed.

2.2.1 The e-cart tool

The virtual shopping cart is implemented by e-commerce companies as a tool for the consumer. It offers a (virtual) holding space for the items that the consumer is planning to buy. However, Close and Kukar-Kinney (2010) discovered that the online consumer can have other (strong) motivations for using the online shopping cart, some of which go against the original idea behind the e-cart. These motivations explain the high frequency of online cart use by consumers and consequently why they are abandoned so often.

Besides the holding of items for purchase at the end of the shopping session, Close and Kukar-Kinney found four different utilitarian and hedonic motivations for the consumer to use an e-cart. The focus of the present research is to determine why hedonic online shoppers have a behavior of frequent online cart abandonment. It is therefore important to realize that the use of an e-cart can be motivated by other (hedonic) motivations than by purchase intention only.

The research of Close and Kukar-Kinney (2010) was the first to investigate motivations underlying online shopping cart use. Reasons for using a physical shopping cart are intuitive and purely practical; storing items before purchase. It was intended and assumed that consumers would use the online shopping cart tool in the same manner as the physical cart. Close and Kukar-Kinney discovered that this was not the case and that different types of consumers would use the e-cart in different ways. Their research is a big step towards understanding e-cart abandonment behavior.

2.2.2 Motivations for using the e-cart

One of the key findings in the research of Close and Kukar-Kinney was that the consumers' utilitarian or hedonic motivations for shopping online may explain their use of the online shopping cart. Similar

to the utilitarian reasons for online shopping, the utilitarian reasons to use an e-cart are mostly goal-directed and task-related. Electronic shopping carts in their very nature are utilitarian, since they serve as a holding space prior to purchase (Close & Kukar-Kinney, 2010). However, using an e-cart can also entail hedonic and experiential aspects.

Concluding from the research of Close and Kukar-Kinney (2010) there are five different motivations for using an online shopping cart. The current research took the liberty to categorize them as utilitarian motivation, financial motivation, hedonic motivation, organizational motivation and information motivation.

Utilitarian motivation

This was the sole reason why the online shopping cart was implemented; as a storage space for desired items, so that the consumer could browse along and purchase these items at the end of the shopping session. It caters to the needs of the functional shopper. These shoppers use the e-cart only when they have the intention to purchase, in other words when they want to buy a product. The frequency of use of the e-cart therefore depends on the purchase intent. In online behavior theory this utilitarian motivation was long assumed to be the only motivation for which consumers used an online shopping cart.

Financial motivation

From the review of the hedonic shopping types we know that the “value shopper” looks for discounts, sales, or price promotions (Arnold & Reynolds, 2003). This type of shopper places items in an online shopping cart to view or take advantage of retail offers that lower the overall purchase costs (Close & Kukar-Kinney, 2010). Retail offers may come in the form of a sale, a price promotion, or even free shipping. Placing items in the shopping cart allows the value shopper to see the total price and what money they will save through discounts or a sale. An online price promotion will most likely increase the frequency of e-cart use among this type of shoppers.

Hedonic motivation

An important component of the hedonic shopping experience is entertainment and for some online shoppers placing desired items in their e-cart is entertaining (Close & Kukar-Kinney, 2010). It can help escape boredom, experience enjoyment and achieve entertainment (Wolfenbarger & Gilly, 2001). This entertainment, in turn, increases the satisfaction felt by the online shopper, as well as overall attitude towards the retail website (Luo, 2002). A satisfying online experience can enhance pleasure

and arousal and makes the consumer more responsive to promotional incentives (Menon & Kahn, 2002).

For consumers who enjoy shopping online, but might lack the financial means or purchase intent at that time, the placing of items in their online shopping cart provides an enjoyable substitute for buying (Close & Kukar-Kinney, 2010). The placing of the product in the cart is therefore not a means to obtain that particular product, but an experiential activity (Wolfinger & Gilly, 2001). The experience is the (mouse)clicking and active interaction of placing products in the shopping cart, rather than passively browsing through the product pages. The active clicking provides the consumer with a sense of control that makes the shopping experience enjoyable and entertaining.

Close and Kukar-Kinney (2010) summarize this hedonic motivation of using the e-cart as: “the extent to which consumers place items in the shopping cart out of boredom, for entertainment or for enjoyment-seeking”. Consumers who enjoy putting items in their cart for entertainment purposes also use their shopping cart more frequently than others.

Organizational motivation

Electronic shopping carts also have an organizational use for consumers. Shoppers place items in their shopping cart to create a “wish list” of items they desire or like to have. Some e-commerce websites offer a separate wish list tool next to their e-cart. Amazon.com and BestBuy.com provide such a wish list tool on their website. Consumers can mark products they like onto their wish list and they can share such a list with friends and family, the same sort of concept as with an online gift registry. Most retail websites do not offer such a wish list feature, mainly because many consumers are reluctant to use such a tool, because of the hassle of moving items from the wish list into the shopping cart at the moment they want to purchase a specific product. The online consumer simply uses the e-cart to create their wish list of desired products.

Another organizational motivation to use the e-cart is the narrowing down of alternatives. Consumers place desired items in the e-cart to narrow down the number of alternatives in their consideration set (Close & Kukar-Kinney, 2010). When the retail website provides persistent carts, the consumer may store items of interest in the cart to return to them later without having to search for them again. The greater the consumer’s organizational motivation of the e-cart, the higher the frequency of the e-cart use will be.

Information motivation

The online shopping cart is also being used for information search purposes. Consumers put items in their e-cart to gather more information about them. The e-cart then becomes a shopping research tool (Close & Kukar-Kinney, 2010), a means to gather and research information about products that are of interest. In their study Close and Kukar-Kinney (2010) found that this information motivation is a weak motivation, meaning that consumers do not necessarily place items in their e-cart to obtain more information. The consumer is more than capable to gather information about products without the use of the e-cart. Information gathering is probably not the main reason that explains consumers' e-cart use, but is more of a side benefit of using the shopping cart.

So from the research of Close and Kukar-Kinney it is clear that consumers use e-carts beyond the original use for which it was designed.

2.2.3 The hedonic shopper

The hedonic motivation for using the e-cart is purely driven by the search for entertainment. The same goes, albeit somewhat less, for the organizational motivation. These e-cart uses correspond to the needs of the hedonic shopper. As described in the previous section, the hedonic consumer shops for the entertaining experience provided by the online shopping. These shoppers involve the e-cart in their hedonic shopping experience and as a result the cart is being used for hedonic motivations.

A hedonic shopper could be recognized by its click-stream pattern, which shows non-focused search behavior. Once a consumer is identified as a hedonic shopper, it is much more likely that this consumer will also use the e-cart for entertainment purposes, since the consumer might involve the e-cart in his or her hedonic shopping experience. This leads to the second hypothesis in this research:

H2: The more the consumer shows (hedonic) non-focused search behavior, the more likely the consumer is to use the e-cart for entertainment purposes

This hypothesis states that hedonic consumers are more likely to use their e-cart for entertainment purposes, as discussed above. This proposed relation is an important link between hedonic shopping behavior and e-cart abandonment.

On the other hand a hedonic shopper is less likely to show purchase behavior. When a hedonic shopper uses the shopping cart for entertainment, he is not actually using it as storage space before

purchasing and is therefore not in the process of making a purchase decision. This translates into the following and third hypothesis:

H3: The more the consumer uses the e-cart for entertainment purposes, the less likely the consumer is to show purchase behavior

On the other end of the spectrum there are the functional shoppers. These type of consumers shop online for the sole purpose to acquire a specific product or information on a specific product. For them there is no added value in using the e-cart other than a tool to store items before moving to the checkout stage. For a functional shopper it is not likely to use the e-cart as an entertainment tool. Since functional shoppers are more likely to show a focused search pattern, this leads to the fourth hypothesis in this research:

H4: The more the consumer shows (functional) focused search behavior, the more likely the consumer is to show purchase behavior

The literature discussed in the previous section indicates that functional shoppers could be recognized by their click-stream data. So when a consumer shows a focused search patterns it is more likely that this consumer is a functional shopper. Therefore that shopper is also more likely to show purchase behavior, because of a higher purchase intention that is characteristic for a functional shopper.

The formulating of these research hypotheses is supported by the existing literature. Together these hypotheses show that hedonic shoppers exhibit a very different type of behavior than functional shoppers, also with regard to the online shopping cart. This difference in behavior may most likely result from the difference in shopping motivation.

2.3 Online shopping cart abandonment

Nowadays it is widely recognized that online consumer behavior differs from offline, so-called traditional consumer behavior. One frequent behavior observed on the internet is online shopping cart abandonment, which is not present, or negligible, in the offline world. Despite the fact that the issue of e-cart abandonment perplexes online retailers and that the topic is being discussed in popular press, it has still been almost untouched by scholars.

As discussed in the previous section, Close and Kukar-Kinney (2010) demonstrated that the e-cart has not only a functional use for consumers, but other (hedonic) uses as well. The same authors then continued with a study on the determinants of consumers' e-cart abandonment, being one of the first scholars to study this behavior.

2.3.1 Checkout abandonment

The quantity of non-academic literature on online shopping cart abandonment is abundant. However, this literature almost always discusses only one specific situation of shopping cart abandonment, namely "checkout abandonment". Checkout abandonment occurs when consumers reach the checkout stage, but during the checkout decide to cancel the process and consequently leave their online cart behind.

The underlying reasons for checkout abandonment are mostly practical, security and process related issues, making checkout abandonment a more easy to understand phenomenon. Real shopping cart abandonment, the type of abandonment which is central in this research, takes place even before the checkout stage and is a much more complex phenomenon. The underlying reasons here are mostly not practical or process related, but are related to consumers' motivation and behavior. This type of shopping cart abandonment is therefore very much a scientific subject matter, which also explains why it is not really being discussed in non-academic e-commerce literature.

However, this research would not be complete without a brief discussion of the reasons underlying checkout abandonment. Before discussing these reasons it is important to understand that the checkout stage is being entered when a consumer clicks the checkout button in the online shopping cart. The consumer then enters the checkout process, which is considered to be the final stage of the shopping session. This research categorizes the reasons for checkout abandonment in four groups: price & costs, privacy & security, process and technology.

Price & costs

An obvious reason for consumers to abandon their online shopping cart at the checkout stage is because the total price of the items in the cart is considered too high. Consumers easily put all kinds of products in their cart, but when they are confronted with the total price of the cart at the checkout they might abandon the cart and end the shopping session. It is often only at the checkout point that the shopper realizes what the total price of the cart actually is.

With online shopping there can be additional costs, not yet incorporated into the price of an item. Shipping costs, handling fees and taxes can increase the total price of the contents of the e-cart. When the shopper perceives these additional costs as too high, the consumer may decide not to buy the contents of the e-cart after all and to abandon the cart. So, additional and unexpected costs calculated at the checkout can increase the chance of a cart abandonment.

When there is an online sale at a particular retail website, consumers might put an item in their cart to see if the sale (i.e. reduction in price) is applicable to that particular item. If at the checkout stage they discover that the sale doesn't include that item, the consumer might abandon the e-cart.

Privacy & security

Some consumers have concerns about their privacy, with internet in general or with specific websites. Their concern may result from the fact that their purchase is being recorded in the data of the online retailer, whereas in offline shopping your purchase is more anonymous. An online purchase can be traced back to a consumer long after the purchase has been made, which is not the case in traditional land-based shopping (when you pay in cash). This may sound illogical, because shopping online was perceived as "anonymous", as you wouldn't have to face other people (store personnel, other shoppers) when making a purchase. Most consumers now know that the purchase they make online is being recorded into the data of that online store. For some consumers this may be a reason to decide at the end to not checkout their e-cart and to abandon it.

A well-known reason for e-cart abandonment is the refusal to submit private information during the checkout process. When a shopper is done with the shopping and wants to buy the products in the e-cart, he enters the checkout phase. Here the consumer has to enter his private details in order to complete the purchase. Some shoppers are concerned about entering their private information. This can lead to consumers cancelling the checkout process and as a result abandoning their cart.

To purchase the contents of the e-cart the retail website needs some financial information, like a bank number for example. Some shoppers are concerned about the security of their financial information when given to the retail website. They might trust the online retailer, but they can be concerned about online criminals accessing their financial information through the online retailer. These concerns can cause consumers to abort the checkout process and abandon their e-cart.

Process

This category includes reasons that relate to the whole process of the checkout. The process may be too slow for the consumer or too difficult, resulting in an early termination of the checkout. Other process-related reasons for abandoning the e-cart without a purchase can be that the shopper's preferred method of payment is not accepted at a particular retail website. Also if delivery takes too long or they do not deliver in the consumer's geographical area, might cause the consumer to stop the purchase at that website and to abandon the e-cart.

Technology

For online shopping to be possible there needs to be a solid technical infrastructure. This infrastructure may malfunction from time to time, resulting in an internet service provider or computer that has technical problems, or a website that suddenly stops working, a payment system out of service for a period of time, or a sale or promotion code that does not work. These technological problems can lead to frustration with the consumer or the consumer is simply not able to purchase at that time due to those problems. Both can cause the consumer to abandon their shopping cart during the checkout process.

Statistics about shopping cart abandonment do not make a distinction between shopping cart abandonment and checkout abandonment. It is also difficult to conclude what the average rate of shopping cart abandonment is, since there are various fluctuating statistics on cart abandonment.

The Baymard Institute in Denmark came to this same conclusion. They noticed that there are countless articles citing the same sources, as well as large fluctuations in the actual abandonment rates. They gathered these statistics and calculated an average of the 22 most cited abandonment statistics. The result, last updated in October 2013, was an average documented online shopping cart abandonment rate of 67,44%. This means that almost 7 out of 10 consumers abandon their shopping cart instead of buying the contents of the cart.

2.3.2 Online shopping cart abandonment

Shopping cart abandonment taking place before the checkout stage is largely a consequence of hedonic shopping behavior, as we assumed in our research question. From the preceding literature discussion we know that consumers also shop online motivated by hedonic reasons and that consumers can place items in the e-cart also for entertainment reasons. Kukar-Kinney and Close (2010) proposed the hypothesis that the more the consumer uses the online cart for (hedonic) entertainment, the more likely that consumer is to abandon the cart. This hypothesis was significantly supported by their survey study (Kukar-Kinney & Close, 2010).

Kukar-Kinney and Close provided the groundwork for research on e-cart abandonment. This current research is a continuation on their studies and hopes to build upon their work. Their discovery that entertainment use of the e-cart is more likely to result in an abandonment of that cart lead to our main theorem that hedonic shoppers are more frequent e-cart abandoners than functional shoppers. Their hypothesis returns in this study as well, since it is an important link between hedonic shopping motivation and shopping cart abandonment:

H5: The more the consumer uses the e-cart for entertainment purposes, the more likely the consumer is to abandon the e-cart

From the literature we can conclude that hedonic shoppers are not interested in the outcome of a shopping session, but care more about the experience of the session itself. Such experiential shoppers view online shopping as an experiential, fun and adventurous activity, rather than a means to acquire a product. Their e-cart use is characterized by the same fun seeking and adventurous motives. The entertainment use of the cart implies that this consumer is a hedonic shopper and therefore we assume that the consumer is more likely to abandon the e-cart.

3. Hypotheses & conceptual model

In this section a brief overview of the hypotheses is presented followed by the conceptual model.

3.1 Hypotheses

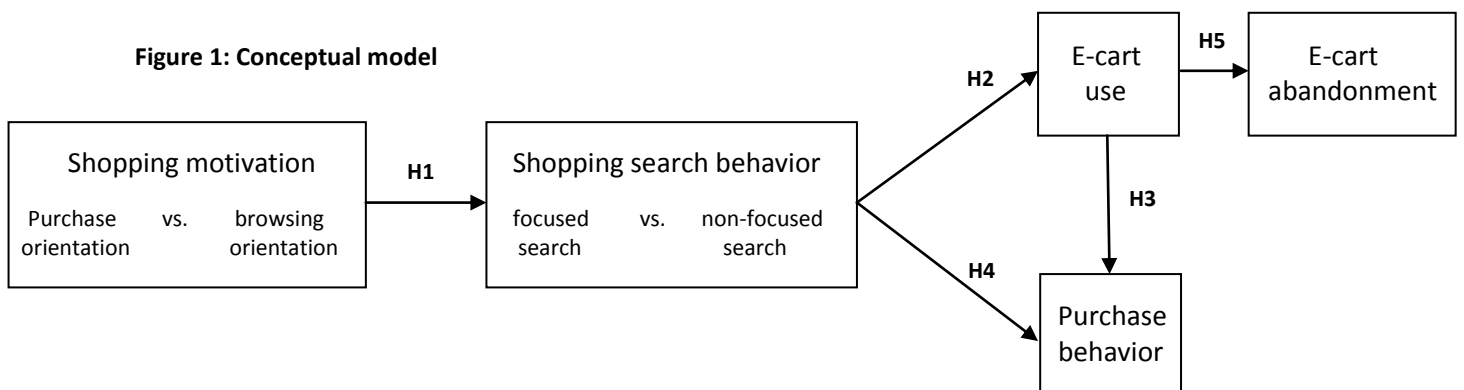
In this research the following hypotheses are developed:

- **H1:** The more the consumer is motivated by browsing rather than purchasing, the more likely the consumer shows non-focused shopping search behavior
- **H2:** The more the consumer shows (hedonic) non-focused search behavior, the more likely the consumer is to use the e-cart for entertainment purposes
- **H3:** The more the consumer uses the e-cart for entertainment purposes, the less likely the consumer is to show purchase behavior
- **H4:** The more the consumer shows (functional) focused search behavior, the more likely the consumer is to show purchase behavior
- **H5:** The more the consumer uses the e-cart for entertainment purposes, the more likely the consumer is to abandon the e-cart

3.2 Conceptual model

The model in figure 1 shows the general model underlying this research. It shows the path of the behavior leading to abandonment and the relations with the corresponding hypotheses. We start with the primary shopping motivation, which can be reflected in the search behavior on a website. This search behavior can indicate in what way the shopping cart will be used and if it will result in a purchase or a shopping cart abandonment.

Figure 1: Conceptual model



4. Methodology

This chapter discusses the research methodology for the study that accompanies this research.

4.1 Survey

Consistent with the online nature of the research an online survey will be conducted. This online survey study will investigate the relations as constructed in the conceptual model and the related hypotheses. The method of an online survey is chosen because it allows us to find out what motivates people to portray certain behavior. In the context of a survey the respondent can indicate to what extent a certain motivation or behavior applies to him or her. This will provide us with a more nuanced picture of motivation and behavior.

4.2 Design

At the very beginning of the survey the respondents were shown three examples of an online shopping cart at three different websites. They were then asked if they were familiar with the concept of the online shopping cart. This would control for any confusion about the word or the concept of an online shopping cart. Any respondent who would answer that they were not familiar with the concept of the online shopping cart could then be easily filtered out of the dataset.

The main body of the survey was made up of groups of statements. Each group of statements related to a particular construct from the research model. For each statement the respondents had to indicate to what extent the statement applied to them on a 7-point Likert scale. This scale ranged from never (1) to always (7). Finally, the respondents answered some questions about their online shopping habits. The complete survey can be found in appendix 1.

The use of a Likert scale allows us to score the respondent on a certain behavior characteristic. The same Likert scale was used throughout the survey to prevent for any confusion. This also allows for comparison within the dataset.

The motivation and behavior statements that were used in this survey are based on the research by Close and Kukar-Kinney (2010), who studied online shopping cart use and abandonment behavior. These statements allow the respondents to score themselves on all relevant constructs from our

research model. With these combined scores we can test and analyze the hypothesized relations between the constructs.

4.3 Sample

The survey was completed by 206 Dutch respondents. Appendix 2 contains the descriptive information on the sample. In the sample 54,4% of the respondents are male and 45,6% are female. Only 1,9% of the respondents is 20 years or younger, 54,9% is between the age of 21 and 30, 13,6% is 31 to 40 years old, 14,6% is 41 to 50 years old, 11,7% is 51 to 60 years old and 3,4% is older than 61 years.

Most respondent visit online stores either a few times per week (29,1%) or a few times per month (31,6%). Only 2,4% visit an online store every day, while 15,5% visit once per week. The respondents who visit online stores once per month covers 11,7% of the sample. 6,8% of the respondents only visit once every couple of months. There were no respondents that visit online stores only once per year or even never.

All 206 respondents indicated that they were familiar with the concept of the online shopping cart. So no respondents had to be removed from the dataset.

4.4 Measures

Before testing the relationships between the constructs as hypothesized in the conceptual model we first have to reduce the number of variables from the survey (the statements) to a small number of core variables. The conducted survey contained multiple statements for each construct in the conceptual model. To obtain a single value for each construct we cannot just combine these statements, but we use a factor analysis. With a factor analysis we can determine whether the individual statements actually measure the same underlying aspect(s). By using a factor analysis we reduce the data of the statements into a few underlying factors. This will also help us gain insight into the structure of the dataset.

When the underlying factors in the dataset are extracted we can use linear regression analyses to test the research hypotheses. A regression test will show if two constructs are significantly related

and what impact one variable has on the other. These analyses will help us confirm or reject the research hypotheses.

Last, we conduct a mediation analysis to examine if the effect of shopping motivation, hedonic or functional, on cart abandonment operates via the path hypothesized in the research framework.

For all analyses in this research we maintain a minimum significance level of $\alpha=0,05$. If possible we use a significance level of $\alpha=0,01$.

5. Results

In this section the results from the survey data analyses will be discussed. We will first discuss the several factor analyses before discussing the regression analyses. The results of the mediation analyses will be discussed at the end.

5.1 Factor analysis

For each variable from the research model we did a factor analysis in order to find out if the statements measure the same underlying constructs. At the end we ran a factor analysis on all statements to see if these constructs also measure something different.

Shopping motivation

The first variable in the conceptual model is shopping motivation. This variable was represented by two statements in the survey. The first ("I visit online stores usually to really buy something during that visit") relates to a functional shopping motivation, while the second ("I visit online stores usually to only look around during that visit") relates to a hedonic shopping motivation.

For this variable we did not have to use a factor analysis, since we only have one statement for each of the two main shopping motivations. The statement that relates to the functional shopping motivation will be labeled as FUNC_MOTIV and the statement that relates to the hedonic shopping motivation will be labeled as HED_MOTIV.

Shopping search behavior

For the second variable in the conceptual model, shopping search behavior, the survey contained six associated statements. For these six statements we ran a factor analysis to find the underlying factors, which we could use in the regression analysis.

For the factor analysis we use the principal components method and we extract factors on the basis of an eigenvalue greater than 1. For the rotation we use the varimax method. For a better overview of the results of the analysis small coefficients in the output with an absolute value lower than 0,30 will be suppressed.

The output of the factor analysis can be found in appendix 3.A. The second table of the output is the KMO and Bartlett's Test. The Kaiser-Meyer-Olkin Measure tells us if the sample size in this analysis is adequate. Practice indicates that a KMO value of 0,5 or above indicates the sample size is good enough. We have a KMO value of 0,482, which is very close and will have to do.

In the third table of the factor analysis output we can find what factors meet the requirement of an eigenvalue greater than 1. In this table, as well as in the scree plot, we find that there are two factors that have an eigenvalue greater than 1. These two factors are clearly higher than the others. With their eigenvalue greater than 1 they both explain more than a separate item on its own.

The most important table is the Rotated Component Matrix table. Here we see which variables group together under a single factor. "Only look at a few specific products I am interested in" loads high onto the first factor. There is a high negative loading on the same factor for "look at a lot of different products, which I am not necessarily planning to buy". The statement "study product pages carefully" also loads onto factor 1.

It is important to choose a representative label for this first factor. Because a factor is defined by the variables that load on it, we must choose a label that is as close as possible to the content of those variables (especially to the variables with the highest factor loadings). From the theoretical background we know that looking at a few specific products and studying product pages carefully are both characteristics of focused search behavior. Looking at a lot of different products, which you are not necessarily going to be is the complete opposite of focused search behavior and therefore loads highly negative on this factor. The first factor can therefore be labeled as focused search behavior, as this is the underlying dimension. We will use the shortened label FOC_SEARCH.

For the second factor we see that "view some products several times during the same visit" and "navigate quickly between the different product pages" load onto this factor. There is also a negative loading for "view products no more than once during the same visit". Non-focused search is characterized by quickly browsing through different product pages, but not necessarily by viewing products several times during the same visit. However, you can theorize that hedonic shoppers often return to product pages that are hedonically fulfilling for them. They often switch back and forth between a lot of different pages. Therefore we label factor 2 as non-focused search behavior and we use the shortened label NONFOC_SEARCH.

The result of the factor analysis is the reduction of the statements into two factors. These factors can be used as input for our regression analysis.

E-cart use

The third variable in the conceptual model is e-cart use. Here we also used a factor analysis to find the underlying factors from the corresponding 5 statements. We used the same type of factor analysis as before. The output of the factor analysis can be found in appendix 3.B. The second table of the output shows a KMO value of 0,724, which is far above the threshold of 0,5. Therefore our sample size is good for running this analysis. The third table shows that the analysis found two factors with an eigenvalue greater than 1. Together they explain more than 70% of the variance.

When we look at the scree plot we see that the point of inflection (the point where the slope has a sharp change; the elbow in the graph) is indicated by the red arrow. This point is the cutoff and the number of appropriate factors are all factors to the left of this point. In this case it confirms that there are two appropriate factors.

In the Rotated Component Matrix table we see which statements load onto which of these two factors. The first factor has three high variable loadings from “to entertain myself”, “to create a fantasy wish list for myself” and a negative loading from “always with the intention to buy it during the same visit”. Creating a fantasy wish list and to entertain oneself are both uses of the e-cart which strongly related to entertainment. This entertainment use entails a low purchase intent, which also explains the high negative loading of “using the e-cart always with the intention to buy it during the same visit”. These three variables relate highly to the experience of the shopping. The underlying construct can therefore be labeled as experience oriented e-cart use. In further analysis we will use the label EXP_CART_USE.

The second factor has two very high loadings, “to see if there is a discount that applies to the product” and “to find more information about the product”. In both cases the shopping cart is used as a source of information. The underlying construct is information gathering and will be labeled as INF_CART_USE.

Purchase behavior

The fourth variable is purchase behavior and is represented by four statements in our online survey. To see if they all measure the same underlying dimension we again used a factor analysis. The output

can be found in appendix 3.C. The KMO value of 0,798 indicate that we can proceed with this factor analysis.

The third table and the scree plot both show that there is only one underlying factor here. It explains as much as 67% of the total variance. Because there was only one factor extracted in this analysis the solution cannot be rotated, so there is no Rotated Component Matrix in this output.

We now know that all the statements measure the same underlying dimension, which is purchase behavior. We can therefore label this single factor simply as purchase behavior, abbreviated as PURCH_BEH.

E-cart abandonment

The last variable in our model was e-cart abandonment and we used a single measure in our survey for this variable. Therefore we can use this measure in our further analysis and it is labeled as CART_ABANDON.

To see if the constructs found in the analyses above actually measure different things, we ran a factor analysis on all statements from the survey. The KMO and Bartlett's Test, Total Variance Explained and the Rotated Component Matrix tables of this analysis can be found in appendix 3.D. The KMO value of 0,765 is far above the threshold of 0,5 and therefore our sample size is good for running this factor analysis. The second table in the appendix shows that there are five factors with an eigenvalue greater than 1, which together explain more than 60% of the variance.

The Rotated Component Matrix shows that statements regarding the intention to purchase group together under the first factor. All statements regarding hedonic shopping cart behavior load onto the second factor, including e-cart abandonment. The third and fourth factor measure two kinds of search behavior, hedonic and functional search behavior respectively. The fifth factor has statements regarding informational use of product pages and the shopping cart. Because some constructs are closely related, motivation and purchase intent for example, the associated statements will load on the same factor when we ran this full factor analysis. The same goes for hedonic e-cart motivations and e-cart abandonment.

This overall factor analysis confirms our believe that the constructs that came forward in our partial factor analyses indeed measure different things and that these constructs can be used in the following regression analyses.

5.2 Regression analysis

With the underlying variables obtained from the factor analysis we could now use linear regression analyses to test our research hypotheses. A regression analysis allows us to see if a variable has an influence on another variable and to which extent.

Hedonic motivation & non-focused search

At the beginning of our model we hypothesized that the more the consumer is motivated by browsing rather than purchasing, the more likely the consumers shows non-focused shopping search behavior (H1). We did a regression analysis with HED_MOTIV as the independent variable and NONFOC_SEARCH as the dependent variable. This allows us to find out if having a hedonic motivation affects the search behavior. The output of the analysis can be found in appendix 4.A.

The Model Summary tells us that the independent variable HED_MOTIV correlates 0,149 with the dependent variable NONFOC_SEARCH. The R Square gives a so-called goodness-of-fit measure. This measure reflects how well the observed data clusters around the estimated regression line. In our case this is 0,022, which tells us that only 2,2% of the variance is explained by this model. A low R Square does not immediately mean that the regression model is unfit to use. In predicting human behavior it is expected that the R-squared value will be low. Furthermore, even if the R Square value is low any significant coefficients can still be used to draw important conclusions about how changes in the independent variable are associated with changes in the dependent variable. This information is still extremely valuable.

The ANOVA table tells us if the model in total makes sense. From this table we can see if the model provides any added value. We have to look at the significance statistic and it shows that the chance is smaller than 0,033 (3,3%) that this model has no added value. In other words, we can state with 96,7% certainty that the model has added value, opposed to having no model. Therefore it is useful to use this model.

The last table shows the coefficients of the model. The unstandardized Beta coefficient shows the influence of the independent variable on the dependent variable per unit of measurement. The standardized Beta coefficient gives the relative influence. In a linear regression the standardized Beta coefficient is equal to the correlation (R).

The t-value is significant ($0,033 < 0,05$), meaning that the chance that the independent variable is not of influence on the dependent variable is 0,033 (3,3%). So we can state that the chance is higher than 96,7% that there is an influence of HED_MOTIV on NONFOC_SEARCH. Therefore we can accept the hypothesis that a hedonic motivated consumer is more likely to show non-focused shopping search behavior.

We did the same regression analysis again, but now with FOC_SEARCH as the dependent variable. Output of this test can be found in appendix 4.B. The standardized Beta coefficient is highly negative ($-0,267$) and the model is highly significant ($0,000 < 0,01$). So with more than 99,9% certainty we can state that a hedonic shopping motivation has a high negative influence on focused search behavior.

Functional motivation & focused search

To check if a functional motivation will lead to focused search behavior we did the same type of regression model with FUNC_MOTIV as the independent variable and FOC_SEARCH as the dependent variable. Output of this model can be found in appendix 4.C. The ANOVA table shows that the model is very useful ($\text{sig.} = 0,009$) and gives a significant ($0,009 < 0,01$) result. The standardized Beta coefficient of 0,182 shows the positive and strong influence of FUNC_MOTIV on FOC_SEARCH. The analysis provides us with the evidence to state that a functional shopping motivation leads to more focused search behavior.

We ran the same regression analysis with NONFOC_SEARCH as the dependent variable, to test the influence of functional shopping motivation on non-focused search behavior. The output of this test can be found in appendix 4.D. The ANOVA table in the output shows that this model is not significant ($0,275 > 0,05$) and therefore it is not useful to use this model to say something about the relationship between FUNC_MOTIV and NONFOC_SEARCH.

Non-focused search & entertainment e-cart use

We then hypothesized that the more the consumer shows (hedonic) non-focused search behavior, the more likely the consumer is to use the e-cart for entertainment purposes (H2). Again we ran a linear regression analysis, this time with NONFOC_SEARCH as the independent variable and EXP_CART_USE as the dependent variable. The output of this model can be found in appendix 4.E.

The model output shows a low correlation ($R = 0,067$) and the ANOVA table tells us this model is not very relevant ($\text{sig.} = 0,337$), because it is not significant ($0,337 > 0,05$). We therefore cannot accept our hypothesis that non-focused search behavior is more likely to lead to an entertainment use of the

shopping cart. The output of the same regression analysis with HED_MOTIV as the independent variable can be found in appendix 4.F. This analysis also gives no significant results ($0,103 > 0,05$).

Focused search & entertainment e-cart use

The second hypothesis in this research meant to prove that using the e-cart for entertainment is a behavior that can mostly be assigned to hedonic shoppers. However, due to the weak variable NONFOC_SEARCH, we could not confirm this hypothesis. To at least show that the entertainment use of the cannot be assigned to functional shoppers we ran the same regression analysis as above, but we now put FOC_SEARCH as the independent variable. FOC_SEARCH indicates functional shopping behavior. The output can be found in appendix 4.G.

In contrast to the model with NONFOC_SEARCH, this model shows a significant result ($0,000 < 0,01$) with a high negative correlation ($-,310$). The fact that the correlation is negative is very important here. It tells us that functional shoppers, identified by their focused search behavior, are much less likely to use the shopping cart for entertainment purposes. So we could not prove that hedonic shoppers are much more likely to use the shopping cart for the entertainment experience, due to the weak NONFOC_SEARCH variable in our study, but we did prove that functional shoppers are much less likely to do so. This provides us with some support to assume that using the e-cart for entertainment is a behavior that can be attributed mostly to hedonic shoppers.

Entertainment e-cart use & purchase behavior

We assume that hedonic search behavior will less likely to end with a purchase. In our model we hypothesized that entertainment use of the e-cart will less likely lead to purchase behavior (H3). The output of a regression analysis with EXP_CART_USE as the independent and PURCH_BEH as the dependent variable can be found in appendix 4.H.

The results are clearly positive. The model is with more than 99,9% certainty of added value. The highly negative standardized Beta coefficient ($-,302$, with $0,000 < 0,01$) indicates that when the shopping cart is used for entertainment it becomes much more unlikely that there will also be purchase behavior. Our third hypothesis is thus confirmed.

Focused search & purchase behavior

In our model we suggested that functional shoppers are motivated by their goal to buy a particular product. We therefore assumed that the more the consumer shows (functional) focused search behavior, the more likely the consumer is to show purchase behavior (H4). A regression analysis with

FOC_SEARCH as independent and PURCH_BEH as dependent variable can be used to test this hypothesis. The output of this regression model can be found in appendix 4.I.

The model is relevant since the significance level is lower than the 0,01 threshold ($0,009 < 0,01$). We can conclude from this regression model that with more than 99,9% certainty focused search behavior has a positive effect on purchase behavior. To make this result more concrete; when a person exhibits focused search it is more likely that he will also buy something. With this result we can confirm our fourth hypothesis that the more the consumer shows (functional) focused search behavior, the more likely the consumer is to show purchase behavior.

Entertainment e-cart use & e-cart abandonment

Our last hypothesis stated that the more the consumer uses the e-cart for entertainment purposes, the more likely the consumer is to abandon the e-cart (H5). We ran a regression analysis using EXP_CART_USE (independent) and CART_ABANDON (dependent) as input. The output can be found in appendix 4.J.

The coefficients table shows a very high Beta coefficient (unstandardized=0,791, standardized=0,504), meaning that EXP_CART_USE has a big influence on CART_ABANDON. With more than 99,9% certainty we can confirm that this influence is present ($0,000 < 0,01$). This result confirms the hypothesis that the more the consumer uses the e-cart for entertainment purposes, the more likely the consumer is to abandon the e-cart.

A summary of the results with regard to the hypotheses can be found in table 1.

Table 1: Proposed model relationships

Hypothesis sign	Structural path	t-value	confirmed
H1:+	Hedonic motivation → non-focused search behavior	2,146*	✓
H2:+	Non-focused search behavior → entertainment use e-cart	0,962	-
H3:-	Entertainment use e-cart → purchase behavior	-4,500**	✓
H4:+	Focused search behavior → purchase behavior	2,640**	✓
H5:+	Entertainment use e-cart → e-cart abandonment	8,251**	✓

* supported at $p < 0,05$

** supported at $p < 0,01$

5.3 Mediation analysis

To see if the effect of shopping motivation, hedonic or functional, on cart abandonment operates via the path hypothesized in the research framework we run two mediation analyses. We test for mediation using the method described by Baron and Kenny (1986). This requires running three regression analyses. First, we regress the mediator variable on the independent variable. Second, we regress the dependent variable on the independent variable and third we regress the dependent variable on both the independent variable and the mediator variable. Then, to establish mediation, the following three conditions must be met:

1. the independent variable must have an effect on the mediator in the first regression
2. the independent variable must have an effect on the dependent variable in the second regression
3. the mediator must have an effect on the dependent variable in the third regression

If all these conditions are met, then there is a sign of mediation when the effect of the independent variable on the dependent variable is less in the third regression than in the second (Baron & Kenny, 1986).

For the first mediation analysis we want to examine if the effect of a functional motivation on cart abandonment operates via the mediator variable focused search behavior. The output for the three regression analyses can be found in appendix 5.A. The output shows that the first two conditions are met, since FUNC_MOTIV has a significant effect on the mediator FOC_SEARCH ($0,009 < 0,01$) and a significant effect on the dependent variable CART_ABANDON ($0,000 < 0,01$). The third condition is very close to being significant ($0,059 > 0,05$). The output does show that the independent variable FUNC_MOTIV has a smaller effect on CART_ABANDON in the third regression ($-0,225$) than in the second regression ($-0,249$). But overall there is not enough evidence to confirm that the effect of functional motivation on cart abandonment operates via focused search behavior.

For the second mediation analysis we want to examine if the effect of a hedonic motivation on cart abandonment operates via the mediator non-focused search behavior. The output for the three regression analyses can be found in appendix 5.B. Again the output shows that the first two conditions hold, since HED_MOTIV has a significant effect on the mediator NONFOC_SEARCH ($0,033 < 0,05$) and a significant effect on the dependent variable CART_ABANDON ($0,034 < 0,05$). However, in the third regression the mediator NONFOC_SEARCH does not have a significant effect on

CART_ABANDON ($0,590 > 0,05$), so this condition is not met. Therefore we do not have enough evidence to confirm that the effect of hedonic shopping motivation on cart abandonment operates via the mediator non-focused search behavior.

6. Discussion

The data from the study supports all of the proposed hypotheses except for one. The study did not find sufficient evidence for the relationship between non-focused search behavior and entertainment motivations for using the shopping cart. The absence of a significant relation here is not because this relation does not exist. The absent relation is caused by the variable representing non-focused search. The research used search behavior aspects found in the theoretical background to measure focused and non-focused search behavior in the survey, but the results for non-focused search are just not clear enough in our study. In order to identify a hedonic shopper by its search behavior you need to really and clearly define this behavior. The in hindsight insufficiently defined non-focused search behavior made it too difficult for the statistical test to find a significant relation. When non-focused search behavior would be defined with more precision we assume that the relation with entertainment cart use will turn out significant.

However, we did find a negative relation between focused search behavior and entertainment cart use. This does not statistically prove that entertainment use of the shopping cart is more likely to be done by hedonic shoppers, but it gives us sufficient support for this theory.

Overall the research found significant evidence for its theory. A direct examination of the correlation between initial hedonic shopping motivation and non-focused search behavior showed a significant and positive relationship. Because this relation is more direct and clear, the weakly defined non-focused search behavior still gave a significant relationship. But also here the author expects that when non-focused behavior is better defined this relationship will prove even more significant.

Nevertheless, it proves that consumers with a hedonic mindset will exhibit more browsing behavior than their functional motivated counterparts. This conclusion is supported by our finding that consumers with a functional mindset will exhibit more focused search behavior. People with the goal to buy a specific item will show a click-stream pattern of goal-directed search, which allows them to complete their goal in a cost and time efficient matter. People with the goal to shop for fun and to enjoy all that the online shopping experience has to offer, will show a click-stream pattern that exhibits no clear goal. These hedonic shoppers are in it for the fun and entertainment of online shopping or even to escape boredom. They will browse from page to page, from one product category to another, rather than actively engaging in a focused decision-making and buying process.

After having confirmed that there is a significant relation between functional shopping motivations and focused search behavior, the study then showed that focused search behavior is significantly more likely to lead to purchase behavior. It confirms the assumption that consumers who exhibit goal-directed click-stream patterns are more likely to end their shopping session with a purchase.

The data then revealed that when the shopping cart is used for entertainment the chances of the shopping session ending with a purchase diminishes quite a lot. Using the shopping cart as a means to achieve hedonic fulfillment will narrow the chance of a purchase. In fact, it had a significant relation with cart abandonment. Consumers using their shopping cart based on hedonic motivations are much more likely to abandon the cart during their shopping session.

The main question explored in this research was whether hedonic shoppers were more likely to abandon their online shopping cart during the stages before checkout than functional shoppers. This question has been confirmed by the results obtained in the study. The experience-driven shopping behavior of hedonic consumers helps them to derive fulfillment from many hedonic aspects of an e-commerce website, including the online shopping cart. While hedonic shoppers can be converted into online buyers, their experience-seeking behavior usually causes them to discard their cart once they are fulfilled by the whole online shopping experience. The research provides theoretical background on hedonic online shopping, online shopping cart use, and cart abandonment that help explain the results found in the study.

The present research provided exploratory evidence that click-stream data could help in identifying types of shoppers. Shoppers who are motivated by hedonic needs show different click-stream patterns than shoppers whose goal it is to buy a product. Although the research proved that functional and hedonic motivations both significantly relate to different search behavior, we could not confirm the mediating role of shopping search behavior within our framework. This is mainly due to the insufficient measurement of search behavior in the survey study, as mentioned above.

When an e-commerce business uses click-stream data to track the movements of their website visitors, they might be able to identify hedonic consumers through their navigation patterns. This might not be a waterproof method and still needs testing, but it allows for e-commerce business to segment their visitors in order to better target or cater to their needs.

7. Theoretical and practical contributions

This research presents an initial effort to study online shopping cart abandonment by looking at motivation and behavior of shoppers. It provides a number of important theoretical and practical contributions, which are presented in the sub-sections below.

7.1 Theoretical contributions

The research advances knowledge by identifying the different behaviors of hedonic and functional shoppers and the effects on shopping cart use and subsequent cart abandonment. The author extended the research context from overall shopping cart abandonment to cart abandonment that takes place before the checkout stage, specifically. This meant that the focus of the research was less on practical and process related abandonment determinants and more on intrinsic motivations and shopping behavior that causes abandonment. The findings from the present research contribute to academic literature by identifying the different uses of the online shopping cart by different shopper types.

The findings indicate that consumers motivated by hedonic needs have a higher frequency of shopping cart abandonment to those motivated by functional needs. Cart abandonment also relates to entertainment cart use, that arises as a result of consumers including the shopping cart in their hedonic online shopping experience.

In addition, the research provided exploratory evidence for shopping motivation to be identified through search navigation patterns. As shown, the search patterns for functional consumers are characterized by a focus and direction toward the goal of making a purchase decision, while the hedonic consumer shows a search behavior that is undirected and more stimulus-driven.

7.2 Practical contributions

This research offers a number of contributions that can be used in practice. The author provides several ideas based on the research that could enhance shopping-to-buying conversion rates.

7.2.1 Viewing shopping cart abandonment differently

The general view among e-commerce businesses is the idea that online shopping cart abandonment is a “bad thing”, because it lowers shopping-to-buying conversion rates and is seen as a lost sale. These companies assume that abandonment of the cart might imply a negative consumer experience that lead to the abandonment (Hoffman & Novak, 2005). Scholars even used abandonment as a measure of consumer dissatisfaction (Oliver & Shor, 2003).

The present research reveals that consumers leave shopping carts behind for many other reasons than dissatisfaction with the online retailer or the website. We found that the cart is being used as part of the shopping experience and that consumers’ uses of the cart go beyond the original use it was designed for, which is to store items for purchasing during a shopping session. Consumers do not think of the online shopping cart in the same way as they do of a physical shopping cart. So in contrast to a physical cart, abandoning an online cart has no emotional resonance with consumers.

This research also shows that cart abandonment does not necessarily equal a dissatisfied customer. Enjoying the experience of online shopping, through a mixture of (hedonic) elements on the website, without buying something can produce a satisfied consumer in combination with an abandoned cart. Some consumers require a few hedonic-motivated visits before they feel ready to visit this online shop when they do have a functional need. They first need to be acquainted and feel trusted with the website and the products before they can visit that website when they do have the intention to purchase. It is therefore impossible to generalize the meaning of a cart abandonment.

The abandoned cart itself can serve as a source of information for the online retailer. The placed items in the cart reveal a consumer’s interests and desires and can be documented for marketing communication purposes. This information can also be useful to trigger impulse buying in real-time.

E-commerce businesses should rethink the way they approach shopping cart abandonment. They should recognize that abandonment is not always a consequence of dissatisfaction. Online businesses should explore the abandonment behavior at their own website and only fight the “bad abandonment”. Online companies may let untapped opportunities go by when generalizing all cases of cart abandonment and only viewing it as a negative phenomenon.

7.2.2 Entertainment value

Throughout the research it becomes clear that merely placing items in a shopping cart is a form of entertainment for some shoppers. Whether they do this to escape boredom, for the thrill of enacting real shopping or to satisfy the need to shop without spending any money, online retailers need to be aware of this entertainment value of the shopping cart.

It seems logical that making the online shop more entertaining and interactive would increase online buying, but it might however increase the entertainment use of the shopping cart. As the research shows entertainment cart use is positively related with cart abandonment and negatively related with purchase behavior. The mentioned adjustments can therefore probably cause conversion rates to go down instead of up. This does not mean that making the website of an online store more entertaining and interactive is a bad move, but the online retailer should be aware of the possible effects. The present research provides insights in how these effect are caused and how it will incite hedonic shopping behavior and associated hedonic cart use.

Despite lowering conversion rates, entertainment derived from the shopping cart can also be positive for the online retailer. Hedonic shoppers that derive entertainment value from the shopping cart may spread positive word-of-mouth about the online retailer and their shopping experience. After a positive entertaining shopping experience the consumer himself develops a positive attitude toward the online retailer and website and is therefore more likely to return. A returning consumer, even if previous visits ended with a cart abandonment, is more valuable for an online retailer, as it increases the likelihood of (impulse) buying.

Thus, e-commerce business should be aware of the fact that consumers can use the shopping cart for entertainment purposes. Instead of reducing this entertainment value to increase conversion rates, online retailers should embrace this entertainment value and leverage their positive effects.

7.2.3 Identifying consumers

Most e-commerce companies treat all their website visitors exactly the same. They do not distinguish between types of visitors or do not know how to do this. With treating every visitor the same we mean that all visitors are provided with the same website experience and with the same type of (marketing) communications. Treating all visitor the same decreases marketing and communication efficiency and as a result can also decrease the conversion rates.

Different types of shoppers desire different types of online shopping experiences. By providing all visitors with the same website experience will ensure that you will never meet visitors needs beyond their expectations. A consumer whose needs are met beyond expectations is more likely to return, to buy or to spread positive word-of-mouth. Customized online shopping experience lets you serve the core needs of each type of visitor. This requires website optimization, more on that topic later.

First of all it is important to identify which type of consumers visit your online shop. The present research provides insight in the two most important types of shoppers, the functional type and the hedonic type. This is the main dichotomy that can be made between consumers that visit an e-commerce website. Literature on the topic, including Moe (2003), tells us that these two groups of shoppers could be identified by their navigation patterns on the website. Keeping track of click-stream data is the best way to collect data on navigation patterns.

The theory discussed in this research showed that by defining focused search behavior through click-stream data measures, an e-commerce business can identify the functional shoppers on its website. Knowing which visitors shop with functional needs, i.e. the need to buy a specific item or multiple items, might in some cases be an opportunity to better serve the needs of a shopper. Ultimately this can increase conversion rates, which is one of the most important measures in e-commerce.

To identify hedonic shoppers you have to look for non-focused search behavior, otherwise known as browsing behavior. This study made clear that defining browsing behavior is more difficult than defining focused search behavior. Whereas focused search is goal-oriented and shows a clear path, non-focused search goes in all different directions. Therefore, it is difficult to define this behavior in click-stream data measures. Further research is needed to help defining browsing behavior in order to identify hedonic-type visitors. However, when a company is able to identify which of its visitors show browsing behavior and are therefore more likely to be of the hedonic shopper type, it might be able to leverage this knowledge.

To recap, by identifying the different types of shoppers among website visitors is a big opportunity for e-commerce companies to leverage this knowledge to increase the effectiveness of marketing and communication efforts. This research made it clear that different types of online shoppers need different types of approaches. Identifying the visitor's behavior and responding with appropriate communication that appeals to the core needs of this visitor can increase conversion rates.

7.3.4 Real-time targeting

Marketing and communication efforts are usually deployed before and after the shopping session of a visitor. By targeting the visitor real-time a company is able to leverage needs and emotions when the lead is “warm”. Identifying shoppers through their click-stream data will help a company to understand which needs and emotions to leverage.

Many studies have shown that a lead grows cold fast. You want to target a lead when it is “hot”, to speak in the same terms. This is why real-time targeting is important. The real-time approach connects with the excitement of the shopping experience before the lead has been distracted or goes cold. It is in real-time when marketing and communication can be most effective.

Trying to convert leads in real-time may prevent shopping cart abandonment. Hedonic shoppers whose emotions are leveraged in real-time may be triggered into doing an impulse buy instead of discarding their shopping cart. The current research elaborates on the emotions and sensory aspects that play a role in hedonic shopping. In many purchases by hedonic shoppers emotion plays a significant role. The subconscious emotions of the shopper are a powerful influence on their buying behavior. By stimulating and playing into these emotions a hedonic shopper can be turned into an online buyer instead of an abandoner.

The findings in this research can help make real-time targeting work more effectively. Leveraging (subconscious) emotions on the spot can be an effective approach for hedonic leads. For those reasons real-time targeting can be an important instrument in converting leads, decreasing cart abandonment and increasing conversion rates.

7.2.5 Website optimizing

As mentioned before, the desired shopping experience differs between website visitors. It can be effective and profitable to optimize your website to cater to these different needs. It is very difficult to cater to functional shoppers and hedonic shoppers at the same time. By creating different shopping environment for both groups will make it easier to optimize the website to the needs of each groups.

By creating different environments (similar to A/B testing environments) a company can optimize navigation routes, design, lay-out and all other elements of the website to work most effectively for

each group. This will create an user-centric experience that may lead to more (impulse) buying and less cart abandonment, which in turn leads to higher conversion rates.

With the use of click-stream data and custom algorithms an e-commerce company can identify the type of shopper and present him with his custom shopping environment. For functional shoppers this means an environment that focuses on information and the ability to compare products. For a hedonic-motivated shopper this means an environment filled with elements that contribute to the experience of shopping. This can be lifestyle images, showing people using the product in a desired setting, multiple photographs of products and showing the product from multiple angles. Products could be presented in collections rather than as a single product to create a story around the products. These elements will greatly enhance the hedonic shopping experience and can trigger impulse buying.

As this research shows the shopping cart is an important part of the online shopping experience, especially for hedonic shoppers. So an e-commerce business has to make sure that it allows the shopping cart to be used as a part of this experience. For this reason it is important that the design of the shopping cart includes more than just a functional holding space for products. Simple design features can already add value to the overall shopping experience in which the shopping cart is used. To give an example, think of a feature that allows shoppers to view products together, which can be especially useful for clothing. When a consumer can view a pair of shoes together with a pair of jeans and a shirt on a single model, it adds value to his experience of shopping for clothes. It is an example of a feature that provides extra entertainment value to a shopping cart. These kind of features will encourage entertainment cart use. Our research has shown the negative relation between entertainment cart use and purchase behavior and the positive relation with cart abandonment. But as previously emphasized, cart abandonment is not by definition a bad phenomenon.

By turning the shopping cart into a persistent allows companies to remind cart abandoners about the products they left behind. When faced with these products at a later time and possibly in a different state of mind, might cause some shoppers to reconsider the purchasing of these products. The same can be achieved with a "wish list" feature. By implementing a wish list feature the shopper can virtually put his favorite products together and save them for future visits. By being reminded about these products in every following visit can positively contribute to the decision-making process in the mind of the consumer. It could help companies in better dealing with cart abandonment.

The current research shows that hedonic shopping is about the experience of online shopping. To support and direct shoppers towards spreading positive word-of-mouth about their experience an e-commerce company can implement a social media sharing feature. This can be implemented in both the shopping cart as on the product pages. It can add an extra dimension to the shopping experience. An additional advantage of a social media sharing button is the involvement of friends in the shopping experience. These friends can trigger, encourage or convince the consumer to buy the product they shared, because of positive feedback, (facebook) likes and substantive comments. These impartial friends have a big impact on the willingness to buy of the consumer and can turn a hedonic shopper into an online buyer.

Hence, a shopping environment that is tailored to the type of shopper and a shopping cart that caters to the needs of the shopper, enhances the shopping experience and will greatly increase consumer satisfaction. An hedonic shopping environment can leverage (subconscious) emotions and can trigger impulse buying. By considering different shopper types in optimizing a website and shopping cart can prove to be very beneficial, when taken into account that reducing cart abandonment is not the ultimate goal.

8. Limitations and future research

While contributing important insights to hedonic shopping behavior, shopping cart use and cart abandonment, the research has some limitations.

First, the findings in this research are based on self-reported survey data, rather than actual consumer behavior. Although the results showed significant relations, it is important to take this limitation into account. A valuable contribution for future research would be to combine survey results with the click-stream data of an e-commerce company. This will provide complementary insights for a more comprehensive view.

Second, the age distribution of our sample had a heavy focus around the age-category 21 to 30 years. Future research could benefit from a more even age distribution of the study sample. Hedonic shopping behavior might differ between age groups and it would be interesting to explore this in upcoming research.

Third, the research had some difficulty in constructing an appropriate variable for non-focused search behavior. Future research could take a closer look into the different components that make up this browsing behavior. A better understanding and definition of this construct could benefit future research on the topic of shopping cart abandonment.

Finally, there are some interesting areas for future research to focus on. It would be valuable to study the effect of online shopping motivation on the reaction to marketing communications. What types of (re)marketing approaches increase the effectiveness of these efforts for different shopper types. For example, do marketing communications with hedonic and visual elements work more effectively on hedonic shoppers? These results may ultimately lead to higher conversion rates.

Another interesting topic for future research would be to study hedonic shopping behavior and cart abandonment among different product categories. The same goes for studying the differences between low-involvement, medium-involvement and high-involvement products with regard to shopping cart use and abandonment.

We hope that this present research stimulates future research on the topic of shopping cart use and abandonment, for which it is still a under-studied online consumer behavior.

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Appendices

Appendix 1 Survey

Sex

- Male
- Female

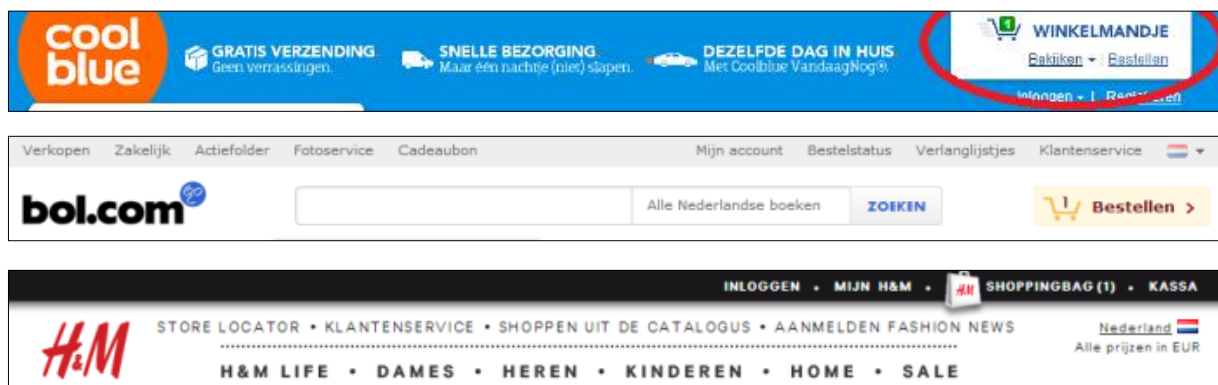
Age

- ≤ 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- ≥ 61

----- page break -----

At most online stores you can use an online shopping cart. This tool can have different names at different online stores, but it always concerns the same functionality.

Here you see 3 examples of an online shopping cart at a website:



Are you familiar with online shopping cart at the website of online stores?

- Yes
- No

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

I visit online stores usually...

	Never			Sometimes			Always	
to really buy something during that visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to only look around during that visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

When I visit an online store...

	Never			Sometimes			Always	
I only look at a few specific products I am interested in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I look at a lot of different products, which I am not necessarily planning to buy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I study product pages carefully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I navigate quickly between the different product pages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I view some products several times during the same visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I view products no more than once during the same visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

I select and place products in the online shopping cart...

	Never			Sometimes			Always	
always with the intention to buy it during the same visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To entertain myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

I select and place products in the online shopping cart...

	Never			Sometimes			Always	
to create a fantasy "wish list" for myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to find more information about the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to see if there is a discount that applies to the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

When I surf on the website of an online store...

	Never			Sometimes			Always	
I usually buy something during the same visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I place products in my online shopping cart to buy them during the same visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My visit ends with the checkout of the online shopping cart	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I leave the website before I really bought something	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

Answer the following statements by indicating to which extent the statement applies to you.

	Never			Sometimes			Always	
How often do you leave an online shopping cart in which you have placed products, without buying anything?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

----- page break -----

How often do you visit online stores in general?

- every day
- a few times per week
- once per week
- a few times per month
- once per month
- once every couple of months
- once per year
- never

For what kind of products do you visit online stores the most in general? (up to 2 answers)

- clothing, shoes and accessories
- books, CD's & DVD's and games
- hard- and software
- Electronics and household appliances
- personal care
- sport goods
- home and garden
- travel

If you just look for your own pleasure, for what type of products do you visit online stores the most? (up to 2 answers)

- clothing, shoes and accessories
- books, CD's & DVD's and games
- hard- and software
- Electronics and household appliances
- personal care
- sport goods
- home and garden
- travel

Appendix 2 Survey sample

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	112	54.4	54.4	54.4
Valid Female	94	45.6	45.6	100.0
Total	206	100.0	100.0	

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid ≤ 20	4	1.9	1.9	1.9
Valid 21-30	113	54.9	54.9	56.8
Valid 31-40	28	13.6	13.6	70.4
Valid 41-50	30	14.6	14.6	85.0
Valid 51-60	24	11.7	11.7	96.6
Valid ≥ 61	7	3.4	3.4	100.0
Total	206	100.0	100.0	

How often do you visit online stores in general?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Every day	5	2.4	2.5	2.5
Valid A few times per week	60	29.1	30.0	32.5
Valid Once per week	32	15.5	16.0	48.5
Valid A few times per month	65	31.6	32.5	81.0
Valid Once per month	24	11.7	12.0	93.0
Valid Once every couple of months	14	6.8	7.0	100.0
Total	200	97.1	100.0	
Missing System	6	2.9		
Total	206	100.0		

Appendix 3.A Factor analysis – Search behavior

Correlation Matrix

	Search behavior: only look at a few specific products I am interested in	Search behavior: look at a lot of different products, which I am not necessarily planning to buy	Search behavior: study product pages carefully	Search behavior: navigate quickly between the different product pages	Search behavior: view some products several times during the same visit	Search behavior: view products no more than once during the same visit
Correlation Search behavior: only look at a few specific products I am interested in	1,000	-,504	,228	-,022	,174	-,030
Search behavior: look at a lot of different products, which I am not necessarily planning to buy	-,504	1,000	-,048	,159	,012	,075
Search behavior: study product pages carefully	,228	-,048	1,000	,011	,165	-,075
Search behavior: navigate quickly between the different product pages	-,022	,159	,011	1,000	,247	-,030
Search behavior: view some products several times during the same visit	,174	,012	,165	,247	1,000	-,455
Search behavior: view products no more than once during the same visit	-,030	,075	-,075	-,030	-,455	1,000

KMO and Bartlett's Test

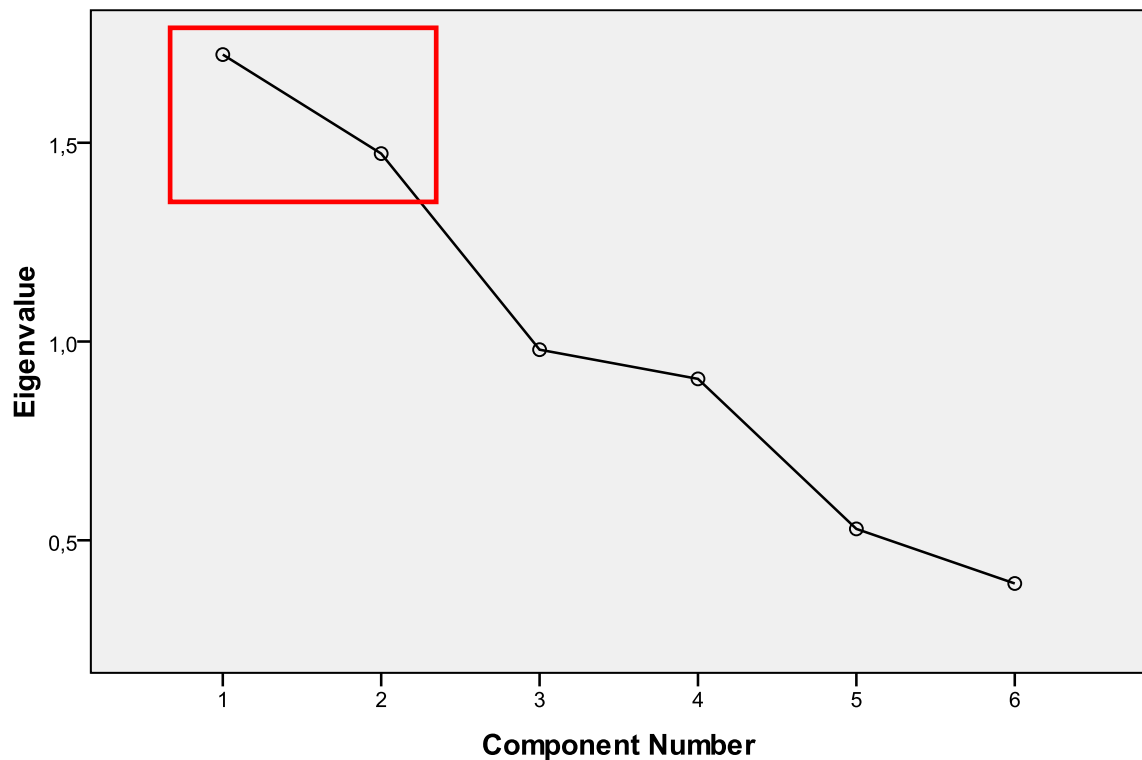
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,482
Bartlett's Test of Sphericity	Approx. Chi-Square	154,570
	df	15
	Sig.	,000

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1,722	28,697	28,697	1,617	26,949	26,949
2	1,473	24,545	53,242	1,578	26,293	53,242
3	,979	16,324	69,566			
4	,906	15,101	84,667			
5	,529	8,811	93,478			
6	,391	6,522	100,000			

Extraction Method: Principal Component Analysis.

Scree Plot



Rotated Component Matrix^a

	Component	
	1	2
Search behavior: only look at a few specific products I am interested in	,837	
Search behavior: look at a lot of different products, which I am not necessarily planning to buy	-,824	
Search behavior: study product pages carefully	,358	
Search behavior: view some products several times during the same visit		,853
Search behavior: view products no more than once during the same visit		-,698
Search behavior: navigate quickly between the different product pages		,500

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Appendix 3.B Factor analysis – E-cart use

Correlation Matrix

	E-cart motivation: always with the intention to buy it during the same visit	E-cart motivation: to entertain myself	E-cart motivation: to create a fantasy" wish list" for myself	E-cart motivation: to find more information about the product	E-cart motivation: to see if there is a discount that applies to the product
Correlation E-cart motivation: always with the intention to buy it during the same visit	1,000	-,540	-,409	-,392	-,284
E-cart motivation: to entertain myself	-,540	1,000	,482	,361	,299
E-cart motivation: to create a fantasy" wish list" for myself	-,409	,482	1,000	,299	,205
E-cart motivation: to find more information about the product	-,392	,361	,299	1,000	,610
E-cart motivation: to see if there is a discount that applies to the product	-,284	,299	,205	,610	1,000

KMO and Bartlett's Test

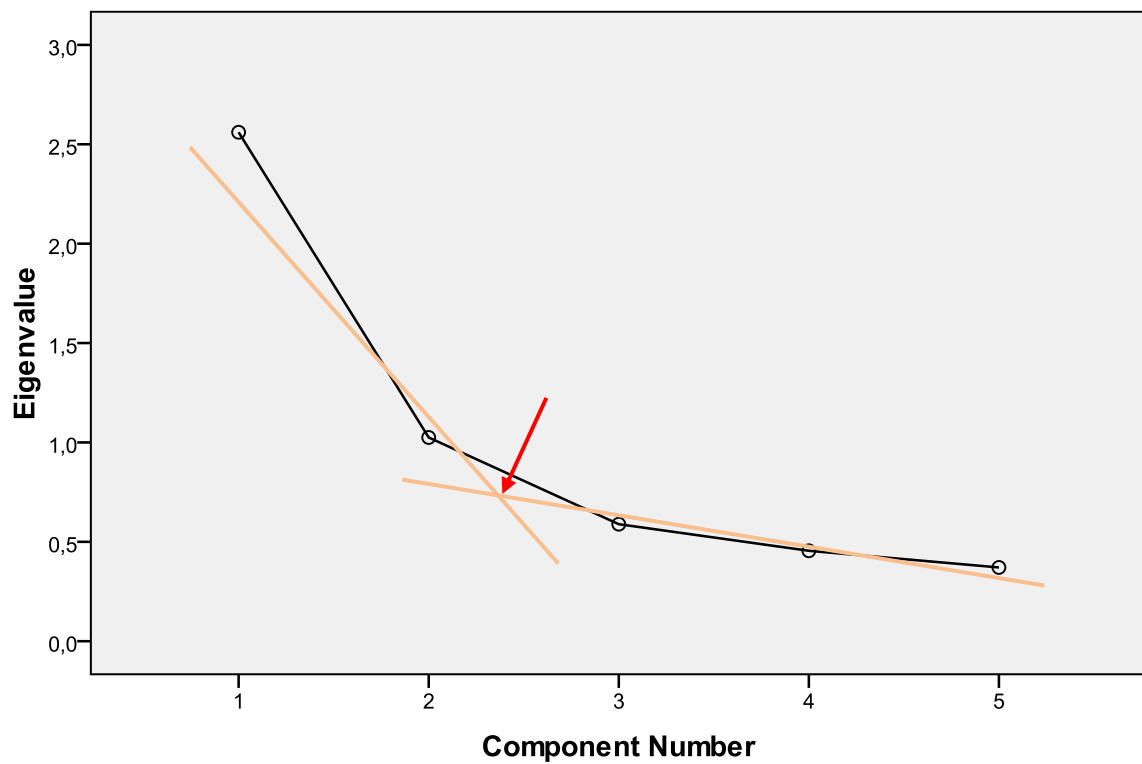
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,724
Bartlett's Test of Sphericity	Approx. Chi-Square	270,867
	df	10
	Sig.	,000

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2,560	51,210	51,210	1,943	38,864	38,864
2	1,025	20,499	71,709	1,642	32,845	71,709
3	,589	11,773	83,482			
4	,455	9,098	92,579			
5	,371	7,421	100,000			

Extraction Method: Principal Component Analysis.

Scree Plot



Rotated Component Matrix^a

	Component	
	1	2
E-cart motivation: to entertain myself	,809	
E-cart motivation: to create a fantasy" wish list" for myself	,796	
E-cart motivation: always with the intention to buy it during the same visit	-,753	
E-cart motivation: to see if there is a discount that applies to the product		,903
E-cart motivation: to find more information about the product		,844

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Appendix 3.C Factor analysis – Purchase behavior

Correlation Matrix

	Purchase behavior: usually buy something during the same visit	Purchase behavior: place products in my online shopping cart to buy them during the same visit	Purchase behavior: visit ends with the checkout of the online shopping cart	Purchase behavior: leave the website before I really bought something
Correlation Purchase behavior: usually buy something during the same visit	1,000	,630	,618	-,443
Purchase behavior: place products in my online shopping cart to buy them during the same visit	,630	1,000	,647	-,460
Purchase behavior: visit ends with the checkout of the online shopping cart	,618	,647	1,000	-,550
Purchase behavior: leave the website before I really bought something	-,443	-,460	-,550	1,000

KMO and Bartlett's Test

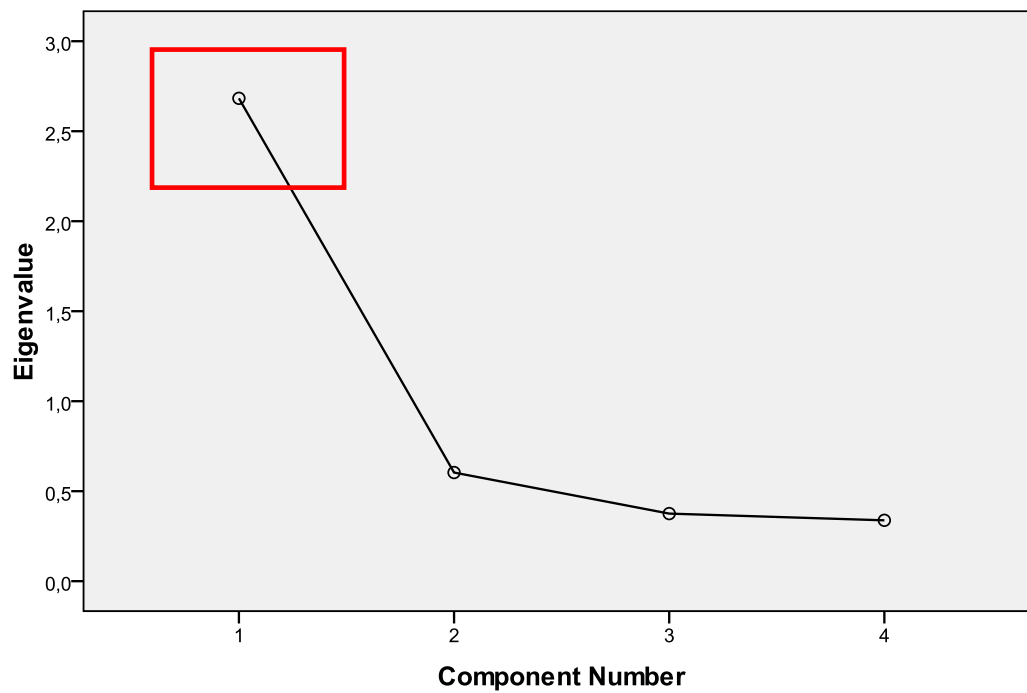
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,798
Bartlett's Test of Sphericity	Approx. Chi-Square	317,659
	df	6
	Sig.	,000

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2,683	67,068	67,068
2	,604	15,091	82,159
3	,376	9,388	91,547
4	,338	8,453	100,000

Extraction Method: Principal Component Analysis.

Scree Plot



Appendix 3.D Factor analysis – Total

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,765
Bartlett's Test of Sphericity	Approx. Chi-Square	1179,324
	df	153
	Sig.	,000

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,560	25,333	25,333	3,497	19,431	19,431
2	2,332	12,956	38,289	2,803	15,575	35,005
3	1,648	9,155	47,444	1,661	9,225	44,231
4	1,420	7,890	55,334	1,652	9,176	53,407
5	1,097	6,095	61,429	1,444	8,022	61,429
6	,993	5,518	66,947			
7	,911	5,062	72,008			
8	,834	4,634	76,643			
9	,637	3,539	80,182			
10	,552	3,065	83,247			
11	,512	2,844	86,091			
12	,484	2,691	88,782			
13	,419	2,326	91,108			
14	,410	2,276	93,384			
15	,371	2,063	95,447			
16	,302	1,677	97,123			
17	,277	1,540	98,663			
18	,241	1,337	100,000			

Extraction Method: Principal Component Analysis.

Rotated Component Matrix^a

	Component				
	1	2	3	4	5
Purchase behavior: visit ends with the checkout of the online shopping cart	,824				
Purchase behavior: usually buy something during the same visit	,797				
Purchase behavior: place products in my online shopping cart to buy them during the same visit	,734				
Purchase behavior: leave the website before I really bought something	-,723				
Functional motivation: to really buy something during that visit	,681				
Hedonic motivation: to only look around during that visit	-,612				
E-cart motivation: to entertain myself		,752			
E-cart motivation: to create a fantasy" wish list" for myself		,725			
E-cart abandonment		,710			
E-cart motivation: always with the intention to buy it during the same visit		-,683			
Search behavior: look at a lot of different products, which I am not necessarily planning to buy			,824		
Search behavior: only look at a few specific products I am interested in			-,815		
Search behavior: view some products several times during the same visit				,864	
Search behavior: view products no more than once during the same visit				-,654	
Search behavior: navigate quickly between the different product pages				,479	-,423
E-cart motivation: to see if there is a discount that applies to the product					,736
E-cart motivation: to find more information about the product		,502			,589
Search behavior: study product pages carefully					,466

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Appendix 4.A Linear regression analysis – Hedonic motivation & non-focused search

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	HED_MOTIV ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: NONFOC_SEARCH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,149 ^a	,022	,017	,99131976

a. Predictors: (Constant), HED_MOTIV

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4,526	1	4,526	4,606	,033 ^a
	Residual	200,474	204	,983		
	Total	205,000	205			

a. Predictors: (Constant), HED_MOTIV

b. Dependent Variable: NONFOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,505	,245		-2,059	,041
	HED_MOTIV	,111	,052	,149	2,146	,033

a. Dependent Variable: NONFOC_SEARCH

Appendix 4.B Linear regression analysis – Hedonic motivation & focused search

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	HED_MOTIV ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: FOC_SEARCH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,267 ^a	,072	,067	,96593260

a. Predictors: (Constant), HED_MOTIV

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14,663	1	14,663	15,715	,000 ^a
	Residual	190,337	204	,933		
	Total	205,000	205			

a. Predictors: (Constant), HED_MOTIV

b. Dependent Variable: FOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,908	,239		3,804	,000
	HED_MOTIV	-,200	,051	-,267	-3,964	,000

a. Dependent Variable: FOC_SEARCH

Appendix 4.C Linear regression analysis – Functional motivation & focused search

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	FUNC_MOTIV ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: FOC_SEARCH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,182 ^a	,033	,028	,98571593

a. Predictors: (Constant), FUNC_MOTIV

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,786	1	6,786	6,984	,009 ^a
	Residual	198,214	204	,972		
	Total	205,000	205			

a. Predictors: (Constant), FUNC_MOTIV

b. Dependent Variable: FOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,653	,257		-2,546	,012
	FUNC_MOTIV	,145	,055	,182	2,643	,009

a. Dependent Variable: FOC_SEARCH

Appendix 4.D Linear regression analysis – Functional motivation & non-focused search

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	FUNC_MOTIV ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: NONFOC_SEARCH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,076 ^a	,006	,001	,99951322

a. Predictors: (Constant), FUNC_MOTIV

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,199	1	1,199	1,200	,275 ^a
	Residual	203,801	204	,999		
	Total	205,000	205			

a. Predictors: (Constant), FUNC_MOTIV

b. Dependent Variable: NONFOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,275	,260		-1,055	,293
	FUNC_MOTIV	,061	,056	,076	1,095	,275

a. Dependent Variable: NONFOC_SEARCH

Appendix 4.E Linear regression analysis – Non-focused search & entertainment e-cart use

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	NONFOC_SEARC H ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: EXP_CART_USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,067 ^a	,005	,000	1,00018258

a. Predictors: (Constant), NONFOC_SEARCH

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,926	1	,926	,926	,337 ^a
	Residual	203,074	203	1,000		
	Total	204,000	204			

a. Predictors: (Constant), NONFOC_SEARCH

b. Dependent Variable: EXP_CART_USE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-7,499E-6	,070		,000	1,000
	NONFOC_SEARCH	,067	,070	,067	,962	,337

a. Dependent Variable: EXP_CART_USE

Appendix 4.F Linear regression analysis – Hedonic motivation & entertainment e-cart use

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	HED_MOTIV ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: EXP_CART_USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,114 ^a	,013	,008	,99591209

a. Predictors: (Constant), HED_MOTIV

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,656	1	2,656	2,678	,103 ^a
	Residual	201,344	203	,992		
	Total	204,000	204			

a. Predictors: (Constant), HED_MOTIV

b. Dependent Variable: EXP_CART_USE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,387	,247		-1,570	,118
	HED_MOTIV	,086	,052	,114	1,637	,103

a. Dependent Variable: EXP_CART_USE

Appendix 4.G Linear regression analysis – Focused search & entertainment e-cart use

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	FOC_SEARCH ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: EXP_CART_USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,310 ^a	,096	,091	,95321949

a. Predictors: (Constant), FOC_SEARCH

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19,549	1	19,549	21,514	,000 ^a
	Residual	184,451	203	,909		
	Total	204,000	204			

a. Predictors: (Constant), FOC_SEARCH

b. Dependent Variable: EXP_CART_USE

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,003	,067		,046	,964
	FOC_SEARCH	-,312	,067	-,310	-4,638	,000

a. Dependent Variable: EXP_CART_USE

Appendix 4.H Linear regression analysis – Entertainment e-cart use & purchase behavior

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	EXP_CART_USE ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: PURCH_BEH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,302 ^a	,091	,087	,95571229

a. Predictors: (Constant), EXP_CART_USE

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18,496	1	18,496	20,250	,000 ^a
	Residual	184,504	202	,913		
	Total	203,000	203			

a. Predictors: (Constant), EXP_CART_USE

b. Dependent Variable: PURCH_BEH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,000	,067		-,004	,997
	EXP_CART_USE	-,301	,067	-,302	-4,500	,000

a. Dependent Variable: PURCH_BEH

Appendix 4.1 Linear regression analysis – Focused search & purchase behavior

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	FOC_SEARCH ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: PURCH_BEH

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,183 ^a	,033	,029	,98560778

a. Predictors: (Constant), FOC_SEARCH

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6,773	1	6,773	6,972	,009 ^a
	Residual	196,227	202	,971		
	Total	203,000	203			

a. Predictors: (Constant), FOC_SEARCH

b. Dependent Variable: PURCH_BEH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,002	,069		-,025	,980
	FOC_SEARCH	,184	,070	,183	2,640	,009

a. Dependent Variable: PURCH_BEH

Appendix 4.J Linear regression analysis – Entertainment e-cart use & e-cart abandonment

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	EXP_CART_USE ^a	.	Enter

a. All requested variables entered.

b. Dependent Variable: CART_ABANDON

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,504 ^a	,254	,250	1,365

a. Predictors: (Constant), EXP_CART_USE

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	126,890	1	126,890	68,114	,000 ^a
	Residual	372,581	200	1,863		
	Total	499,470	201			

a. Predictors: (Constant), EXP_CART_USE

b. Dependent Variable: CART_ABANDON

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,809	,096		39,665	,000
	EXP_CART_USE	,791	,096	,504	8,253	,000

a. Dependent Variable: CART_ABANDON

Appendix 5.A Mediation analysis – Functional motivation & e-cart abandonment

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,653	,257		-2,546	,012
	FUNC_MOTIV	,145	,055	,182	2,643	,009

a. Dependent Variable: FOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,207	,399		13,046	,000
	FUNC_MOTIV	-,310	,085	-,249	-3,643	,000

a. Dependent Variable: CART_ABANDON

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5,075	,403		12,608	,000
	FUNC_MOTIV	-,280	,086	-,225	-3,253	,001
	FOC_SEARCH	-,209	,110	-,132	-1,902	,059

a. Dependent Variable: CART_ABANDON

Appendix 5.B Mediation analysis – Hedonic motivation & e-cart abandonment

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,505	,245		-2,059	,041
	HED_MOTIV	,111	,052	,149	2,146	,033

a. Dependent Variable: NONFOC_SEARCH

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,002	,392		7,656	,000
	HED_MOTIV	,177	,083	,149	2,137	,034

a. Dependent Variable: CART_ABANDON

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,029	,396		7,650	,000
	HED_MOTIV	,171	,084	,144	2,042	,042
	NONFOC_SEARCH	,061	,112	,038	,539	,590

a. Dependent Variable: CART_ABANDON