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**The Effect of Different Website Elements on the Perceived
Trustworthiness of Online Retailers**

Thesis

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ABSTRACT

One trend within e-commerce is that e-tailers have to work harder to increase the customers' trustworthiness. Therefore, this paper studies the effect of website functionalities on customers' trustworthiness and purchase intention. An experiment is done in which subjects did see either a control page, communication functionalities or navigation functionalities. Thereafter, they had to answer questions in regard to trust and purchase intention. The results show that communication functionalities have an impact on trust beliefs, which in turns influence purchase intention. Based on this result, e-tailers better understand how to increase the customers' purchase intention.

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1. INTRODUCTION

Operating in today's hyper competitive online business environment requires more from e-tailers than running a simple online store with good performing items to satisfy the current customer demand within e-commerce[1]. Despite the enormous predicted growth in e-commerce, e-tailers have difficulties to increase their trustworthiness to customers and take advantage of the growing market. E-commerce sales revenue is currently up to $1.671 trillion and will increase to $3.578 trillion by 2019[2]. Customers are becoming increasingly demanding and will not accept the sole product when purchasing online. In order to build trust and reach customer satisfaction, joy and shopping experience are regarded to be just as important. Due to the deprivation of rich physical interaction context, web design may act as the initial lever for e-tailers to build trust. Web design has been found to be a critical part of Internet marketing and an important element to increase trust (Urban, Sultan, & Quails, 2000). Thus, e-tailers should pay special attention to the design of their webpage in order to influence customers. This implies the importance of a deeper understanding of how customers' trust is developed within e-commerce and in what way e-tailers should respond.

This paper addresses this problem by studying how website elements influence online purchase intention in an e-commerce setting. In order to understand the influence of website elements on purchase intention, this thesis assesses the underlying role of customers' trust. Even though 'trust' seems like a broad term, it is defined in three dimensions of trust: ability, benevolence, and integrity (Mayer, 1999). To gain a deeper understand of the underlying role of trust, this study distinguishes different types of products associated with high and low risk. In addition, this thesis uses existing literature about website elements, trust, and purchase intention to perform an experiment which replicates an e-commerce environment. By doing this, this paper shows how to use website elements such that customers' will gain more trustworthiness and have a greater purchase intention. Therefore, the research question to be answered is: "How does the presence of website functionalities, combined with search and experience products, affect the customers' purchase intention mediated by trust?" Additionally, this study examines the effect of customers' emotions in an e-commerce environment. This lead to an additional sub-question: "Does the customers' emotions influence trust, which in turns influences purchase intention?"

Previous literature addresses the effect of website elements on trust and purchase intention before. To start with the study by Urban et al. (2000), they find that customers make purchase decisions almost solely based on trust and give e-tailers implications to place trust at the center of their Internet strategy (Urban, et al., 2000). In addition, the study by McKnight et al. (2002) is the first study that develops and validates trust measures for e-tailers (McKnight, Vivek, & Charles, 2002), but their study did not examine trust related to purchase intention. The study by Bart et al. (2005) develops a

model that links website characteristics, online trust and purchase intention. Their results show that online trust mediates between website characteristics and purchase intention (Bart, Venkatash, Fareena, & Urban, 2005). Although the study by Bart et al. (2005) points out many website elements, it does not give any specific improvements for e-tailers. Schlosser et al. (2006) examine how marketing signals influences customers' trust beliefs in an e-commerce environment. Trust beliefs are based on the customers' ability, benevolence, and integrity beliefs regarding an e-tailers. Their research show that the e-tailers' ability is the only trust belief which is related to purchase intention (Schlosser, et al., 2006). The studies by Bart et al. (2005) and Schlosser et al. (2006) have in common that they measure the effect of website characteristics on the purchase intention mediated by trust. However, the current study extends on previous literature by examining the effect of fifteen website elements and different type of products on the purchase intention. As the literature review will show, current literature has looked at each topic in different perspective. Therefore, this study addresses the remaining need to gain insights into the effect of website elements on purchase intention.

By examining the effect of website elements on purchase intention, e-tailers gain more insights in the importance of website elements under different circumstances. This is especially important because customers can make a reliable decision about a web page within 50ms (Lindgaard, Fernandes, Dudek, & Brown, 2006). In addition, website elements are even more important when customers are perceiving a high level of risk because customers will rely more on what they see (Kirimani, 2000). In both cases, website elements are key elements for e-tailers. However, customers' trust tends to be even more important. Seeing that a greater purchase intention is the main goal of every e-tailer, e-tailers with a trust-based website can result in more conversion comparing to e-tailers who do not pay attention to trust (Urban, et al., 2000). So, it is important for e-tailers to pay attention to website functionalities in order to increase the customers' trust and purchase intention.

The remainder of this paper is as follows. The chapter 2 reviews the literature regarding website functionalities, online trust and online purchase intention. Chapter 3 addresses the methodology and research models. Chapter 4 and 5 shows the descriptive data en the results of this study. Finally, chapter 6 presents the conclusion and discusses issues for future research.

2. LITERATURE REVIEW AND HYPOTHESES

This chapter discusses and evaluates relevant literature, starting with a theory regarding information asymmetry between customers and e-tailers. Based on this theory, some empirical papers will be discussed in each section. First, the effect of website functionalities, trust and online purchase intention will be explained. Thereafter, the distinction between search and experience products is included as well. As a final point, the moderation effect of emotions on trust will be discussed. After discussing the literature of each topic, each section will end with hypotheses. An overview of all hypotheses is displayed in figure 2.1.
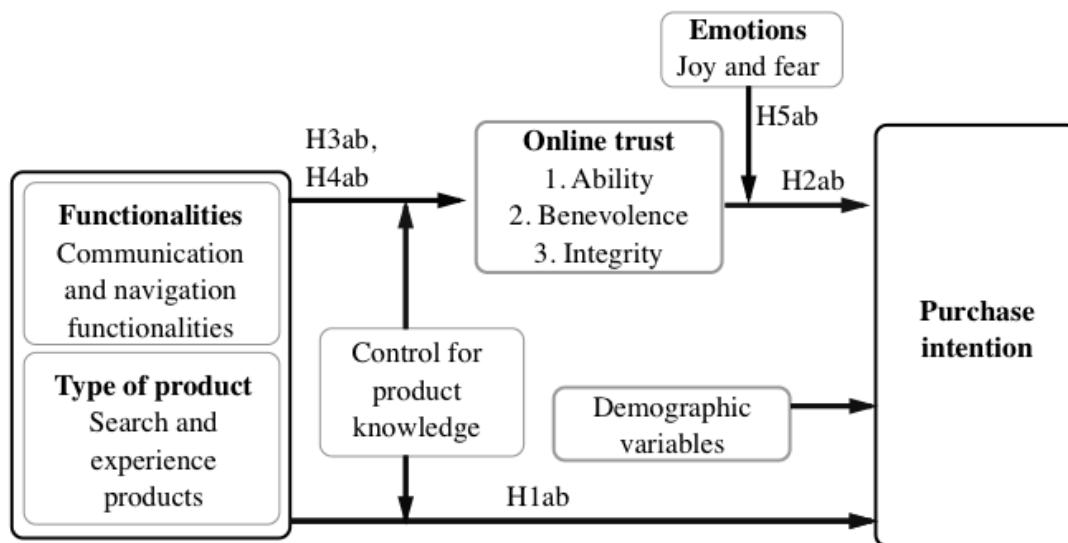

Figure 2.1 Conceptual framework. Variables Functionalities and Type of product are independent variables. Online trust is the mediation variable and purchase intention is defined as the outcome variable. In addition, variable Emotions is included as moderation variable between online trust and purchase intention.

2.1 Signalling Theory

Customers are facing many uncertainties with respect to product performance and quality. Before discussing the main variables of this study, underlying literature regarding information asymmetry is discussed before. To explain this phenomenon, Spence (1973) introduces the term 'marketing signalling' under information asymmetry, which helps one party to determine the real value of the subject better than someone with less information. Spence (1973) illustrates this with a job market example with two parties, the employer, and a job applicant. The main goal of employers is to determine the value of an applicant's productivity. However, it is quite difficult to assess this, since employers can not observe the applicant's productivity based on its job interview. High-quality applicants have more information, which they can use as signals to provide the employer with more information. In essence, the applicant (signaller) and employer (receiver) are key elements in the signalling theory (Spence, 1973). Kirmani et al. (2000) summarizes under which conditions the

signal transmission is the most successful. The most important one is pre-purchase information scarity. This implies that customers are not well informed about the product and service quality before purchase. The second most important one is post-purchase information clarity, which means that customers are not able to assess the quality prior to purchase (Kirmani & Rao, 2000). E-tailers (signaller) and customers (receiver) are experiencing the same kind of uncertainty as described in Spence's (1973) job market example. In this case, e-tailers have relatively more information, which leads to information asymmetry. An e-tailer could tackle this by sending signals to the customer. However, the study by Kirmani et al. (2000) emphasizes that signals are the most effective under conditions of pre-purchase information scarity. This implies that signals might have a different effect based on the perceived pre-purchase information of customers. One of major purpose of this current study is to examine how website functionalities (signals) in relation with a different type of products influence the customers' purchase intention, which is defined as a customers' initial purchase from a firm (Schlosser, et al., 2006). Previous literature regarding e-tailers confirms Spence's (1973) signalling theory. To illustrate this, Schlosser et al. (2006) find that online purchase intention is higher for high-investment websites comparing to low-investment websites under conditions of high risk. Website investments were manipulated through the presence of visual design elements and better technology. Furthermore, the type of risk depends on two situations whereas a subject could either buy a present for his roommate (low risk) or future boss (high risk). However, at conditions of low risk, online purchase intention remained constant between high and low-investment websites (Schlosser, et al., 2006). In general, it might be the case that high-investment websites do have a more positive effect on purchase intention. Therefore, it is posited that:

H1a: High-investment websites do have a more positive effect on purchase intention comparing to low-investment websites.

In addition, this study distinguishes products into search and experience products. This classification is based on the consumers' ability to know the product quality before purchase (Alba, et al., 1997). In general, customers are perceiving more uncertainty while shopping for search products comparing to experience products (Huang, Lurie, & Mitra, 2009). Therefore, buying experience products involves more risk than search products. Based on the findings by Schlosser et al. (2006), hypothesis H1b is defined as:

H1b: Search products (low risk) do have a more positive effect on purchase intention compared to experience products (high risk).

2.2 Online Purchase Intention and Trust

This section addresses the relationship between online purchase intention and trust. Online purchase intention will be explained first, after which, online trust is explained. The study by Bart et al. (2005) finds that website functionalities influence purchase intention. Next, they also measure the effect of website characteristics on purchase intention mediated by trust. Their major finding is that trust mediates the effect of website functionalities on purchase intention such that the website functionalities influence trust, which in turn influence purchase intention (Bart, et al., 2005). In addition, the study of Ann. E. Schlosser (2006) is in line with the outcome of Bart et al. (2005) because they both examine how online trust is related to purchase intention. Online trust influences online purchase intention when risk is high, or when purchase requires trust. On the other hand, when risk is low, the trusting beliefs have no influence on the purchase intention (Schlosser, et al., 2006). According to the studies by Bart et al. (2005) and Schlosser et al. (2006), trust could influence the customers' purchase intention.

After discussing the relationship between trust and online purchase intention, literature associated with trust is reviewed. Mayer (1999) defines three dimensions of trust: ability, benevolence, and integrity. Ability beliefs reflect customers' confidence that a firm has enough skills to perform in a right way. The belief benevolence reflects the consumers' confidence that the firm cares about its customers. Furthermore, integrity reflects the extent that a company will follow the set of moral principles and professional standard to interact with people. The 'ability' belief is the most important belief for mitigating consumers' perceived uncertainty while making a purchase (Mayer, Roger, & Davis, 1999). The study by McKnight (2002) is the first study who developed and validated trust measures for e-tailers. They find that trusting beliefs differ across customers while visiting a website. Additionally, customers judge e-tailers not in broad terms, but more in terms of specific attributes. So that customers could believe an e-tailer is benevolent, without having the ability to perform right. So, customers may have certain beliefs regarding trust for specific functionalities and products, rather than broad trust (McKnight, Vivek, & Charles, 2002). Furthermore, the study of Schlosser et al. (2006) examines how marketing signals influence customers' trust in an e-commerce environment. Website functionalities, as marketing signals, could have different effects on customers' trust beliefs, because customers have different levels of perceived risk and other purposes while visiting a website. Next, Schlosser et al. (2006) find that a customers' online purchase intention depends on their beliefs regarding the e-tailers' ability rather than the e-tailers' benevolence and integrity (Schlosser, et al., 2006). So, previous literature states that beliefs about the firm's ability have a positive effect on purchase intention and beliefs about the firm's benevolence and integrity do not have an effect on purchase intention. This leads to the following hypotheses:

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H2a: Beliefs about the firm's ability have a positive effect on customers' purchase intention.

H2b: Beliefs about the firm's benevolence and integrity do not have any effect on purchase intention.

2.3 Website Functionalities

Customers are facing many website features while visiting an e-tailer. They evaluate website features differently, because customers have different needs. The study by Bart et al. (2005) find that the importance of website functionalities differs across products. For instance, navigation and presentation, which refers to the appearance and lay-out of a website, can positively influence how to obtain product information and find specific webpages (Bart, et al., 2005). The study by Danaher et al. (2006) was the first one that built on the research by Ghose et al. (1998) and developed a measure for website-specific functionalities. They measured the functionalities of 385 websites based on 19 functionality attributes (see appendix B), and assigned a 1 if the functionality was present and 0 otherwise (Ghose, Sanjoy, & Dou, 1998; Danaher, Mullarkey, & Essegaier, 2006). Considering website features have a different impact on the search behavior and purchase intention, the study by Mallapragada et al. (2016) examines the effect of the product variety and website functionalities on the transactions' basket value of customers. They distinguish website functionalities, as studied before by Danaher et al. (2006), into communication and navigation functionalities. Communication functionalities capture the presence of communication-oriented features, such as e-mail, chat rooms, and message boards and navigation functionality captures the presence of browsing through features, such as website maps, content, layout and updates. Communication functionalities were found to be negatively associated with purchase probability, page views, and basked value, but positively associated with visit duration. This is because customers can perceive communication functionalities as clutter, and therefore buy less and view fewer pages. Although this seems counterintuitive, previous research on website design stated that website elements which are perceived as irrelevant could be bothering the shopping process (Wells, Hess, & Valacich, 2011). One explanation for this is that customers have become more comfortable by shopping online. So, customers are only perceiving communication functionalities as clutter when they do not appreciate the presence of functionalities (Mallapragada, Chandukala, & Liu, 2016). Navigation functionalities were found to be positively associated with purchase probability, basket value and visit duration, but have a negative impact on the page views. Based on this study, website functionalities have a different effect on the customers' purchase intention. Besides, previous studies have found that the effect between website functionalities and purchase intention is mediation by trust (Bart, et al., 2005; Schlosser, et al., 2006). To illustrate this, the study by Bart et al. (2005) found that the mediation effect of trust differs across website categories and different functionalities. Therefore, it is posited that:

H3a: Navigation functionalities have a positive impact on purchase intention mediated by trust.

H3b: Communication functionalities have a negative impact on purchase intention mediated by trust.

2.4 Type of Product

E-tailers sell search and experience products. This classification is based on the consumers' ability to know the product quality before or after buying. Although the quality of search products can be assessed prior to purchase, the quality of experience products is more difficult to assess. Even though the classification between search and experience product is quite clear, the importance of the available information depends on the perception of the customer. For example, it is more challenging to market products which involves sensory contact, since customers can not evaluate this product prior to purchase. Only customers with more knowledge are able to evaluate experience products properly (Alba, et al., 1997; Antonio Rosa & Malter, 2003). Schlosser et al. (2003) examines how individuals processed information through virtual interaction with a product. In order to control for the subjects' product knowledge, they asked each subject three question regarding the customers' experience, knowledge, and familiarity with the product (Schlosser, 2003). Furthermore, Weather et al. (2007) examines the effect between the type of product and different website features. When products have more experience qualities, retailers should make the product page more visual with pictures in order to increase the vividness of information and reduce the performance uncertainty. If a product is mostly search based, the performance uncertainty will decrease when customers have control over the available information. As an example, retailers can use hyperlinks to offer more information. In addition, providing third-party information was more effective for search products than for experience products (Weathers, Sharma, & Wood, 2007). Thus, the study by Weather et al. (2007) indicates that search and experience products have different effects on the product uncertainty. In addition, the study by Huang et al. (2009) uses the distinction between search and experience products as well. In this study, furniture and garden implements were used as search products and automotive parts, health and products and camera equipment were selected as experience products. Participants were asked to indicate their ability to judge six products on a seven-point scale from "not at all" (1) to "very well" (7). This study showed no significant difference between search and experience products in an online setting. (Huang, Lurie, & Mitra, 2009) Furthermore, the main finding of the study by Huang et al. (2009) was that the search and purchase process differs across search and experience products. Experience products involve a higher level of depth search (more time spent per product page), whereas search products involve a higher level of breath search (more page views). The difference in the amount of time spent on each page is due to the increased uncertainty of experience products. The uncertainty will decrease by spending more time on each page (Huang, Lurie, & Mitra, 2009). To sum up, previous literature stated that product

uncertainty differs between search and experience products with search products involving less uncertainty than experience products. As a result, consumer browsing behavior differs across search and experience products in regard to the depth and width of search. Therefore, one assumption is that the presence of search products has a more positive effect on the purchase intention. In addition, trust might moderate the effect between type of product and purchase intention. So that the moderation effect of trust is more important under conditions of high uncertainty (Bart, et al., 2005). This leads to the following hypotheses:

H4a: Search products have a more positive impact on purchase intention mediated by trust.
H4b: Experience products have a less positive impact on purchase intention mediated by trust.

2.5 Emotions

Emotions might influence the consumers' trust in an e-tailer. To make a distinction between emotions, the study by Shaver & Schwartz (1987) specifies emotions into love, joy, anger, sadness and fear (Shaver & Schwartz, 1987). Lerner, et al. (2001) studies the effect of fear and anger on the risk perception of people. They found that fear and anger can predict judgment and choice behavior across tasks and situation. In addition, they examine the effect of emotions on global beliefs about control, certainty, and optimism. Control stands for the belief whether people are responsible for a certain outcome, certainty indicates how certain people are over a certain outcome, and optimism stands for the change of doing life event in de future, such as marrying. One outcome was that people who experiencing fear have low beliefs regarding control, certainty and optimism and angry people have higher beliefs regarding control, certainty, and optimism (Lerner & Keltner, 2001). Thus, emotions influence the risk perception of people such that they will react differently to situations. Furthermore, the study by Dunn, et al. (2005) states that emotions depend on a persons' perception of certainty and the amount of control over a certain outcome. They found that emotions with positive valence increase trust, and fear will decrease trust. However, when people are familiar within a certain situation, the effect between emotions and trust will becomes irrelevant (Dunn & Schweitzer, 2005). Both studies are implying that emotions influence the outcome variable when people are uncertainty. Therefore, trust might moderate the effect of this study, such that joy increases emotions and fear decreases emotions.

H5a: Joy moderates trust such that it will increase for customers with positive emotions.
H5b: Fear moderates trust such that it will decrease for customers with negative emotions.

3. METHODOLOGY

The main purpose of this section is to gain a deeper understanding of how this study was performed. This section starts with a discussion on the study design and procedures used to conduct the results of this study. Subsequently, the variables measurement, sample selection, and model specification will be discussed.

3.1 Study Design and Procedures

An experiment is used to examine the research question of the current study. The experiment is designed in Qualtrics and distributed across social media such as Facebook and Linkedin. The total sample of this study consists of 233 subjects who participated, and 170 subjects who participate completely. A between subjects-design is conducted to test the effect of website functionalities (navigation, communication and control group) and type of products (search and experience products). An overview of all conditions is displayed in table 3.1. Even though the topic of this study is related to real web design, the experimental design of this study consists of a fictional webpage in order to avoid external influence. As an illustration, the study by Bart et al. (2005) uses a wide range of real websites. However, using a real website makes it difficult to control for external influence, such as an e-tailers image. Therefore, the webpages in this study are specially designed for this study (see appendix C section 3).

Table 3.1. This table shows the distribution of conditions within this study. Each condition represents one webpage of the experiment. A graphic of each webpage is displayed in appendix C section 3.

	Control group	Communication functionalities	Navigation functionalities
Search product (camera)	Condition 1	Condition 2	Condition 3
Experience product (perfume)	Condition 4	Condition 5	Condition 6

Participants are randomly assigned to one type of website functionality and one type of product to avoid selection bias. Website functionalities are manipulated by the presence of a control page without any functionalities and a webpage with navigation and communication functionalities. To illustrate this, the control page only includes functionalities to shop online, such as product information and an order button (see appendix C section 3 condition 1 and 4). By way of contrast, the webpage with navigation and communication functionalities is more sophisticated in terms of functionalities. The webpage with navigation functionalities has functionalities to change the page lay-out or a navigation function to check other pages on the same website. To show subjects the presence of navigation functionalities, all functionalities are marked with a red stripe (see appendix C section 3 condition 3 and 6). In addition, the webpage with communication functionalities has

functionalities such as a chat for online help and a section to post reviews about products (see appendix C section 3 condition 2 and 5). To define the type of product, perfume is used as experience product and a camera as search product (Huang, et al., 2009). Both products are priced in the manipulation for $60. To avoid product familiarity, both products are originated from unfamiliar brands (perfume brand = TokyoMilk and camera brand = Vivitar). Besides, product knowledge is measured to control for knowledge regarding perfume and camera's in general. Before seeing the webpage with the manipulation, subjects have to read a description about navigation and communication functionalities, so that they were able to differentiate between functionalities (appendix C section 2). Thereafter, subjects have to read a fictional scenario (appendix C section 3). They are instructed to buy a camera for their dad or a perfume for their mom with a budget of $60. To test the effectiveness of each manipulation, subjects viewed one fictional webpage and answered questions about their online purchase intentions and trustworthiness. In addition, subjects have to answer questions about their emotions while seeing the webpage and their product knowledge about camera's or perfume in general. Afterwards, subjects have to answer two questions in order to confirm whether they did see the manipulation (appendix C section 4). To get more insights into the most important communication and navigation functionalities, subjects had to rate the importance of each functionality (appendix C section 5). At the end of the survey, subjects reported their age, gender as well as how often they do shop online. The last question is included to control for the subjects' Internet experience in general.

3.2 Variable Measurement

Most of the variables in this study were measured with existing scales from previous literature (see appendix A). The items of the dependent variable, purchase intention, were measured using three items of the study by Schlosser et al. (2006). In addition, the sixteen items regarding trust were also derived from Schlosser et al. (2006). Both measures were selected for this study because the study by Schlosser et al. (2006) examined trust and purchase intention for e-tailers as well. The measures for purchase intention and trust were both measured on an interval scale. Website functionalities were being measured based on seven communication functionalities and eight navigation functionalities used by Mallapragada et al. (2016). An overview of all website functionalities used in this study is displayed in appendix B. Seeing that some functionalities, such as online diagnostics, are not that often used on websites (mallapragada, et al., 2016), this will not be taken into account. In addition, functionalities to change graphics or text, page layout and site content were combined because all functionalities have similar purposes. Then, all navigation functionalities were combined as one nominal variable and all communication functionalities were combined as one nominal variable as done in the study by Mallapragada et al. (2016). Furthermore, the distinction between search and experience products was adopted from the study by Huang et al. (2009) and was a nominal

variable as well. Besides, the six items to measure emotions (Shaver, et al., 1987) and three items to measure product knowledge (Schlosser, 2003) were measured on an interval scale.

3.3 Mediation Analyses

This section explains why the data in this study was analyzed with mediation models. Considering the hypothesis of this study, the underlying process between treatment variable website functionalities and purchase intention was examined. To gain knowledge about this underlying process, one major purpose of this study is to assess which causal mechanism causes the effect on purchase intention. Therefore, a mediation analysis was used to assess this underlying process. The main goal of mediation analysis is to establish the extent to which a treatment variable (X) influences an outcome variable (Y) through one of more mediation variables (M) (Hayes, 2014). This study used the mediated process defined by Baron & Kenny (1986), which has been widely used within the field of marketing. To illustrate this, the *Journal of Consumer Research*, the *Journal of Marketing*, and the *Journal of Marketing Research* cited Baron & Kenny's mediation process (1986) in 240 articles (Zhao, et al., 2010). Since this mediation process has been widely used, this study will adopt the same procedures as well. Furthermore, previous studies have examined the mediation process between treatment and outcome variable associated with trust before (Bart, et al., 2005; Schlosser, et al., 2006). Bart et al. (2005) used Structural Equation Modeling (SEM) to measure the effect of each treatment variable on the outcome variable mediated by trust. Their study used many latent constructs as treatment variables to estimate the relation of each construct on purchase intention mediated by trust. Another mediation analysis related to trust was defined by Schlosser et al (2006). They examined the effect of website characteristics on purchase intention mediated by trust beliefs. To define the mediation variable out of all trust beliefs, Schlosser et al. (2006) modeled ability beliefs as a function of purchase intention. To test whether benevolence and integrity beliefs did not influence purchase intention, both beliefs were included into the stepwise regression model. This current study adopted the procedure defined by Schlosser et al. (2006) to specify the number of mediation variables. In addition, the study by Schlosser et al. (2006) used the same requirements for mediation as defined by Baron & Kenny (1986). The mediation analyses defined by Baron & Kenny (1986) were performed to clarify the causal mechanism between treatment variables and the outcome variable of this study (see figure 4.1). Mediation of trust was measured based on Baron & Kenny's test. To test mediation, Baron and Kenny (1987) recommended three linear regression models (Baron & Kenny, 1986):

(1) $Y = \beta_0 + c'X + \varepsilon$

(2) $M = \beta_0 + aX + \varepsilon$

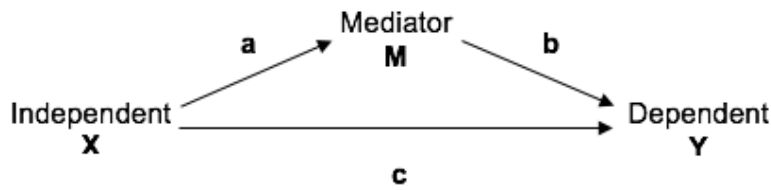(3) $Y = \beta_0 + cX + bM + \varepsilon$

Figure 4.1*: Mediation model (Baron & Kenny, 1987). Path $a \times b$ denotes the indirect path between X and Y mediated by M, and path c denotes the total effect between X and Y.

To explain all models in detail, equation 1 denotes the direct effect (c') between treatment variable X and outcome variable Y. In addition to the direct effect, equation 2 displays the indirect effect (path a) of treatment variable X on outcome variable M. The second part of the indirect effect is denoted in equation 3, where path (path b) shows the indirect effect of the mediation variable (M) on the outcome variable (Y). According to Baron & Kenny (1986), one important condition to establish mediation is to have a significant path c' and path a. Besides, the mediation variable M must affect the dependent variable in equation 3. If so, the total effect will become insignificant or less strong (path c) (Baron & Kenny, 1986). The study by Zhao et al. (2010) elaborates on the study by Baron and Kenny (1987) and describes the relationship between the indirect effect, direct effect, and total effect. The indirect effect between X on Y through M is denoted as $a \times b$, which estimates the effect of X on M (path a) and the effect of M on Y (path b). The direct effect (c') of X on Y quantifies how an increase in X affects Y. As a matter of fact, the indirect effect $a \times b$ and direct effect (c') and are mathematically identical to the total effect (c) in equation 3 (Zhao, Lynch, & Chen, 2010). Thus, the total effect of c is the sum of $a \times b$ and c' (see equation 4). Although the study by Baron & Kenny (1987) emphasized that the direct effect (path c') must be significant, the study by Zhao et al. (2010) proves the opposite. There is no need to have a significant direct effect c' to establish mediation (see equation 4) (Zhao, et al., 2010).

(4) $c = (a \times b) + c'$

The main goal of Baron & Kenny's linear regression models is to identify the type of mediation. Zhao et al (2010) defined five patterns, the first three are consistent with mediation and the last two with nonmediation:

1. *Complementary mediation:* Mediation effect ($a \times b$) and direct effect c' point at the same direction;

2. *Competitive mediation*: Mediation effect ($a \times b$) and direct effect c' point in opposite directions;

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3. *Indirect-only mediation*: Mediation effect ($a \times b$) exists, but there is no direct effect;

4. *Direct-only nonmediation*: Direct effect c' exists, but there is no indirect effect ($a \times b$);

5. *No-effect nonmediation*: No direct c' or indirect ($a \times b$) mediation effect (Zhao, et al., 2010).

3.4 Mediation Models

After discussing Baron & Kenny's mediation procedure, this section will address all models once again and define the mediation models associated with the current study. To provide an overview, section 1 discusses the direct effect of X on Y, section 2 the indirect effect of X on M, and section 3 the effect of X on Y mediated by M.

(1) Treatment effect (X) on outcome variable (Y)

Measuring the treatment effect (X) on outcome variable (Y) was the first step defined by Baron & Kenny (see equation 1). In regard to the current study, equation 1 defines the direct effect between website functionalities, combined with search and experience products, on purchase intention. In this case, the model of equation 1 was used to examine hypothesis H1a and H1b. To start off with the treatment variables, which are the website functionalities and type of products. Website functionalities were denoted by two dummy coded variables, navigation functionalities NAV_{FUN} and communication functionalities COM_{FUN}. As an illustration, conditions with navigation functionalities were coded with a 1 for NAV_{FUN} and 0 for COM_{FUN}. In addition, the control page without any functionalities was coded 0 for NAV_{FUN} and 0 for COM_{FUN}. Type of product PROD was coded as a dummy variable as well. Perfume (experience product) was denoted as 0 and a camera (search product) was denoted as 1. In addition, the control variables knowledge KNOW, age AGE, gender GENDER and Internet experience INT_{EXP} were included as control variables. The mediation model to define the direct effect of path c' was defined as follows:

$$(5)\ Y = \beta_0 + \beta_1 PROD + \beta_2 NAV_{FUN} + \beta_3 COM_{FUN} + \beta_4 AGE + \beta_5 GENDER + \beta_6 INT_{EXP} + \beta_7 KNOW + \varepsilon$$

(2) Treatment effect (X) on mediation variable (M)

Before discussing the indirect effect of X on M (equation 2), the number of mediation variables is discussed first. A stepwise regression analysis was used to examine the effect of trust beliefs on purchase intention. One assumption of the current study is that trust belief ability is most related to purchase intention (H2a). Therefore, the effect of this trust beliefs on purchase intention is displayed in equation 6. H2b showed that benevolence and integrity beliefs were not related to purchase intention. When adding benevolence and integrity beliefs to the model, this variable must have a

nonsignificant effect on purchase intention. To exclude the fact that benevolence and integrity beliefs might influence purchase intention, the current study adopted the same procedure as used by Schlosser et al. (2006). Purchase intention is constructed as PUR_INT, ability beliefs as ABILITY, benevolence beliefs as BEN and integrity as INT. The stepwise regression models are displayed in equation 6 and 7.

$$(6) \ PUR_{INT} = \beta_0 + \beta_1 ABILITY_1 + \varepsilon$$

$$(7) \ PUR_{INT} = \beta_0 + \beta_1 ABILITY_1 + \beta_2 BEN + \beta_3 INT + \varepsilon$$

After defining the amount of mediation variables for the current study, the effect of the treatment variables on the mediation variable(s) was measured by using an extension of equation 2 (see equation 8). This equation is related to H3a, H3b, H4a, and H4b. In order to accept the hypotheses, variables PROD, NAV_{FUN} and COM_{FUN} need to have a significant effect on a least one trust belief. If this is not the case, there is no mediation effect. In addition, the amount of regression models depends on the amount of mediation variables defined in equation 6 and 7. Thus, if this study showed a significant effect of two trust beliefs on purchase intention, one linear regression model need to be performed for each trust belief. ME_1 denotes the first mediation variable and ME_2 denotes the second mediation variable. The effect of treatment variables on the mediation variables ME_1 and ME_2 is displayed in equation 8.

$$(8) \ ME_{1,2} = \beta_0 + \beta_1 PROD + \beta_2 NAV_{FUN} + \beta_3 COM_{FUN} + \beta_4 AGE + \beta_5 GENDER + \beta_6 INT_{EXP} + \beta_7 KNOW + \varepsilon$$

(3) Effect of treatment variable (X) on outcome variable (Y) mediation by (M)
Equation 3 is the second elements to define the indirect effect of mediation. In this case, the mediation variable has to be significant to establish mediation (Baron & Kenny, 1986). If this is the case, H3a, H3b, H4a and H4b can be examined. Under circumstances of one mediation variable, the general model of equation 3 was used. When rewriting equation 3, equation 9 can be defined.

$$(9) \ Y = \beta_0 + \beta_1 PROD + \beta_2 NAV_{FUN} + \beta_3 COM_{FUN} + \beta_4 ME + \beta_5 AGE + \beta_6 GENDER + \beta_7 INT_{EXP} + \beta_8 KNOW + \varepsilon$$

Although the main assumption is that this study contains one mediation variable of trust. It might be the case that benevolence and integrity beliefs have an effect on purchase intention. Therefore, literature regarding mediation analysis with more than two mediators is included as well. Edwards

& Lambert's (2007) study defined a 'second stage model' to examine mediation effect with more than two mediation variables and four equations (Edwards & Lambert, 2007). However, the first two equations of this 'second stage model' are in line with equation 1 and 2 of this study. Additionally, this second stage model contains an additional model for the second mediator ME_2 similar to equation 2. The fourth equation replaces equation 3, whereas ME_1 and ME_2 are both included in the regression model. So, under circumstances of two mediation variables, equation 3 can be rewritten as equation 10.

$$(10)\ Y = \beta_0 + \beta_1 PROD + \beta_2 NAV_{FUN} + \beta_3 COM_{FUN} + \beta_4 ME_1 + \beta_5 ME_2 + \beta_6 AGE + \beta_7 GENDER + \beta_8 INT_{EXP} + \beta_9 KNOW + \varepsilon$$

As an extension to the original mediation analysis by Baron & Kenny (1986), this study contains two variables which might moderate the mediation variable(s). Since those moderation variables are part of the mediation process, both variables were included as moderation mediation variables. This definition is based on the moderated mediation model (Muller, Yzerbyt, & Judd, 2005). According to the theoretical framework, it is notable to mention that the moderation variables might influence the mediation variables on path (*b*). Therefore, the moderation variables MO_1 and MO_2 were both included in equation 3. After rewriting equation 3 once again, the general moderated mediation model was defined as follows:

$$(11)\ Y = \beta_0 + \beta_1 X + \beta_2 ME_1 + \beta_3 ME_2 + \beta_4 ME_1 \times MO_{1,2} + \beta_5 ME_2 \times MO_{1,2}$$

Variables JOY and FEAR serve as moderation variables for the mediation variable(s) of this current study. Both moderation variables might be responsible for the mediation process between the mediation variable(s) M and the outcome variable Y. To examine whether the moderation variables influence the mediator on the outcome variable Y, equation 12 was constructed, which is based on the moderated mediation model as displayed in equation 11 (Muller, Yzerbyt, & Judd, 2005). Since this study contains two moderation variables, variable JOY is denoted as MO_1 and variable FEAR is denoted as MO_2. Note that the number of mediation variables depends on equation 6 and 7.

$$(12)\ Y = \beta_0 + \beta_1 PROD + \beta_2 NAV_{FUN} + \beta_3 COM_{FUN} + \beta_4 ME_1 + \beta_5 ME_2 + \beta_6 ME_1 \times MO_{1,2} + \beta_7 ME_2 \times MO_{1,2} + \beta_8 AGE + \beta_9 GENDER + \beta_{10} INT_{EXP} + \beta_{11} KNOW + \varepsilon$$

4. DATA

This section describes the data used in this study. The data description section discusses the Principal Component Analysis as well as the Mean, Standard Deviation and Cronbach's alfa of each variable used in this study. In addition, details about the sample of this study are being discussed.

4.1 Data Description

A multistage process was used in this section to purify the measures of this study (see appendix A). The first stage involves Principal Component Analysis (PCA) to confirm whether all variables load on the same factor. As expected, the items of variables purchase intention, knowledge, and emotions have loading values of 0.50 or higher which mean that the factor is sufficient (Janssens, Wijnen, De Pelsmacker, & Van Kenhove, 2008). However, trust beliefs ability, benevolence and integrity were statistically significant, but not equally distributed across factors. Ability was confirmed by one factor (loading > 0.60) and benevolence and integrity were placed in the second factor (loading > 0.60). In addition, two items with a substantial drop in item-to-total loading were deleted. This implies that trust is being measured with one variable for ability and one variable for integrity and benevolence. New variables were created by taking the mean value of each factor, which is in line with the book by Janssens et al. 2008.

The second stage addresses the data description of each variable confirmed by the PCA. This stage involves the description of the Mean, Standard Deviation (S.D.) and Cronbach's Alpha α of each variable. According to the book by Janssens et al. (2008), the variable with the lowest internal validity of this study is sufficient ($\alpha = 0.811$), which means that all internal items within a variable are related to each other. Purchase intention (Mean = 4.13; S.D.= 1.48; $\alpha = 0.897$) was measured by three items using a seven-point scale. Furthermore, ability (Mean = 4.20; S.D.= 1.25; $\alpha = 0.925$) and benevolence and integrity (Mean = 4.03; S.D.= 1.06; $\alpha = 0.918$) were measured with sixteen items and a seven-point scale of trust defined in previous research by Schlosser et al. (2006). Emotions were divided into joy (Mean = 3.82; S.D.= 1.32; $\alpha = 0.929$) and fear (Mean = 2.84; S.D.= 1.34; $\alpha = 0.811$). Both variables were measured with three questions and a seven-point scale, which is in line with the study by Shaver et al. (1987). The last variable, product knowledge (Mean = 4.40; S.D.= 1.40; $\alpha = 0.924$), was measured with three questions regarding product knowledge and a seven-point scale as well. As a final note, the importance of each communication and navigation functionality were measured separately (see table 4.1). Subjects found that online help (Mean = 5.46) and a chat (Mean = 5.41) were the most important communication functionalities while shopping online. Next, subjects found a navigation menu, search function, change of graphics and change of the content the most important navigation functionalities.

Table 4.1 Mean and Standard Deviation (S.D.) of communication and navigation functionalities.

Communication functionalities			Navigation functionalities		
	Mean	**S.D.**		**Mean**	**S.D.**
1. E-mail contact	5.11	1.78	**1. Change language**	5.18	1.61
2. Online help	5.46	1.31	**2. Change graphics**	5.68	1.44
3. Registration	4.29	1.63	**3. Change content**	5.63	1.54
4. Feedback with online forms	4.79	1.63	**4. Search function**	5.81	1.38
5. Chat	5.41	1.30	**5. Navigation menu**	5.78	1.43
6. Topic-specific form	5.11	1.32	**6. Relevant links**	4.95	1.53
7. Message board	4.98	1.52	**7. Recent updates**	4.51	1.51
			8. Download guideline	3.81	1.92

4.2 Sample Description

The distribution across conditions is displayed in table 4.2. To explain the total sample, (44%) of the sample was male and (56%) was female with a mean age of 25. Besides, (72%) of the total sample shops at least once a month online. This implies that most subjects are familiar with online shopping such that they can imagine the experiment more realistic. The simple rule of thumb within experimental economics is to have a sample size of at least 20 subjects for each condition. (List, Sadoff, & Wagner, 2011). Since the total sample size consists of 170 subjects, the total sample size is sufficient. However, it depends on the variance within each condition to determine whether the sample size could be equally divided among the six conditions. Therefore, an One-Way ANOVA was performed in relation with purchase intention. According to this test, the variance within each group is equal to other conditions, $(F(5, 164) = 0.993, p > .050)$. Therefore, the total sample size of 170 subjects can be equally divided across six conditions.

Table 4.2 Amount of subjects N within each condition.

	Control group	Communication functionalities	Navigation functionalities
Search product (camera)	N = 27	N = 31	N = 30
Experience product (perfume)	N = 27	N = 27	N = 28

5. RESULTS

This section shows the empirical evidence of this study. As mentioned in the introduction section, the effect of website functionalities on purchase intention mediated by trust was examined. First of all, the direct effect between website functionalities and purchase intention was examined. Thereafter, the indirect effect of website functionalities on purchase intention mediated by trust was addressed. To end this section, the moderation effect of emotions on trust was measured.

Manipulation Check

To test whether subjects have read the instruction of the current study carefully, a manipulation check was performed. After seeing the webpage with either communication functionalities, navigation functionalities or a control page, subjects had to answer whether they did see communication functionalities (yes/no) and navigation functionalities (yes/no). First, a Pearson Chi-Square (X^2) confirms a relation between the presence of communication functionalities and whether subjects did see the manipulation ($X^2 = 72.72$, p = .000). Second, the presence of navigation functionalities was also confirmed by a Pearson Chi-square ($X^2 = 13.84$, p = .000). Thus, subjects were aware of the presence of communication and navigation functionalities in the current study.

Website Functionalities and Purchase Intention

This section analyzes the effect of website functionalities on purchase intention. In order to determine the relationship between three nominal predictors (navigation functionalities, communication functionalities and type of product) and the outcome variable purchase intention a standard multiple regression was performed (see table 5.1). The general multiple linear regression model of equation 5 was significant (F (7,162) = 2.287, p < .050) with a R^2 of .090 and a maximum VIF of 1.420. One major assumption of the linear regression model is that independent variables are not highly correlated (Janssens, et al., 2008). To test for multicollinearity across independent variables, the variance information factor (VIF) was used. Multicollinearity might be a problem for interpreting the results when the VIF is greater than 10 (Neter, Wasserman, & Kutner). According to the VIF score of the equation 5, multicollinearity is not an issue. Although equation 5 was significant, only 9% (R^2) of the variation in the dependent variable was explained by the variation of the independent variables. Since the R^2 is quite small, the independent variables of equation 5 are hardly related to purchase intention. To explain this, the results showed that variables NAV_{FUN} and COM_{FUN} were not significant. Therefore, website functionalities do not predict purchase intention directly, which indicates that H1a is rejected. Variables NAV_{FUN} and COM_{fun} were both dummy coded. As an illustration, $NAV_{FUN} = 0$ and $COM_{FUN} = 0$ stands for the control page. Considering that an increase in both dummy variables does not lead to a greater purchase intention, there is no difference between the low-investment webpage (control page) and the high-investment webpage

(communication or navigation functionalities). Besides, variable PROD showed no significant effect on purchase intention as well. Therefore, H1b is rejected too. Regardless of the type of product, customers will remain purchasing products even if it is hard to estimate the product quality before purchase. This indicates that the treatment effects have no influence on purchase intention. However, variables AGE and KNOW tend to be significant. This indicates that older customers have a lower purchase intention. Besides, customers with more product knowledge are more willing to purchase a product from an unfamiliar e-tailer.

Table 5.1. The results of table 5.1 show the effect of website functionalities on purchase intention. The dependent variable is purchase intention. The explanatory variables are NAV_{FUN}, $COM_{FUN,}$ and PROD. Variables GENDER, AGE, INT_{exp}, and KNOW are included as control variables. The direct effect of X on Y is tested here.

Dependent variable: Purchase intention		
Equation 5		
	β	P-value
Constant	3.721***	0.000
NAV_{FUN}	-0.229	0.414
COM_{FUN}	0.398	0.149
PROD	0.097	0.668
GENDER	-0.112	0.624
AGE	-0.031**	0.048
INT_{EXP}	0.152	0.119
KNOW	0.172**	0.035
R^2	0.090	0.030

*$p \leq 0.10$, **$p \leq 0.05$, ***$p \leq 0.01$

Although there was no significant direct effect of website functionalities on purchase intention, it might be interesting to discuss numerical differences of explanatory variables NAV_{FUN}, $COM_{fun,}$ and PROD. One interesting outcome, displayed in figure 5.1, is the fact that navigation functionalities combined with search product do have lower a Mean score comparing to the control page combined with search products. On the other hand, communication functionalities with search or experience products do have the highest impact on purchase intention. To sum up, this section found no significant direct effect between website functionalities and purchase intention. However, the presence of communication functionalities has a greater effect on purchase intention comparing to navigation functionalities or the control page.
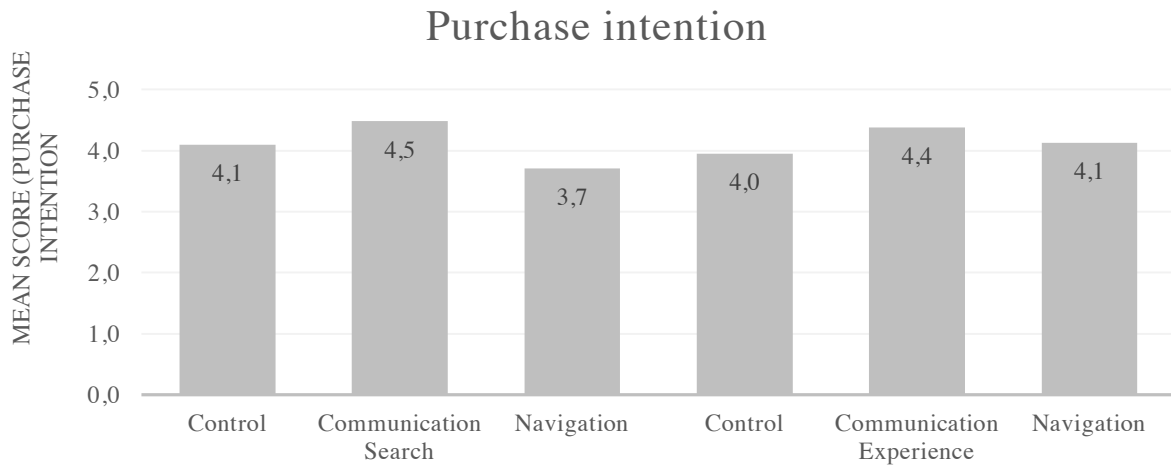
Figure 5.1. Mean score of purchase intention across conditions (communication functionalities, navigation functionalities and control page) with search and experience products. Purchase intention was measured with a seven-point scale.

Trust Beliefs and Purchase Intention

I used a stepwise regression to understand which trust beliefs are most related to purchase intention. As mentioned in the method section, equation 6 was performed first with purchase intention as dependent variable and variable ABILITY as explanatory variable. Then, benevolence and integrity beliefs were included in equation 7 to see whether the explanatory variable affects the outcome variable and the other explanatory variable ABILITY. Since benevolence and integrity beliefs were merged in the data description section, variable BEN_INT was created. Based on the stepwise regression models of equation 6 and 7 (table 5.2), the mediation variable(s) of this study were defined. The linear regression model of equation 6 was significant (F (1,168) = 78.100, p < .000) with a R^2 of .317. Ability beliefs significantly influenced purchase intention, so that customers with greater ability beliefs have a greater purchase intention (β = 0.669, p < .000). This indicates that H2a is accepted. When considering the model of equation 7, this model showed to be significant (F (2,167) = 41.600, p < .000) with a R^2 of .333. The R^2 showed a good fit between the data and the regression models (see table 5.2). Also, model 2 showed a small increase in model fit compared to model 1. This indicates that model 2 explains more of the variation in purchase intention. To get back to the point, benevolence and integrity do have some influence on purchase intention. Therefore, H2b is rejected. However, the effect of benevolence and integrity beliefs is less strong comparing to ability beliefs. This implies that ability beliefs are a better predictor for online purchase intention than benevolence and integrity beliefs. Since the VIF of equation 7 is not greater than 2.287, multicollinearity is not an issue.

Table 5.2. The results of table 5.2 show the effect of trust beliefs on purchase intention. The dependent variable of both equations is purchase intention. The explanatory variable of equation 6 is ABILITY, and the explanatory variable of equation 7 are variables ABILITY and BEN_INT.

	Dependent variable: Purchase intention					
	Equation 6			Equation 7		
	β	R^2	P-value	β	R^2	P-value
Constant	1.320***	0.317	0.000	0.970***	0.333	0.010
ABILITY	0.669***		0.000	0.503***		0.000
BEN_INT				0.260*		0.053

*$p \leq 0.10$, **$p \leq 0.05$, ***$p \leq 0.01$

Website Functionalities and Trust beliefs

A multiple linear regression was used to examine the effect of website explanatory variables NAV_{FUN}, COM_{FUN} and PROD on mediation variable trust beliefs. As displayed in table 5.2, equation 7 showed that both variables ABILITY and BEN_INT were related to purchase intention. As a consequence, variables ABILITY and BEN_INT were included in this section to measure the effect of explanatory variables NAV_{FUN}, COM_{FUN} and PROD on mediation variables ABILITY and BEN_INT. Therefore, the multiple linear regression model of equation 8 was performed once for ABILITY as dependent variable and once for BEN_INT as dependent variable. The first multiple linear regression (equation 8a) with dependent variable ABILITY and explanatory variables NAV_{FUN}, COM_{FUN} and PROD is displayed in table 5.3. Model 8a was significant ($F(7,162) = 3.253$, $p < .050$) with a R^2 of 0.123 and a VIF of 1.420. Variables COM_{FUN}, PROD, AGE, and KNOW have a significant effect on ability beliefs regarding e-tailers. The e-tailers' ability increased 0.513 by showing communication functionalities instead of the control page without any functionalities. Since variable PROD is coded as 0 = experience product and 1 = search product, the e-tailers' ability increased even more by selling low-risk products (search products). Then, the second multiple linear regression (equation 8b) with dependent variable BEN_INT and variables NAV_{FUN}, COM_{FUN} and PROD was performed (see table 5.3). Equation 8b was significant ($F(7,162) = 4.148$, $p < .000$) with a R^2 of 0.152 and a VIF of 1.420. COM_{FUN}, AGE, and KNOW have a significant effect on benevolence and integrity beliefs regarding e-tailers. In this case, the e-tailers' benevolence and integrity beliefs increased with 0.624 by showing communication functionalities instead of a control page. Besides, older customers have a lower trusting beliefs in general and customers with more product knowledge have higher trusting beliefs in general. When comparing both models, it is notable to mention that variable COM_{FUN} has a stronger positive effect on benevolence and integrity beliefs than on ability beliefs. However, when a purchase involves less risk (search products), dummy variable PROD showed to have a positive significant effect on ability beliefs (model 8a). On the other hand, variable PROD showed no significant effect on benevolence and integrity beliefs

(model 8b). When considering the model fit of equation 8A and 8B, the independent variables showed to explain more of the dependent variable in equation 8B comparing to equation 8A. So, the independent variables are a better predictors for benevolence and integrity beliefs comparing to ability beliefs.

Table 5.3. The results of this table show the effect of website functionalities on mediation variables ability and benevolence and integrity. The dependent variable of equation 8A are ability beliefs, and the dependent variable of equation 8B are benevolence and integrity beliefs. The explanatory variables of both models are NAV_{FUN}, COM_{FUN}, and PROD. Variables GENDER, AGE, INT_{exp}, and KNOW are included as control variables. This table shows the indirect effect between X on M.

	Dependent variable: Trust beliefs			
	Equation 8A		Equation 8B	
	β	P-value	β	P-value
Constant	3.782***	0.000	3.505***	0.000
NAV_{FUN}	0.087	0.706	0.040	0.838
COM_{FUN}	0.513**	0.025	0.624***	0.001
PROD	0.355*	0.059	0.178	0.256
GENDER	0.005	0.978	0.014	0.927
AGE	-0.036***	0.006	-0.027**	0.014
INT_{EXP}	0.072	0.373	0.033	0.627
KNOW	0.157**	0.020	0.170***	0.003
R^2	0.123***	0.003	0.152***	0.000

*$p \leq 0.10$, **$p \leq 0.05$, ***$p \leq 0.01$

To explain every treatment variable more in detail, figures 5.2, 5.3 and 5.4 show the effect of every treatment variable on the Mean value of ability and benevolence beliefs. To start with communication functionalities (figure 5.2), all trust beliefs increased significantly by showing communication functionalities instead of the control page. Although this effect was strongest for benevolence & integrity beliefs ($\beta = 0.624$), the mean score of ability beliefs was higher for the control page and webpage with communication functionalities. This implies that customers assign greater ability beliefs to an e-tailer instead of benevolence and integrity beliefs.
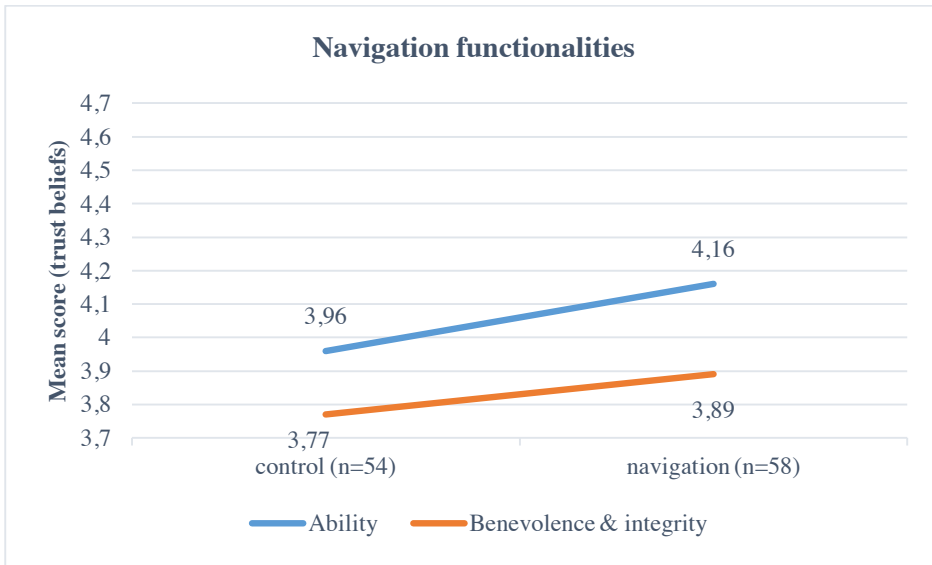
25
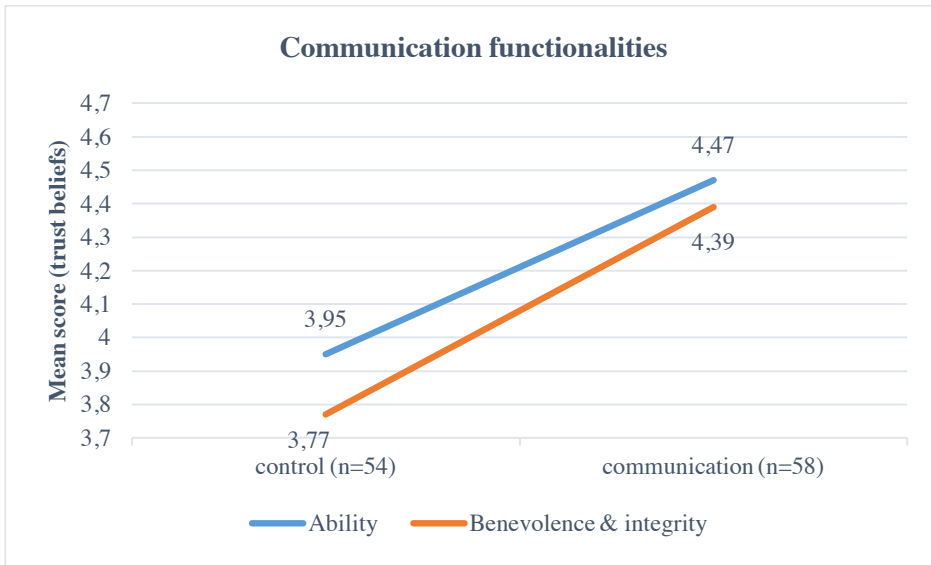
Figure 5.2: Mean score of ability and benevolence & integrity beliefs with communication functionalities and without communication functionalities (control). Ability and benevolence & integrity were measured with a seven-point scale.

This study found no significant effect of navigation functionalities on trust beliefs. However, it might be interesting to address the numerical difference between the presence of navigation functionalities on all trust beliefs. In contrast to the numerical effect of navigation functionalities on purchase intention as displayed in figure 5.1, the presence of navigation functionalities has a positive marginal effect on all trust beliefs (figure 5.3). As a matter of fact, the presence of navigation functionalities does have a more positive effect on ability beliefs comparing to benevolence and integrity beliefs. Comparing the results of navigation and communication functionalities, this study showed that communication functionalities do have a more positive effect on trust beliefs in general. Figure 5.4 shows the effect of search and experience products on trust beliefs. Since the effect of communication and navigation functionalities influences trust beliefs, figure 5.4 shows merely the control page with either search (low risk) or experience (high risk) products. The presence of experience products almost has the same effect on all trust beliefs. However, this study showed a significant increase in ability beliefs while showing a search product. Thus, ability beliefs are more sensible under conditions of high and low-risk conditions. This tendency is also the case for benevolence and integrity beliefs while showing a search product, but this effect was less strong.

Figure 5.3. Mean score of ability and benevolence & integrity beliefs with navigation functionalities and without navigation functionalities (control). Ability and benevolence & integrity were measured with a seven-point scale.
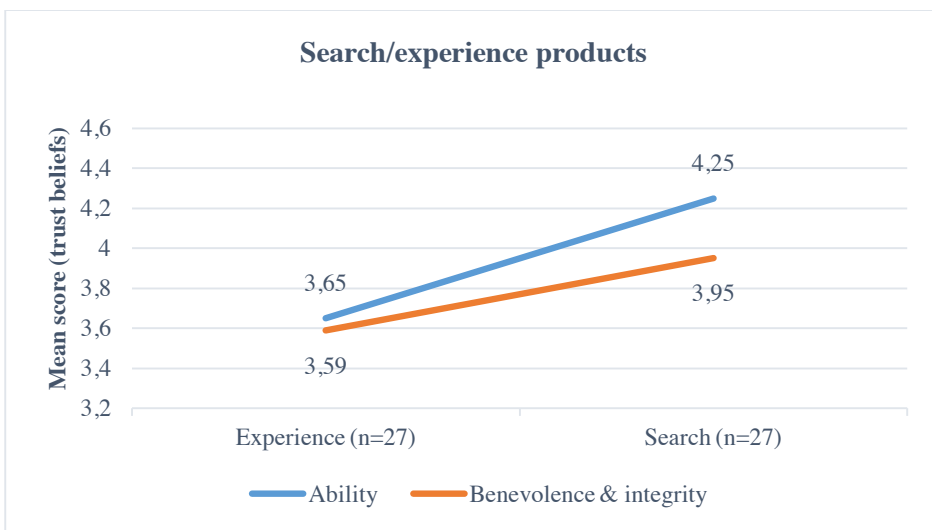
Figure 5.4. Mean score of ability and benevolence & integrity beliefs with search and experience products. Ability and benevolence & integrity were measured with a seven-point scale.

Website Functionalities on Purchase Intention Mediated by Trust

Model 8a and model 8b showed that at least one treatment variable has a significant effect on ability beliefs and benevolence and integrity beliefs. Therefore, this study analyzed the effect between website functionalities and purchase intention with two mediation variables. As denoted in the method section, the "second stage model" of equation 10 was used to examine the mediation effect between website functionalities and purchase intention with two mediation variables. Based on this "second stage model", both mediation variables ABILITY and BEN_INT were included in equation 10 displayed in table 5.4.

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A multiple linear regression was used to measure the effect of explanatory variables NAV_{FUN}, COM_{FUN}, and PROD on the dependent variable purchase intention controlling for trust beliefs ABILITY and BEN_{int}. In addition, control variables GENDER, AGE, INT_{exp}, and KNOW were included as well (see table 5.4). Equation 10 was significant (F (9,160) = 9.722, p < .000) with a R^2 of .354 and a maximum VIF of 2.369. Considering the results of equation 10, variable ABILITY showed to be the only significant variable. Comparing the results of equation 10 to the results of equation 6 and 7, equation 10 showed to have a higher model fit of 35%. Thus, the independent variables displayed in equation 10 predict more of the variance in purchase intention.

Table 5.4. The results of the effect of website functionalities on purchase intention controlling for trust beliefs ABILITY and $BEN_{int.}$ The dependent variable is purchase intention. The explanatory variables are NAV_{FUN}, COM_{FUN}, and PROD. Variables GENDER, AGE, INT_{exp}, and KNOW are included as control variables. This table shows the indirect effect between X and Y mediated by M.

Dependent variable: Purchase Intention		
	Equation 10	
	β	P-value
Constant	1.035	0.163
$\mathbf{NAV_{FUN}}$	-0.281	0.236
$\mathbf{COM_{FUN}}$	0.001	0.997
PROD	-0.122	0.531
ABILITY	0.505***	0.000
$\mathbf{BEN_{INT}}$	0.222	0.112
GENDER	-0.118	0.543
AGE	-0.007	0.608
$\mathbf{INT_{EXP}}$	0.108	0.190
KNOW	0.055	0.440
$\mathbf{R^2}$	0.354***	0.000

*p ≤ 0.10, **p ≤ 0.05, ***p ≤ 0.01

After completing the analyses defined by Baron & Kenny (1986), the type of mediation can be described. To start with the direct effect between treatment variables and outcome variable purchase intention (path c'), this study showed no significant effect between explanatory variables NAV_{FUN}, COM_{FUN}, and PROD and outcome variable purchase intention (see table 5.1). Thus, this study showed no direct effect between the presence of website functionalities and purchase intention when performing equation 5. In addition, there is no direct effect between search and experience products on purchase intention. Therefore, all explanatory variables of this study are not direct predictors of the customers' purchase intention.

The second condition defined by Baron & Kenny (1986) refers to the indirect path between treatment variables X and mediation variables M (path a). Since this study found two mediation variables of trust, two multiple linear regression analyses were performed for each mediation variable (see table 5.3). The first multiple linear regression was performed with ABILITY as dependent variable in equation 8a. Explanatory variables COM_{FUN} ($\beta = 0.513$)** and PROD ($\beta = 0.355$)* were significant, which indicates that both variables will be considered in defining the type of mediation. Considering the second multiple linear regression with BEN_{INT} as dependent variable, only explanatory variable COM_{FUN} ($\beta = 0.624$)*** showed to be significant in equation 8b. Therefore, variable COM_{FUN} will be considered in defining the mediation process for mediation variable BEN_{INT}.

The last condition defined by Baron & Kenny (1986) requires a significant effect on the outcome variable purchase intention, when the mediation variables ABILITY (ME_1) and BEN_{INT} (ME_2) are included in the same equation as the explanatory variables NAV_{FUN}, COM_{FUN}, and PROD. However, variable ABILITY (ME_1) with ($\beta = 0.505$)*** was the only significant mediation variable related to purchase intention (see table 5.4). Based on the outcome of equation 10, this study showed that path b is significant as well. Therefore, this study showed a significant indirect effect ($a \times b$) without a significant direct effect (path c'). Based on the five patterns of mediation defined by Zhao et al. (2010), this study showed to have an "Indirect-only mediation". This indicates that the definition of the mediation variable ABILITY is in line with the conceptual framework of this study. An overview of the indirect mediation process is displayed in figure 5.5.
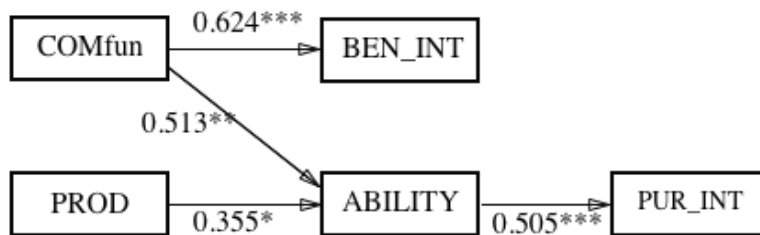
Figure 5.5. Results of the Indirect-only mediation. Explanatory variable COM_{FUN} has an effect on variable BEN_INT, but BEN_INT is no mediation variable between COM_{FUN} and PUR_INT. Explanatory variables COM_{FUN} and PROD tend to have a indirect-only mediation effect on PUR_INT mediated by ABILITY. *p $\leq$ 0.10, **p $\leq$ 0.05, ***p $\leq$ 0.01.

To explain figure 5.5 more in detail, the indirect-only mediation effect of variable COM_{FUN} on purchase intention mediated by ABILITY is equal to $0.513 \times 0.505 = 0.259$. So, the presence of navigation functionalities increases ability by 0.513, and one increase in ability increases purchase intention by 0.505. Since the indirect effect of COM_{FUN} is positive, H3b is rejected. Communication functionalities do have a positive effect on purchase intention mediated by ability. On the other hand, navigation functionalities do not have any effect on trust beliefs or purchase intention. Therefore, H3a is rejected as well. Variable PROD showed to be significant (table 5.3) in relation with mediation variable ABILITY. The indirect effect of variable PROD on purchase intention mediated by ability is equal to $0.355 \times 0.505 = 0.179$. Since variable PROD is coded as 0 (experience product) and 1 (search product), search products increase ability by 0.355, and ability increases purchase intention by 0.505. Based on this results, H4a and H4b are both accepted. Search products have a more positive effect on purchase intention mediated by ability compared to experience products.

Website Functionalities and Purchase Intention Mediated by Trust and Moderated by Emotions

H5 suggests that joy increases trust and fear decreases trust. To test both hypotheses, linear regression model 11 was used as an extension of the mediation process described before. Since an interaction effect can lead to a high amount of correlation across variables, all variables in this analysis were mean-centred. The first model with joy as moderation variable for trust was significant (F (12,157) = 7.728, p < .000) with a R^2 of 0.371 and a maximum VIF of 3.173. Although ABILITY was significant (p < .000), there was no interaction effect between joy and ability. The second model with fear as moderation variable showed to be significant (F (12,157) = 7.250, p < .000) with a R^2 of 0.357 and a maximum VIF of 3.265. Variables ABILITY (p < .000) and BEN_{INT} (p < .095) were significant, without showing any moderation effect for variable FEAR and ABILITY or BEN_{INT}. So, emotions do not moderate the effect of ABILITY and BEN_{INT} in the extended mediation model. Therefore, H5a and H5b are rejected. This indicates that the effect of trust on purchase intention does not vary at different levels of joy and fear emotions. Nevertheless, emotions might affect trust in general. Therefore, a linear regression was performed to examine the effect of emotions on trust beliefs. Two linear regression models were defined, whereas one examined the effect of emotions on ability beliefs and the other one the effect of emotions of benevolence and integrity beliefs. To start with the effect of emotions on ability beliefs, the results showed a significant model (F (2,167) = 40.151, p < .000) with a R^2 of 0.325 and a maximum VIF of 1.002 (table 5.5). Both independent variables JOY and FEAR showed to be significant. Regardless of the webpage shown in this study, customers with positive emotions (joy) assign more ability beliefs to an e-tailer and customers with negative emotions (fear) assign fewer ability beliefs to an e-tailer. In addition, the effect variable JOY showed a stronger effect on ability beliefs comparing to variable FEAR.

The second linear model was defined to examine the effect of emotions joy and fear on benevolence and integrity beliefs (table 5.6). The regression model showed to be significant (F (2,167) = 43.261, p < .000) with a R^2 of 0.325 and a maximum VIF of 1.002. However, variable JOY showed to be significant, while variable FEAR was not significant. Customers with positive emotions assign more benevolence and integrity to e-tailers, whereas fear does not influence benevolence and integrity beliefs.

Table 5.6: Results of the multiple linear regression with emotions joy and fear. The dependent variable in model 1 is variable ABILITY and the dependent variable in model 2 is variable BEN$_{INT}$. The explanatory variables are JOY and FEAR. The effect of X on Y is tested here.

	DV: Ability (model 1)			DV: Benevolence and integrity (model 2)		
	β	R^2	P-value	β	R^2	P-value
Constant	2.665***	0.325	0.000	2.308***	0.341	0.000
JOY	0.512***		0.000	0.469***		0.000
FEAR	-0.148**		0.013	-0.025		0.611

*p ≤ 0.10, **p ≤ 0.05, ***p ≤ 0.01

6. CONCLUSION

The conclusion of this study consists of a short review of this paper and discusses the contribution of this study to previous literature. In addition, the implications for e-tailers and the limitations and directions for future studies will be discussed.

6.1 Discussion

I found that the presence of website functionalities has no direct effect on the customers' purchase intention. Although this result is in contrast to what I expected, this study showed an indirect relationship between website functionalities and purchase intention mediated by trust. Even though previous studies suggested that website functionalities are directly related to customers' purchase intention (Bart et al. 2005; Schlosser et al. 2006; Mallapragada et al. 2016), this study showed no significant direct effect between website functionalities and purchase intention. This might be due to the fact that the experiment design between the control page and website functionalities was not distinctive enough. The study by Schlosser et al. (2006) changed the background color and font to make the control page less attractive to find a significant effect between high and low-investment websites on purchase intention. However, by doing this, subjects might pay more attention to the color and font instead of the absence of other website functionalities. Another possible reason for this significant effect in other studies is that previous studies (Bart et al. 2005; Mallapragada et al. 2016) used existing Websites instead of an experimental design. So that they were not able to control for the influence of color and other additional website elements. So, the current study showed that, when other website elements being equal, the presence of navigation and communication functionalities have no direct effect on purchase intention.

Regardless of the direct effect, trust beliefs turned out to explain the indirect effect between website functionalities and purchase intention. Previous studies (Mayer., 1999; McKnight, et al., 2002; Schlosser, et al., 2006) claimed that ability beliefs were the most important trust belief for reducing the customers' perceived uncertainty towards e-tailers. In contrast to previous studies, this study found that benevolence and integrity beliefs were related to purchase intention as well. However, this study showed no indirect relation between communication functionalities and purchase intention mediated by benevolence and integrity beliefs. Thus, customers can perceive an e-tailer as benevolent and honest, without having any intention to purchase from that e-tailer. To explain this indirect effect more in detail, this study found that the presence of communication functionalities increases purchase intention mediated by ability beliefs. However, this is in contrast to the study by Mallapragada et al. (2016). They stated that the presence of communication functionalities has a negative effect on purchase intention. Besides, they argued that customers perceive communication functionalities as clutter when they have high Internet experience (Mallapragada, Chandukala, &

Liu, 2016). On the other hand, this current study found that communication functionalities have a positive indirect effect on purchase intention controlling for Internet experience. So, Internet experience is no predictor for a negative effect of communication functionalities on purchase intention. Other than communication functionalities, navigation functionalities showed no effect on trust beliefs. This indicates that the purpose of navigation communication is not related to trust beliefs or purchase intention. As expected, the presence of search products (low risk) led to a positive increase in the ability beliefs. However, search (low risk) and experience products (high risk) did not influence benevolence and integrity beliefs. Both results are in line with previous studies. Search products involve less uncertainty (Weather, et al., 2007; Huang, et al., 2009), such that customers have greater ability beliefs for e-tailers that sell search products (Mayer., 1999).

This study showed no effect of emotions on the indirect effect between communication functionalities on purchase intention mediated by ability beliefs. Nevertheless, there was a significant effect of emotions joy and fear on trust beliefs ability. Customers with positive emotions assign more ability beliefs to an e-tailers. On the other hand, customers with negative emotions assign less ability to an e-tailers. So, emotions do influence trust beliefs, which is in line with the studies by Lerner et al. (2001) and Dunn et al. (2005). Apart from this result, positive emotions influence benevolence and integrity beliefs, but negative emotions showed no effect on benevolence and integrity beliefs. Both findings match previous results. As found before, ability beliefs involve more risk comparing to benevolence and integrity beliefs. Therefore, customers who perceive a high level of fear, have a tendency to assign fewer ability beliefs to e-tailers. Since benevolence and integrity beliefs involve less risk, customers with negative emotions do not assign less benevolence and integrity beliefs to e-tailers. To get back to the point, although emotions influence trust, an increase in trust by the effect of emotions do not lead to a greater purchase intention.

6.2 Implications for Practice

The findings of this study have important implications for e-tailers. First, e-tailers should pay more attention to communication functionalities instead of navigation functionalities. By doing this, e-tailers can increase their ability beliefs, such that customers realise that the e-tailer is capable of performing online transactions. Offering online help by an online information form or an online chat seems to be the most important communication functionalities for customers (see table 4.1). Therefore, e-tailers should highlight the opportunity to ask for help by an online form or chat. Second, communication functionalities were found to be related to the e-tailers' benevolence and integrity beliefs. This indicates that communication functionalities also affect the good-natured principles of e-tailers. However, increasing these principles will not have an effect on the customers' purchase intention. Benevolence and integrity beliefs might be more important for the e-tailers' long-

term strategy to increase the overall trust. Finally, there are different implications for e-tailers with search and experience products. Because of the high level of perceived uncertainty associated with experience products, customers assign less ability to e-tailers with experience products. Nevertheless, this study showed that e-tailers with experience products can improve the customers' ability beliefs by paying more attention to communication functionalities. Besides the effect of experience products, search products in relation with communication functionalities have an even stronger effect on customers' ability beliefs.

6.3 Limitations and Directions for Future Research

One limitation of this study is that the distinction of website functionalities into communication and navigation might be too broad to give more specific implications for e-tailers. As an illustration, this study examined that communication functionalities are most important for e-tailers. However, this study did not address which type of navigation functionalities leads to a greater trustworthiness or purchase intention. Based on this limitation, it might be interesting to test the effect of each website functionality on ability beliefs and purchase intention. Another limitation is based on navigation functionalities, which showed to be not related to trust or purchase intention. Therefore, it might be interesting to do more research on the indirect relationship between navigation functionalities and purchase intention.

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APPENDIX A - Measures and Items

1. Online purchase intention (1 = strongly disagree and 7 = strongly agree)

(Schlosser, White, & Lloyd, 2006)

1. Unlikely/likely

2. Impossible/possible

3. Improbable/probable

2. Trusting Beliefs (1 = strongly disagree and 7 = strongly agree)

(Schlosser, White, & Lloyd, 2006)

Ability

1. The e-tailer seems very capable of performing online transactions.

2. The e-tailer appears to be successful at the things it tries to do

3. The e-tailer seems to have much knowledge about what needs to be done

to fulfill online transaction

4. I feel very confident about the e-tailers' online skills

5. The e-tailer appears to have specialized capabilities that can increase its performance with online

transactions.

6. The e-tailer appears to be well qualified in the area of e-commerce.

Benevolence

1. The e-tailer seems very concerned about my welfare

2. My needs and desires appear to be important to the retailer

3. It does not seem that the e-tailer would knowingly do anything to hurt me.

4. The e-tailer seems to really look out for what is important to me

5. The e-tailer appears to go out of its way to help me.

Integrity

1. The e-tailer seems to have a strong sense of justice

2. The e-tailer appears to try hard to be fair in dealings with others

3. The e-tailer's action and behaviors are very consistent.

4. I like the retailers' values

5. Sound principles seem to guide the retailers' behavior.

3. Emotions (1 = strongly disagree and 7 = strongly agree)

(Shaver & Schwartz, 1987)

The following questions are about your emotion while you are browsing with the webpage. Please circle one number that describes your feeling when you were browsing with the webpage.

<u>Joy</u>

1. Joy

2. Enjoyment

3. Pleasure

<u>Fear</u>

1. Fear

2. Uneasiness

3. Anxiety

4. Knowledge (1 = strongly disagree and 7 = strongly agree)

(Schlosser, 2003)

1. Inexperienced/experienced

2. Not knowledgeable/knowledgeable

3. Unfamiliar/Familiar

5. Demographic variables

1. Age

2. Gender

3. Education

APPENDIX B - Website Functionalities

	Communication Functionalities	Navigation Functionalities
1. Change language		x
2. Change Graphics of Text		x
3. Change Page Layout		x
4. Customize Site Content		x
5. E-mail Contact	x	
6. View Product/ Service information		x
7. Online help	x	
8. Basic Search		x
9. Site Map		x
10. Links to Other Areas on Website		x
11. Download Content		x
12. Registration	x	
13. Feedback on online forms	x	
14. Online diagnostics		x
15. Recent Updates		x
16. Chat Rooms	x	
17. Topic-specific Discussion Forums	x	
18 Message Board	x	

APPENDIX C - Survey Design

1. Introduction

Thank you for showing interest in filling in my survey. By participating, you can help me to obtain my master in Marketing at the Erasmus School of Economics. Before we are going to start with the questions, please keep in mind to imagine yourself in the situation and answer the questions truthfully.

This survey will take approximately 5-7 minutes to complete. I would suggest you to answer the questions with a computer or laptop. A mobile screen might be too small in order to participate. If you have any further questions, please contact me by mail.

Kind regards,

Kimberly Ernest

431789ke@eur.nl

2. Instructions

Please read the below introduction about website functionality carefully before proceeding to the next page. Website functionalities could be broadly classified into two types: communication functionality and navigation functionality.

1. Communication functionalities

Communication functionalities are characteristics on an online retailer's website, which capture the presence of communication-oriented features, such as e-mail, chat rooms and a message board.
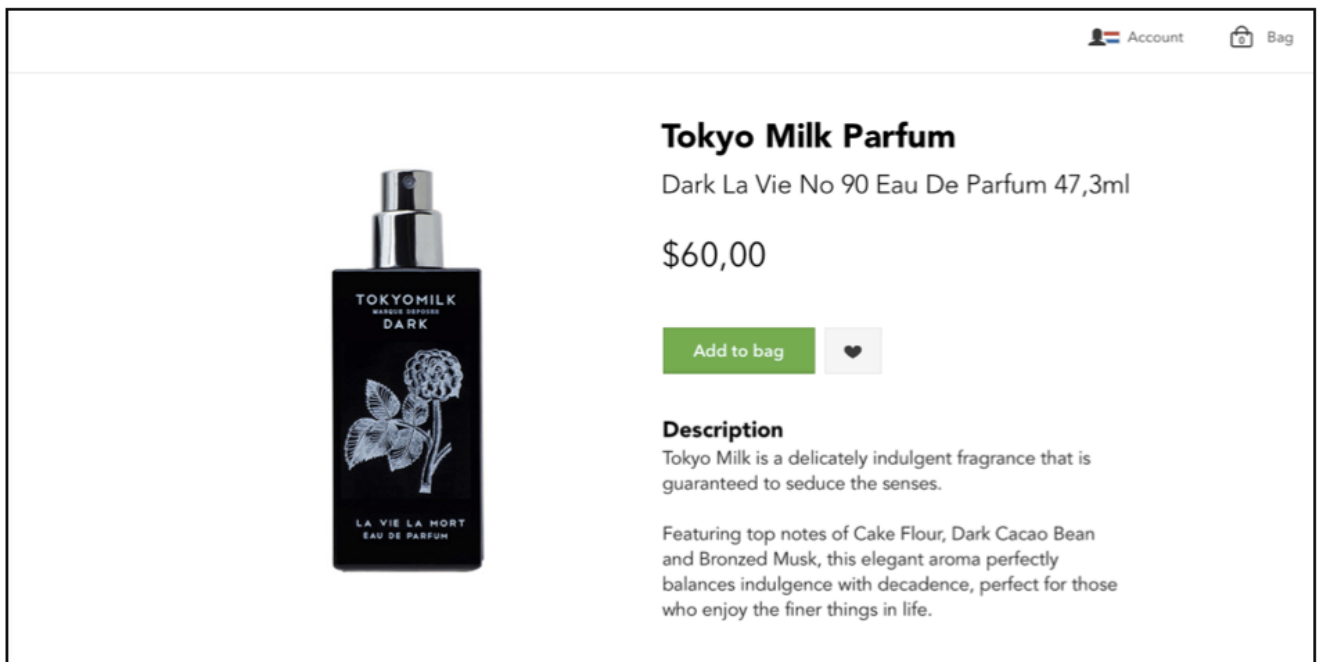
2. Navigation functionalities

Navigation functionalities are characteristics on an online retailer's website, which capture the presence of navigation-oriented features, such as a navigation menu, content, layout and the most recent updates.

3. Condition 1 (control page with experience product)

Please read this carefully before answering the questions:

Imagine that you are shopping for a new perfume. Because of your mom's birthday, you want to give her a perfume that is around $60. Since you do not have time to go to the shopping center, you will order the perfume online. While looking for a perfume on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

Measures below condition

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

3. Condition 2 (Communication functionalities with experience product)

Please read this carefully before answering the questions:

Imagine that you are shopping for a new perfume. Because of your mom's birthday, you want to give her a perfume that is around $60. Since you do not have time to go to the shopping center, you will order the perfume online. While looking for a perfume on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

Measures below condition

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

3. Condition 3 (Experience product with experience product)

Imagine that you are shopping for a new perfume. Because of your mom's birthday, you want to give her a perfume that is around $60. Since you do not have time to go to the shopping center, you will order the perfume online. While looking for a perfume on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

<u>Measures below condition</u>

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

3. Condition 4 (control page with search product)

Please read this carefully before answering the questions:

Imagine that you are shopping for a digital camera. Because of your dad's birthday, you want to give him a new camera that is around $60. Since you do not have time to go to the shopping center, you will order the camera online. While looking for a camera on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

<u>Measures below condition</u>

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

3. Condition 5 (Communication functionalities with search product)

Please read this carefully before answering the questions:

Imagine that you are shopping for a digital camera. Because of your dad's birthday, you want to give him a new camera that is around $60. Since you do not have time to go to the shopping center, you will order the camera online. While looking for a camera on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

Measures below condition

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

3. Condition 6 (Navigation functionalities with search product)

Please read this carefully before answering the questions:

Imagine that you are shopping for a digital camera. Because of your dad's birthday, you want to give him a new camera that is around $60. Since you do not have time to go to the shopping center, you will order the camera online. While looking for a camera on the Internet, you reach this product page from an unknown retailer. Please examine the product page carefully and then answer the questions below the product page. Try to properly study all the elements for more than 10 seconds.

Measures below condition

1. Purchase intention

2. Knowledge

3. Ability (trust)

4. Benevolence (trust)

5. Integrity (trust)

6. Emotions

4. Manipulation Check

1. The product page shown on the previous page has communication functionalities such as e-mail, chat rooms and a message board.

- o Yes
- o No

2. The product page shown on the previous page has navigation functionalities such as a navigation menu, change of layout and the most recent updates.

- o Yes
- o No

5. Rating each functionality

After answering the manipulation check, subjects had to rate the importance (1 = strongly disagree and 7 = strongly agree) of each navigation or communication functionality individually.

5. Rating functionalities condition 2 and 4

You have seen the e-tailer's webpage with communication functionalities. Please rate the importance of each functionality while you are purchasing perfume or a camera from the e-tailer which you did see before.

1. The e-mail contact on a webpage is important to me.
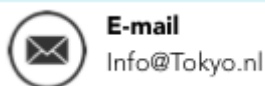
2. A form which offers online help is important for me.

3. User registration as an option is important to me.

Register an Account

First Name: *

Last Name: *

Country: *

Netherlands ⬍

Office, Flat or Address 1: *

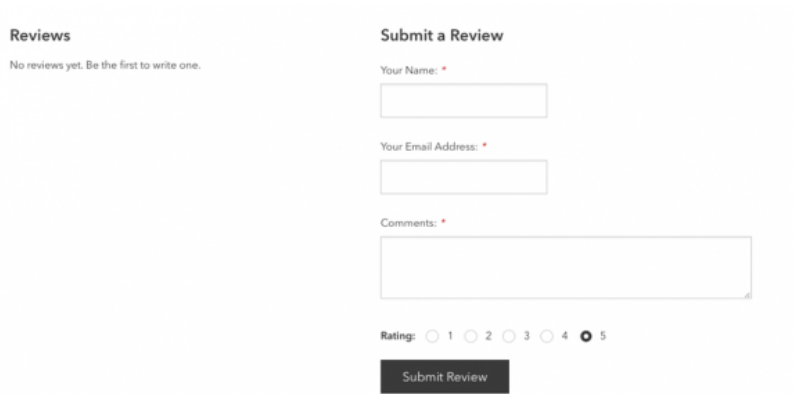4. It's important to me that the e-tailer encourages feedback with online forms.

How do you rate
this page?

😣 😦 😐 😃 ❤

5. The presence of an online chat is important to me.

Chat Now
You can chat live with a
product specialist or an
esthetician while you browse
Monday through Friday, 9 AM -
9 PM ET.

6. The presence of a topic-specific discussion form is important to me.

7. The presence of a message board is important to me.

5. Rating condition 3 and 6

You have seen the e-tailer's webpage with navigation functionalities. Please rate the importance of each functionality while you are purchasing a perfume or a camera from the e-tailer which you did see before.

1. The presence of a button or function that enables a user to change the site's language is important to me.

2. The presence of a function that enables a user to change the site's graphic is important to me.

3. A function that enables a user to customize the site's content is important to me.

Description	>
Directions	>
Brand	>
Delivery & Returns	>

4. The presence of a basic search function is important to me.

Q Search

5. The presence of a navigation menu is important to me.

> ☰ Menu

6. The presence of relevant link to other parts of the site is important to me.

More in Camera, Photo & Video

Point-and-Shoots Under $200

Point-and-Shoot Bundles

Deals in Camera

7. A clear section with the most recent updates is important to me.

What's new?

This item: Vivitar 14mp
camera 1.8 TFT, Colors/Styles
May Vary

8. It's important to me that the e-tailer offers the ability to download a guideline.

Download Vivitar's instructions