DIGITAL INFORMATION TRANSPARENCY AND SATISFACTION. CAN WE HAVE TOO MUCH OF A GOOD THING?

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ABSTRACT

Despite core product and service quality improvements and advances in shopping processes and technology, customers often report being unsatisfied with their online purchases. One plausible reason for lower customer satisfaction rates is too much or too little information that is shared with the customers about their orders. We show that when forming their perceptions about the purchases, customers form digital information satisfaction (DIS) levels as they evaluate supplementary informational services in addition to the core product being purchased. We believe that DIS is one of the dimensions of overall customer satisfaction. We also show that supplementary informational services are essential in meeting the increased informational needs of online shopping and, thus, can explain the decreased overall customer satisfaction level through the decreases in DIS.

We develop and test the Digital Information Transparency and Satisfaction (DITS) model that shows how supplemental informational services influence digital information satisfaction (DIS_ in e-commerce. By doing so, this dissertation introduces a new dimension of satisfaction in the era of online shopping. This helps close the knowledge gap in the current research on overall customer satisfaction by showing that too much information transparency can harm the overall experience of the customers, thus leading to decreases in DIS. The study results provide a platform for future research on the influence of informational services provided during online shopping. Explaining the role of information shared with the customers in their perceptions of transparency and, consequently, DIS may help provide crucial practical business insights. Thus, by proposing the DITS model, this dissertation brings contributions to both theory and praxis by enhancing the understanding of DIS, which can serve as a robust foundation for future research

on decreasing levels of overall customer satisfaction in a digital setting, as well as help companies improve their customer relationships.

DEDICATION

To my family, through thick and thin…

To my husband Matt and my firstborn Zac, you two have waited patiently for me to say, “My dissertation is done.” It is only because of your unconditional love and support that I can say those words now. Thank you!

ACKNOWLEDGMENTS

While the words within this dissertation are my own, I want to express my appreciation to those who contributed to its realization, emphasizing that this work was a collaborative effort and would not be possible without those mentioned here. I want to express my boundless gratitude to everyone who contributed to this dissertation from the bottom of my heart, thank you!

To my family, thank you for keeping me sane and on track despite all the ups and downs of life.

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To my committee members, Heshan Sun, Phillip Roth, and Wayne Stewart Jr., I appreciate your efforts in assisting me with the process of writing the dissertation. You devoted numerous hours to guiding and improving my work, and thanks to your assistance, I have achieved more than I had ever envisioned. And I hope to pay it forward one day!

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CHAPTER 1: PRELUDE TO THE DISSERTATION

1.1 Opening vignette

> *Jane broke the screen on her phone the night before her new phone was supposed to arrive. She was very anxious to receive it as she had been dealing with her slow old phone for a while now and was tired of it. She was also excited because the new phone had many new updated features, such as greater storage capacity, and one of the best cameras on the market. When placing the order, she opted in to receive text message notifications about the order status updates and opted out from the email notifications. However, because her new phone was shipped using UPS, on the day of delivery Jane received an email from them with the link to track the delivery of her package in real-time using the map on the UPS website. When she logged in to see where the delivery vehicle is for the first time around 10 AM, it was already in her neighborhood a few streets over. She got so excited, as that meant that her new fancy phone would be there in a little bit. She now expected it to be delivered within an hour or two. An hour later, she went online to check the map again and was disappointed, as the delivery truck had already moved into a neighborhood farther from her home. The third time she checked, the driver was stopped at Popeye's for lunch. She checked the live map a few more times after that, but it only added to her anxiety and frustration. The phone was delivered at 5:45 PM. Jane did not have a good day. She thought to herself: "I wish I never got that email".*

1.2 Introduction

Technological development has brought many benefits to consumers, such as new products and services, new product features, increased quality of the products, lower prices, and convenient delivery. Customers are now able to track their order in real-time as it is being delivered (e.g., UPS real-time map tracking), use geospatial systems on their mobile device to watch their taxi move on the map (e.g., Uber), and use remote-access software to get their laptop fixed without coming to the store (e.g., Dell technical support). All these features can be considered informational services, as their primary purpose is to keep the customer informed

about the order they have placed with the company. As a result, the order process has become more visible than never before – customers are able to check what is happening with their purchased goods or service 24/7, and the status of the order online is updated only seconds after the change took place. This, however, brings not only benefits to the parties. Judging by the opening vignette, had Jane not had the ability to check the live map to follow her new phone delivery, she would not have been so frustrated by the delivery route the driver followed. This anecdotal situation illustrates one of the most paramount ideas of this dissertation - contrary to popular belief, more is not always better. The same holds for information transparency – more information transparency is not always better.

New technology conveniences have made customers form higher expectations of the quality of these supplementary services that support their digital order (Van Belleghem, 2012). Nevertheless, the number of informational services that customers receive is, at times, overwhelming – the amount of information that is shared with them by the companies has skyrocketed in the last decade. When discussing customer satisfaction with online shopping processes, we believe that it is formed not only from evaluating the core product or service purchased but also from evaluating the supplementary informational services (often provided for free). Therefore, it is vital to send the correct information at the right time using the right communication media. To explain the effects of these informational services, we focus on the perceptions of transparency formed by customers during the online shopping experience. To do so, we developed and tested ***Digital Informational Transparency and Satisfaction (DITS) model.*** Three new concepts are introduced for the purpose: ***perceived digital information transparency (PDIT)****, defined as the extent to which a customer perceives order fulfillment*

processes to be visible; ***desired digital information transparency (DDIT)****, defined as the extent of transparency a customer wants from a company during the order fulfillment process,* and ***Information sharing****, defined as the extent to which information about the order fulfillment process is communicated to the customer.* Confirming the relationships among the variables in the model allows us to demonstrate the importance of these two new concepts and, thus, make a strong case for their practical and scientific contribution.

1.3 Motivation

Over the past few decades, the ideology of many industries, such as retail shopping, e-commerce, and services, has been developed around customer orientation and, ultimately, aimed at customer satisfaction. Traditionally, in brick-and-mortar commerce, the major determinants of customer satisfaction were product or service quality (Jahanshahi et al., 2011). The appearance of online shopping and advances in technologies have significantly expanded the variety of factors that influence customer satisfaction. In the current environment, many additional factors influence customer satisfaction: word of mouth (Anderson, 1998), website quality (S. Kim & Stoel, 2004), web appearance (S. Kim & Stoel, 2004), perceived security, perceived privacy, information quality, and user interface quality (Eid, 2011), customer service (Jahanshahi et al., 2011), prestige and aesthetics (El-Adly, 2019), and others.

Such changes have led to an increase in the level of customer expectations (*2020 Customer Expectations Report*, 2020) and, ultimately, the fact that it is harder to satisfy them. Today's customers are believed to be more vocal, pickier, fickler, and vainer – all these changes are brought on by advances in technologies that allow customers to be more cautious in their

choices, more intolerant, and louder in voicing their dissatisfaction (Bell & Patterson, 2011). Online order tracking, for example, once was an exclusive service, but now it is expected of every online retailer or service provider. Moreover, the absence of order tracking would now hurt customer satisfaction levels. Thus, it is becoming harder for companies to satisfy their customers, especially in online shopping. For example, 56% of online shoppers reported being disappointed with their holiday shopping experience in 2018 compared to 36% in 2017 (*2018 Global Ecommerce Study. Summary Report.*, 2020). When talking about the overall satisfaction of U.S. customers with online retail, the American Customer Satisfaction Index (ACSI) is used. ACSI is a national cross-industry measure of customer satisfaction in the United States (*American Customer Satisfaction Index*, 2019). This indicator is based on customer evaluations of the quality of goods and services purchased in the United States and produced by domestic and foreign firms with substantial U.S. market shares. Although the quality, variety, and functionality of goods and services increase every year with the technological advancements of the modern world, out of 100 maximum points, U.S. customer satisfaction with online retail has been in the 78-83 points range for the past decade (*American Customer Satisfaction Index*, 2019). Even though online retail satisfaction levels are higher than offline retail satisfaction, there is room for significant improvement.

Satisfaction is paramount to companies' financial results, as it promotes repurchase intentions, loyalty, and, ultimately, profit (Eklof et al., 2020). Thus, companies need to do everything possible to avoid dissatisfaction. There are multiple reasons for customer dissatisfaction with online shopping. The primary determinants are product quality and customer service (Jahanshahi et al., 2011). With the wide spread of supplementary informational services

affiliated with the core purchased product, a significant part of dissatisfaction can stem from the mismatch between the actual and the desired levels of the quality of such informational services. For instance, when asked about dissatisfaction, customers mention expensive or delayed shipping, inaccuracy of tracking information, and confusion with returns and exchanges (*2018 Global Ecommerce Study. Summary Report.*, 2020), among other conventional reasons, such as product quality. The major determinant of customer satisfaction remains the quality of the core product or service the customer is purchasing. Yet, the growing repertoire of digital online services offered along with the product is currently a significant contributor to the overall customer experience in e-commerce (Betzing et al., 2018; Bolton et al., 2018; Klaus, 2014). Recent years have proven the importance of these additional factors in forming satisfaction, yet there is not enough research on the effects of supplementary services on customer satisfaction. Thus, there exists a need to study other factors and in particular informational services that have come into play due to developments in online shopping technologies.

1.4 Study Objectives

The customer shopping experience has been transformed notably by the wide availability of technologies and their use in electronic commerce. Additionally, customer satisfaction is now formed in a different manner. Information that is available and is shared with the customers due to new digital technologies used for e-commerce, became a siginificant constituent of satisfaction, as it creates a sense of transparency to the customers. Yet, there is no theory that would explain how transparency perception is formed or the influences of this digital information transparency. Thus, this dissertation's main objective is to gain a better understanding of digital information transparency in e-commerce by developing and testing the

model of ***Digital Informational Transparency and Satisfaction (DITS).*** To do so, three new concepts are introduced: PDIT – the degree of visibility of customer-facing business processes; DDIT – the extent of transparency a customer wants from a company during the order fulfillment process; and Information sharing – the extent to which information about the order fulfillment process is communicated to the customer.

Modern technology has allowed the customer to compare product offers (in terms of price-quality ratio) from different sellers. The search for the information on product features, prices, or product ratings has a low cost, thus, enabling customers to find the best deals available on the market (Diehl et al., 2003). For example, the availability of prices from different sellers (price transparency) of the electronic markets is proven to influence the competition (Soh et al., 2006). Such advancements have significantly changed the flow of the stages that the customer goes through during online shopping. Such stages are conceptualized in a Customer Resource Life Cycle (CRLC) framework and include: 1. Requirements stage when the customer establishes the need, the quantity, and the features of the product; 2. Acquisition stage when they choose a seller, place an order, and pay for it; 3. Ownership stage when the customers are using the product; and 4. Retirement stage when the product is disposed of) (Ives & Learmonth, 1984). There exists extensive research on the influence of information that is available before the purchase is made. During the Requirements stage, the customer establishes the needed attributes, quality, and quantity of the product. The customer searches for the characteristics and specifications of products, compares products and their prices, and chooses which product they will purchase (Ives & Learmonth, 1984). Therefore, specific informational services, such as product characteristic comparison, price and availability, and customer reviews, have a direct

influence on the purchasing decision (T.-Z. Chang & Wildt, 1994; Li Miao & Mattila, 2007; Soh et al., 2006; Soto-Acosta et al., 2014; Ye et al., 2009).

While a decision to purchase from a particular company is crucial, it is just as vital to develop a clear understanding of the effects that information and supplementary informational services have on the customer's satisfaction once the order has been placed. The research efforts in this area, regrettably, are still insufficient – existing research focuses on studying the information available to consumers before the order has been placed. However, there are several empirical studies that examine the influence of supporting services on customer satisfaction. For example, Homburg et al. (2002), in their research study, show that the amount and the breadth of the supporting services that are provided by the retailers for their customers in the traditional offline retail setting are significant predictors of customer satisfaction. Cenfetelli et al. (2008) introduce and show the importance of the concept of Supporting Service Functionality (defined as the degree to which a web site uses information technologies to provide supplementary services that support a core transaction, and aid customers in reaching their shopping goals) in predicting customer beliefs and behaviors, such as customer satisfaction in B2C online setting. A different way to distinguish the core product purchased from the supplementary features is taken by Xu et al. (2013). When examining IS system, service, and information qualities as separate construct, they suggest a model that divides system quality into two components (information quality and service quality) providing additional evidence of the importance of supplementary services to the overall customer satisfaction with the cire service or product (Xu et al., 2013). However, not enough research efforts are directed at studying the influence of supplementary informational services that supplement each purchase in e-commerce.

Thus, there is a pressing need to better understand the factors influencing satisfaction with digital order information after the order has been placed. Online purchases are accompanied by many supplementary informational services, as we mentioned before, such as various online payment systems and online receipts, real-time order tracking, order status notification updates, delivery notifications, customer support, online returns, software updates, etc. The influence of such services on various purchasing outcomes (e.g., customer satisfaction, loyalty, and repurchase intentions) is evident yet under-researched. The literature lacks a more embedded construct representing the plenum of information a customer interacts with during the whole order process. Cenfetelli et al. (2008), for example, provide a generalized schema on the distinction of the influence of core product/service, service quality and functionality on customer satisfaction during online shopping. Supporting service and quality and functionality, concepts close to the idea of this research, include a plethora of services to support the core transaction, such as maintenance, pay, replacements, upgrades, evaluations, etc., and their quality determinants, such as reliability responsiveness, assurance, etc. (Cenfetelli et al., 2008). However, there is a need to better understand the specific features of informational supplementary services, as their rise, widespread use, and influence on customer outcomes in e-commerce have not been sufficiently studied and understood.

Our objective, therefore, is to present a theory that would close this gap in literature. Additionally, the conceptualization of transparency is crucial in today's digital business environment, as it will provide companies with a significant understanding of their customers' informational needs during the order fulfillment process. By order fulfillment, we assume the ability to perform the promised service dependably (Stank et al., 2003). Inadequate order

fulfillment (especially in the service industry) has the potential to provoke strong negative reactions and lead to dissatisfaction (Pham & Ahammad, 2017). Thus, in order to satisfy the customer, a company must provide them with the right product of the right quality and quantity at the right time at the right place with the right information (Davis-Sramek et al., 2008). When talking about supplementary informational services, if the companies know what kind of information is needed, when it is needed, and how it can be delivered most satisfactorily, they will be able to maximize their efforts and increase customer satisfaction.

This work introduces a theoretical model that places the constructs of digital information transparency and digital information satisfaction in the nomological net, providing their antecedents and consequences. To meet the objectives of the dissertation established above, the following research questions were developed:

- *How do customers form perceptions of digital information transparency based on the order information they receive during online shopping?* Much research effort is put into finding out the influence of information on the purchasing decision. For example, Dellarocas et al. (2007) investigate the importance of online product reviews in predicting sales. Similarly, price transparency (the availability of price information from various platforms) is another significant factor affecting online customers (Soh et al., 2006). Nevertheless, little is known about the influence of Information sharing that takes place after the order has been placed and its influence on the perceptions of transparency and, consequently, satisfaction.

- *What are the contextual factors that influence the levels of transparency that are desired by customers during online shopping?* There exists much evidence on the influence of individual characteristics and situational factors on various aspects of consumer behavior (Perea y Monsuwé et al., 2004; Peter et al., 2010; Ramya & Ali, 2016). Little is known about these factors' influence on the transparency requirements that these factors form during online shopping.

- *What is Digital Information Satisfaction, and how is it formed during online shopping?* There is extant research on information satisfaction from the vantage point of the output of an information system. For instance, Baroudi et al. (1986) conducted an empirical study on user involvement, system usage, and their influence on information satisfaction. Ives et al. (1983) developed a measure of user information satisfaction. Yet, precious little work has been done to determine what information satisfaction is in the retail setting, specifically in e-commerce.

DIT is formed from the information available to the customer during the entire purchase process. Much of the research on information that accompanies online purchases is done on the factors that take place before the order is placed. Moreover, there is a great need to fill the gap of understanding of the influence of information on purchasing outcomes of the other stages of the CRLC (Ives & Learmonth, 1984). Considering that including all the stages into this dissertation's scope is impractical, we limit the study to the information received once the customer placed the order (living out the Acquisition stage) to the moment the product or service is received. Therefore, the scope of the dissertation is limited to studying various informational points of

contact with the customer during the order fulfillment process. Such activities include payment confirmations, order confirmations, order status updates, shipping, tracking services, etc.

1.5 Core Research Model

There exist two ways of defining satisfaction: as an outcome of the experience, or as a process (which is the most widely adopted way)(Parker & Mathews, 2001). In case of a process approach, customer satisfaction is viewed as a comparison between what was expected and what was received and, thus, the focus is on its antecedents (Parker & Mathews, 2001). Kotler (1997) defines satisfaction as the feeling of pleasure or disappointment that results from comparing a product's perceived performance (outcome) with the expectations. Satisfaction can also be described as an emotional reaction to the difference between what the customer anticipated from the transaction and what they received (Hansemark & Albinsson, 2004). Therefore, when talking about shopping, satisfaction is formed by comparing the expected product/service quality and actual product/service quality (Meesala & Paul, 2018; Razak et al., 2016). However, customer satisfaction in the current digital environment consists of an increasing number of other additional factors encountered at various stages of the online shopping process. Existing approaches to customer satisfaction do not consider an array of new services that accompany the purchase in e-commerce. Most such services are provided at no extra cost to the customer.

Additionally, most of them are informational in their nature (e.g., order shipment tracking, software updates, digital receipts). Therefore, overall satisfaction with online shopping would consist of product/service satisfaction and satisfaction formed by these additional factors. These facts suggest that this new dimension of satisfaction should be investigated to close the

research gap. Because the shopping experience has changed with the widespread of e-commerce, there is a need for a theory that would be able to describe the relationship between transparency and digital information satisfaction, which is one of the objectives of this research. We, thus, propose a new concept of ***digital information satisfaction (DIS)****, defined as the extent to which a customer believes the digital order information available to them meets their order information requirements*. DIS would, therefore, be an indicator of a second-order reflective concept of overall satisfaction.

The information shared with the customers as they are purchasing goods or services online influences the overall shopping experience. Information availability, however, does not always lead to the desired results. Organizational use of information has the potential to increase customer satisfaction; however, at some point, information becomes unwieldy and overwhelming to consumers. As mentioned above, more than half of online shoppers report dissatisfactory outcomes (*2018 Global Ecommerce Study. Summary Report.*, 2020) despite many efforts taken to increase the quality of services offered. One possible explanation for increased dissatisfaction is the concept of information overload – receiving too much information, which reduces decision accuracy (Eppler & Mengis, 2008). The research conducted on information overload shows that it results from organizations' increased ability to provide consumers with various information at a low cost. Laud & Schepers (2009) suggest that instead of providing more information, they should aim to provide "better information." We suggest that this "better information" in e-commerce creates a sense of transparency for the customers.

The concept of transparency is represented in many ways across various disciplines. In management literature, the examination of transparency in studies arises mainly from agency

theory discussions (Eisenhardt, 1989). According to this theory, principal and agent often have different levels of information regarding a particular task. Such asymmetry causes low transparency for one of the parties. At the same time, transparency between parties can be achieved by making trustworthy information available, which, in turn, leads to higher levels of clarity, insight, and effectiveness as it eliminated what is dark and secret (Danker, 2013). Transparency as an information systems (IS) construct has been discussed from several perspectives focusing on transparency of prices, its effect on the market, and strategic decisions in the e-commerce environment (Granados et al., 2006; Granados & Gupta, 2013; Sinha & Swearingen, 2002). In the era of online shopping, customers form their perceptions and future intentions not only when they receive and use the goods and services but also during the whole CRLC. Information sharing, a concept mostly used in supply chain management, implies the communication of critical and proprietary information between the partners of the supply chain (Monczka et al., 1998). In e-commerce, Information sharing implies the communication of critical order information from the company to its consumers, thus, becoming a fundamental component of information transparency perceptions. A lack of research studies the information exchanged between a company and its customers as the orders are fulfilled. Moreover, no research would apply the concept of Information sharing to the e-commerce setting and from the vantage point of transparency of information. Thus, we propose a concept of ***PDIT****, defined as the extent to which a customer perceives order fulfillment processes to be visible.*

Additionally, we believe there is a certain level of information transparency that the customers prefer. Since the information provided is a service, we apply the approach introduced by Kettinger & Lee (2005), who suggest different levels (or zones) of tolerance to determine

different service quality levels. We believe that each customer will have a different level of needed level of information transparency that will depend on several individual and situational characteristics. Thus, we define DDIT – *the extent of transparency a customer wants from a company during the order fulfillment process.*

Generally, it is expected that a consumer wants a detailed version of their e-tail receipt, including the total price charged to their account. However, do customers find value in a three-page report of every original price, reduced price, discount applied, multi-item discount, discounts from customer rewards, and the prices that were saved overall; when all they wanted to know was how much their credit card was charged? Do their requirements change depending on the product they are purchasing or previous experience of buying from a particular website? Considering that existing literature on customer satisfaction does not explain why customers are more easily dissatisfied with purchases made online and the expanding importance of e-commerce, we set up to develop an understanding of the phenomena of information transparency and customer satisfaction in the digital world of e-commerce. To do so, this dissertation proposes a theoretical model of ***Digital Information Transparency and Satisfaction (DITS).*** The main principle of the model consists of two components: 1. not all the information shared with the customers contributes to the sense of transparency they develop about the company; 2. more transparency is not always better. Thus, it becomes clear that there are situations when there is "enough" information transparency, when there "must be more," and when there is "too much" of it. Creating value in the use of information requires a clear understanding of these levels.

To define various levels of information transparency and demonstrate their influence on DIS, principles of Expectation-Confirmation Theory (ECT) (R. L. Oliver, 1980), and service

quality Zones of tolerance (ZOT) (Kettinger & Lee, 2005). According to ECT, better satisfaction will be observed when the expected level of services will be confirmed with actual (R. L. Oliver, 1980). The ZOT model was used to conceptualize the desired level of transparency for the customers. Basing our ideas on the ECT, we introduce a novel way of thinking about the amount of information that is beneficial – we believe there should be a balance between what is desired by a customer and what he or she is receiving from the company; therefore, creating the desired level of information transparency (Hossain & Quaddus, 2012). To understand these levels, principles of ECT should be applied. According to ECT, better satisfaction will be observed when the expected level of services will be confirmed with actual (R. L. Oliver, 1980). Basing our ideas on the ECT, we introduce a novel way of thinking about the amount of information that is beneficial – we believe there should be a balance between what is desired by a customer and what he or she is receiving from the company, therefore, creating the "ideal" level of information transparency (Hossain & Quaddus, 2012). This level indicates that a customer is satisfied with the amount of information that is provided. When that information becomes excessive, it can lead to adverse outcomes, such as decreased trust in the information (Maltz, 2000). This type of balance/imbalance produces U-curve relationships, just as information overload does in prior information management and information processing literature (Eppler & Mengis, 2008). In their study, Eppler & Mengis (2008) show that a curvy-linear relationship exists between the amount of information and the accuracy of the decision making – diminishing benefits of additional information turn into adverse effects, the information overload.

Today, there exists mainly a one-sided view of the concept of transparency - "Transparency is nowadays an unambiguously positive concept for the general public,

governments, and firms alike"(Menéndez-Viso, 2009). Although transparency can significantly benefit companies if directed toward their customers' specific information needs, we believe it can also be harmful. The information has both negative and positive effects (Bawden & Robinson, 2009). There is a gap in IS literature that needs to be filled – research does not identify the relationship between transparency and information overload as a part of customer satisfaction. Therefore, one of the main goals of this dissertation is to show that too much transparency can negatively affect customer satisfaction. It can be achieved by comparing the desired levels of information transparency with the perceived levels. This type of balance/imbalance produces U-curve relationships, just as information overload does in prior information management and information processing literature (Eppler & Mengis, 2008). Creating a balance between a customer's informational needs and the amount of information provided to him has been an endless challenge to organizations, particularly with digital information that can utilize large bulk emails, social media, and various visual materials.

1.6 Research Design

This dissertation employs a survey approach using vignettes instead of attitude statements to test the hypotheses. Vignettes are short hypothetical scenarios intended to elicit responses to specified circumstances (Finch, 1987; Hill, 1997). Vignette texts are designed as illustrated realistic situations provided to a respondent to ask for a judgment or opinion on how they would behave or respond to that particular incident or scenario (Vargas, 2008).

Figure 1.1 provides a step-by-step overview of the general approach this research has to data collection. First, the appropriate methodology is identified to fit the study's objectives and

domain. Second, the constructs are operationalized in the most effective way: keeping in mind that the relationships between information, transparency, and satisfaction need to be examined, some constructs are picked to be manipulated using vignettes, and some are better suited for survey questions. Third, considering the sample size needed to produce sufficient statistical power, the vignette pool is identified and introduced into the survey design. Simultaneously, measures are developed for the new constructs introduced in the dissertation. Lastly, once the survey is developed, two pilot tests take place to ensure the validity of measures, effectiveness of manipulations in vignettes, and the overall effectiveness of the survey design. To collect data, a survey is developed with the addition of vignettes instead of attitude statements.

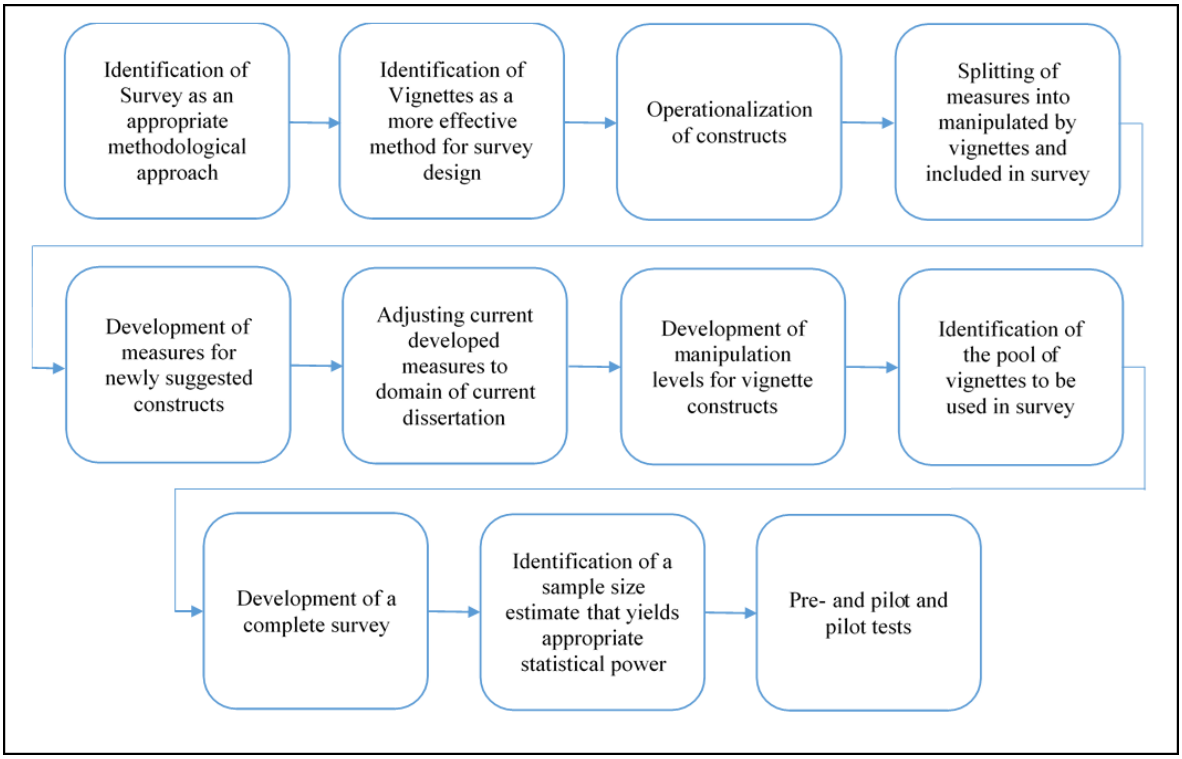


Figure 1.1 Overview of the Methodological Development Process

1.7 Research Contributions

This dissertation expresses the need to study and define the relationship between informational services provided during order fulfillment processes in e-commerce and satisfaction. Correspondingly, the research conducted extends the emerging literature stream on information transparency and its manifestations in e-commerce and discovers additional determinants of customer satisfaction connected with supplementary informational services provided to the customers. This dissertation advances both theory and praxis by proposing a theoretical model of digital information transparency and satisfaction.

1.7.1 Contributions to Theory

We contribute to the theory of information transparency in several ways. First and foremost, we introduce the concept of information transparency in the area of IS and e-commerce. We propose that the information generated during the order fulfillment process is a service that is provided to the customer, so it should be evaluated accordingly. While a limited number of studies have examined transparency in IS, they have done so primarily in the context of information disclosure in the area of business strategy (Awad & Krishnan, 2006; Granados & Gupta, 2013), information transparency as an output of the IS (Street & Meister, 2004; Zhu, 2005), and product and price transparency (Dewan et al., 2007; Soh et al., 2006). For example, Granados & Gupta (2013) discussed transparency strategies that the companies can effectively implement to compete in the digital world. Zhu (2005) examined the implication of information transparency in a business-to-business electronic market and discussed how transparency affects profits, consumer surplus, and social welfare. Closest to the current dissertation, Soh et al.

(2006) examine the relationships among the electronic marketplace, price transparency, and companies' performance. Their discussion is limited to price transparency and does not include any other information that is available during online purchasing. By bringing attention to the plethora of information generated and shared with the customer, we introduce the concept of Information sharing and show how it influences the perceptions of information transparency generated during the order fulfillment process. *This not only clarifies the role of information in the stages that follow the purchase but also provides the opportunity to conduct further research into factors that influence customer satisfaction throughout all the stages of online purchases.*

Another significant contribution is concerned with the concept of Information sharing. The literature review conducted has revealed that the majority of approaches taken to studying information have a positive or negative connotation. For example, Nelson et al. (2005) study information quality antecedents within the context of data warehousing. They state that accuracy of information, its completeness, currency, and format contribute to information quality, which, in turn, leads to satisfaction. On the other side of the spectrum is information overload, associated with the feeling of having too much information for a specific purpose (Edmunds & Morris, 2000). Chen et al. (2009) study the effects of information overload on the consumer's subjective state towards a buying decision. They find that overabundance of product information is not necessarily beneficial to consumers and e-retailers. They also show that perceived information overload influences purchasing decision outcomes (Y.-C. Chen et al., 2009). This dissertation takes a neutral approach on the information associated with online ordering and proposes the construct of Information sharing in the context of e-commerce. *Such a neutral*

perspective on information is important, as it provides a comprehensive basis for a more thorough review of the positive and negative manifestations of information.

Similarly, this research makes a sizable contribution to customer satisfaction research, suggesting that overall customer satisfaction in e-commerce has multiple dimensions, one of which is DIS. Thus, we suggest that decreasing levels of satisfaction in recent years can be explained by the duality of the nature of satisfaction in e-commerce. Following the approach of Cenfetelli et al. (2008), we distinguish the influence of the core product from the influence of supplementary services that are provided along the core purchase. We show that DIS decreases due to inadequate levels of information sharing (as a supplementary informational service outcome) that influence transparency perceptions of customers after they place the order. Thus, by introducing the concept of information transparency as a feature of the supplementary services in e-commerce, we open the black box of possible explanations as to why customer satisfaction levels are stagnant despite the increases in the variety, quality, and functionality of goods and services in recent years. We suggest that customer satisfaction in e-commerce consists not only of the evaluation of the difference between expected and actual product quality but also includes a coinciding evaluation of the quality of the supplementary informational services that are associated with the order fulfillment process (e.g., order tracking, software support, etc.). By conceptualizing digital information transparency, *this research extends the current conceptual understanding of customer satisfaction in e-commerce.*

This dissertation adds to the growing body of literature on information transparency by suggesting that each customer forms two distinct digital information transparency levels associated with each order (desired and perceived). While prior research in e-commerce has

opened up the discussion on the information in various forms and its influence on various e-commerce outcomes (for example, product reviews and their influence on satisfaction by Changchit & Klaus (2020) or price transparency and its influence on purchasing decisions by Hanna et al. (2019), precious little research has been done on the information in its various forms that are generated and shared with the customer once the order has been placed. Thus, this study is among the first to examine the difference those information transparency perceptions made during the order fulfillment process and their influence on satisfaction.

1.7.2 Contributions to Praxis

Copious amounts of information are generated in e-commerce. Specifically, a sizable part of this information is brought about during the ordering processes. While it is easy for the company just to send all that to the customer, it would not be the most effective and efficient way to do so. The most important practical contribution of this dissertation is in the delineation of the relationship between the whole amount of information shared with the customer and their perceptions of the order fulfillment process's digital information transparency. We show that not all the information that is shared increases the perceptions of transparency. We encourage practitioners to develop IS that supplement online ordering with flexible characteristics and the ability to adapt easily depending on the customers themselves and the purchasing situations in which the orders are being placed. The dissertation's data analysis results provide valuable insight into the characteristics of information that improve the perceptions of transparency, such as message informativeness, timeliness, or chosen communication channels.

1.8 Structure of the Dissertation

The remaining section of the work begins with a literature review examining various aspects in which consumers receive and evaluate information in their purchasing experiences during online shopping. We begin by introducing the concept of transparency as it is defined and discussed in different disciplines, followed by the discussion of the transparency concept and its use in IS research. Later follows the literature review of Information sharing (as an essential antecedent of transparency), and its manifestations in e-commerce during all the stages of CRLC; on customer satisfaction (including its distinguishing features in e-commerce), and other constructs that are used in the research model. Next, the current research model's theoretical foundations are described: ECT, Stimulus-Organism-Response model (SOR), and service quality ZOT. We base our conceptualization of digital information transparency and satisfaction on those theories as they explain the expectations related to the acquisition or availability of information and its influences on individuals. In the next chapter, we perform a conceptualization of perceived digital information transparency, present a theoretical model, and introduce the curvilinear relationship between transparency and information satisfaction and the possible outcomes of such transparency. A review of the methodological procedures used follows these sections. Lastly, we present the discussion of the implications for the research, possible future avenues, and opportunities.

1.9 Scope of the Dissertation

The scope of the dissertation, or its domain, refers to the set of parameters under which the research will be conducted(M. K. Simon & Goes, 2013). A clearly defined scope of the study

is essential, as knowing the specific frame (temporal, spatial, or other) within which the research is done promotes understanding of the theoretical base, suggested relationships, and overall contribution by the readers. Considering the gap in the literature discovered above, we determine the conceptual scope of the study to be the relationships between the variables of the model that take place during online purchases of goods only. Additionally, the temporal scope is defined by the order fulfillment processes that take place between the moment the customer places the order and the moment the order is delivered to them. Thus, any concepts used in the order should be considered specific to the e-commerce order fulfillment process. For example, by Information sharing, we understand order fulfillment Information sharing; by any information transparency, we mean order fulfillment information transparency. For the purposes of parsimony of names, the “order fulfilment” part was omitted in the names of the constructs.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In today's environment, customers can quickly and easily get product details, prices, product reviews, manuals, testimonials, use directions, troubleshooting help, and make informed decisions about the product's choices and the company. Most research has been done on the information search in the pre-purchase stage of the customer journey (e.g., the impact of online user reviews on sales (Duan et al., 2008; Ye et al., 2009), recommender systems in e-commerce (Schafer et al., 1999; Schwartz & Bilsky, 1990; Sinha & Swearingen, 2002), decision-making in online shopping (Häubl & Trifts, 2000). However, not enough effort is made to study the information and its effects on satisfaction after placing the order. This raises questions about how customers receive their order updates, check return policies, and track their packages and how this information contributes to their overall satisfactory or unsatisfactory outcomes. To diminish this gap in current research, this work aims to study the concept of information transparency in the post-purchase stage.

Due to the growth of e-commerce during the past few decades, research examining e-commerce has also grown. The relative newness and difference of this type of purchasing lie in the fact that it includes a core product or service and a plethora of additional, mostly free, services that are provided (e.g., order status tracking, customer support, online repairs, etc.). At first, satisfaction literature was mainly concerned with the dis/confirmation of the expectations of the quality of the core purchased product/service as a determinant of satisfaction (Churchill & Surprenant, 1982). An increasing number of articles extends the variety of factors that influence

customer satisfaction. Among such factors are price fairness and customer service (Hanif et al., 2010), service failure recovery (Hess Jr. et al., 2003), e-commerce system quality and product quality (Lin et al., 2011), and others. However, there are not enough research efforts to investigate how information generated during online ordering influences satisfaction. This has left gaps that must be further explored to provide organizational leadership with the ability to effectively manage information and consumer needs to increase value and improve loyalty. In this section, relevant literature is reviewed and used to summarize what is known about transparency and highlight the gap in current knowledge. We start by reviewing the research that discusses transparency in different areas, then narrow it down to transparency in IS research, and in the context of e-commerce. Next, we discuss literature on the concept of Information sharing, which is a fundamental constituent of digital information transparency perceptions in e-commerce. Lastly, we go over the abstract theories and models that are used to ground the theory of the current dissertation.

2.2 Transparency Research

2.2.1 Transparency in Various Disciplines

The word “transparency” is derived from the Latin word “*trans*” ("across, beyond; through") and “parere” (come in sight, appear; submit, obey) (*Online Etymology Dictionary. Transparency (n.),* 2019). Taken together, the original meaning of the concept of transparency is "easily seen through" (*Online Etymology Dictionary. Transparency (n.),* 2019). The word was continuously used to describe the various phenomena in many languages, such as Italian, Spanish, French, English, etc. In physics, transparency is referred to the physical property of an

object to transmit light, which means a person can see through that object (Geraats, 2002). The word has also been later adapted to and further widely used in an economic or political context, where transparency of information means its symmetry for all the parties involved (all parties of a transaction have the same information about it). In contrast, the opacity of information – its asymmetry (one or more parties of the transaction possesses the information that is not available to one or more other parties of this transaction) (Geraats, 2002).

The use of information and communication technologies (ICT) has led to the decrease of the cost of information search and introduced automation to many processes in e-commerce. As a result, a person now can find needed information about anything in the world within a matter of seconds and without much effort. Due to such easy access, many of the processes that were not disclosed to the public before are visible now, creating a sense of transparency. For example, previously, customers were not informed when their orders were being shipped, while now not only do they know when the order has been sent to the shipping company, they are also able to track the progress of said shipment almost in real-time. Thus, information transparency has grown into a popular topic, especially in recent years, where the origin is reported to have begun with calls for the US government to increase government activities' transparency as early as WWII. The following Table 2.1 demonstrates the available sources in a variety of databases that mention information transparency.

Database	Range	Number of Articles	Last 5 years
EBSCO Host	1957-2021	3,653	1,682
ProQuest	1910 - 2021	116,356	61,403
Emerald Insight	2003-2021	9,610	9,607
ERIC	1986-2021	188	69
Gale Academic OneFile	1978-2021	58,172	25,620

Table 2.1 Database Results for Information Transparency

A literature search using Google scholar has revealed 53800 articles that include the word "transparency" in their title. Search for "information transparency" yielded 602 articles. Table 2.2 was developed to describe the main subject areas where information transparency is discussed. For parsimony, only the most cited articles were chosen for Table 2.2. Appendix A contains an extended version of the literature review table and is based on the 301 (50%) most cited articles with the phrase "information transparency" in the title. As demonstrated, most areas of information transparency overlap to create applications of Information sharing and transparency. An example is a relationship between health and medical information transparency and social responsibility. However, it is also found that corporate information transparency includes areas of social responsibility, ethics, technology acceptance, and more.

Key focus points	Research area	Source
Transparency is closely related to accountability. Propose dimensions of transparency (Economic/institutional, political).	Political science	(Kaufmann & Bellver, 2005)
Decision-making transparency. Policy information transparency. Policy outcome transparency.		(Grimmelikhuijsen & Welch, 2012)
Measures of demand for transparency. Dimensions of the public demand for transparency: fiscal, safety, government concerns, principled openness.		(Piotrowski & Van Ryzin, 2007)
Public access to information, ability to process information, reduced corruption.		(Kolstad & Wiig, 2009)
Transparency as a legal right to information. Government transparency and the use of new technologies.		(Jaeger & Bertot, 2010)
Information access and dissemination. Face-to-face transparency, computer-mediated transparency.		(Dawes, 2010)
Using technologies to improve information transparency and efficiency in government.		(Y.-C. Chen, 2012)
Computer-mediated transparency and its effect on the public sector.		(Meijer, 2009)
Supply chain transparency as a result of collaborative planning setting among parties.	Management	(Akkermans et al., 2004)
Information transparency in the corporate environment. The convergence of information streams.		(C. Simon, 2006)
Corporate dynamic transparency. Transparency as an interactive process, its ethical arguments.		(Vaccaro & Madsen, 2009)
Levels of information transparency (strategic, non-financial, and financial information).		(Sheu & Lin, 2006)
Transparency framework (sufficiency and diagnosticity of pricing information).		(Li Miao & Mattila, 2007)
Transparency as an element of supply relationships. Value transparency.		(Lamming et al., 2001)
A conceptual framework for characterizing and measuring corporate transparency.		(Bushman & Smith, 2003)
Establishment of complete information transparency in supply chains using planning software.		(Brosze et al., 2010)
Transparency and information disclosure practices.	Finance	(Chi, 2009)
Degree of transparency of trading systems. Pre-trade transparency, post-trade transparency.		(Pagano & Roell, 1996)
Information transparency of reporting. Informativeness of a signal concerning a project.		(Walther, 2004)

Accounting transparency, Accounting opacity. Corporate accounting transparency.		(Hwang et al., 2008)
Accounting transparency factors. Accounting transparency is achieved by using business reporting software.		(Bushman & Smith, 2003)
Transparency as timely and accurate disclosure on all material matters regarding the corporation.		(Turrent et al., 2012)
Medicine market price information transparency. Mechanisms of transparency of prices.	Health care	(Hinsch et al., 2014)
Transparency of health information and medical errors and its influence on patient safety.		(Kachalia, 2013)
Transparency Systems for Medical Care Prices. Price transparency in health care. Health information transparency.		(Cutler & Dafny, 2011)
Continuous access. Physicians' feedback. Informed Consent in Primary Care.		(Tang & Lansky, 2005)
Transparency standard in health care.		(Brody, 1989)
Transparency of health applications and its influence on patient decision-making.		(Albrecht, 2013)

Table 2.2 Transparency and its Context in Various Disciplines

Political science defines transparency as a legal right to availability of timely and reliable economic, social and political information (Jaeger & Bertot, 2010; Kaufmann & Bellver, 2005); lack of secrecy and openness to public scrutiny (Dawes, 2010). Kolstad & Wiig (2009) believe transparency to be about public access to information. They claim that it is increasingly discussed as a central point to reducing corruption levels in the countries. The authors present three components of political information transparency: access to information, the ability to process it, and the ability and incentives to act on this information (Kolstad & Wiig, 2009).

An underlying theme of transparency in politics shows the discussion of the availability of information to people and the public's ability to get and process such information (Kolstad & Wiig, 2009). Among such aspects, research notes technological sophistication and government literacy, long-term access to information (Jaeger & Bertot, 2010) (), use of information and

communication technologies (Y.-C. Chen, 2012), etc. Jaeger & Bertot (2010) consider transparency to be the central part of the democratic government. They state that in order to be completely transparent, the government needs to ensure that users of the information: 1. have physical access to information (be able to reach it); 2. have intellectual access to information (be able to understand it); and 3. social access to information (being able to share it with others) (Jaeger & Bertot, 2010). As to how such transparency occurs, there are four primary information dissemination channels: public meetings, proactive dissemination by government, release of requested materials, and leaks (Piotrowski & Van Ryzin, 2007). Meijer (2009) considers transparency (lack of secrecy and openness to public scrutiny) a means to reduce the uncertainty of the public and to increase public trust. However, in the modern environment, information, and communication technologies (ICT) offer a new approach to information dissemination (and, thus, information transparency) and promotion of anti-corruption (Bertot et al., 2010). According to Dawes (2010), unlike face-to-face transparency, ICT-enabled information transparency is not interactive, is decontextualized (removed from the shared experience by users), and highly structured.

The examination of transparency in management studies arises mainly from the discussions of agency theory (Eisenhardt, 1989), precisely the information asymmetry that exists between the agent and the principal. Transparency is often associated with the idea that stakeholders should constantly be interacting with each other. Thus, in research, corporate transparency is used to identify a unidirectional flow of information from the firm to various stakeholders (Vaccaro & Madsen, 2009). Additionally, depending on the parties engaged, information transparency in management is divided into internal (between stakeholders within a

company) and external (between the company and its customers, suppliers, shareholders, etc.) (C. Simon, 2006). Corporate transparency, defined as the availability of information to those outside publicly, is conceptualized as consisting of three main components: corporate reporting, private information acquisition and communication, and information dissemination (Bushman & Smith, 2003). On the other hand, information transparency is discussed in terms of the amount of information available to the decision makers. Additionally, generally speaking, the higher the knowledge about the situation, the better the decision (Brosze et al., 2010; C. Simon, 2006). However, Zhu (2004) notes that while being regarded to as a good thing, transparency can be a "double-edged sword" – not all the participants of the market necessarily benefit from it. This can explain the decreased profits of the companies due to price transparency and the fact that many firms switch from public to private exchanges (Harris, 2001).

Talking about information transparency in the financial sector, the discussion is concentrated mainly around the financial reporting to stakeholders and availability of the information concerning financial projects, accounting earnings, existing conditions, decisions, and actions in the company (Hwang et al., 2008; Walther, 2004). It is believed that the companies have used information disclosure practices to mitigate agency costs and promote the integrity of the markets (specifically, the security market) (Chi, 2009). When studying trading systems and their transparency, the research focuses on informed trading and the differences between auction and dealer markets. Trading systems have a different degree of transparency, with the auction markets being more transparent in general. In that context, a degree of transparency is defined as the extent of intermediaries' knowledge of the rest of the current order flow when they price and satisfy a particular order (Pagano & Roell, 1996). The authors

distinguish pre-and post-trade information transparency and show that the degree of transparency of the market mechanism influences its liquidity (higher transparency displays higher liquidity of the market) (Pagano & Roell, 1996). Corporate transparency, another research area, is defined as the "widespread availability of relevant, reliable information about the periodic performance financial position, investment opportunities, governance, value, and risk of publicly traded firms" (Bushman & Smith, 2003).

Transparency in health care touches on health information available to patients (Albrecht, 2013); transparency systems of medical care prices (Cutler & Dafny, 2011); transparency of medicine prices (Hinsch et al., 2014), etc. In general, the phenomenon of transparency is viewed as mostly positive and dealing with eliminating the information asymmetry between parties. For example, Hinsch et al. (2014) study the influence of medicine price information mechanisms on medicine prices' transparency. Kachalia (2013) discusses the importance of medical errors' transparency and its effects on patient safety. They conclude that the culture of transparency in medical establishments will promote a better balance of accountability and emotional and legal concerns of patients and clinicians (Kachalia, 2013). In general, when it comes to health care, one of the crucial things mentioned is the importance of the transparency of information and access to it and the transparency of the sources of such information .

2.2.2 Transparency in Information Systems Research

The significance of information transparency in the current environment is undeniable (Granados et al., 2006, 2010; Zhu, 2002) **.** In the limited amount of management/business research that uses the word "information transparency," many articles

discuss the process of disclosing information (making it explicit and openly available) to the potential user for the benefits of the decision-making process (Turilli & Floridi, 2009). Dealing with information in its various manifestations, IS literature has contributed to the plethora of research on information transparency. Literature search among IS publications revealed that only a limited number of articles discuss transparency of information. While conducting a literature review and reading articles, we have inductively come up with three prevailing vantage points from which information transparency in IS is viewed (Table 2.3):

- *Product-related transparency* and its effects on the external stakeholders (companies, rivals, customers) (Dewan et al., 2007; Granados et al., 2006; Soh et al., 2006);

- *Transparency strategies for organizations*, including disclosure, distortion, bias, or concealment of information elements to different parties (Awad & Krishnan, 2006; Granados & Gupta, 2013);

- *Transparency as an outcome of IS use* (transparency in recommender systems, internal and external transparency in organizations, transparency of the information collected on the customers, etc.) (Al-Jabri & Roztocki, 2015; Sinha & Swearingen, 2002; Street & Meister, 2004).

Article	Conceptualization of transparency	Key points
Product-related transparency		
(Dewan et al., 2007)	Information transparency – availability of information on the price and the quantity available to buy or sell.	Impact of information transparency on retailers' price competition. Study a market with shortages and consider customers' optimal search behavior.
(Soh et al., 2006)	Price transparency - availability of pricing information, the degree to which market participants know the prevailing prices and characteristics or attributes of goods or services on offer.	Examine the relationships among EMP strategy, price transparency, and performance. Found that all EMPs pursuing a low-cost strategy had high price transparency and performed poorly.
(Granados et al., 2006)	Market Transparency - the extent to which information is made available to market participants, including pricing, product, and supplier information.	Examine how IT interacts with other forces to facilitate or inhibit a move to transparent electronic markets.
Transparency strategies for organizations		
(Awad & Krishnan, 2006)	Information transparency - features that give consumers access to the information a firm has collected about them and how it will be used.	Consumer privacy concern and consumer-rated importance of privacy policy are positively associated with consumer-rated importance of information transparency.
(Granados et al., 2010)	The level of availability and accessibility of market information to its participants (buyers, suppliers, etc.). Transparency strategy - set of policies and decisions that a firm makes to disclose, conceal, bias, or distort market information.	Some firms already have developed explicit transparency strategies to manage market information disclosure, whereas others simply react to competitive actions, consumer behavior, and business conditions.
(Granados & Gupta, 2013)	Transparency strategy - strategy to selectively disclose information outside the firm's boundaries to buyers, suppliers, competitors, and other third parties like governments and local communities.	Firms should strategically and selectively disclose information. Make a case for the need to develop research and best practices on transparency strategy. The science and practice of transparency strategy is about selecting a strategic option (e.g., disclose, distort, bias, or conceal) for each informational element and different parties outside the firm (e.g., buyers, suppliers, competitors).

Transparency as an outcome of IS use		
(Street & Meister, 2004)	Information transparency as an outcome of communication behaviors using IS within an organization that reflects the degree to which employees have access to the information required for their responsibilities	Two different types of transparency: internal and external. External transparency – the outcome of communication behaviors directed outside the organization. Internal transparency - same behaviors within the organization.
(Sinha & Swearingen, 2002)	Transparency in recommender systems – user understanding of why a particular recommendation was made.	In general, users like and feel more confident in recommendations perceived as transparent. The system needs to show its logic to the user and show why a particular recommendation is suitable.
(Zhu, 2005)	Information transparency is defined as the degree of visibility and accessibility of information.	Found that information transparency affects producers and consumers differently.

Table 2.3 Transparency in IS

Product transparency is crucial in the current online shopping environment as digital technologies have enabled the customers to easily, quickly, and almost at no cost to find out anything about the item they are purchasing. Such reduced costs of information search have impacted the amount of information customers seek before completing a purchase – customers now try to find out all the product features, characteristics, qualities, and price deals before purchasing it. Due to this fact, online retailers provide a plethora of product information on their websites, including product prices . Price information is one of the tools that are being widely researched by customers before they make a decision on which product to buy and where. Dewan et al. (2007) discuss price transparency and price strategies of an online retailer in response to stockouts (a situation where the product is out of stock in other retailers). Despite the reduction mentioned above of information search costs, customers still incur them (time and effort to search online). Also, they have different costs because of the difference in their levels of

familiarity with technologies, online experiences, Internet speed, etc. All these factors allow companies to use price transparency in strategic areas and profit from the situation when competitors are out of stock (Dewan et al., 2007). (Soh et al., 2006)discuss the electronic marketplaces (EMPs) and their influences on the prices. Despite the widely accepted logic that EMPs will decrease prices by providing higher transparency, the authors found that EMPs with high price transparency and low-cost strategy performed poorly (Soh et al., 2006).

Due to the controversial influence of information transparency on the firm's performance (e.g., price transparency), it is vital to make strategically sound decisions about which information to disclose. Transparency strategy can be defined as selective disclosure of information outside the firm's boundaries (to buyers, competitors, suppliers, etc.) (Granados & Gupta, 2013). A firm can choose one of the four possible strategies: to disclose information, distort it, present it with bias, or conceal it (Granados et al., 2010). Street & Meister (2004) define two different types of information transparency: internal (the outcome of communication within the organization) and external (the outcome of communication directed outside of the organization).

Transparency can also be perceived as a result of the system design. When talking about search engines and recommendation systems, transparency is achieved when a user understands the underlying algorithm. For example, transparency of the recommender systems is formed when users of such systems feel that they understand how and why a particular recommendation was made (Sinha & Swearingen, 2002). In general, the understanding of information transparency in IS, especially in the sub-area of e-commerce, is fragmented and often

inconsistent. Thus, there exists a need to explore the phenomenon of information transparency further.

2.2.3 Information Transparency in the Context of E-commerce

Recent developments in technology and the recent worldwide pandemic have brought an era of mobile and electronic commerce to a new level. Shopping online is popular among consumers because it is convenient, fast, and now is safer than before. Such an increase in online sales popularity has led to drastic improvements in how customers receive their orders. For example, most websites use the services of shipping companies such as UPS, USPS, or other delivery companies to send their packages with tracking numbers so that the location of the package and the tentative delivery date can be checked online at any time. Amazon shipping services go even further and, during the delivery day, show a package location on the map in real-time. Besides, customers receive emails with itemized order receipts, shipment details, promotional emails from the companies showing new products, sales, prices, etc. Thus, they are constantly presented with various types of information, which, in turn, influences their perceptions about the company and their future intentions.

Most of the current research on information availability and its effects on purchasing outcomes is concentrated on the Requirements stage of the CRLC (Ives & Learmonth, 1984), which happens before the actual purchase of the product. CRLC is categorizing the stages that a customer is experiencing with each product they purchase: Requirements (a customer establishes what they need, the quantity, and the features of the product); Acquisition (the source of purchase is selected, the order is placed and paid for, and the product is received and tested);

Ownership (the customer is using the product, maintaining and updating it); and Retirement (the product is returned or disposed of) (Ives & Learmonth, 1984).

2.3 Information Sharing

2.3.1 Information and Online Shopping

To overcome some of the shortcomings of online shopping, such as the inability to touch a product or see how it looks in real life, a customer is conducting extensive research in the initial stages of shopping. This leads to them processing copious amounts of information and making decisions about the purchase. However, the amount of information sent after the order has been placed is tremendous as well. From the moment the order is placed, a customer can instantly receive various emails: order confirmation email with all the details of the order in it; payment confirmation email, if one of the online payment systems has been used to complete the transaction; emails about order updates, shipping confirmation, delivery dates changes; emails that contain instruction manuals, warranty information, additional services (such as online accounts for software support or complimentary online accounts for the use of the product), etc. These supplementary information services accompany every purchase. However, the amount of information and the content of it is different from vendor to vendor. While there is extensive research on the influence of the information available to the customer before they place the order (e.g., product reviews (Changchit & Klaus, 2020)), the impact of the information that follows after the order has been placed is not examined. We believe that the information provided to the customer after the order has been placed influences their perception of a company's information transparency. Thus, Information sharing is a direct antecedent of transparency. Given the

importance of information transparency discussed above, the ease of access to information that customers have, and the lack of research of information transparency in the later stages, there is a need to study the perceptions that customers have about the information that the company supplies after the order had been placed.

As a result of the growing organizational use of transparency strategies and attempts to provide the correct amount of information to the customer, organizations develop numerous communication types for consumers and stakeholders. Understanding how communication can be effective requires understanding both the informational needs of customers and information-sharing principles. Lack of research in the stages of the ordering process that follow the purchase urges this research. However, the scope of the current dissertation limits the ability to study the whole online ordering process. Therefore, the dissertation focuses specifically on the order fulfillment process (the set of processes from the moment when the order is placed until the product/service is delivered).

2.3.2 Overview of Information Sharing Concept

Information technology has improved access to information. People have extensive means of sharing information with others and receive the information shared with them. The same stands true for companies in various fields of operation. Organizational activity in any form consists of the interchange of information (Barrett & Konsynski, 1982). Nevertheless, early decades of computerization of organizations were focused on replacing manual labor with computer-based systems (Barrett & Konsynski, 1982). However, in the last decade or two, many companies have widened their efforts to improve their informational technologies and their

supply chains to match supply quantities with demand better to reduce inventory costs (H. L. Lee & Whang, 2000). Many organizations invest in collaborative information and communication systems to promote and ensure Information sharing (Davenport & Prusak, 1998) within the organization and outside of it. Since the number of investments needed to do this is significant, companies should know how to use these technologies most effectively. The exchange of information is vital in many areas, for example, during decision-making processes in groups. Better decisions can be made when the group members can consider more information and consider information from diverse sources (Gigone & Hastie, 1993).

In recent years, the subject of effective Information sharing has regained the attention of academics and professionals (L. Li, 2002). It is most widely studied in supply chain management, as Information sharing is crucial for supply chain management (Moberg et al., 2002). Copious amounts of information are shared between the supply chain participants (e.g., between manufacturers and retailers, companies and retailers) (L. Li, 2002). Lalonde (1998) calls Information sharing one of the building blocks of a solid supply chain relationship. Additionally, it is one of the most important cost reduction techniques for the organization (H. L. Lee & Whang, 2000).

There are various definitions of Information sharing. It is primarily defined as the extent to which critical and proprietary information is communicated to one's supply chain partner (Monczka et al., 1998). Johnson et al. (2006) define Information sharing in groups as the extent to which team members share information with each other. Although the importance of Information sharing is evident in multiple studies, the impact of sharing the information depends on what information is shared, when it is shared, how it is shared, and with whom (S. Li & Lin,

2006). Therefore, when studying Information sharing, three aspects need to be considered: support technology, information content, and information quality (Zhou & Benton, 2007). Information quality concerns the degree to which information exchanged between organizations meets the organizations' needs (Piccoli et al., 2001). Zhou & Benton (2007) define information quality as the quality of information shared between manufacturers and customers. Multiple studies have identified various characteristics that define the quality of information. For example, McCormack (1998) defines four dimensions of information quality: accuracy, frequency, credibility, and availability. In IS research, information quality is defined as the quality of outputs produced by information systems (Gorla et al., 2010). Zhou & Benton (2007) define nine dimensions of information quality: timeliness, accuracy, completeness, availability, internal, and external connectivity, relevance, accessibility, and frequency of updates. Information content, on the other hand, deals with the composition of the information that is shared. From this perspective, there are to different information flows: the information that manufacturers share with their customers, and the information that customers share with their manufacturers (Zhou & Benton, 2007). Lastly, Information sharing support technologies include software and hardware that are needed to support Information sharing (Zhou & Benton, 2007).

In the supply chain, a wide variety of data is shared. It can be inventory levels, sales data, order status, sales forecasts, and production or delivery schedules (H. L. Lee & Whang, 2000). Another aspect of Information sharing is the type of models that are used for the purpose. There are three main models: the information transfer model, the third-party model, and the information hub model (H. L. Lee & Whang, 2000). The information transfer model focuses on transferring information from one partner to another, who maintains the database. In the third-

party model, a third party collects all the information and maintains the database. Lastly, the information hub model replaces the third party with the information system (H. L. Lee & Whang, 2000). Additionally, Information sharing can have two-directional characteristics – vertical Information sharing (sharing among parties on the same level of the supply chain) and horizontal Information sharing (sharing among parties on different levels of the supply chain) (L. Li, 2002). Overall, the research in this area shows that Information sharing significantly enhances effective supply chain practices and that higher levels of Information sharing lead to higher levels of performance of organizations (Zhou & Benton, 2007).

Another area where information and how it is shared is necessary is knowledge management and, specifically, group performance. Information sharing is a primary tool used for the team members to effectively utilize their available informational resources (Mesmer-Magnus & DeChurch, 2012). It is one of the most necessary knowledge management elements in the organization (Ruggles, 1998). The concept of Information sharing involves the idea of an individual being willing to share this information (Jarvenpaa & Staples, 2000). This is the main distinguishing characteristic that delineates Information sharing from information reporting (Jarvenpaa & Staples, 2000). Information sharing is influenced by a variety of factors, such as whether tangible or intangible information is shared (Constant et al., 1994), trust and shared vision between partners (S. Li & Lin, 2006), rational self-interest as well as the social and organizational context (Jarvenpaa & Staples, 2000), and prosocial attitudes and norms of organizational ownership or people's own self-expressive needs (Constant et al., 1994). There are two ways in which the information that is shared between the parties influences the judgments of the group: the information influences the individual judgment of the members and

changes the common reference point for the group members, thus, influencing the group judgement (Gigone & Hastie, 1993).

When implemented in a group, organization, or supply chain, Information sharing has multiple benefits. In groups, it provides team members the ability to take more relevant information into account when making decisions, thus leading to better decisions (Gigone & Hastie, 1993). For the supply chain and its participants, effective Information sharing enhances performance (Zhou & Benton, 2007), reduces the costs of inventory and stockouts (H. L. Lee et al., 2000), and reduces the cost (H. L. Lee & Whang, 2000). Additionally, the decreased error rate achieved due to Information sharing leads to decreased administrative cost (Barrett & Konsynski, 1982). Other advantages include cost displacement and increased productivity (Keen, 1981), expansion of professional networks, and improvement of public accountability (Dawes, 2010).

2.3.3 Information Sharing and Customer Resource Life Cycle

When talking about Information sharing in the retail area, several important aspects are worth mentioning. First and foremost, the order fulfillment process implies the successful coordination of several participants, such as payment services, website servers, warehouses, shipping partners, and others. All of them interact and exchange information to ensure the delivery of the products or services to the customer. Second, because of these multiple order fulfillment processes, diverse information is generated and, consequently, shared with the customer. Effective sharing of such information leads to the elimination of the information-sharing problem – information reaches people to whom it is valuable and does not interfere with

people it is not valuable to (Malone et al., 1987). We believe that a different side of the information-sharing problem exists, as receiving too much information makes it not valuable to people. This issue is not studied in research work. We believe that, similarly, effective Information sharing mentioned above should eliminate this side of the problem as well.

While the concept of Information sharing between partners of the supply chain is widely studied, the amount of research done on the transfer of information between the customer and the company is scarce. Moreover, the research that exists focuses primarily on the information generated and distributed before the purchase, during the Requirements stage of the CRLC (Ives & Learmonth, 1984). CRLC is categorizing the stages that a customer is experiencing with each product they purchase): Requirements (a customer establishes what they need, the quantity, and the features of the product); Acquisition (the source of purchase is selected, the order is placed and paid for, and the product is received and tested); Ownership (the customer is using the product, maintaining and updating it); and Retirement (the product is returned or disposed of) (Ives & Learmonth, 1984).

Many studies examine web support for stages of the life cycle and performance outcomes. Requirements stage can be considered one of the most important ones in electronic e-commerce as, due to the specifics of online purchasing (e.g., higher perceived risks discussed by Liebermann & Stashevsky (2002)), customers pay more attention to the information that is available before they make a purchasing decision. Thus, more efforts focused on this stage of the CRLC. The influence of the following factors on purchasing outcomes is studied widely: product information (T.-Z. Chang & Wildt, 1994); visual product presentation (H. Li et al., 2002; Park et al., 2005); price transparency (Granados & Gupta, 2013; Soh et al., 2006); word of mouth

(Chevalier & Mayzlin, 2006); online customer reviews (Berger et al., 2010; Öğüt & Onur Taş, 2012), etc.

Further research shows the equal importance of other stages as well. E-commerce competence, defined as experiences and resources crucial to developing and managing Internet-based businesses, for example, influences company performance during each stage of the customer service life cycle (CSLC) (Saeed et al., 2005). Otim & Grover (2006), for instance, examine the influence of three sets of web-based services on customer repeat purchase intentions. They show that post-purchase stages[1] are essential in customer retention strategies that web-based stores implement. Such strategies improve the satisfaction and, consequently, long-term relationships between the company and its customers (Otim & Grover, 2006).

For the purpose of this research, we focus on the narrow timeframe from the Acquisition stage of the CRLC. Specifically, we call it the order fulfillment process – the set of procedures and processes that happen from the moment the order is placed to the moment when the goods or services are delivered to the customer. Information sharing during this stage involves informing the customer about the following instances: successful order placement, payment going through, order status (e.g., preparing for shipment, shipped, delivered), shipment tracking, etc.

2.3.3 Information Sharing Dimensions

Based on the literature review conducted, we define Information sharing as the extent to which information about the order fulfillment process is communicated to the customer. As discussed in the supply chain literature, Information sharing includes three main aspects:

[1] Pre- and post-purchase is a broader way to classify the stages of the CRLC (Ozer & Gultekin, 2015).

information quality, Information sharing support technology, and the information content (Zhou & Benton, 2007). Information quality is the degree to which the information that is shared between the organizations meets the needs of the organizations (Petersen, 1999). Information support technology is all the technology used in the exchange of information between supply chain participants. Information content can be referred to as supplier information, customer information, manufacturer information, and retailer information (Chopra & Meindl, 2001). To develop the dimensions of the Information sharing fitting to the concept of e-commerce, we have conducted a data collection from the articles that mention information content, quality, and technology and have summarized the dimensions from the most common descriptions, simultaneously adapting them to online shopping. The process and the result of this analysis are schematically noted in Figure 4.1 below.

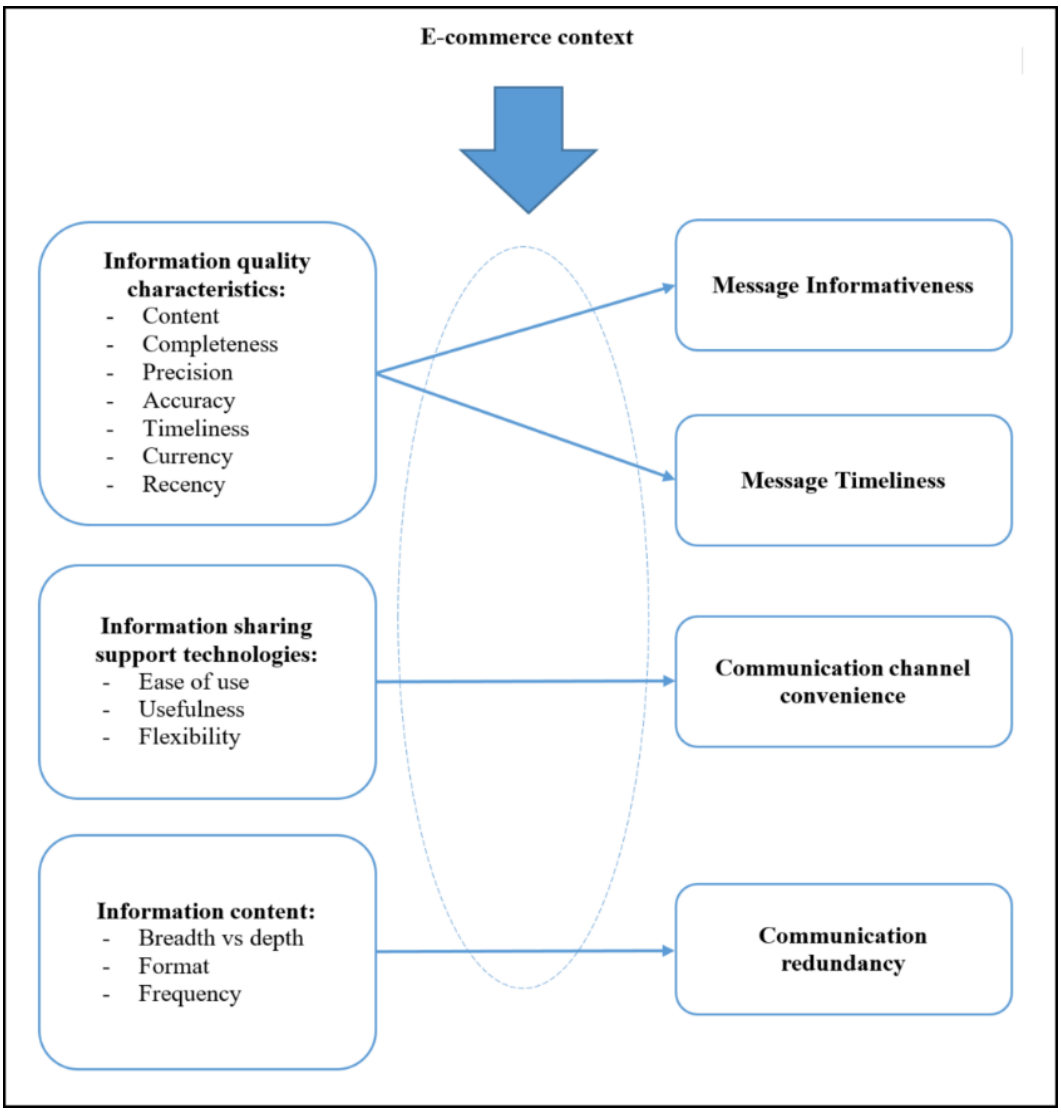


Figure 2.1 Development of Dimensions of Information Sharing

Message informativeness is defined as the degree to which the content of the communication sent to the customer about the order progress is complete, precise, and accurate. It is derived from the corresponding dimensions of information quality (Gorla et al., 2010; Y. W. Lee et al., 2002; Monczka et al., 1998). Message timelines, defined as the degree to which the communication about the order fulfillment process is sent in a timely manner that satisfies the customer's needs. It is derived from the dimensions of information quality that reflect the

timeliness, currency, and recency of the information (Gorla et al., 2010; Y. W. Lee et al., 2002). The convenience of the communication channels is derived from the information-sharing support technologies. However, since the customers are receiving the communications about the order progress on the device of their choosing, it is safe to assume that it is useful and easy to use for them. Therefore, the single dimension left to define would be Flexibility, often mentioned in the literature on the information technology infrastructure (Byrd & Turner, 2000; Duncan, 1995). Thus, communication channel convenience is defined as the degree to which a customer can choose how and where to receive the communication about the order progress. Lastly, communication redundancy is somewhat similar to convenience, as it deals with the repetition of communications about the order fulfillment process. It is defined as the degree to which a customer receives identical communication about the order fulfillment process multiple times on multiple channels.

The examination of the literature on the Information sharing concept in the supply chain area has revealed one particular characteristic of the relationship between the partners. The supply chain participants are usually able to gain access to a relatively similar level of information, as they are working together to collectively utilize their available informational resources (Mesmer-Magnus & DeChurch, 2012). The relationship between the company and its customers is different, as the customer, to some extent, needs to receive permission to access the information (for example, whether it is on the company website or email). Most of the information nowadays is automatically shared with the customer as their order is being fulfilled. However, sometimes the customer needs to request that information from the company. We believe that in the context of transparency, this plays a crucial role. Therefore, we propose the

fifth dimension of Information sharing in e-commerce, communication initiator, defined as the degree to which a customer needs to request information about the order fulfillment process.

The understanding of Information sharing in other disciplines mostly assumes that a sharing party is the one initiating contact with another party, therefore it is not discussed in the research. However, it is widely known that in e-commerce, there are situations when customers are forced to seek information out by contacting the company. For instance, when they are experiencing delays with their order: the package that was supposed to be delivered is late, and there are no updates on it. Here, we believe that transparency perceptions by the customer are higher when the company is initiating the Information sharing process and providing the customer with the updates. Therefore, an additional, fifth dimension of Information sharing is suggested to be a communication initiator. We define it as the degree to which a customer needs to request information about the order fulfillment process. Table 4.2 below provides the summary of Information sharing dimensions and their definitions.

Dimension name	Definition
Message informativeness	the degree to which the content of the communication sent to the customer about the order progress is complete, precise, and accurate.
Message timeliness	the degree to which the communication about the order fulfillment process is sent in a timely manner that satisfies the customer's needs.
Communication channel convenience	the degree to which a customer can choose how and where to receive the communication about the order progress.
Communication redundancy	the degree to which a customer receives identical communication about the order fulfillment process multiple times on multiple channels.
Communication initiator	the degree to which a customer needs to request information about the order fulfillment process.

Table 2.4 Information Sharing Dimensions

2.4 Customer Satisfaction Research

2.4.1 Overall Customer Satisfaction with Purchases

Satisfaction is the holy grail of business. A satisfied customer brings sustainable profitability to the company through such long-term effects as re-purchase intentions and behaviors (Choi & Kim, 2013), brand loyalty (Shankar et al., 2003), positive word of mouth (Anderson, 1998), etc. For this reason, the majority, if not all actions that are taken by the companies are aimed at achieving and increasing customer satisfaction levels. Thus, the concept of customer satisfaction has occupied one of the central positions in marketing research and practice (Churchill & Surprenant, 1982; Oktareza et al., 2020). Additionally, it is included in research from other areas, including IS. For example, one of the crucial concepts of IS research is user information satisfaction (UIS) - the extent to which users believe the information system available to them meets their information requirements (Ives et al., 1983).

The conventional way to discuss customer satisfaction in the first few decades of the research efforts was through the prism of the retroactive evaluation of the company and its products or services that is based on the perceived quality of these products, their value, and customer expectations. Here, customer satisfaction is viewed as an outcome of the comparison of expected and received. For example, (R. L. Oliver, 1997) defines satisfaction as a post-consumption judgement of whether the product provided a pleasurable level of overall usage-related fulfillment. (Turner & Kotler, 1997) define customer satisfaction as “the level of a person felt state resulting from comparing a product’s perceived performance”. Choi & Kim (2013) define it as “the customer’s overall evaluation of the product or service after they purchase it”.

These and other definitions have a common element – customer satisfaction is studied as a unidimensional cumulative outcome of the experience that the customer had with the company and the product. Subsequent conceptualizations of customer satisfaction that developed in more recent years adopted the process-based view. (Dis)confirmation paradigm, for example, views customer satisfaction as the result of the process of comparison of customer's own expectations and perceived outcomes (McKinney et al., 2002). Therefore, when talking about shopping, satisfaction is formed by comparing the expected product/service quality and actual product/service quality (Meesala & Paul, 2018; Razak et al., 2016).

2.4.2 Duality of Nature of Overall Customer Satisfaction in E-commerce

The advancements of the world, specifically in the area of commerce, have caused inevitable changes in the way we view satisfaction. New types of products and services, new ways of doing business (online, mobile, and mixed commerce), new order processes and elements, and new requirements that customers have to products and companies, led to the need to view customer satisfaction separately for every different element of the shopping process. Thus, it became evident that the overall satisfaction is multidimensional and is formed from the multiple satisfactions with more specific parts of the whole customer experiences. For example, some of the research that has been conducted on more specific satisfaction, looks at product quality (Jahanshahi et al., 2011); service quality (Oh, 1999); the quality of the company website (Hur et al., 2011); and other antecedents of satisfaction. Additionally, researchers have started developing theories and models for satisfaction in different areas: banking (Jamal & Naser, 2002; Levesque & McDougall, 1996) hotel industry (Barsky, 1992; Kandampully & Suhartanto, 2000);

healthcare services (Boshoff & Gray, 2004; Suki, 2011); retailing industry (Gómez et al., 2004; Qomariah et al., 2020), and many others.

In IS, customer satisfaction has been adapted to reflect the user's satisfaction that results from the interaction with an information system. Any IS can be viewed as a provider of service. In this case service is information that is generated as a result of the operation of the IS. Originally, the idea of the satisfaction with the IS was introduced by Cyert & March (1963), who state that if the system meets the needs and expectations of the users, that reinforces their satisfaction with it. Later, Ives et al. (1983) introduce a concept of User information satisfaction (UIS), defined as the extent to which users believe that the IS available to them meets their information requirements. They state that UIS is a construct that provides a surrogate measure of the effectiveness of the IS and the positive changes it brings to the company. Baroudi et al. (1986) discuss UIS as influenced by the involvement of the user and system usage. They define the satisfaction with the information as the user's satisfaction with the information system and its outputs (Baroudi et al., 1986). Additionally, they point out that UIS is an attitude and should be conceptualized as such.

The current environment of e-commerce requires improved understanding of customer satisfaction. As online shopping can be characterized by the traits that are distinct of those of offline shopping, customer satisfaction is formed from different antecedents as well (Hult et al., 2019). Additional phenomenon that leads to the greater need of understanding online customer satisfaction is the increasing demands of the customers that are caused by the increasing affordances in technology (Bell & Patterson, 2011). Today's customers are pickier, fickler, more vocal, and vainer. All of this is due to the customers having a wider and easier access to

information and having better ways of sharing their own information. (Bell & Patterson, 2011). Much of the research has been done on discovering the differences between customer satisfaction in online and offline shopping environments. For instance, Hult et al. (2019) discuss the difference between antecedents and consequences of customer satisfaction across online and offline purchases of different types of goods. Saini & Lynch (2016) and Danaher et al. (2003) show the differences in brand loyalty between online and offline purchasing contexts. Additionally, the relationship between customer satisfaction and loyalty is proven to be stronger in online purchases due to the "cognitive lock-in" effect (Shankar et al., 2003).

Another significant aspect of e-commerce and overall customer satisfaction associated with online purchases is in the multidimensionality of the way in which the satisfaction is formed. The deployment of information technology features on the websites of e-retailers has led to the creation of supplementary supportive services that are provided along with the core purchase. Therefore, even the e-retailers that are primarily focused on selling physical goods, are now required to be more service-oriented (Homburg et al., 2002). They find that the amount and the broadness of supporting services that are provided by the retailers in the traditional offline setting significantly contribute to the perceptions of customer satisfaction. Moreover, they believe that customers are purchasing specific products to satisfy specific goals, therefore, they will be more satisfied if the supporting services are aiding the core product in the achievement of such goals. For example, a customer may be purchasing a food steamer because they want to eat healthier. Thus, if the steamer comes with a website collection of various healthy dishes that can be prepared in it, it will help the customer achieve their goal of healthy eating more effectively, thus increasing their overall satisfaction with the purchase (Homburg et al., 2002).

The phenomenon of supporting services that are offered along with the core product purchased is even more apparent with the deployment of information technologies in the area of e-commerce during the last few decades. When we buy things online, we are able to track the progress of our order, get access to receipts, track the delivery of the orders, and receive access to customer service during every stage of order fulfillment process. Thus, when the customer is forming their perceptions of overall satisfaction, they no longer are evaluating solely the quality of the core product or service. To introduce this phenomenon into the area of online shopping, a concept of Supporting Service Functionality (SSF) was introduced into research (Cenfetelli et al., 2008). Derived from the concept of service quality, SSF explains additional aspects of what the supplementary services are and how their characteristics influence customers beliefs and behavior, beyond just the concept of service quality. Essentially, what this research article does, is it divides the antecedents of the overall satisfaction into two groups: those, connected with the core product or service purchased, and those deriving from the supplementary services provided by e-retailers to support the core transaction.

This dissertation takes the next step to better understanding the features of customer satisfaction in an online shopping environment. We distinguish satisfaction with the core product or service purchased, and the satisfaction with the array of supplementary information services that are provided along with the core ones. As mentioned before, customers form perceptions of satisfaction based on their experience with multiple aspects of the shopping process. While the relationship between product quality and satisfaction is straightforward and widely discussed, there is a significant lack of research that would describe the relationship of satisfaction with supplementary services that accompany the purchase. By these supplementary services we mean

the delivery of information about the order to the customer, such as receipts sent to the email, shipping notifications, parcel tracking, delivery notifications, etc. Such services that we are focused on are informational in their nature, they are essentially outputs of the information systems that are engaged in the order fulfillment process. As such, they must be studied as both services (thus, customer satisfaction), and outputs of the IS (thus, UIS). Additionally, as we are discussing the area of electronic commerce, we must consider that such services are digital in their form. Taking various definitions of satisfaction into account, we, therefore, suggest the concept of DIS and define it as the extent to which a customer believes the digital order information available to him meets his order information requirements.

2.5 Theoretical Foundation for the Model

Information transparency that pertains to the order fulfillment process, as mentioned above, is a topic that requires serious research efforts. It is widely known that information supplied in the pre-purchase stage has a significant influence on various outcomes, such as quality of the decision made (Xiao & Benbasat, 2007), purchasing intentions (T.-Z. Chang & Wildt, 1994), consumer choice (Hoyer, 1984), etc. The need for research arises due to a lack of structured knowledge and understanding of the effects of information on various aspects of consumers' perceptions of online shopping. During online ordering, customers are most interested in the “state” of their order. The changes of that “state” are provided to the customers in the form of informational communications. Furthermore, these communications provided to the customers when they place an order online are more than just information. It could be considered a secondary digital service that is received in addition to the core product purchased. Thus, the quality of such a service would influence the satisfaction of the customers as well.

Satisfaction is formed when the customer compares the quality of the actual service received with the subjective standard (e.g., customer's expectations) (Bhattacherjee, 2001).

The objective of the research model presented in this work is to fill in the gap in existing academic work discussed above. As mentioned before, information transparency in the pre-purchase stages has been discussed, and its importance is apparent. However, customer satisfaction in e-commerce requires the study of the post-purchase encounters with the company as well. Clarity of such post-purchase processes will bring beneficial outcomes to both companies and customers. While discussing digital information transparency as a service, the proposed theoretical model is based on the following higher-order theories: SOR model (Belk, 1975; Eroglu et al., 2001), ECT (Mehrabian & Russell, 1974; R. L. Oliver, 1980), and service quality ZOT (Kettinger & Lee, 2005). S-O-R model approach allows us to explain how DIS is formed as a response to information transparency perceptions during online shopping. ECT explains the customer's influence by comparing different levels of perceptions of information transparency during the order fulfillment process. Lastly, we use the concept of ZOT to define various levels of information transparency and show how they are formed depending on the individual and situational factors.

2.5.1 Expectation-Confirmation Theory

ECT (also known as EDT - Expectation-Disconfirmation Theory) proposed by Oliver (1980) Oliver (1980) posits that expectations create a frame of reference for customers. Then they compare the actual service received with the expected level, thus making a critical judgment, which influences their perceptions. Additionally, outcomes that are poorer than expected by the customer (a negative disconfirmation) lead to adverse outcomes, while those

better than expected (a positive disconfirmation) lead to positive shopping outcomes. Customers' overall satisfaction or dissatisfaction with the company forms their post-purchase intentions, such as repurchase or not to purchase from the same vendor again (Hossain & Quaddus, 2012). If a customer has low expectations about the company (e.g., from reading other reviews) and the company exceeds the expectations, this customer will continue doing business with them. If the expectations are under-met (e.g., due to poor performance or unrealistic expectations), the customer experiences dissatisfaction and no longer chooses to buy from the company. In the model identified by (Kim, 2012), developed from prior research, the pre-purchase and post-purchase stages are directly influenced by the customer's expectations.

ECT is used widely in the IS field: to understand the continued use of a system (Bhattacherjee, 2001; S. S. Kim & Malhotra, 2005), to explain the loyalty and adoption in the e-commerce environment (Pavlou & Fygenson, 2006), to study the post-adoption beliefs (Thong et al., 2006). In this study, ECT is essential for exploring the expectations that customers have about the level of information transparency regarding each purchase. The expectations are formed based on the situational, individual variables, and the product's specific characteristics (e.g., price). The development of a structural model to understand expectation and confirmation in Kim et al. (2009) found variables of trust and risk to be related to price, influence loyalty, and perceptions of benefit. Further, Kim et al. (2009) found that expectation may provide significant insight into levels of expected satisfaction in transaction performance, which requires additional research.

In addition to trust, information sent to customers by retailers has been studied to indicate a relationship with expectations and the willingness of consumers to complain about products or services (M. Hu et al., 2015). Expectations and confirmation can be developed based on

perceptions indicated in the information that retailers provide to consumers prior to their purchase, creating expectations of how a product will be delivered, benefits or features, and reliability of the retailer. This research moves the model further by examining what happens if perceived service (or, in this case, information transparency) is much higher than desired – the influence is expected to result in a curvilinear relationship between Information sharing and customer satisfaction (Maltz, 2000). Figure 2.2 provides a schematic of the ECT applied in this dissertation. Curvilinear relationship and information overload are widely researched in IS; however, it mainly focuses on the effect excessive information has on purchasing decisions (Xiao & Benbasat, 2007). In the post-purchase stage, information that is sent to customers is not sent for decision-making purposes but rather to keep the customer informed, satisfied, and not worried about the order.

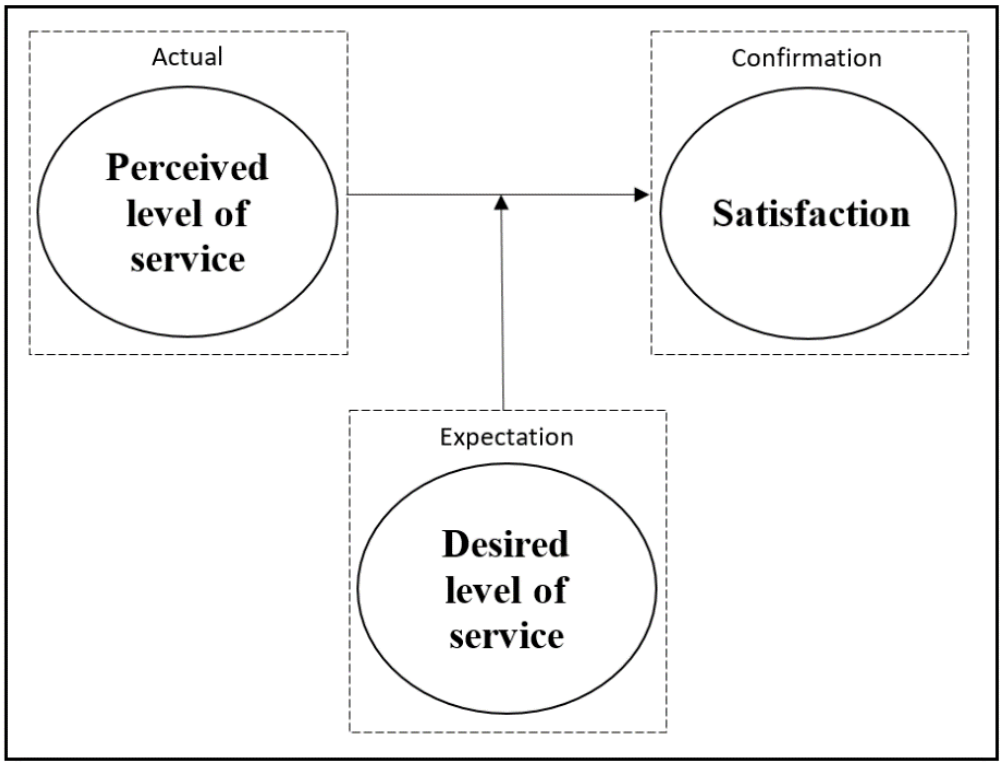


Figure 2.2 Logical Schematic of ECT in the Context of the Dissertation

Nonetheless, information that is shared with the customers does not always have a positive effect. Like any other type of information, too much order information can lead to adverse consequences - create confusion for the customer, cause frustration or disappointment. For this reason, the company needs to know which details to share and how transparent to influence customers' perceptions. Although research in the late 1900s shows that information overload has varied results in customer purchase intentions, more recent studies indicate that issues may occur primarily from aspects of the information or how the information is presented (Soto-Acosta et al., 2014). Disorganization in information, low or high information in electronic word-of-mouth, availability of sources of information, and quality of information are found as potentially having a negative influence on product purchasing behaviors (Danniswara et al., 2020; Furner et al., 2016; Scheibehenne et al., 2010; Soto-Acosta et al., 2014).

Moreover, we cannot assume the logic of the pre-purchase relationship will apply to the post-purchase stages. Thus, the effects of too much Information sharing need to be studied separately. S-O-R and ECT theory is the foundation for the constructed model in the areas of the desired information transparency, individual characteristics, and situational characteristics. This relationship would result from the expectations an individual has in these areas, either confirmed or denied, causing the consumer to have perceptions about the experience.

2.5.2 Stimulus-Organism-Response Model

Consumer behavior as a phenomenon is usually described as a process based on an Input-Output (I-O) model (Jacoby, 2002). Scientific advances have revised this early form of justification to a more sophisticated S-O-R model, initially proposed by Mehrabian & Russell (1974). S-O-R model nowadays is used as a basis for many different models in management and

marketing fields (Belk, 1975; H.-J. Chang et al., 2011; Eroglu et al., 2003; Jacoby, 2002; J. Kim & Lennon, 2013). In contrast to previous I-O models, this model is focused more on the internal organism factors, which are defined as "internal processes and structures intervening between stimuli external to the person and the final actions, reactions, or responses emitted" (Bagozzi, 1986). In general, it posits that the cues in the environment (stimuli) influence the affective and cognitive reactions (response) of individuals (organism). The stimulus is conceptualized as an influence that arouses the individual. It is external to the person and can consist of marketing mix factors and other environmental factors (H.-J. Chang et al., 2011). Belk (1975) modified the paradigm by dividing the stimulus into two separate constructs – object and situation. He justifies the split as behavior with respect to a product or service that is purchased (object) is the main focus of the studies. However, the situation in which such a product is considered is influencing the behavior as well.

In the context of online retailing, Eroglu et al. (2001) propose a model that examines the influence of atmospheric qualities of a virtual store on shopping outcomes, such as approach or avoidance behaviors of customers. According to the S-O-R paradigm, the organism can be represented by affective and cognitive states and processes. They, in turn, intervene the relationship between the stimulus and the response (Mehrabian & Russell, 1974). Eroglu et al. (2001) suggest that the online store's atmospheric elements affect customers' cognitive and affective states. They define the stimulus as the sum of all the cues that are visible and audible to the online shopper. The organism can be defined as both affective (pleasure, arousal, and dominance) and cognitive states that intervene in the relationship between the stimuli and responses (Eroglu et al., 2001). Lastly, the response is conceptualized as an outcome of the reaction of the organism to the stimulus. In e-commerce, two primary outcomes (responses)

studied are approach (positive actions, such as repurchase or loyalty) or avoidance (switching websites, buying items from competitors, etc.) behaviors. The empirical test of the model shows that the online store atmosphere significantly influences the customers' response in the form of both satisfaction and approach/avoidance behaviors (Eroglu et al., 2001).

Chang et al. (2011) develop a theoretical framework of the relationships between retail environmental characteristics and impulse buying behavior. They use the S-O-R paradigm to suggest that the retail store's environment plays an essential role in stimulating customers' desire to purchase. They also investigate the moderating effect of hedonic motivation on relationships between retail environmental characteristics and consumers' positive emotional responses (Chang et al., 2011). Another research article examines the effects of the seller's reputation and website quality on the customer's purchase intentions (J. Kim & Lennon, 2013). The authors extend the original S-O-R model by Mehrabian & Russell (1974) by dividing the Stimulus component into two dimensions – external and internal (in regard to the organism). They propose that the seller reputation is an internal stimulus, as it is formed within a customer, and that the website quality, accordingly, is an external stimulus (as a customer has no control over it). They discover that reputation and website quality significantly affect customers' emotions and adverse effects on perceived risk. Perceived risk, in turn, has a significant negative effect on consumers' emotions. Lastly, both perceived risk and emotion significantly influence purchase intentions (J. Kim & Lennon, 2013). Vieira (2013) conducts a meta-analysis on the S-O-R framework in the store environment. They conclude that Mehrabian and Russell's environmental theory is generalizable across various dimensions of the purchasing situations, confirming its importance in online retail research.

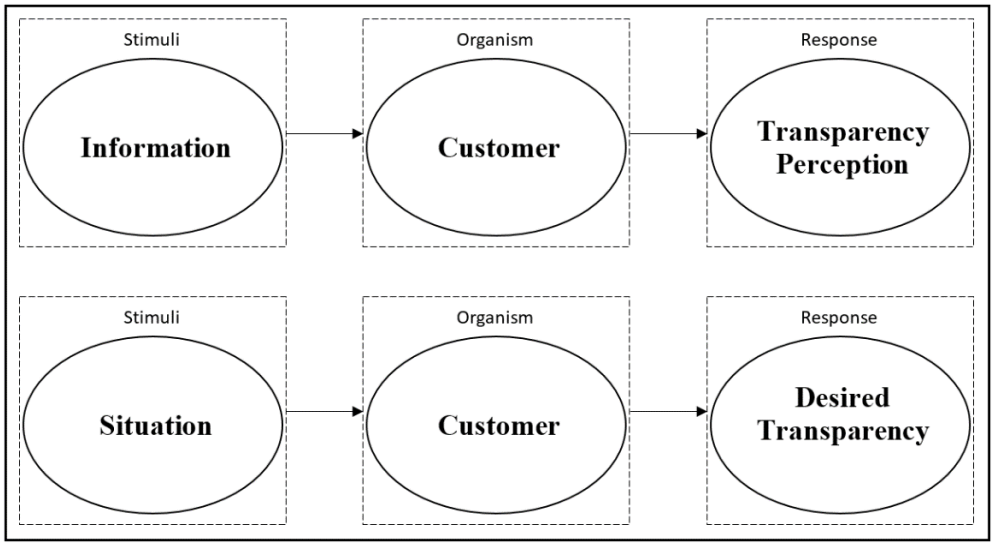


Figure 2.3 Logical Schematic of S-O-R Model in the Context of the Dissertation

For the purposes of the current study, we consider information sent to the customers to be an environmental cue (stimulus). We believe that like the quality of the product influencing various purchasing outcomes, all stimuli received in the post-purchase processes influence how the customer perceives the company and leads to such outcomes as loyalty, satisfaction, and re-purchase intentions and others (as illustrated in Figure 2.3). The S-O-R model is used as the foundation for the construct in Information sharing, perceived digital information transparency, and DIS. These are areas that include a stimulus, organism, and results in a response.

2.5.3 Service Quality Zones of Tolerance

The exponential development of the service industry and its deregulation during the last several decades have led to the higher need to understand the quality aspect of the services and its influence on customer perceptions. Many researchers have focused on developing the service quality stream (Ghobadian et al., 1994; Parasuraman et al., 1985, 1988). The service quality

model, developed by Berry et al. (1985), is based on the idea that customers compare the expectations of their service before receiving it with the perceptions of the level of service they have received. Research showed that high-quality services (as perceived and compared by the customers) are vital for the profitability and success of the companies (Cavana et al., 2007), as it leads to such positive outcomes as lower costs for the companies (Grant, 1998), more loyal customers (Lewis et al., 2016), and higher profit margins (Gundersen et al., 1996). Measuring service quality is more challenging than product quality since services are not tangible and more abstract (Cronin & Taylor, 1992; Lewis et al., 2016; Parasuraman et al., 1988). Moreover, service quality involves evaluating the quality of the manner in which the service is delivered and the quality of the service itself, while product quality is concerned with the final product only (Lobo, 2008).

Focusing on the challenges and specific features of service quality evaluation, Parasuraman et al. (1988) develop and test an instrument for measuring service quality in organizations – SERVQUAL. It has become one of the most popular standardized surveys (Frost & Kumar, 2001). However, SERVQUAL has received considerable criticism for its reliance on gap scores derived by measuring the difference between perceived levels of service and their expected levels. In response to these limitations, the ZOT concept was introduced (Berry & Parasuraman, 1991; Johnston, 1995; Liljander & Strandvik, 1993). In this approach, service quality is defined as having different levels: desired (the service level that the customer hopes to receive) and adequate (the lowest service level that the customer finds acceptable) (Yap & Sweeney, 2007). These levels are viewed as thresholds, as opposed to the point measures, which divides service into three different zones: the zone below the adequate level of expected services

(when the customer is dissatisfied), the zone above the desired level of services (when the customer is delighted), and the zone between the two – the zone of tolerance (Yap & Sweeney, 2007). Since the introduction of the measure, the service quality of many industries was studied using the ZOT approach. For example, Nadiri & Hussain (2005) focus on determining the ZOT of the hotel industry, and for banks, Hsieh et al. (2013) explores the ZOT for the customers in IT-enabled call centers, and Hu (2010) studies the ZOT of the city bus services.

As a part of IS, information services require the evaluation of the level of their quality as well. Taking this into account, SERVQUAL measure was adapted to the IS context in several ways: as an updated measure of User Information Satisfaction (UIS) (Kettinger & Lee, 1999), as an extension to DeLone & McLean (1992)'s IS success model presented by Pitt et al. (1995), etc. The criticism of the SERVQUAL instrument originated in the marketing field has impacted its implementations in the IS. van Dyke et al. (1997) denounces the IS-adapted SERVQUAL instrument, which leads to a further need for the ZOT adaption in the context of IS. For this reason, Kettinger & Lee (1997) adapt the ZOT and their operational definitions to the IS field and test the measure for its reliability and validity(Figure 2.4).

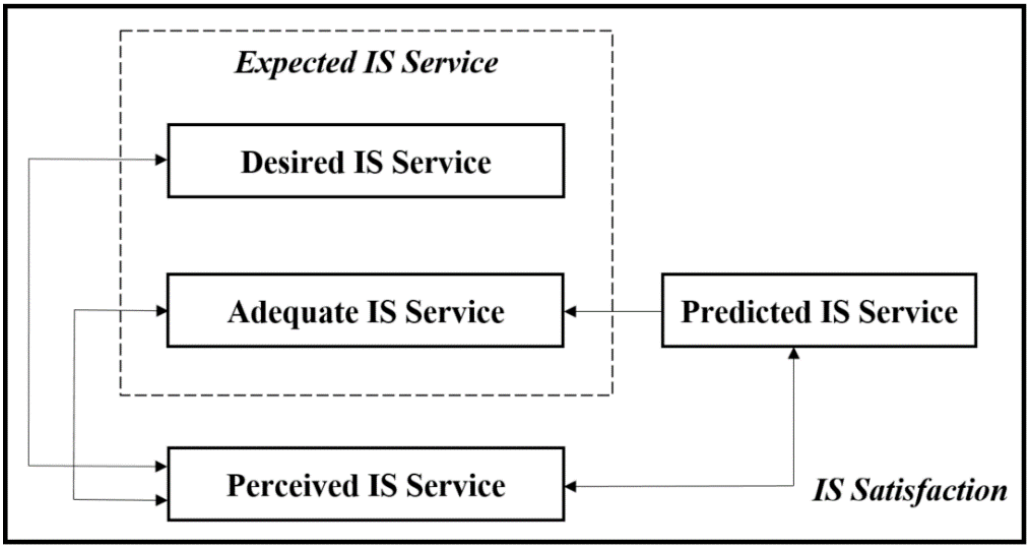


Figure 2.4 IS ZOT (Kettinger & Lee, 1997)

As evident from Figure 2.4, the customer establishes two distinct expected levels when assessing service quality. The adequate level, the customer's minimum service level is willing to accept without being dissatisfied, is formed from the customer's beliefs about the level of service that will occur (Kettinger & Lee, 1997). Desired service level is a combination of what customer believes “can be” and “should be” provided given the circumstances (Kettinger & Lee, 1997). Thus, the predicted level of service influences the adequate level, thus playing a direct role in satisfaction (Kettinger & Lee, 1997; Zeithaml et al., 1993). These levels are formed based on various factors, such as prior experience with the service provider, an average level of similar services in the industry, or perceptions of the customer about the service quality level that should be present given the circumstances and the type of services they are purchasing (Zeithaml et al., 1993). Additionally, the customer's personal needs, situational factors, and the ability to find service alternatives influence the ZOT via different levels of customer expectations (Zeithaml et al., 1993). However, Ho et al. (2015) note that such factors influence mainly adequate level of

service quality, as it changes from situation to situation. Additionally, the empirical analysis of the ZOT shows that the highest level of customer expectations (the desired service level) affects the minimum level of expectations. Thus, the ZOT shifts upwards with the increased desired service level instead of becoming wider (Ho et al., 2015).

The research on ZOT has improved the instruments of service quality evaluation, as the concept of zones is based on the idea that the service level that the customer expects is not a point estimate and cannot be considered as such (Kettinger & Lee, 2005). Customer service expectations are best described in zones, representing the difference between the desired and minimally accepted level of quality (as shown in Figure 2.4). These zones are different not only for different customers, but they also can vary for the same customer in different purchasing situations. Moreover, the size of the tolerance zone varies significantly, being extremely narrow for some customers. This means that it is harder for the IS provider to secure a level of service that would match the narrow bands that some customers have (Kettinger & Lee, 2005).

The ZOT framework has been widely researched and cited within the last few decades, as it has provided value to practitioners and has merit for academics. By providing a range within which customers are willing to accept the variations of the quality of services delivered, the framework allows to assess customer expectations better than possible when using the traditional SERVQUAL framework (Nadiri et al., 2009). By adding a concept of expectations, and thus, tolerance zones, to the satisfaction stream, the researchers were able to investigate the impact that expectations have on the relationships between the quality of the services and customer satisfaction (Yap & Sweeney, 2007). It has been found that the received quality of services that is above the customer's adequate levels improves customer satisfaction, making them less likely

to switch to a different provider, thus, increasing customer loyalty (Yap & Sweeney, 2007) and, consequently, the profitability of the company. Lastly, by keeping the concept of ZOT in mind, the practitioners can determine their levels of delivered services, and place them within the customer tolerance zone, thus, deciding more effectively where their resources would be used with the maximum returns.

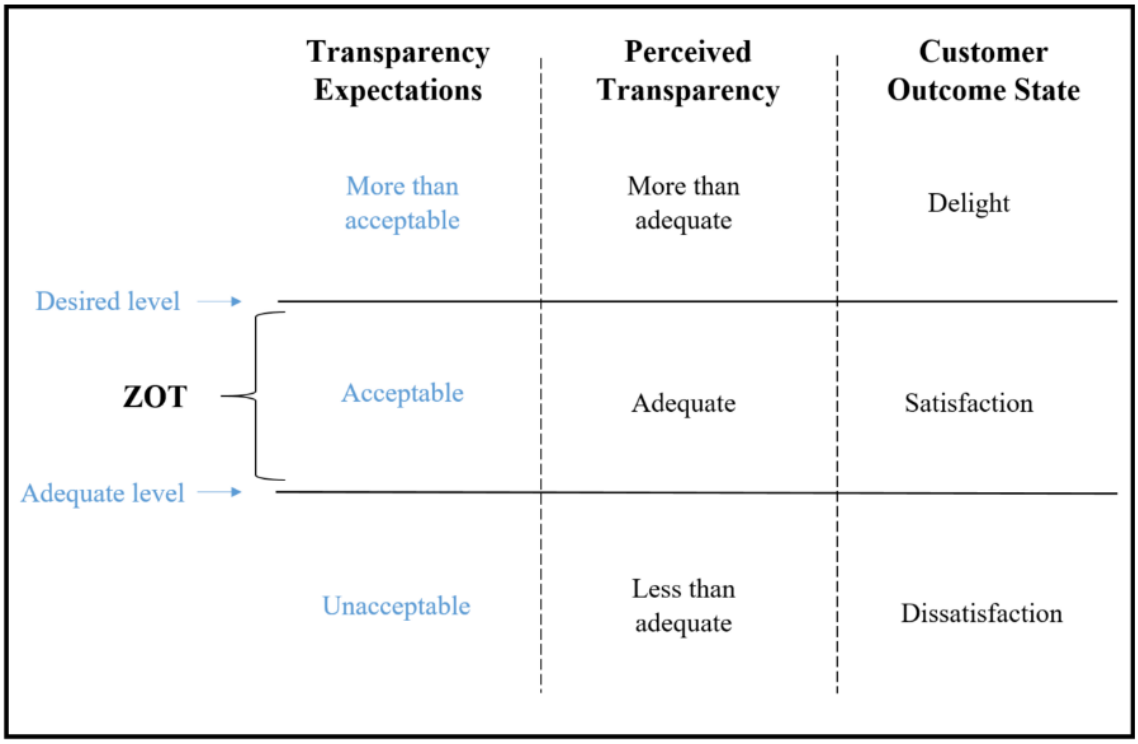


Figure 2.5 ZOT in the Content of the Dissertation (adapted from Johnston (1995))

For the purpose of this dissertation, we will focus on the desired level of transparency and omit the discussion of the adequate level. The relationship between satisfaction and the increasing level of transparency is straightforward in the ZOT itself (an area of the Figure 2.5 that is situated between the Adequate and the Desired level). If the perceived transparency increases from one level to another one, and the new higher level is located anywhere in the area

between adequate and desired transparency, the satisfaction will always increase. We here are interested in studying the relationship once the desired level was increased. We believe that, at some point of increasing perceived transparency, when it is higher than a level of transparency the customer desires, their satisfaction is going to start decreasing (see Figure 2.6). Therefore, the ZOT concepts and ideas are used in the model, however we limit the scope of it to studying the levels of perceived digital information transparency that are higher than the levels that are desired by the customers in each specific situation. Further research should be done to confirm the direct relationship in the ZOT itself.

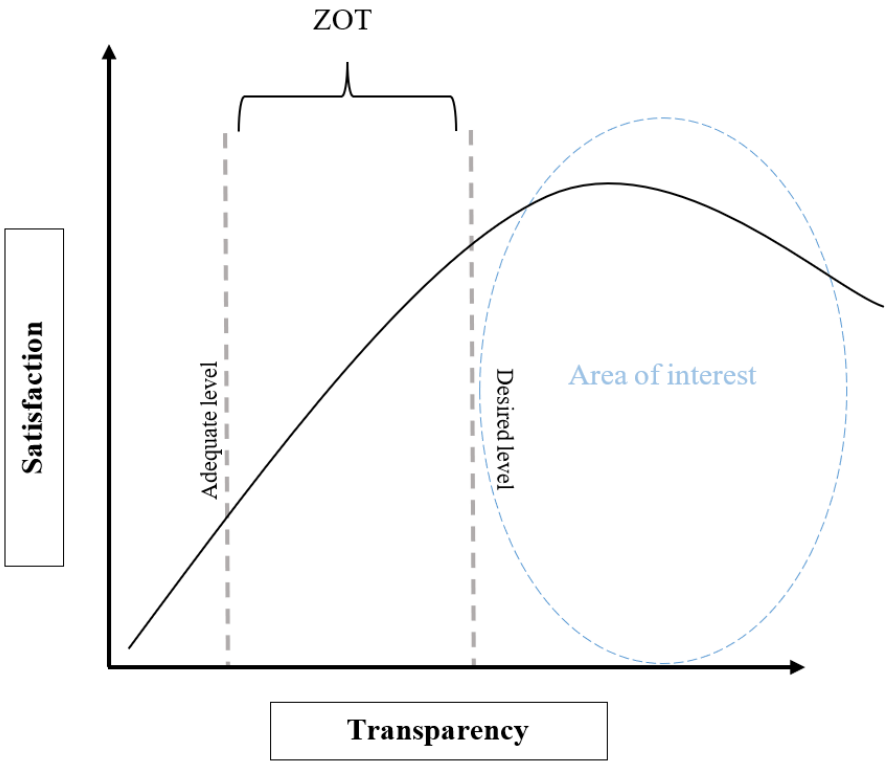


Figure 2.6 Transparency ZOT Levels and its Influence on Satisfaction

2.6 Other Constructs Used in the Model

The focus of the model can be characterized as explaining digital satisfaction with information transparency in electronic commerce as an supplementary service provided with the main product purchased. Ground theories used in the development of the model, specifically the S-O-R model, imply the need to study the interaction of multiple factors that influence the outcome (in our case, it is the desired levels of digital information transparency). Taking the specific features of e-commerce into account, individual characteristics that play an important role in determining customers' behaviors in online shopping, and the specifics of products that are purchased, we determine the individual and situational characteristics that influence the level of digital information transparency that is needed by the customer. We believe that DDIT will be determined by a set of situational and individual antecedents. Among the most important situational factors that are discussed in this dissertation, are: trust in e-retailer (since information is aimed at reducing the perceived risks of e-commerce, and trust in a retailer that a customer is choosing to purchase from implies smaller perceived risks, higher trust will lead to lower need for transparency); and Product importance (if the product is not very important to the customer for various reasons, the customer will tend to care less about its delivery, and, thus, the need for transparency will be lower as well). Among the individual antecedents we highlight a factor that determines the level of technology use of the customer, and specifically their comfort with using technology to purchase goods and services (e-commerce comfort level). Additionally, we look at the general characteristics of the individual regardless of their background or exposure to technology that would determine their level of needed transparency. For that, we study the level of Detail orientation that an individual is displaying, basing our idea on the fact that people with

higher levels of attention to details, in general, would need more information from the company to satisfy their Detail orientation. It is important to note that these four factors researched in the current dissertation are not exclusive and further studies need to be conducted to determine other important antecedents of the levels of transparency that are desired by different customers and different situations.

Trust in e-retailer. Interacting with other entities who are independent and not entirely predictable is overwhelmingly complex. A customer purchasing online cannot control the actions of the company that they are purchasing from. A situation like this creates much complexity in the relationships between a buyer and a seller. Additionally, the level of uncertainty is high as there is a spatial and temporal gap between the customer and a seller (Chiu et al., 2014). Trust is one of the ways in which this complexity and uncertainty can be reduced. Thus, trust is one of the basic principles of business relationships (Hart & Saunders, 1997). Moreover, it is one of the most critical factors in e-commerce that stimulates the purchases made over the Internet by reducing the perceived risk of online purchasing (Corbitt et al., 2003). In a broader sense, trust can be understood as confidence that one person has in another person or a company. Such confidence can come from a variety of factors, including familiarity with the company (whether the customer had purchased from them before or heard about other peoples' experience of purchasing from them) and a person's disposition to trust (Gefen, 2000), third party assurances in addition to disposition to trust (Kimery & McCord, 2002), website quality, user's web experience, perceived risk, perceived market orientation, perceived technical trustworthiness (Corbitt et al., 2003). Chen & Dhillon (2003) divide the overall trust into three composing

dimensions: competence, integrity, and benevolence. These, in turn, are determined by consumer characteristics, website infrastructure, firm characteristics, and past interactions.

Just as there are many approaches to determining the factors that influence trust, there are many definitions of the construct. Additionally, there is no one universally accepted scholarly definition. In psychology, trust is defined as an expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied upon (Rotter, 1967). In management, trust is an individual's belief and expectation about the likelihood of having a desirable action performed by the trustee (Sitkin & Roth, 1993). In marketing, Morgan & Hunt (1994) define trust as an individual's perception of the confidence in the partner's reliability and integrity. Moorman et al. (1993) interpret trust through the willingness to rely on a partner in whom one has confidence. The variety of definitions of trust from various areas of research possesses several common themes. Rousseau et al. (1998) state that "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another under conditions of risk and interdependence" (p. 395). Discussing trust specifically in the area of e-commerce, we use the definition by Kimery & McCord (2002). They define trust in e-retailer as the customer's willingness to accept vulnerability in the online transaction based on positive expectations of the future behavior of the e-retailer (Kimery & McCord, 2002). We take their definition as a base and define *trust in e-retailer as the extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer*.

Product importance. Customers attach a certain level of importance to the products that they are purchasing. Different customers also assign a different level of importance to different

products (Bloch & Richins, 1983). The concept of Product importance has been researched in different areas and is shown to influence various outcomes, such as responses to marketing communications (Rothschild, 1977), consumer decision-making processes (Howard & Sheth, 1969), or post-decision processes (Cohen & Goldberg, 1970), etc. Various names discuss a similar phenomenon: Product importance (Bloch & Richins, 1983), purchase importance (Tam, 2011), ego-involvement (Sherif, 1979), and product involvement (Traylor, 1981; Xue, 2008). In marketing, for example, product involvement is proven to be an important factor that influences the effectiveness of advertising efforts (Zaichkowsky, 1986). In IS, "user involvement" is crucial for improving system quality and, consequently, information satisfaction (Baroudi et al., 1986). Another related construct, the importance of the purchase, is an exogenous variable in the model of buyer behavior by Howard & Sheth (1969). It is defined as the relative intensity of motives that motivate the buyer's activities related to the given product class compared to other product classes (Howard, 1974).

Bloch & Richins (1983) conduct thorough literature of the Product importance construct, categorize existing definitions, and suggest three ways of conceptualization: perceived Product importance, instrumental importance, and enduring importance. Instrumental importance and enduring importance are separate constructs, which are interacting with each other. Perceived Product importance is defined as the extent to which a consumer links a product to salient enduring or situation-specific goals (Bloch & Richins, 1983). For the purpose of this dissertation, we take this definition as a basis, generalize it more, and define *Product importance as the extent to which a customer links a particular product to specific goals.*

Detail orientation. Detail orientation or Attention to detail is a concept that is discussed mainly in three areas: psychology, organizational culture, and innovation. In psychology, Detail orientation and detail-oriented cognitive style are studied in relation to autism (Happé & Frith, 2006; Valla & Belmonte, 2013), and auditory processing in musicians (Wenhart & Altenmüller, 2019). Organizational culture literature has borrowed the concept from psychology and implemented it to studying person-organization fit (O'Reilly et al., 1991), job satisfaction and behavioral intentions (Tepeci & Bartlett, 2002), organizational culture and subcultures (Bellou, 2008), organizational culture and adoption of environmental activity management (Baird et al., 2018), organizational culture and job satisfaction (Bellou, 2010), and innovations (Miron-Spektor et al., 2007). Regarding the definition of Detail orientation, there is a lack of consistency in the management literature. Attention to Detail as a cultural dimension is defined through involvement in being analytical, precise, and paying attention to detail (Braddy et al., 2006). (O'Reilly et al., 1991) defined the cultural value of Attention-to-detail by precision, analysis, and attention to detail. Taking into account the literature review conducted, we define *Detail orientation as the extent to which a customer has a tendency to be precise, and focus on and check details thoroughly.*

E-commerce comfort level. Interaction of the individual with technology, specifically with information technology, is a phenomenon that is widely discussed in many research areas. Academics look into constructs that cover various sides of the individual-computer interaction. One of the aspects of said interaction is a perception that an individual has about the levels of their comfort using technology. The phenomenon is described with different constructs, such as computer self-efficacy, computer literacy, and computer comfort level.

In psychology, perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 2010). In other words, self-efficacy is a belief of an individual regarding what they can accomplish using a specific technology. In IS, the concept of computer self-efficacy has taken an important niche. The concept was introduced by (Compeau & Higgins, 1995) and defined as a judgment of one's capability to use a computer. The focus of the construct is on the judgments of what a person can do with technology in the future as opposed to what a person has done with technology in the past.

Additionally, improved self-efficacy and positive attitudes towards using technology influence the technology use (Holden & Rada, 2011). Self-efficacy has various positive outcomes, such as better performance (Wang & Newlin, 2002), technology acceptance, and use (Compeau & Higgins, 1995). Further studies into the influence of technology self-efficacy have concentrated on more specific dimensions, such as internet self-efficacy. Another way Joo et al. (2000) define internet self-efficacy as the perceived capability to use the Internet. In the context of online learning, Eastin & LaRose (2006) define internet self-efficacy as the belief in one’s capabilities to organize and execute courses of Internet actions required to produce given attainments.

Another concept that deals with the same phenomenon is literacy. There are several constructs in the literacy dimension. Internet literacy is a multidimensional construct that includes the ability to access, analyze, evaluate, and create an online construct (Livingstone & Helsper, 2010). Cyberliteracy is concerned with understanding the impact of the Internet (Horton Jr, 1983). Computer literacy is the ability to comprehend the relationship with computer

technology and its uses, possibilities, and meanings (Duffelmeyer, 2000). Information literacy is a set of abilities that an individual possesses in order to recognize when information is needed and have the ability to locate, evaluate, and use effectively needed information (Information Literacy Competency Standards for Higher Education, 2000). Overall, it differs from self-efficacy as it defines fact rather than perception.

Lastly, the concept of computer comfort level needs to be discussed. Comfort, in general, is a freedom from stress and anxiety (Dornisch, 2013). Technology comfort level measures how comfortable a person is using computers in general (Lassar et al., 2005). This dissertation focuses on the relationship between situational and individual characteristics and their influence on the desired level of digital information transparency. The level of transparency that a customer wants in a particular situation is dependent on the type of relationship between an individual and the Internet. In part, such a relationship depends on how comfortable the customer is using the Internet for purchases, order communications, order tracking, order problem solving, etc. Therefore, the concept of Internet comfort level is adapted. We take the definition of technology comfort level by Lassar et al. (2005) and define e-commerce comfort level as the extent *to which a person feels comfortable using the Internet to purchase goods and/or services.*

CHAPTER 3: RESEARCH MODEL

3.1 Introduction

This section conceptualizes information transparency, defines the constructs used in the research, and describes the proposed theoretical model of Digital Information Transparency and Satisfaction (DITS). Included here are the logical explanations and theoretical justification for each of the suggested hypotheses. First, we need to discuss the theoretical basis for the conceptualization of the new constructs. Theory is the single central component of scientific endeavor. A well-developed theory allows researchers to understand and predict phenomena (Cook et al., 1979; Kerlinger, 1966), to describe or explain the sequence of events (DiMaggio & Powell, 1983), and to be an educational asset that would increase consciousness about a specific set of concepts (Brief & Dukerich, 1991). Thus, it is difficult to overstate the importance of creating high quality theories.

Creating and defining theoretical constructs and identifying the relationships between these constructs is at the core of theory building (George, 2000). This is done to develop hypotheses that predict and explain the nature of a phenomenon that can be observed. Strong and clearly defined constructs are the fundamental part of any good theory (Suddaby, 2010). Thus, in order to discuss and present the theory of information transparency and satisfaction, we first must provide the conceptualization of phenomena of interest. MacKenzie et al. (2011) recommend that constructs require clear and understandable definitions. Besides, context or scope conditions, semantic relationships with other related constructs, and logical consistency of all elements are needed in order to develop a strong conceptualization (Suddaby, 2010). Elements of a construct can only be accurately associated with the findings if they are clearly

defined and representative of potential future research and can be used to identify later changes or uses of the construct. Thus, definitions for all variables in the construct follow and are based on findings in the literature. Additionally, we present the conceptualization of the new constructs. To develop a construct of information transparency, we start from the definition of transparency in physics and discuss the construct from the IS perspective.

3.2 Constructs and Their Definitions

3.2.1 Conceptualizing Perceived Digital Information Transparency

Different materials vary in their ability to transmit light, which determines if an object is transparent, translucent, or opaque (Ramamurthy et al., 1999). This ability depends on the density of the molecules of the material (Patkar, 2018). Opaque objects have the highest density, which means that no light is passed through the object; most of it is either reflected or absorbed. Translucent objects are less dense, which allows some light to travel through them (Ramamurthy et al., 1999). Lastly, transparency of an object or a material is its property that can be defined as an ability to transmit light without appreciable scattering so that bodies lying beyond the object are entirely visible (Peelen, 1979). This is a physical perspective. Moreover, there is also a perceptual side to transparency – if we talk about an ability to see through something. For example, air or glass has the property of physical transparency. However, we do not perceive them as such because we do not see the air or the glass (unless it is foggy) (Peelen, 1979). Similar definitions and descriptions are found in computer science, where the signal in optical networks is discussed. According to Ramamurthy et al. (1999), transparent networks are the ones that readily allow end-to-end communication of data without interruption or loss of the signal.

The literature review conducted on the concept of transparency in other areas (e.g., management, finances, health care, etc.) has revealed a pattern of three crucial characteristics that are discussed: a. Transparency is a right to own information; b. Transparency is an easy access to information; c. Transparency is about access to information with specific characteristics (relevancy, usefulness, correctness, and timeliness). In the area of IS and e-commerce specifically, the customer: a. should have the right to receive information about the order placed; b. should receive this information in the way that is most convenient for them; c. should receive correct and updated information that is pertaining to their order. Thus, when discussing transparency in the context of online order information transfer, we base our definition on the three patterns discussed above, in addition to the notions of transparency of materials and objects in physics. As mentioned above, the transparency of the material or an object is a function of the amount of light that can go through it, the degree of see-thoroughness. Applying this to the IS area, we define information transparency through the degree of visibility of information.

Like physics, information transparency can be interpreted or discussed from two perspectives: as a fact and as a perception. In this research, we focus on the perceptions of transparency that are formed by customers during the online shopping experience. Not all the order information sent to the customers increases their perception of the transparency of the order process. For example, incorrect delivery dates would, in fact, decrease the transparency perceptions, and the customer might think the company is trying to obscure facts or hide accurate information. In this work, we are focused on the perceptions of information transparency that are formed during the digital interaction of the customer and an online company after the order has

been placed. Thus, we introduce the concept *of PDIT*. PDIT is defined as *the extent to which a customer perceives order fulfillment processes to be visible*.

A detailed description of the construct and its elements, as suggested by Suddaby (2010), is provided below in Table 3.1. PDIT presented as the individual's perceptions, operates on the individual level, and is personally constructed. A person can develop a perception of digital information transparency based on the interaction with the company after the order has been placed. Such a perception will be formed both based on the information that is supplied by the company and by the technologies that a person can use to access such information.

Time	Sub-elements	Considerations	This study
Definition	Conceptual domain	*Type of property the construct represents and the entity to which it applies.*	High levels of PDIT characterize high levels of visibility of order processes to the customers. When PDIT is high, customers believe that they can find out details about their order and its status without much effort. The entity to which it applies is information.
	Level	*At what level does the construct operate?*	The construct operates on the individual level, as perceptions about transparency are formed by customers themselves.
	Definition	*Clear, concise conceptual definition.*	***PDIT - the extent to which a customer perceives order fulfillment processes to be visible.***
Scope		*Is it personally or socially constructed?*	PDIT is personally constructed, as it is a perception of an individual that is formed by the information supplied by the company and the technologies that the individual uses.
		Is it applicable to all IT?	It applies only to situations and technologies that are aimed at information transfer, including online purchases.
		Is it relatively stable or fluid?	Being a perception phenomenon of every individual, Digital Information Transparency is a fluid concept.
Relationships	Related constructs	*What are the relationships in which the construct exists?*	It exists among many constructs that deal with the transfer of information, for example, information overload, information asymmetry, price transparency, etc. PDIT is specific to the exchange of information between parties (e.g., customer and a company), which is discussed in detail further.
	Dimensionality	*Is the construct uni- or multi-dimensional?*	PDIT is a unidimensional construct that describes the degree of visibility of information to the customer.

Table 3.1 Elements Considered in Conceptualizing PDIT

3.2.2 Conceptualizing Desired Digital Information Transparency

To conceptualize DDIT, we base our logic on the previously discussed concept of transparency and the idea of ZOT, specifically ZOT in IS (Kettinger & Lee, 2005). DDIT, like PDIT, is a perception of transparency (not a fact, as discussed in the previous section). This concept, specifically, focuses on the level of digital information transparency the customer would like, depending on a specific order situation.

Customer satisfaction has often been conceptualized as an outcome (Van Riel et al., 2003). Moreover, such an outcome is a result of comparing prior expectations about the service quality that the customer has and the service quality perceived by the customer after the service was provided (R. L. Oliver, 1980). This assumes that customers form specific expectations of the service quality before using the service (Parasuraman et al., 1985). Further research conducted in the service quality and customer behavior areas has confirmed different types of service quality perceptions: expected levels, desired levels, and perceived levels. There is a variety of names for these levels, such as “ideal” and “minimum tolerable” (Miller, 1977); “desirable” (Spreng & Olshavsky, 1992); “adequate” (Berry & Parasuraman, 1991); “Desired” and “adequate” (Kettinger & Lee, 2005). Such different levels of expectations form ZOT (Miller, 1977; R. L. Oliver, 1980), where the bottom level of the zone is defined as adequate, and the top-level is defined as desired (Johnston, 1995). The significance of the idea of ZOT is that a customer is willing to accept the variation in the level of services they are receiving as long as this level is within the area of tolerable variation – within the zone of tolerance (Strandvik, 1994).

The zone of tolerance concept assumes that the customer consciously or subconsciously forms the ideas of what is his acceptable, less than acceptable, and more than acceptable levels of service. This idea is formed before the customer receives a service and is based on various factors and sources, such as prior experiences that the customer has with this or any other company or the image of the company that will provide the service (Johnston, 1995). The desired level of service, in particular, is of higher importance for this research. As noted above, as long as the service quality is within the ZOT (between adequate and desired levels, as pictured in Figure 2.6), the customer satisfaction levels are relatively stable and increase as the quality levels increase (Johnston, 1995). However, there needs to be more research that examines the relationship between service quality and customer satisfaction beyond the desired level. We take this idea and implement it in this dissertation, where we study the relationship between the perceived transparency level, the desired transparency level, and the DIS. For that, grounding it in the definition of the desired level of service quality, we define DDIT as the *extent of transparency a customer wants from a company during the order fulfillment process.* When relating to the ZOT, the DDIT represents the desired level of service and, thus, is higher than the minimum level of service they would accept (adequate level). Therefore, in defining DDIT, we use the word “wants” to represent the level higher than the minimum acceptable.

Table 3.2 provides a detailed description of the construct and its elements. We follow the format suggested by Suddaby (2010). DDIT is presented as individual perceptions, operates on the individual level, and is personally constructed. A person can develop a perception of the desired level of digital information transparency based on several factors, such as situational characteristics of the order placed or the customer's individual characteristics.

Time	Sub-elements	Considerations	This study
Definition	Conceptual domain	*Type of property the construct represents and the entity to which it applies.*	High levels of DDIT characterize the customer's need for high levels of visibility of order processes. When DDIT is high, customers want to be able to know details about the order status without much effort. The entity to which it applies is information.
	Level	*At what level does the construct operate?*	The construct operates on the individual level, as perceptions about transparency are formed by customers.
	Definition	*Clear, concise conceptual definition.*	***DDIT - the extent of transparency a customer wants from a company during the order fulfillment process.***
Scope		*Is it personally or socially constructed?*	DDIT is personally constructed, as it is the desired level of service formed by the individual based on various situational and individual factors.
		Is it applicable to all IT?	It applies only to situations and technologies that are aimed at information transfer, including online purchases.
		Is it relatively stable or fluid?	Being a perception phenomenon of every individual, Digital Information Transparency is a fluid concept.
Relationships	Related constructs	*What are the relationships in which the construct exists?*	It exists among a plethora of constructs that deal with the transfer of information, for example, information overload, information asymmetry, price transparency, etc. DDIT is specific for exchanging information between parties (e.g., customer and a company), which is discussed in detail further.
	Dimensionality	*Is the construct uni- or multi-dimensional?*	DDIT is a unidimensional construct that describes the degree of visibility of information that the customer would want during the order fulfillment process.

Table 3.2 Elements Considered in Conceptualizing DDIT

3.2.2 Existing Construct Used in the Model

MacKenzie et al. (2011) recommended that validation of constructs requires clear and understandable definitions within the construct. Elements of a construct can only be accurately associated with the findings if they are clearly defined and representative or potential future research and can be used to identify later changes or uses of the construct. For that reason, we present the definitions for all variables. They are followed by discussions of the origins of the constructs and our findings from the literature review conducted. PDIT and DDIT were discussed in the previous sections and, thus, are omitted here. The definitions of all the constructs used in the model (original or adapted from the literature) are presented in Table 3.3.

Construct name	***Construct definition***
Information sharing[2]	the extent to which information about the order fulfillment process is communicated to the customer.
Perceived digital information transparency	the extent to which a customer perceives order fulfillment processes to be visible.
Trust in e-retailer[3]	the extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer.
Product importance[4]	the extent to which a customer links a particular product to specific goals.
Detail orientation[5]	the extent to which a customer tends to focus on and check details thoroughly.
E-commerce comfort level[6]	the extent to which a person feels comfortable using the Internet to purchase goods and/or services.

[2] Adapted from Monczka et al. (1998)
[3] Adapted from Kimery & McCord (2002)
[4] Bloch & Richins (1983)
[5] Sitser et al. (2013)
[6] Adapted from Lassar et al. (2005)

Desired digital information transparency	the extent of transparency a customer wants from a company during the order fulfillment process.
Digital information satisfaction	the extent to which a customer believes the digital order information available to them meets their order information requirements.

Table 3.3 Construct Definitions

Information sharing. The concept of Information sharing is most used in the supply chain domain of research. As information technologies develop, the importance of information technology management increases. Firms become more integrated, and the effective sharing of information between partners becomes crucial for refining supply chain performance (Zhou & Benton, 2007). In the supply chain, Information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Mohr & Spekman, 1994). Information sharing improves the relationships between supply chain partners, allowing for more effective communication (Monczka et al., 1998). This, in turn, leads to various positive outcomes, such as price reduction, improved quality of products, and higher satisfaction with profits (Monczka et al., 1998).

Information sharing is considered to have three main aspects involved in supply chain management: information content, Information sharing support technology, and information quality (Zhou & Benton, 2007). Information content can be referred to as supplier information, customer information, manufacturer information, and retailer information (Chopra & Meindl, 2001). Information quality is the degree to which the information that is shared between the organizations meets the needs of the organizations (Petersen, 1999). Many studies discuss information quality and its dimensions. The information quality measures greatly vary in terms of the number of dimensions (from as few as 2 to 9). Among them are accuracy and timeliness

(Mahmood, 1987); availability of forecast, accuracy, credibility, and frequency (McCormack, 1998); recency, content, accuracy, and frequency (Neumann & Segev, 1979); accuracy, precision, currency, timeliness, reliability, completeness, conciseness, format, and relevance (J. E. Bailey & Pearson, 1983). Based on the literature review conducted, we adapt the definition of Information sharing from the supply chain research. For the purpose of this dissertation, we define *Information sharing as the extent to which information about the order fulfillment process is communicated to the customer*. Additionally, taking into account the plethora of dimensions of Information sharing, including the information quality, we comprise the list of the dimensions of Information sharing in the area of e-commerce. They include: message informativeness (derived from content, completeness, precision, and accuracy dimensions of information quality), convenience of communication channels (derived from Information sharing support technologies), message timeliness (derived from timeliness, currency, and recency dimension of information quality), and communication redundancy (derived from format and frequency dimensions of information quality).

Trust in e-retailer. Customers tend to perceive online purchases as more convenient than offline purchases. However, they also believe that e-commerce is riskier (Dai et al., 2018). The trust that a customer has towards a company means that the perceived risk of the online transaction is lower. Moreover, it is one of the most critical factors in e-commerce that stimulates the purchases made over the Internet (Corbitt et al., 2003). Trust can be described as a confidence that one person has in another person or a company. Such confidence can come from an array of different factors, such as a person's disposition to trust (Gefen, 2000), or previous experience with the company (familiarity) (Gefen, 2000).

There is no one universally accepted scholarly definition of trust. In psychology, it is defined as an expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied upon (Rotter, 1967). In management, trust is an individual's belief and expectation about the likelihood of having a desirable action performed by the trustee (Sitkin & Roth, 1993). In marketing, Morgan & Hunt (1994) define trust as an individual's perception of the confidence in the partner's reliability and integrity. Discussing trust specifically in the area of e-commerce, we use the definition by Kimery & McCord (2002). They define trust in e-retailer as the customer's willingness to accept vulnerability in the online transaction based on positive expectations of the future behavior of the e-retailer (Kimery & McCord, 2002). We take their definition as a base and define *trust in e-retailer as the extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer*.

Product importance. Different customers also assign a different level of importance to different products (Bloch & Richins, 1983). The concept of product importance has a significant influence on various customer behaviors. In marketing, for example, product involvement (a type of importance) is an important factor that influences the effectiveness of advertising efforts (Zaichkowsky, 1986). In IS, "user involvement" is crucial for improving system quality and, consequently, information satisfaction (Baroudi et al., 1986). Bloch & Richins (1983) conduct thorough literature of the Product importance construct, categorize existing definitions, and suggest three ways of conceptualization: perceived Product importance, instrumental importance, and enduring importance. Instrumental importance and enduring importance are separate constructs, which are interacting with each other. Perceived Product importance is defined as the

extent to which a consumer links a product to salient enduring or situation-specific goals (Bloch & Richins, 1983). For the purpose of this dissertation, we take this definition as a basis, generalize it, and define *Product importance as the extent to which a customer links a particular product to specific goals.*

Detail orientation. Detail orientation (or attention to detail) is discussed in three main research areas: psychology, organizational culture, and innovation. Detail orientation and detail-oriented cognitive style are studied in psychology literature in relation to autism (Happé & Frith, 2006; Valla & Belmonte, 2013), and auditory processing in musicians (Wenhart & Altenmüller, 2019). Organizational culture literature uses Detail orientation to study person-organization fit (O'Reilly et al., 1991), job satisfaction and behavioral intentions (Tepeci & Bartlett, 2002), organizational culture and subcultures (Bellou, 2008), organizational culture and adoption of environmental activity management (Baird et al., 2018), organizational culture and job satisfaction (Bellou, 2010), and innovations (Miron-Spektor et al., 2007). Attention to Detail as a cultural dimension is defined through involvement in being analytical, precise, and paying attention to detail (Braddy et al., 2006). Taking into account the literature review conducted, we define *Detail orientation as the extent to which a customer has a tendency to be precise and focus on and check details thoroughly*.

E-commerce comfort level. Interaction of the individual with technology, specifically with information technology, is a phenomenon that is widely discussed in many research areas. Academics investigate constructs that cover various sides of the individual-computer interaction. One of the aspects of said interaction is a perception that an individual has about the levels of their comfort using technology. The phenomenon is described with different constructs, such as

computer self-efficacy, computer literacy, and computer comfort level. Even though these constructs are similar, the specific phenomenon discussed in the dissertation requires the use of the construct of computer comfort level. Comfort, in general, is a freedom from stress and anxiety (Dornisch, 2013). Technology comfort level measures how comfortable a person is using computers in general (Lassar et al., 2005). We take this definition of technology comfort level by Lassar et al. (2005) and define e-commerce comfort level as the extent *to which a person feels comfortable using the Internet to purchase goods and/or services.*

Digital information satisfaction. The concept of satisfaction has originated in the management area, specifically in the context of job performance. There, it was defined as the positive emotional state that results from the appraisal of one's job (Roodt et al., 2002). Further, it was introduced in multiple other research areas, such as product consumption, IS, e-commerce, etc. In commerce, satisfaction results from a match of expectations about the quality of products/services and their perceived performance (Kim, 2005). Satisfaction is also defined as an evaluative judgment of a specific purchasing decision (S. Oliver, 1997). In IS, the concept of satisfaction is studied in the context of the information systems and their outputs. Information technologies require extensive monetary investments. Thus, it is crucial for the implemented technologies to be effective and benefit organizations. The measure of user information satisfaction (UIS) is developed to determine the effectiveness of information systems and is defined as the extent to which users believe the information system available to them meets their information requirements (Ives et al., 1983). We combine the definitions of satisfaction found in e-commerce literature and IS literature. For the purpose of this research, we define *DIS as the*

extent to which a customer believes the digital order information available to them meets their order information requirements.

3.3 Development of Core Research Model. Theory of Digital Information Transparency and Satisfaction

With the emergence of new digital technologies, communication between the company and its customer during the order fulfillment process is taking place in a variety of different ways. The amount of information that a customer receives after he places the order with the company online has drastically increased since the introduction of electronic and mobile commerce and developments in digital technologies. Besides notifications about promotions and sales, multiple informational messages are sent regarding each of the orders: order confirmation emails, emails about payment status, messages about order shipping, app notifications about the order delivery, phone calls about any arising problems, etc. Thus, information is an essential part of online shopping, which needs to be considered to understand the overall satisfaction with the purchase/company. Customer experience in e-commerce consists of the evaluation of the quality of the purchased product itself and the evaluation of a plethora of these additional informational communications that are offered along with the primary product. These communications instances in their core meaning can be described as a type of services offered to the customer – informational services.

Considering that our research is focused on evaluating the information as a supplementary service that is offered after the order has been placed, such services would influence various customer outcomes, such as satisfaction. In order to assess this relationship

from this perspective, Stimulus Organism Response (S-O-R) model (Belk, 1975), Expectation Confirmation Theory (ECT) (R. L. Oliver, 1980), and Zones of Tolerance (Kettinger & Lee, 2005, 1997) were used to derive the current model. As mentioned above, the S-O-R paradigm holds that any organism will respond to the stimulus. In general, cues in the environment (stimuli) influence the affective and cognitive reactions (response) of individuals (organism). Stimulus is conceptualized as an influence that arouses the individual. With customer satisfaction, the stimuli can be different: product quality, payment security, various interactions with a company (or its representatives), etc. In this research, the stimulus discussed is the totality of the supplementary informational services provided to the customer after their order was placed. Such services can be order tracking, software support, online returns, etc. The organism is a customer themselves. As the organism receives those multiple informational stimuli, they respond to them in various ways. Examples of responses can be customer satisfaction (the focus of this study), loyalty, re-purchase intentions, etc. Therefore, the abstract logic of the model is as follows: information (stimuli) that is shared with the customer (organism) influences their perceptions about the experience, such as satisfaction (response). Speaking about various specific factors that are influencing customer satisfaction, ECT is effective. In general, the expectation of the level of the services is compared to the actual level of the services that a customer received, creating a sense of satisfaction or dissatisfaction. To explain the relationship between information transparency and customer satisfaction even more precisely, we also base our logic and suggestions on the work by Kettinger & Lee (2005). The authors offer a concept of ZOT, suggesting three different levels of services that can be distinguished: expected, desired, and adequate (Kettinger & Lee, 2005).

We posit that depending on the situational and individual characteristics, the customers will develop the desired levels of information transparency – the level of service the customer wants to be performed for each order placed online. Then, they will compare it to the levels of information transparency they perceive and, depending on the outcome of such comparison, will experience various levels of satisfaction. Once again, only the desired level is studied in the current dissertation due to its conflicting nature of influence – we suggest that once the perceived level of services is higher than desired, the satisfaction will start to decrease after a certain point of increasing perceived transparency. Increasing perceived levels of transparency beyond adequate to desired is going to only increase satisfaction, and therefore is omitted from the current dissertation. We believe that as each customer has different levels of desired information transparency depending on the specific situation, it will be beneficial for the companies to allow customers to customize the information they would like to receive and the communication media they would like to use for that. Next, based on the theories explained above, we propose a Digital Information Transparency and Satisfaction Model to explain the influence of the order information on the purchasing outcome (see Figure 3.1).

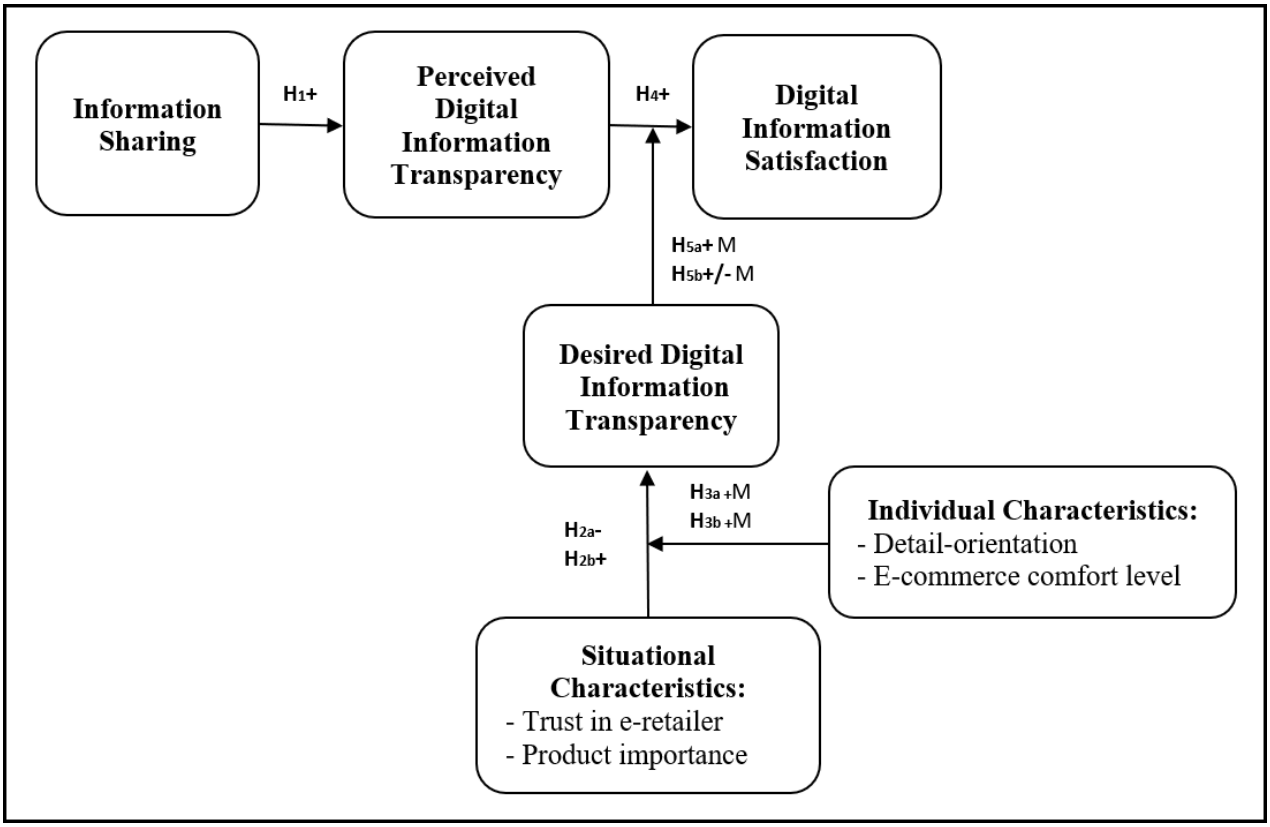


Figure 3.1 Theoretical Model of DITS

3.4 Hypotheses

During the order fulfillment process and after it has been delivered, a customer is forming their idea about how open and transparent the company is based on communication with the company. The more of the various informational messages are received, the more visible the customer-facing order process is perceived to be. However, there are also risks from receiving too much information, which results in information overload (Furner et al., 2016; Scheibehenne et al., 2010; Soto-Acosta et al., 2014). Such overload can be due to the amount, source, or different types of information provided to the customer. Hypotheses developed for this model

include evaluation of Information sharing, transparency, and as they would be related to the communication provided by an organization as part of the order fulfillment process. Following this, the concepts forming the construct included situational and individual characteristics, which may influence how the information is perceived by the receiver and the expectations of the information supplied. Finally, it is expected that all of these factors would then influence the DIS, which would be contributed to by the quality and amounts of information received.

3.4.1 Information Sharing and Perceived Digital Information Transparency

The phenomenon of Information sharing brought on by developments in digital technology has spread in many various areas, including e-commerce. Asymmetric information harms markets. For example, in the credit market, it reduces the efficiency of the lending allocations (Pagano & Jappelli, 1993). Information sharing, therefore, is aimed at the reduction or elimination of such negative consequences – Information sharing in the credit markets, for example, is crucial as it increases the degree of competitiveness within the market, improves credit allocation efficiency, and increases the credit volumes (Pagano & Jappelli, 1993).

In the supply chain, Information sharing is discussed in the relationships between the manufacturers and retailers. It is defined as the extent to which critical and proprietary information is communicated to one's supply chain partner (Monczka et al., 1998). There, the main benefit is in the manufacturer's ability to quickly and effectively react to the retailer's needs for more product, which leads to the reduction of inventory needed and cost (H. L. Lee et al., 2000). Zhou & Benton (2007) define three aspects of Information sharing: Information sharing support technology, information content, and information quality. Information quality consists of several characteristics, such as accuracy, adequacy, timeliness, and credibility (Monczka et al.,

1998). Thus, while Information sharing itself is important, what is even more crucial, is what information is shared and when and how it is shared with parties (Li & Lin, 2006). Information sharing is defined as the degree to which the information exchanged between organizations meets the needs of the organizations (Petersen, 1999). It is shown to positively influence partnership quality (Lee & Kim, 1999) and customer satisfaction (Spekman et al., 1998).

Research regarding order fulfillment processes, information that it involves, and customer perceptions, has not been widely developed. Thus, we introduce the hypothesis of Information sharing and its influence on perceptions of transparency. As mentioned above, Information sharing should be done with the information. Thus, the characteristics of the shared information are critical (Li & Lin, 2006). We believe that different customers will have different perceptions of transparency depending on the information being sent to them. Various purchasing situations will differ based on what information is sent and when. However, in general, more information shared will provide a greater chance that some of it will contribute to the perception of digital transparency of the company's business processes. Thus, we posit:

Hypothesis 1: Information sharing increases PDIT, such that:

(H1a): The higher informativeness of the messages that the customer receives will lead to the higher perceived information transparency of the order process.

(H1b): The better message timeliness of the messages that the customer receives will lead to the higher perceived information transparency of the order process.

(H1c): The more convenient communication channels used to deliver the messages to the customers will lead to higher perceived information transparency of the order process.

(H1d): The higher redundancy of the messages that the customer receives will lead to the lower perceived information transparency of the order process.

(H1e): The higher perceived information transparency of the order process will result from the company being the communication initiator.

3.4.2 Situational Characteristics and Desired Digital Information Transparency

Previous research indicates that situational characteristics are essential to the success of information provided to consumers during the process of ordering (Zaichkowsky, 1986). We posit that, additionally, such situational characteristics of the placed order will determine the levels of the information transparency that is desired by the customer. Desired expectations are defined as the level of service the customer wants to be performed (Spreng & Mackoy, 1996) or the level of service he believes can and should be delivered (Kettinger & Lee, 2005). The "Can and should be delivered" aspect of the definition indicates that the desired levels of information transparency are different both for every customer and for every transaction. For example, the same customer buying from Amazon.com will have a different desired level of information transparency from the company than if they were buying from any unknown website.

Similarly, buying paper towels online will differ in the level of desired information transparency from buying a new phone or a laptop. Therefore, we believe that a large variety of

factors will influence how much transparency is desired by a customer in every specific order. For the purpose of this research, we examine the influence of the four most impactful factors, in our opinion. Further research should be conducted to determine the influence of other situational and individual characteristics.

According to the SOR model, the stimulus can be divided into two separate constructs – object and situation (Belk, 1975). The customer's reaction with respect to a product or service depends not only on the item purchased (object) but also on the factors of the situation in which it is purchased. Next, we will examine these factors separately.

Trust in e-retailer. Consumer trust is studied in a variety of areas related to e-commerce. In this sense, trust is usually viewed as one of the most important factors for the successful relationship between a seller and a buyer (Dwyer et al., 1987). In Kim (2012), consumer trust influences consumer expectations, which leads to the willingness to purchase and later to re-purchase behaviors. Differences occur in how trust can be measured for purchases.

Research indicates that the value in customer choices of e-commerce outweighs that of brick-and-mortar retail selections and demonstrates a critical element of how marketing and information are provided to consumers in online business (Xiao et al., 2016). E-loyalty is influenced by trust, especially where new e-commerce customers focus on organization or brand trust instead of those with more experience in these types of purchases (Xiao et al., 2016). Further, if trust is lower, consumer expectations may be lower, indicating that if a purchase is made, satisfaction may be directly related to how high the expectations were at the time of purchase (D. J. Kim, 2012).

The construct of trust has been studied extensively in the IS field due to the popularity of e-commerce (Corbitt et al., 2003; Cyr et al., 2009; McKnight et al., 2002). In addition, various research studies trust from different vantage points: for example, Sun (2010) focuses on seller trust; Pavlou & Gefen (2004) study institution-based trust, and Kim et al. (2010) discuss trust in various payment systems. Our current study considers the influence of account trust customers have towards a particular e-retailer, and thus, define it as the extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer (Kimery & McCord, 2002). Further, there is evidence in research, including Kim & Lennon (2013), that vendor trust is applicable and consistent in e-commerce, reflecting an intent to purchase and repurchase (Bartikowski & Merunka, 2015). We propose that if a customer has a high level of trust in the e-retailer, they will not require as much transparency as they would in a low trust situation. Thus, an increase in trust will decrease the desired transparency.

Product importance. One of the most supported ideas of consumer behavior theory is that customer assigns different levels of importance to different products they purchase (Bloch & Richins, 1983). Interestingly, for the same product, different customers will have different levels of perceived importance as well. This is showing the high individuality of the construct of Product importance (Tyebjee, 1979). The research in this area is not very deep. However, there are two forms of Product importance in the literature that can be defined depending on their antecedents, correlates, and temporal duration – instrumental and enduring importance (Bloch & Richins, 1983). Instrumental Product importance is based on a consumer's desire to reach a specific goal. Such a goal is derived from a purchase of a specific product. On the other hand,

enduring importance is a long-term perception of the importance of the product based on its relationship to the needs and values of the consumer that are core (Bloch & Richins, 1983). While the two importance forms are distinguished as separate constructs, it is highly likely for the interaction between them to occur. For example, instrumental importance is usually engaged during the purchase process, but it also overpowers the perception of enduring importance that was placed before the purchase (Bloch & Richins, 1983). As the scope of this study is post-purchase processes, where this interaction occurs, we will not differentiate between the two forms and will use a generalized version of Product importance, defined as the extent to which a customer links a particular product to salient enduring or situation-specific goals. We believe that as the Product importance increases, the customers will want to pay more attention to the order fulfilment process. This is due to the fact that, as the product purchased is of a high importance to the customer, they will want to make sure to receive it. Thus, they will pay more attention to the order, making sure everything is going as planned. Therefore, with the increased Product importance, their desired level of information transparency will increase.

Considering the situational characteristics described above, we propose:

Hypothesis 2: Situational characteristics will influence DDIT levels, such that:

(H2a) trust in e-retailer will have a negative effect on DDIT – an increase in trust levels will lead to decreased levels of DDIT;

(H2b) Product importance will have a positive effect on DDIT – an increase in importance will lead to increased levels of DDIT.

3.4.3 Individual Characteristics and Desired Digital Information Transparency

Detail orientation. Detail orientation is a concept focused on the individual's tendency to be involved with a particular situation or an object. Such degree of involvement can vary on the spectrum from indifference to heavy involvement. Braddy et al. (2006) define it ass involvement in being analytical, precise, and paying attention to detail. During online purchasing, a person with high Detail orientation will be more focused on receiving information from the e-retailer, and, thus, their desired level of digital information transparency will be higher. An individual with low levels of Detail orientation, on the other hand, will have a lower level of DDIT as they do not have the need to receive detailed communications from the e-retailer while their order is being fulfilled.

E-commerce comfort level. Individuals have specific beliefs about the level of their skills when it comes to IT. Such beliefs play an important role in different behavioral outcomes, such as computer usage (Compeau & Higgins, 1995), technology adoption (Lassar et al., 2005), etc. Therefore, not experienced computer users will be less likely to use the Internet to make purchases (Lassar et al., 2005). We define e-commerce comfort level as the extent to which a person feels comfortable using the Internet to purchase goods and/or services; where all transactions occur in the digital space and confirmation, or other information must be sought out through those digital offerings or achieved through interactions outside of the brick-and-mortar retail locations. E-commerce offerings include receiving products or services, where returns or access to customer service occurs through these same methods, but products and services are not accessed or understood and purchased prior to the digital environment.

While it is expected that the direction of the influence of the situational characteristics will be the same for different individuals (e.g., the increase of Product importance will increase DIT for all customers), it is also expected that individual characteristics will play the role of moderators and will weaken or strengthen the relationships. Relationships of situational characteristics were found in trust and Product importance (Corbitt et al., 2003; Cyr et al., 2009; Dvir & Gafni, 2018; D. J. Kim, 2012; McKnight et al., 2002; Xiao et al., 2016). Therefore, we believe that the relationship between situational characteristics and desired information transparency will be stronger for people with a higher e-commerce comfort level. Thus, we propose the following hypotheses:

Hypothesis 3: Individual characteristics will moderate the relationship between Situational characteristics and DDIT, such that:

(H3a) For customers with high Detail orientation, the relationship between Situational characteristics and DDIT will be stronger:

- *H3a1: for the customers with high Detail orientation, the relationship between Trust and DDIT will be stronger (more negative).*
- *H3a2: for the customers with high Detail orientation, the relationship between Product Importance and DDIT will be stronger (more positive).*

(H3b) For customers with high E-commerce comfort levels, the relationship between Situational characteristics and DDIT will be stronger:

- *H3b1: for customers with high E-commerce comfort levels, the relationship between Trust and DDIT will be stronger (more negative).*
- *H3b2: for customers with high E-commerce comfort levels, the relationship between Product importance and DDIT will be stronger (more positive).*

3.4.4 Perceived Digital Information Transparency and Satisfaction

Information is created and exchanged in both offline and online purchases. In a store, such information is given by the sales personnel. It may include knowledge of products, inventory levels (availability of items in a location, store location of items), product or service features and benefits, or access to various options available to customers, such as the ability to order additional items from the online location (push mobile notifications from Walgreens, Home Depot, or Target), etc. (Bhargave et al., 2016). Online purchases generate and share even more information. As already mentioned before, this research recognizes the information shared with the customer to be a type of service provided along with the purchase of the original product. Kettinger & Lee (2005) proposed a theory that divides perceived service levels into adequate and desired levels, referred to as ZOT. Adequate service quality expectations are minimum levels that will satisfy customers, while desired is the level that represents a mix of

what customers believe "can be" and "should be" provided by the company (Kettinger & Lee, 2005). The same logic is applied to the concept of Desired Information Transparency (DIT), defined as the extent of transparency a customer wants from a company regarding a particular purchase.

Over the last several decades, IT leads to an increase in the availability of various types of information, which, in turn, leads to significant changes in business procedures. For example, transparency of prices on the e-market forces companies to change their pricing strategies and competition tactics. The general definition of information transparency is the degree of visibility and accessibility of information (Zhu, 2005). Various studies modify the definition to fit the specific context. For example, market transparency - the extent to which information is made available to market participants, including pricing, product, and supplier information (Granados et al., 2006). Price transparency is defined as the availability of pricing information, the degree to which market participants know the prevailing prices and characteristics or attributes of goods or services on offer (Soh et al., 2006). Taking the general definition as a basis, PDIT is, therefore, defined as the extent to which a customer perceives post-purchase processes to be visible.

Digital technologies enable intimate communication between a company and its customers. Not only do they receive multiple emails about current promotions and sales, advertisement of goods and services, but they also get notified about the orders placed (customers receive online receipts, shipping updates, returns or exchanges instructions, refunds notifications, etc.). In decision making, information provision is defined as the transfer of data from a central knowledge repository to agents within the firm that make technology adoption decisions (Lenox & King, 2004). In the supply chain, Information sharing is referred to as the

extent to which critical and proprietary information is communicated to one's supply chain partner (Monczka et al., 1998). Thus, the transfer of information from the company to its customers as their orders are being fulfilled in this study is referred to as Information sharing. Since current research focuses on the exchange (or sharing) of information between the seller and the buyer in e-commerce, and such information is considered a service, we need to examine how such supplementary services influence customer satisfaction. The concept of user information satisfaction is long researched in the IS field. If the system provides the user with the information that meets the needs and requirements, the user is satisfied and will return to using the system again (Ives et al., 1983). We apply the same logic combined with the ECT approach to the concept of DIS, which is defined here as the extent to which a customer believes the digital information available to him meets his order information requirements.

However, online purchasing always involves some degree of risk (e.g., a product could be of low quality or could arrive damaged, or the seller could simply not ship the order, customer's personal or payment information can be leaked, etc.) (Miyazaki & Fernandez, 2001). Therefore, having a transparent order fulfillment process can reduce some of the worries associated with the risks. Whenever a company is sending a notification about the progress of the order to the customer, they contribute to the overall opinion that this customer is forming about the experience and the company as a whole. Therefore, we believe that PDIT increases will lead to the increases in DIS.

The exception occurs in the possibility of information overload, as indicated previously – too much information leads to diminishing positive effects of increases in information transparency on satisfaction. Such a U-curve relationship is a nonlinear relationship found

between certain dependent and independent variables. This type of relationship has been found in research such as Eppler & Mengis (2008) to occur in information overload, consisting of results that too little information and too much information had similar responses in respondents. Relationships resulting in U-curves have occurred in medical science, such as between cholesterol levels and stroke and in cases of fasting plasma glucose and uric acid (Bringeland et al., 2016). However, reporting of U-curves in marketing and other business or behavioral sciences is less common, reported in the past few years in innovation and technology (Berghäll, 2016), and information technology related to perceived risk and internet experience (Soto-Acosta et al., 2014). It is expected that this research will also demonstrate a U-curve due to the relationships of the dependent and independent variables' ability to dictate expectations in respondents. Thus:

*Hypothesis 4**:** PDIT will have a positive relationship with DIS up to a certain point, after which diminishing returns will be observed (the increase in PDIT will lead to the decrease in DIS).*

3.4.5 Desired Digital Information Transparency and its Moderating Effects on Satisfaction

In e-commerce, more options and/or more information about those options improve the customer's ability to choose the best alternative and purchase the product for the best price, which increases their satisfaction (Matzler et al., 2006). Since shopping online is always accompanied by certain risks (Miyazaki & Fernandez, 2001), the transparency of information about the order fulfillment is crucial. Based on the situation of the purchase and the product itself, a customer is forming an opinion about the level of transparency that they require to be

satisfied with the services. The sense of transparency that the company creates influences customers' overall received perception of satisfaction. When the desired level of transparency is matched with the actual perceived level, a positive evaluation outcome is created (Hossain & Quaddus, 2012). However, if there is too much information being sent during the order fulfillment process, customers may feel overwhelmed with it and become counterproductive: customer satisfaction can decrease. Such a relationship has a justification like that of information overload. In addition, customers may even perceive the information to be unclear, contradictory, or confusing, even if they received it from the same source (Maltz, 2000). We believe that DDIT will influence the relationships between PDIT and DIS, including the reverse U-curve. For the increases in PDIT that are below the levels of DDIT, the increase in DIS will be stronger. For the highest level of PDIT, DDIT will strengthen the inverted u-curve relationship as well. Thus,

Hypothesis 5 states: For customers with a high level of DDIT, the relationship between PDIT and DIS will be stronger.

The following table includes the five hypotheses and their elements and their relationships to the founding theories of this research. ECT and the SOR Model were selected as the foundation theories due to research indicating that perceptions are influenced by both stimuli and previous expectations, which can indicate or create experiences for the individual. Examples of the relationship of ECT have occurred in research of overall customer satisfaction with a company, where results have indicated that this perception informed their post-purchase intentions (Hossain & Quaddus, 2012). Similarly, SOR has been studied where elements of shopping value, informativeness, and effectiveness of information provided in e-commerce influence the organism of web satisfaction and ultimately purchase intention when acted upon by

moderators of gender and income (Prashar et al., 2017). As a result of the prior research, the following table indicates the expected relationships between hypotheses and the theories.

Hypothesis	Elements	Theories
Hypothesis 1: Hypothesis 1: Information sharing increases PDIT, such that: • (H1a): The higher informativeness of the messages that the customer receives will lead to the higher perceived information transparency of the order process. • (H1b): The better message timeliness of the messages that the customer receives will lead to the higher perceived information transparency of the order process. • (H1c): The more convenient communication channels used to deliver the messages to the customers will lead to higher perceived information transparency of the order process. • (H1d): The higher redundancy of the messages that the customer receives will lead to the lower perceived information transparency of the order process. • (H1e): The higher perceived information transparency of the order process will result from the company being the communication initiator.	Information sharing characteristics (e.g., timeliness, informativeness) that result in perceptions of transparency	SOR
Hypothesis 2: Situational characteristics will determine DDIT levels, such that: • (H2a) trust in e-retailer will have a negative effect on DDIT – an increase in trust levels will lead to decreased levels of DDIT. • (H2b) Product importance will have a positive effect on DDIT – an increase in importance will lead to increased levels of DDIT.	Trust influences the level of transparency. As the customer believes the seller will provide what promised, they will not need to check on the order. Different levels of Product importance may lead to different expectations.	ECT ZOT

Hypothesis 3: Individual characteristics will moderate the relationship between Situational characteristics and DDIT, such that: • (H3a) For customers with high Detail orientation, the relationship between Situational characteristics and DDIT will be stronger: ✓ H3a1: for the customers with high Detail orientation, the relationship between Trust and DDIT will be stronger (more negative). ✓ H3a2: for the customers with high Detail orientation, the relationship between Product Importance and DDIT will be stronger (more positive). • (H3b) For customers with high E-commerce comfort levels, the relationship between Situational characteristics and DDIT will be stronger: ✓ H3b1: for customers with high E-commerce comfort levels, the relationship between Trust and DDIT will be stronger (more negative). ✓ H3b2: for customers with high E-commerce comfort levels, the relationship between Product importance and DDIT will be stronger (more positive).	User behaviors differ based on the experiences and personal factors of the individuals. Two significant factors are Detail orientation and e-commerce comfort level. These two factors will influence the strength of the relationship between a situation and the desired level of digital information transparency.	ECT ZOT
Hypothesis 4: PDIT will have a positive relationship with DIS, up to a certain point, after which diminishing returns will be observed (the increase in PDIT will lead to the decrease in DIS).	Positive stimuli (PDIT) result in a positive response (DIS).	SOR ECT
Hypothesis 5: For customers with a high level of DDIT, the relationship between PDIT and DIS will be stronger.	Desired vs. actual levels of information transparency. Satisfaction. Information overload, diminishing satisfaction.	ECT

Table 3.4 Hypotheses Table of Elements and Theories

CHAPTER 4: RESEARCH DESIGN

4.1 Introduction

The main objective of this research is to better understand the phenomenon of digital information transparency in e-commerce. For that, we develop and test the model of Digital Informational Transparency and Satisfaction (DITS). Considering that the emphasis is on explaining the relationship between transparency and satisfaction, the survey methodology is used to collect data. The data collected was analyzed using statistical techniques. Before the data collection section, we discuss the approach we took, including using vignettes in the survey questions, procedures of the operationalization of the constructs, and item creation.

4.2 Use of Vignettes in Research

To collect data, a survey was developed with the addition of vignettes instead of attitude statements. Vignettes are short hypothetical scenarios intended to elicit responses to specified circumstances (Finch, 1987; Hill, 1997). Vignettes are designed as illustrated realistic situations provided to a respondent to ask for a judgment or opinion on how the individual would behave or respond to that particular incident or scenario (Vargas, 2008). Although vignettes can be used in diverse types of research, the typical use is in measuring attitudes or beliefs of respondents and can be used in closed-ended questions.

In the literature review conducted by Aguinis & Bradley (2014), successful use of vignettes in research is designed to capture information able to be used in experimental casual-relationship designs, with the ability to overcome the risks associated with costly experiments

that remove respondents from their natural environment to a creative environment. Further, the authors adopted the definition previously published by Atzmüller & Steiner (2010), stating "a short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics (p. 128)", and the application of Hughes & Huby (2002) to include "images, videos, and other media" (p. 353). Acceptable use of Experimental Vignette Methodology (EVM) includes either "paper people studies" or "policy capturing and conjoint analysis studies" (Aguinis & Bradley, 2014). Recent use of vignettes in qualitative research has included studying responses to drug use, culture, vignettes, and health perceptions or care, which used narrative, descriptive, and coding (Budd & Kandemir, 2018; de Macedo et al., 2015; Pitard, 2016).

Although EVM enables the researchers to introduce a hypothetical situation, it could be that respondents are unable to identify with the scenario, and the risk is that respondents may not react in the same way if the situation was presented in real life (Aguinis & Bradley, 2014). Considering these risks, it is critical that respondents selected for the study have familiarity with similar or identical situations, which further supports the application of situational stimuli that consider different environments and situations in the consumer behavioral processes (Belk, 1975). For example, respondents for this study should be familiar with online purchasing, shipping products, and the processes related to customer-facing aspects of e-commerce. Respondents that never purchased an e-commerce business would not be a good fit to study the genuine reaction to the vignettes developed for this research. Further, other variables may be present, such as extreme situations, which could cause the participant results to be unlike those of the vignettes. One example could be a solid fan base of the company ordered from and the

customer being more patient or less concerned about the arrival or information available, which was the purpose in addressing trust as a variable in this research.

The literature review conducted showed that there are no specific criteria for the use of vignettes. However, after studying the articles that use this method, it was concluded that vignettes are especially effective when the context is important for the purpose of the study. It is not acceptable, practical, or available to conduct the study as an experimental study that engages individuals in that particular scenario. Having the situation described in sufficient detail allows us to better understand peoples' perceptions of transparency. In order to develop vignettes, the following principles were derived from the literature and applied to the design: vignettes must appear plausible and authentic to participants; must avoid depicting eccentric characters and disastrous events; need to contain sufficient context; must be presented in an appropriate format; and must be readily understood (Barter & Renold, 1999).

4.3 Participants

More than 96% of all American adults (of age 18 and above) use an e-commerce platform to shop. Among them, more than half of the shoppers are Millennials and Gen X representatives (Hwong, 2018). Participants for this research were selected using convenience sampling designed to reach the population identified as consumers using the Internet for purchases delivered to the individual. This is a nonprobability sampling because it does not access the entire population of individuals that use the internet for purchases. Additionally, the respondents were not randomly selected from the population (Etikan, 2016). Convenience sampling is typical in research seeking individuals for perceptions or satisfaction, as found in

studies for customer-satisfaction surveys (J. Bailey, 2012; Zhang et al., 2013), and used in specific population studies for improvement in internet technology (Sharma & Baoku, 2013).

It was intended that the study gathered respondents from a minimum of nine hundred respondents using Mechanical Turk service. Amazon Mechanical Turk (MTurk) is a crowdsourcing system that is widely used for data collection in academic research. It provides flexible, affordable, and reliable source of human participants for several types of data collection (Moss et al., 2023). Mechanical Turk workers on average are from a more diverse background than the typical college undergraduate, and in numbers that are equal or larger than the size of even large universities' subject pools (Mason & Suri, 2012). To appropriately select the workers for our study, we have created several Human Intelligence Tasks (HITs). Additionally, in order to ensure the high quality of responses that are representative of our population for the study, we have limited the location of the workers to be USA only, the worker HIT approval rate of greater than 98%, and worker number of approved HITs of over 500. Only the workers who met these qualifications were able to complete the survey.

4.5 Measures and Manipulations

4.5.1 Item Generation and Refinement

The first step of the data collection process was the measure development for new concepts of Information sharing, PDIT, and DDIT. The measures for the rest of the constructs were adapted from existing sources to improve content validity (Straub & Gefen, 2004) and edited to fit the e-commerce online order fulfillment process. As mentioned, attitude statements are more accurate

than crude direct questions about beliefs and values. Vignettes, as noted above, are more appropriate for surveys, in which a response to a situation is crucial for the researcher. As vignettes were chosen to accompany the questions in the survey, some of the item's levels were manipulated in the text of the vignettes (Information sharing, Trust in e-retailer, and Product importance) (see Appendix B for the list of used vignettes). The rest of the constructs are measured with attitude statements.

Item constructs	Manipulated in vignettes
PDIT Detail orientation E-commerce comfort level DDIT DIS	Information sharing Trust in e-retailer Product importance

Table 4.1 Constructs Measured Using Items vs. Manipulated in the Vignettes

New measures for Information sharing (manipulated in the vignettes), PDIT, and DDIT, were developed. To make sure that the best items were chosen for the operationalization of the constructs, we have created a vast pool of various items and performed a series of card-sorting exercises with Ph.D. students familiar with IS E-commerce research. We have provided the Ph.D. students with the constructs and their definitions. As the first step of the exercise, we asked them to sort vignette sentences from the whole pool and refer them to the column of the construct they believed they were pertaining to. The second step of the exercise was for the Ph.D. students to rank the vignette sentence items for each of the constructs from the most fitting to the least fitting. The results of this Q-sorting exercise have revealed some issued with the wording of the sentences from the vignettes. Thus, we have analyzed the results, identified wording issues and then revised/reworded the vignette sentence items to be more representative

of the construct levels they were intended for; and excluded the vignette sentence items from the pool that were ranked the lowest.

4.5.1.1 Information Sharing

Based on the literature review conducted, we define Information sharing as the extent to which information about the order fulfillment process is communicated to the customer. As discussed in the supply chain literature, Information sharing includes three main aspects: information quality, Information sharing support technology, and the information content (Zhou & Benton, 2007). Information quality is the degree to which the information that is shared between the organizations meets the needs of the organizations (Petersen, 1999). Information support technology is all the technology used in the exchange of information between supply chain participants. Information content can be referred to as supplier information, customer information, manufacturer information, and retailer information (Chopra & Meindl, 2001). To develop the dimensions of the Information sharing fitting to the concept of e-commerce, we have conducted a data collection from the articles that mention information content, quality, and technology and have summarized the dimensions from the most common descriptions, simultaneously adapting them to online shopping.

Dimensions	Definition	Levels
Message informativeness	the degree to which the content of the communication sent to the customer about the order progress is complete, precise, and accurate.	Insufficient
		Sufficient
		Excessive
Message timeliness	the degree to which the communication about the order fulfillment process is sent in a timely manner that satisfies the customer's needs.	On-time
		Delayed
Communication channel convenience	the degree to which a customer can choose how and where to receive the communication about the order progress.	Able to choose channels
		Not able to choose channels
Communication redundancy	the degree to which a customer receives identical communication about the order fulfillment process multiple times on multiple channels.	All chosen channels, multiple times
		All chosen channels, one time
		All channels, one time
		All channels, multiple times
Communication initiator	the degree to which a customer needs to request information about the order fulfillment process.	Customer
		Company

Table 4.2 Information Sharing Dimensions and Their Levels

Each of the dimensions of Information sharing has multiple levels assigned to it and must be manipulated in the text of the vignettes. Additionally, the other constructs that are manipulated in the text are Trust in e-retailer, and Product importance*2. In order to individually study the effect of each of the dimensions on PDIT, the dissertation would need 384 different vignettes (2*2*2*3*4*2*2 levels of constructs and dimensions), resulting in a sample size of a minimum of 19 200 respondents. Due to the scope limitations of the current dissertation research and the required sample size needed to test the relationships with a full pool of the Information sharing dimensions and its combinations, we have developed three general levels of a combined concept of Information sharing (see Table 4.3 below). Additionally, as the Information sharing construct was manipulated in the vignettes, we have developed distinct levels of each of the dimensions of the Information sharing and operationalized them with the descriptive statements

(see Appendix B, Table B). The resulting pool of vignettes, therefore, was shortened to 12 vignettes with a minimum sample size of approximately 600 respondents.

Information sharing dimensions	**Pulled Information sharing levels**		
	Insufficient	**Sufficient**	**Excessive**
Message Informativeness	Low	High	Excessive
Communication Channel Convenience	Not able to choose channels	Able to choose channels	Not able to choose channels
Communication Initiator	Customer	Company	Company
Message Timeliness	Delayed	On-time	On-time
Communication redundancy	All channels, multiple times	All chosen channels, one time	All channels, multiple times

Table 4.3 Combined Dimensions of Information Sharing

Table 4.4 below represents the list of final hypotheses tested in Pilot studies and full-scale data collection process. Lastly, in order to complete a manipulation check of the dimension levels (to make sure that the wording used corresponds to the intended level), a series of Q-sorting exercises were performed with Ph.D. students. As the first step of the exercise, we asked them to sort vignette sentences from the whole pool and refer them to the column of the construct they believed they were pertaining to. The second step of the exercise was for the Ph.D. students to rank the vignette sentence items for each of the constructs from the most fitting to the least fitting. The results of this Q-sorting exercise have revealed some issued with the wording of the sentences from the vignettes. Thus, we have analyzed the results, identified wording issues and then revised/reworded the vignette sentence items to be more representative of the construct levels they were intended for; and excluded the vignette sentence items from the pool that were ranked the lowest.

Hypotheses	
H1	***Information sharing will increase PDIT:***
H1a	- The increase from insufficient to sufficient Information sharing will increase PDIT
H1b	- The increase from sufficient to excessive Information sharing will increase PDIT
H2	***Situational characteristics will influence DDIT:***
H2a	- Trust in e-retailer will have a negative effect on DDIT – an increase in trust levels will lead to decreased levels of DDIT;
H2b	- Product importance will have a positive effect on DDIT – an increase in importance will lead to increased levels of DDIT.
H3	***Individual characteristics will moderate the relationships between Situational characteristics and DDIT:***
H3a	*For customers with high Detail orientation, the relationship between Situational characteristics and DDIT will be stronger:*
H3a1	- For the customers with high Detail orientation, the relationship between Trust and DDIT will be stronger (more negative)
H3a2	- For the customers with high Detail orientation, the relationship between Product Importance and DDIT will be stronger (more positive)
H3b	*For customers with high E-commerce comfort levels, the relationship between Situational characteristics and DDIT will be stronger:*
H3b1	- For customers with high E-commerce comfort levels, the relationship between Trust and DDIT will be stronger (more negative)
H3b2	- For customers with high E-commerce comfort levels, the relationship between Product importance and DDIT will be stronger (more positive)
H4	PDIT will have a positive relationship with DIS up to a certain point, after which diminishing returns will be observed (the increase in PDIT will lead to the decrease in DIS).
H5	For customers with a high level of DDIT, the relationship between PDIT and DIS will be stronger.

Table 4.4 Final List of Hypotheses Tested

4.5.1.2 Perceived Digital Information Transparency

PDIT is defined as the extent of transparency a customer wants from a company during the order fulfillment process. Since this was a new construct that was presented in the dissertation for the first time, its measure needed to be developed and tested for validity and

reliability. To operationalize PDIT, we based our item pool on the definition and created twelve items divided into two groups. Group one (PDIT 1) contained the following statements:

- I believe the seller has been forthright about the progress of my order after I paid for it.
- I believe the seller provided me with clear details about the order process.
- I believe that after I paid for my order, the seller was forthright about the processes concerning my order.
- I believe that the process of executing my order was visible.
- I feel like there was detailed visibility regarding how my order was carried out.
- I believe the seller has not been forthright about my order details after I paid for it. (Reverse)

These were designed to be on the Likert scale, where 1 – Strongly disagree, and 5 – Strongly agree. For this measure, we asked Ph.D. students to rank them from the most fitting one to the least fitting one (according to the construct's definition) and pick those with the highest fit.

Group two (PDIT 2) was adapted from the information transparency scale by Awad & Krishnan (2006) and Perceived information transparency by Al-Jabri & Roztocki (2015). A 5-point Likert scale was developed ranging from 1 – Extremely dissatisfied to 5 – Extremely satisfied. The items created were:

- The online seller allowed me to check my order progress after I paid for it.
- The online seller provided prices, total amount, and payment status information.
- The online seller provided information on the order progress after I paid for it.
- The online seller provided information about the shipment of the order.

- The online seller provided tracking information about the shipment of the order.
- Overall, the online seller provided good information on the order fulfillment process.

For this measure, we used the same approach as for PDIT and have asked the Ph.D. students rank them from the most fitting one to the least fitting one (according to the construct's definition) and pick those with the highest fit. As a result of data analysis at this stage, it was decided to keep both of the item pools to be used in pilot testing as the results were inconclusive as to which of the items was more effective. Further, the validity and reliability of these items from the pilot tests were checked as well.

4.5.1.3 Desired Digital Information Transparency

To operationalize the concept of DDIT, we have followed the approach of Kettinger & Lee (2005) and created the following statements to measure the overall DDIT. This set of items consisted of ten attitude statements about the desired level of visibility of the order fulfillment process. As the result of the q-sorting exercise performed by Ph.D students, we have revised/reworded the items that presented some wording issues, and and excluded the three items that were ranked the lowest. The remaining seven items were selected, revised, and left to be tested in the pilot test:

- What level of visibility of the order fulfillment process would you like to have for the purchasing situation described above?
- Thinking about the purchasing situation described above, what level of visibility of the order fulfillment process would you like to have?

- What level of visibility of the processes would you desire as your order is being carried out for the purchasing situation described above?
- Considering the purchasing situation described above, what level of visibility of the processes would you desire as your order is being carried out?
- Thinking about the purchasing situation described above, how much information transparency would you like to have?
- How much information transparency would you want in the purchasing situation described above?
- How much information transparency would you like to have in the purchasing situation described above?

4.5.1.4 Existing construct measures

Trust in e-retailer. There are many definitions and, thus, measures of trust. It is one of the most important factors in electronic commerce. Trust stimulates purchases, specially made online, as it reduces the perceived risks of the interaction with the sellers (Corbitt et al., 2003). For the purpose of this research, we use the definition by Kimery & McCord (2002) as a starting point. They define trust as the customer's willingness to accept vulnerability in the online transaction based on positive expectations of the future behavior of the e-retailer. Thus, we define trust in e-retailer as the *extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer*.

The construct was manipulated in the text of the vignettes. To test the hypotheses, we presented the participants with two levels of trust variable. High trust was represented with the purchases made from a website that was well known to the customer. Low trust – by a new

website that has just started its business (see Table 4.4 for wording in vinettes). To make sure the manipulation was doing what it was supposed to, we performed manipulation check and included a one-item Trust measure by Gefen, (2000) into the survey:

- I trust this retailer (Gefen, 2000).

Trust level	Text representation
Low	… you had to use a new resale website to purchase from, and you were not quite sure if they were trustworthy.
	You've heard about this new website recently starting its business, so you decided to check them out.
High	You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well).
	You checked a website you always use and trust…

Table 4.5 Levels of Trust and Their Representation in Text of the Vignettes

Product importance. Every product purchased corresponds to a certain level of importance that is defined by the customer (Bloch & Richins, 1983). Since different customers attach a different level of importance to products, it is impossible to evaluate the Product importance that each of the survey participants assigns to the specific product. Thus, the construct should be manipulated in the vignettes through descriptive phrases without using the specific product or service. For the purposes of parsimony, we distinguish two levels of Product importance: high and low. The construct is operationalized by describing different purchasing situations (see Table 4.5). To make sure the Product importance construct was worder properly, we performed manipulation check and included a survey question that asked the participants: "In the situation described above, how important to you was the product purchased? (with two levels: Low – "unimportant", and High – "important").

Product importance level	Text representation
Low	You need to get more laundry detergent as you will run out of it in a few weeks. It is not your top priority, but you decided to do it now anyway.
	You will run out of paper towels soon, so you need to purchase more in the next few weeks.
High	You are purchasing a gift for a loved one's birthday. This gift is expensive and special for you, and you are hoping it will be very special for the person you are buying it for.
	You wanted to purchase a limited-edition autographed album of your favorite music performer.

Table 4.6 Levels of Product Importance and Their Representation in Text of the Vignettes

Additionally, we have included the Price of the product as the control variable of the study. Price is the amount of money that is used as a tool of exchange to obtain a product or services (Djatmiko & Pradana, 2016). Product price influences purchasing decisions (Djatmiko & Pradana, 2016), while price perceptions have a significant influence on customer satisfaction. Therefore, we believe, that product price, as one of the possible product characteristics (Bloch & Richins, 1983) could influence the levels of desired transparency as well. However, since we estimated the effect of price and Product importance to be close in their nature, we have included it as a control variable only as opposed to one of the independent variables.

Detail orientation. There is a lack of consistency in the management literature regarding the definition of Detail orientation. The main area of research where the concept is studied in psychology. There, attention to detail as a cognitive style is studied in relation to autism (Valla & Belmonte, 2013), auditory processing in musicians (Wenhart & Altenmüller, 2019). Additionally, Detail orientation as a cultural value is defined through precision, analysis, and

attention to detail. Thus, we define *Detail orientation as the extent to which a customer has a tendency to be precise and focus on and check details thoroughly*.

To measure the construct, we used the operationalization of Detail orientation by (Palmer et al., 2015). They use the following measure with the :

- I usually notice car number plates or similar strings of information.
- I am fascinated by dates.
- I tend to notice details that others do not.
- I am fascinated by numbers.
- I notice patterns in things all the time.
- I often notice small sounds when others do not.
- I usually concentrate more on the whole picture rather than the small details. (Reverse)
- I am not very good at remembering phone numbers. (Reverse)
- I don't usually notice small changes in a situation or a person. (Reverse)
- I am not very good at remembering people's date of birth. (Reverse)
- I like to collect information about categories of things (e.g., types of cars, birds, trains, plants, etc.).

The answers were on the Likert scale, with 1 – Strongly disagree, and 5 – Strongly agree.

E-commerce comfort level. Comfort, in general, is a freedom from stress and anxiety (Dornisch, 2013). Technology comfort level measures how comfortable a person is using computers in general (Lassar et al., 2005). This dissertation focuses on the relationship between situational and individual characteristics and their influence on the desired level of digital information transparency. The level of transparency that a customer wants in a particular

situation is dependent on the type of relationship between an individual and the Internet. In part, such a relationship depends on how comfortable the customer is using the Internet for purchases. The higher e-commerce comfort level was represented by the higher ability to check the order fulfillment process and, consequently, a higher need for transparency. The measure for this construct was adapted from the existing Technology comfort level by Lassar et al. (2005):

- How comfortable do you feel using computers and smartphones in general? (1 – Very comfortable, and 5 – Very uncomfortable)
- How comfortable do you feel using the Internet for online purchases? (1 – Very comfortable, and 5 – Very uncomfortable)
- How satisfied are you with your current skills for using the Internet for online purchases? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)
- Using the Internet for purchases is a good idea. (1 – Strongly disagree, and 5 – Strongly agree)
- I like the idea of using the Internet to purchase. (1 – Strongly disagree, and 5 – Strongly agree)
- I feel good about how things go when I do purchasing or other activities on the Internet. (1 – Strongly disagree, and 5 – Strongly agree)
- I am comfortable making purchases on the Internet. (1 – Strongly disagree, and 5 – Strongly agree)

Digital information satisfaction. As a theoretical base for the instrument, we used User Information Satisfaction (UIS) questionnaire by Baroudi & Orlikowski (1988). The authors have defined the three dimensions of the UIS to be: (1) information product; (2) electronic data processing (EDP) staff and services; (3) knowledge and involvement. Since we believe that

information that is provided to the customer is a type of a supplementary service offered by the company, we adapt the Information product dimensions. Five structured choices are offered. Five items comprise the DIS scale:

- How satisfied were you with the reliability of the information you received about the order fulfillment process? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)
- How satisfied were you with the accuracy of the information you received about the order fulfillment process? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)
- How satisfied were you with the completeness of the information you received about the order fulfillment process? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)
- How satisfied were you with the relevancy of the information you received about the order fulfillment process? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)
- How satisfied were you with the precision of the information you received about the order fulfillment process? (1 – Extremely dissatisfied, and 5 – Extremely satisfied)

4.5.2 Vignette pool and selection

Vignettes were be used to manipulate only several constructs, as such items as Detail orientation or e-commerce comfort level vary from person to person and cannot be forced onto an individual. We manipulated Information supply; and situation variables, such as Trust in e-retailer, Product importance, and Product price. Table 4.6 represents the levels of the constructs that were determined, along with the examples for the vignette statements.

Construct	Level	Vignette statement examples
Trust in e-retailer	Low	You've heard about this new website recently starting its business, so you decided to check it out.
	High	You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well).
Product price[7]	Low	You checked a website you always use, and the detergent you usually get was on sale. It came up to be very cheap with that discount, so you placed an order.
	High	You ended up paying a lot of money for the album.
Product importance	Low	You need to get more laundry detergent as you will run out of it in a few weeks. It is not your top priority, but you decided to add it to your shopping cart as a reminder to yourself.
	High	You are purchasing a gift for a loved one's birthday. This gift is expensive and special for you, and you are hoping it will be very special for the person you are buying it for. That is why you have done a lot of research and know what you want to purchase.
Message informativeness	Insufficient	No order number, shipping details, or tracking information was provided to you.
	Sufficient	When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed order information.
	Excessive	The content of the notifications was very detailed and included an itemized invoice with the order number, detailed full item names, item numbers, pictures of the items, their full prices, discounted prices, taxes, order total, shipping address, payment method details, billing address, estimated delivery date, etc. In addition, these notifications contained details on the current and future planned sales and promotions and a lot of other information about the company.
Communication channel convenience	Able to choose channels	Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls).

[7] Used as a control variable

		All you had to do was put check marks on the notification preferences you wanted.
	Not able to choose channels, all channels	When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes."
Communication initiator	Customer	You had to call customer support and inquire about the tracking information for your purchase.
	Company	When the order shipped, you received another email…
Message timeliness	On-time	Just a few seconds later, you received an email…
	Delayed	An hour after placing the order, you finally received an email about it…
Communication redundancy	All chosen channels, one time	You decided to only get email order updates. Just a few seconds later, you received an email with…
	All chosen channels, multiple times	All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc. In the span of the next 15 minutes, you have received three more identical emails.
	All channels, one time	The page said: "We will send you an email once your order ships." An hour after placing the order, you finally received an email about it, but it did not contain any of the necessary order information.
	All channels, multiple times	As soon as you placed the order, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated.

Table 4.7 Variable Levels Manipulated in the Vignettes and Their Textual Representations

As recommended by Kotrlik & Higgins (2001), the researchers need to make sampling decisions based on the number of essential variables in the study. The table above shows five dimensions of Information sharing each having two to four levels, which presented a challenge in terms of the sample size needed to find a significant relationship. Thus, we have combined the

levels of five individual variables into three distinct levels of information supply (see Table 3). This way, instead of having a total number of vignettes that are impossibly large for a current study, we were able to capture the main idea of excessive information transparency by creating

Insufficient Information sharing	*Message Informativeness :* Low	When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you an email once your order ships." An hour after placing the order, you finally received an email about it, but it did not contain any of the necessary order information. In the span of the next 15 minutes, you have received three more identical emails. A few days later, you received another email showing that the status of your order had changed to "shipped," but no other details were provided. Later, you got another three identical emails. You had to call customer support and inquire about the tracking information for your purchase. They could not provide you with the tracking number during the call; instead, the customer support representative said they would email you the details in the next hour or so. Two hours later, you received the email with the updates; however, the information in the email was not about your order (the order number, shipping address, and the rest of the details were wrong). Therefore, you had to call them again. Finally, an hour or so after the second call, you received an email with tracking details. A few days later, your order was delivered. You have received an email that your package was delivered the next day after the actual delivery day.
	Communication channel convenience: Not able to choose channels	
	Communication initiator: Customer	
	Message timeliness: Delayed	
	Communication redundancy: All channels, multiple times	
Sufficient Information sharing	*Message Informativeness : High*	Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls). All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc. When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed
	Communication channel convenience: Able to choose channels	
	Communication initiator: Company	

	Message timeliness: On-time	order information. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and detailed. You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.
	Communication redundancy: All chosen channels, one time	
Excessive Information sharing	*Message Informativeness :* Excessive	When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." ." As soon as you placed the order, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated. In total, four identical emails, messages, and app notifications were received. The content of the notifications was very detailed and included an itemized invoice with the order number, detailed full item names, item numbers, pictures of the items, their full prices, discounted prices, taxes, order total, shipping address, payment method details, billing address, estimated delivery date, etc. In addition, these notifications contained details on the current and future planned sales and promotions and a lot of other information about the company. When the order shipped, you received another three identical emails, text messages, and app notifications with tracking information, the expected delivery date, and the rest of the detailed order information again. A few minutes later, the same notifications repeated. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and extremely detailed. You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.
	Communication channel convenience: Not able to choose channels	
	Communication initiator: Company	
	Message timeliness: On-time	
	Communication redundancy: All chosen channels, multiple times	

Table 4.8 Combined Levels of Information Sharing Used in Vignettes

4.6 Pilot Studies

To test the developed survey, two pilot tests were conducted in December of 2022 and May of 2023. Both were used to improve the survey and develop a final set of vignettes that would serve as the best representation of the online purchasing situations aimed at gathering data about online purchase information transparency perceptions of customers.

4.6.1 Pilot Study One

4.6.1.1 Pilot Study One Data Quality

Respondents. The first Pilot study (Pilot Study One) allocated fifty-six respondents. The respondents in this study were undergraduate business students at a large public university in the southeastern region. There exists some criticism of using student sampling for research. For instance, Wells (1993) states that "the findings based on students are always suspect". As mentioned above, this dissertation utilizes the convenience sampling approach to data collection. The sample for Pilot Study One is comprised exclusively of students from two courses for reasons of representativeness and not entirely just for their accessibility. In March of 2023, the largest percentage of e-commerce shoppers (46.9%) in the USA were adults that are 18 to 24 years old (Start.io, 2023). Additionally, the purpose of the courses from which students were recruited is to convey basic knowledge of information systems and their applications in business and e-commerce. Therefore, our use of students who had been trained in the use of the technology and are comfortable with online purchases, is appropriate in the context of this study.

Deleted responses. The Pilot Study One survey contained a total of 73 variables of interest (including the demographics questions). Out of the sample of fifty-six student responses were excluded due to non-response to the majority of questions of the survey (over 58 variables) and/or very long completion times (4000 seconds or above) (see Table 4.8). The expected duration time for the survey was suggested by Qualtrics and was approximately 20 minutes. Among the responses for Pilot Study One, there were three responses with a duration time of over 4000 seconds, which were excluded. Having excluded the respondents with unusually long survey duration time, we have received an average duration time for the survey of approximately 490 seconds. The median time was approximately 460 seconds. We have additionally excluded the respondents who have completed the survey in less than 1/3 of the median time. One response was excluded because of this.

	Number of missing		
	0	58	69
# of respondents	51	2	3

Table 4.9 Pilot Study One Removed Responses

The last step of data quality was to check for the respondents who did not pay attention to the survey and have selected the same option for all or almost all of the answers to the questions. Fortunately, data analysis showed that we don't have such respondents in the pilot test. Taking into account all the quality check points, we have retained 48 responses for the Data Analysis of the Pilot Study One. 8 out of 56 responses were deleted (14% approximately), therefore we would need to achieve a target sample size of 115% for the final data collection stage.

4.6.1.2 Correlations and Internal Consistency of Constructs

The main purpose of Pilot Study One was to examine the internal consistency of latent constructs “E-commerce comfort level”, “Detail orientation,” “Trust”, PDIT, DDIT, and “DIS”. Additionally, we were aiming to investigate correlations in accordance with the research model.

E-commerce comfort level. The value of Cronbach’s alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data analysis presented Cronbach’s alpha value for the E-commerce comfort level construct of 0.7. The version of the measure used in Pilot Study One showed some issues in terms of correlations (some were lower than 0.2) (see Table 4.9). Therefore, it was decided to add two additional items to the final measure:

- I feel good about how things go when I do purchasing or other activities on the Internet.
- I am comfortable making purchases on the Internet.(McKnight et al., 2002)

	Q8_1	**Q8_2**	**Q9_1**	**Q10_1**	**Q10_2**
Q8_1	1.00	0.71	0.10	0.18	0.03
Q8_2		1.00	0.31	0.45	0.33
Q9_1			1.00	0.43	0.23
Q10_1				1.00	0.54
Q10_2					1.00

Table 4.10 E-Commerce Comfort Level Correlations

Detail orientation. The value of Cronbach’s alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data analysis presented Cronbach’s

alpha value for the Detail orientation construct of 0.7. Correlations between items indicated that items Q13_6 and Q13_5 were negatively correlated (see Table 4.10). As a result, item Q13_6 was removed, which increased Cronbach's alpha of Detail orientation to 0.72.

	Q13_1	**Q13_2**	**Q13_3**	**Q13_4**	**Q13_5**	**Q13_6**
Q13_1	1	0.33	0.32	0.22	0.72	0.12
Q13_2		1	0.46	0.33	0.38	0.24
Q13_3			1	0.36	0.04	0.39
Q13_4				1	0.24	0.15
Q13_5					1	-0.01
Q13_6						1

Table 4.11 Detail Orientation Correlations

The results of correlation analysis presented some issues with the Detail orientation construct, which may lead to bigger issues in the final data collection round. Therefore, it was decided to use the original measure that Palmer et al. (2015) used to operationalize Detail orientation for their study. Further research revealed that the authors have used 6 items from a measure of the "Attention to detail" subscale of the autism-spectrum quotient (Baron-Cohen et al., 2001). The full version of this scale includes the following 10 items:

- I usually notice car number plates or similar strings of information. (Used)
- I am fascinated by dates. (Used)
- I tend to notice details that others do not. (Used)
- I am fascinated by numbers. (Used)
- I notice patterns in things all the time. (Used)
- I usually concentrate more on the whole picture, rather than the small details. (Reverse, added)
- I am not very good at remembering phone numbers. (Reverse, added)
- I don't usually notice small changes in a situation, or a person. (Reverse, added)

- I am not very good at remembering people's date of birth. (Reverse, added)
- I often notice small sounds when others do not. (Added)

Trust. The value of Cronbach's alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data analysis presented Cronbach's alpha value for the Trust construct of 0.87. However, the Trust instrument was only present in the survey to test the manipulation effectiveness of Trust in the text of the vignettes.

Digital Information Satisfaction (DIS). The value of Cronbach's alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data analysis presented Cronbach's alpha value for the DIS construct of 0.98. High correlation was detected among all the items of the DIS measure, which can be related due to data quality issues or respondents not distinguishing between different components of DIS(e.g., relevancy, accuracy, and/or precision of information). Further tests need to be conducted in the final data collection. However, manipulation check testing indicated that vignette wording worked well. For the vignettes that describe Sufficient Information sharing situations, the average DIS was 4.16/5, while for insufficient Information sharing – 2.31, with the difference being statistically significant (t=6.71, and p-value <0.001).

Perceived Digital Information Transparency (PDIT). Two different instruments for PDIT were tested in the Pilot Study One (PDIT1 and PDIT2). The value of Cronbach's alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data

analysis, Cronbach's alpha for PDIT1 was 0.91, and for PDIT2 – 0.97. For PDIT1, based on the Correlation analysis, two items were removed (see Table 4.11), which reduced the Cronbach's alpha slightly to 0.81, but also removed the correlations of over 0.85. The deleted items were the following:

- Q20_1 – "I believe the online seller has been open about the progress that happened with my order after I paid for it."
- Q20_5 – "I feel like there was visibility of the details regarding the process of my order being carried out."

	Q20_1	**Q20_2**	**Q20_3**	**Q20_4**	**Q20_5**	**Q20_6R**
Q20_1	1.00	0.82	0.87	0.75	0.86	0.30
Q20_2		1.00	0.79	0.76	0.88	0.40
Q20_3			1.00	0.69	0.81	0.30
Q20_4				1.00	0.76	0.14
Q20_5					1.00	0.31
Q20_6R						1.00

Table 4.12 PDIT1 Correlations

PDIT2 presented with the higher Cronbach's alpha but had multiple correlations over 0.8 (see Appendix C). Thus, it was decided to use PDIT1 in the final data collection process.

Desired Digital Information Transparency (DDIT). The value of Cronbach's alpha > 0.7 indicated an acceptable level of internal consistency for established constructs (Nunnally, 1978) and 0.6 for exploratory scales (J. F. Hair Jr et al., 2021). The results of the Pilot Study One data analysis, Cronbach's alpha for DDIT was 0.91 ,which is acceptable.

Correlations and internal consistency of Pilot Study One. Pilot Study One study results indicated acceptable internal consistency for all the constructs. However, the Cronbach's alpha

value was very high for DIS, indicating high correlation levels between items included in the scale. Additionally, there were several low between-item correlations (R<0.3) within subscale "Detail orientation" and subscale "E-commerce comfort level".

Manipulation check. To assess whether the manipulation check worked properly, average scores of Product importance were compared using t-test. The average importance of product measured directly by question "In the situation described above, how important to you was the product purchased?" was higher (4.04) for vignettes with pre-assumed high importance than for vignettes with pre-assumed low importance (3.40). The difference was statistically significant (t=2.43, p=0.019). In addition, PDIT scores were compared for vignettes with pre-assumed Sufficient Information sharing and Insufficient Information sharing. Pilot data indicated a higher PDIT score in the case of Sufficient Information sharing (3.85) than in case of Insufficient Information sharing (2.34). Conducted t-test showed that this difference was significant (t=6.19, and p-value < 0.001). Thus, the vignettes worked correctly, and respondents understood them adequately. In addition, received results indicated a positive relationship between Information sharing and PDIT preliminary supporting H1. Lastly, the Pearson's correlation coefficients were examined. As seen from the Table 4.12 below, Pearson correlations between Trust and DDIT was positive (0.24) not supporting H2, while correlation between Product importance and DDIT was positive (0.22), supporting H2b.

	ECCL	DO	Trust	PI	PDIT1	DDIT	DIS
ECCL[8]	1	0.21	-0.07	0.10	0.00	-0.01	-0.03
DO[9]	0.21	1	0.18	0.38	0.11	0.02	0.20
Trust[10]	-0.07	0.18	1	0.47	0.61	0.24	0.67
PI[11]	0.10	0.38	0.47	1	0.13	0.22	0.26
PDIT1	0.00	0.11	0.61	0.13	1	0.19	0.90
DDIT	-0.01	0.02	0.24	0.22	0.19	1	0.14
DIS	-0.03	0.20	0.67	0.26	0.90	0.14	1

Table 4.13 Pearson Correlation Coefficients from Pilot Study One

Pilot Study One conclusion. Based on Pilot study One, several changes were made in the survey. Several items were added to "Detailed orientation" scale (5 items) and "E-commerce comfort level" (2 items). The number of vignettes was increased to 6 to introduce three levels of Information sharing ("insufficient", "sufficient", and "excessive").

4.6.2. Pilot Study Two

4.6.2.1 Pilot Study Two Data Quality

Respondents. The second Pilot study (Pilot Study Two) was conducted in May 2023. The respondents in this study were undergraduate business students at a large public university in the southeastern region. The sample for Pilot Study TWO was also comprised exclusively of business school students from a large public university in Southeast USA. 106 total respondents filled out our questionnaire. Considering that estimated time for filling out the questionnaire was 1200 seconds, 10 respondents with survey duration time of above 3*1200 seconds (1 hour) and 6 respondents who completed survey in less than 1/3 of the median time (<300 seconds) were

[8] ECCL – E-commerce comfort level
[9] DO – Detail orientation
[10] Trust – Trust in e-retailer
[11] PI – Product importance

removed due to unrealistic times for completion the survey. The survey included six attention check questions. The 27 respondents of 90 didn't pass attention check (around 30%), therefore only 63 respondents were selected for further analysis.

4.6.2.2 Main Statistical Analysis. Structural Equation Modeling

After data cleaning, the Structural Equation Modeling (SEM) approach was used to further validate the survey instruments and test the relationships in the main research framework (*Figure 3.1*). SEM is a comprehensive statistical data analysis technique that is used for instrument validation and hypothesis testing in business and behavioral research (Chau, 1997; Hoyle, 1995) and has gained widespread popularity in management sciences as well. A wide variety of constructs in MIS, for example, "user attitude" or "user satisfaction," are latent constructs (unobserved constructs with observed indicators) (Chau, 1997). SEM is effective for measuring and testing these latent constructs. The constructs from the research model that are not manipulated in the vignettes are latent (e.g., Detail orientation, PDIT, DDIT, DIS, etc.); thus, the SEM approach was used to test the hypotheses for the dissertation.

Additionally, due to the relatively small sample size of Pilot Study Two (63 total responses), and the relatively large number of relationships in the model, we used the Partial least squares (PLS) approach of SEM (PLS-SEM) (J. F. Hair Jr et al., 2019) to estimate the basic research model. PLS was chosen as it has some advantages that are beneficial in case of the Pilot Study Two for this dissertation: it does not require a large sample size (but can work with large samples also); it can work when data are not normally distributed; and it can work with formative constructs (Goodhue et al., 2012). Additionally, PLS-SEM doesn't require the estimation of how good the model fits the data using fit indices. Instead, the model quality is

estimated by loadings, construct reliability, validity, etc. (J. F. Hair Jr et al., 2021). Further, in the case of the chosen PLS approach, formal indicators of the model fit can be unreliable. Therefore, Hair Jr et al. (2021) proposes to evaluate the PLS model fit in several steps: 1) to assess the indicator reliability; 2) to assess the internal consistency of the latent construct included in the model; 3) to assess convergent validity; 4) to evaluate discriminant validity. Considering all the facts described above, it was concluded to be a more appropriate approach for the current methods section of this research.

Construct reliability. For the first step of Pilot Study Two data analysis, indicator reliability for the constructs was estimated using item loadings (J. F. Hair Jr et al., 2021). In the model based on Pilot Study Two data, several items within the Detail orientation scale had loadings of < 0.4 and, thus, were removed from the model (J. Hair Jr et al., 2022). In addition, the construct Detail orientation had a low reliability $\alpha<0.6$ for exploratory scales (0.7 for well-established scales) (J. F. Hair Jr et al., 2021). As an additional check, the same model was re-estimated using a larger sample (including respondents who didn't pass the attention check), but in this case, several items for the Detail orientation scale had loadings of <0.5. Considering that items with low loadings should be removed from the model (Awang, 2012; J. F. Hair Jr. et al., 2010), all the items with loadings of <0.5 were removed. See Appendix D for the results of this adjusted model. The diagram of the model is presented in Appendix E.

According to Appendix D, all loadings were large 0.5 indicating that the model have no problematic items (J. F. Hair Jr. et al., 2010). Moreover, 26 of 33 (78.8%) loadings were larger than 0.708, indicating that the model has around 80% of "ideal items" (J. F. Hair Jr. et al., 2010) or items with acceptable item reliability which is measured by squared loadings (J. F. Hair Jr et

al., 2021). Several items had loading <0.7 (in majority from Detailed orientation scale). Considering that items with loadings <0.7 can be considered as acceptable in non-established scales (Hulland, 1999), all items depicted in Appendix A were used in the SEM model for the final data.

Construct internal consistency. The internal consistency of the constructs was explored using Cronbach's α and composite reliability Jöreskog's rho_c statistics (known also as ω) (J. Hair Jr et al., 2022). Product importance had α of < 0.7 (met the threshold recommended by Nunnally (1978)) but exceeded a value of 0.6 (acceptable level for newly developed exploratory constructs according to J. F. Hair Jr et al. (2021) , the second problematic construct was Detail orientation, which after adjusting, still had α=0.57 (<0.6). All other constructs had Cronbach's α values of >0.7. Since Cronbach's alpha is considered to be a lower assessment of internal consistency (J. F. Hair Jr et al., 2021), we have assessed all the Jöreskog's rho_c statistics values, which exceeded the 0.70 proposed by Fornell and Larcker (1981) as an acceptable level of composite reliability. Considering rho_c for Detail orientation was > 0.7, this construct was approved for the final questionnaire, but two items were added to this scale, considering possible further issues with the reliability of this scale.

Construct convergent validity. To explore convergent validity, the average variance extracted (AVE) was estimated for the constructs. As reported in Appendix D, all the constructs, excluding E-commerce comfort level, had AVE values higher than the acceptable level of 0.5 proposed by J. F. Hair Jr. et al. (2010). Thus, the model indicated acceptable convergent validity of Pilot Study Two data, while the E-commerce comfort level had AVE of 0.455 that was close to 0.5.

Construct discriminant validity. To support discriminant validity, any constructs should have the squared root of AVE greater than any of its correlation coefficient with any of the other constructs (Awang et al., 2015). All constructs had the AVE values higher than all of their correlations. Additionally, correlations among all the latent constructs were lower than 0.85, indicating that there was no redundancy in constructs (Awang, 2012), excluding DIS and PDIT. Thus, the model based on Pilot Study Two data indicated acceptable discriminant validity levels. J. F. Hair Jr et al. (2021) recommend heterotrait–monotrait ratio (HTMT) of correlations as a better alternative to comparisons correlation between construct and AVE. The HTMT is calculated as the average value of the indicator correlations across latent constructs (the heterotrait–heteromethod correlations) relative to the (geometric) mean of the average correlations of the indicators, which measure the same construct (the monotrait–heteromethod correlations) (J. Hair Jr et al., 2022). According to Henseler et al. (2015), an HTMT of < 0.9 is acceptable for conceptually close constructs and an HTMT of < 0.85 – for conceptually different constructs. All HTMT values were <0.85, excluding HTMT between DIS and PDIT (0.97), confirming that there could be an essential overlap between DIS and PDIT but supporting discriminant validity for all other constructs.

Preliminary hypotheses testing. As the last step of data analysis in Pilot Study Two, the structural model, which included relationships between construct (shown in Figure 4.3) was assessed. At first, a possible collinearity issue was investigated as a necessary step in PLS structural model evaluation (J. Hair Jr et al., 2022). All calculated VIF values were < 5, which indicated no issues with multicollinearity.

To test the explanatory power of the model, R^2 values were investigated. According to J. F. Hair Jr et al. (2021), R^2 values of > 0.75 correspond to substantially high predicted possibility, between 0.75 and 0.50 – correspond to moderate predicted possibility, and below 0.25 as weak predicted possibility. According to Figure 4.3, PDIT, DIS, and DDIT are endogenous. The R^2 value for PDIT was 0.73, for DIS was 0.88, and for DDIT was 0.35. Thus, the model had high predicted possibility for outcome latent variable PDIT and DIS and moderate for DDIT using Pilot Study Two data. Finally, the model was also tested using new outcomes added after Pilot Study One (Total purchase information satisfaction (4 items), Total purchase process satisfaction (4 items), and Total online purchase satisfaction (4 items). Results there indicated small differences.

As a final stage of Pilot Study Two, path analysis was performed to test the hypotheses from the research model. If the corresponding path coefficients significantly differ from zero, then the corresponding effects can be considered significant. Taking into account PLS-SEM is a non-parametric method, bootstrapping (1000 replications) was used to calculate the standard errors of the path loadings. According to Ravand & Baghaei (2016), the parameter evaluations received within PLS method which are more than twice are larger their standard errors could be considered significantly different from zero at the significance level of 0.05. Also, the path coefficient is considered significant if zero doesn't fall into bootstrapped 95% CI. Table 4.13 reports path analysis results.

Hypotheses	Path	Bootstr path coeff	SD	T-stat	lower 95% CI	upper 95% CI
Hypothesis 1: Information sharing will increase PDIT: *H1a – increase from insufficient to sufficient level will increase PDIT* *H1b - increase from sufficient to excessive level will increase PDIT*	Sufficient_information-> PDIT	0.79	0.0748	10.53	0.63	0.92
	Excessive_information-> PDIT	0.54	0.1061	5.05	0.32	0.73
(H2a) trust in e-retailer will have a negative effect on DDIT – increase in the trust will lead to decreased levels of DDIT;	TRUST -> DDIT	-0.23	0.12	-1.88	-0.46	0.01
(H2b) Product importance will have a positive effect on DDIT – an increase in importance will lead to increased levels of DDIT.	Product.import -> DDIT	0.12	0.13	1.05	-0.17	0.36
(H3a) for the customers with high Detail orientation, the relationship between Situational characteristics and DDIT will be stronger; and for the customers with low Detail orientation, the relationship between Situational characteristics and DDIT will be weaker;	Product.import* Det.Or-> DDIT	0.08	0.15	0.57	-0.22	0.38
	TRUST*Det.Or -> DDIT	0.16	0.16	1.38	-0.19	0.46
(H3b) for customers with high e-commerce comfort level, the relationship between Situational characteristics and DDIT will be stronger; and for the customers with a low e-commerce comfort level, the relationship between Situational characteristics and DDIT will be weaker.	Product.import* E-comm. comf. lev -> DDIT	-0.04	0.14	-0.40	-0.33	0.24
	TRUST*E_com. comf.lev -> DDIT	0.02	0.13	0.11	-0.24	0.27

Hypothesis 4**:** PDIT will have a positive relationship with DIS.	PDIT -> DIS	0.94	0.02	52.47	0.91	0.98
Hypothesis 5: for customers with high level of DDIT, the relationship between PDIT and DIS are stronger (more positive)	PDIT*DDIT -> DIS	0.01	0.03	0.28	-0.04	0.06

Table 4.14 Path Analysis Results (Pilot Study Two, 63 Respondents)

Hypothesis One (H1). As mentioned in the Methods section of this dissertation, individual testing of the five dimensions of Information sharing was out of the scope of this dissertation due to the extremely large sample size that would be needed. Therefore, the dimensions were combined into three levels of Information sharing to show the proposed increases in PDIT when increasing the Information sharing. Therefore, we have operationalized the proposed relationship by splitting the H1 into two parts:

- H1a – the Increase in Information sharing pulled construct from "insufficient" to "sufficient" will lead to increase of PDIT.
- H1b - the Increase in Information sharing pulled construct from "sufficient" to "excessive" will lead to increase of PDIT.

Hypothesis 1 was partially supported. Figure 4.1 illustrates the effect of Information sharing on PDIT. As shown in Figure 4.1, the "sufficient" level of Information sharing significantly and positively affects PDIT compared to the "insufficient" level of Information sharing. If shared information becomes excessive, then PDIT decreases, but still is higher than for the "insufficient" level of Information sharing (the correspondent coefficient is positive β=0.54 and the 95% confidence interval (CI) doesn't include zero).

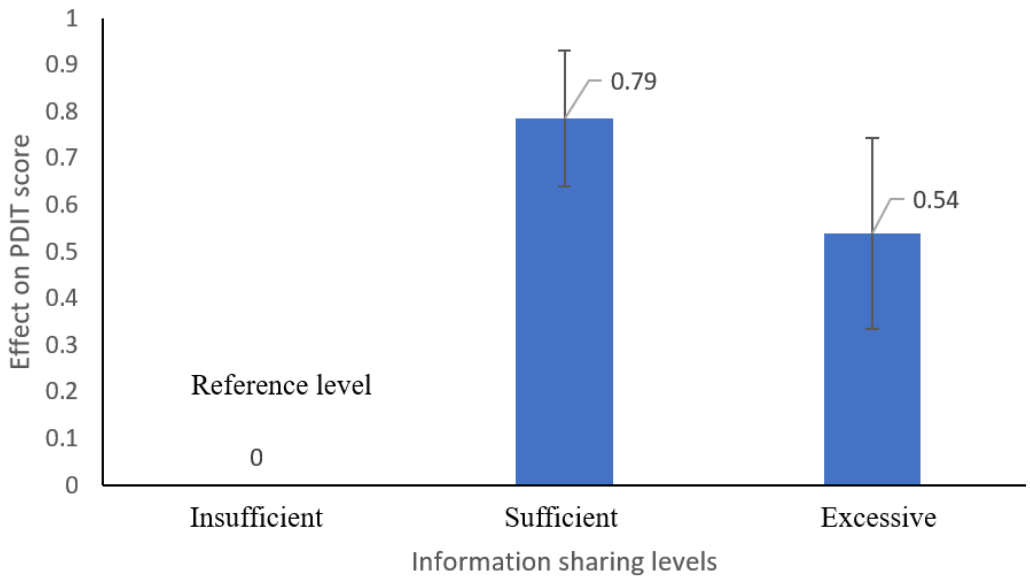


Figure 4.1 Effect of Information Sharing on PDIT[12]

Hypothesis Two (H2). Pilot Study Two data was analyzed to test the sub hypotheses of H2. H2a testing showed a negative coefficient of the relationship between Trust and PDIT in line with the hypotheses, however the 95% CI contained zero, which meant that the relationships were statistically insignificant. We assumed that this insignificance was due to a small sample size and expected it to increase in the Final full data collection round. H2b hypothesis testing yielded a positive coefficient (in line with the hypothesized relationships), yet the 95% CI contained zero as well. Similarly to H2a, we assumed that this insignificance was due to a small sample size and expected it to increase in the Final full data collection round.

Hypothesis Three (H3). H3 was concerned with individual characteristics and their influence on the relationship between situational characteristics and DDIT. H3a coefficients were

[12] the low level of Information sharing is a reference level for comparison with others

both positive (in line with the proposed relationship in the hypothesis), but 95% CIs contained zero in both cases). Thus, these were statistically insignificant results. Similar to H2, we expected significance to increase with a larger sample size.

Hypothesis Four (H4). H4 examined the relationship between PDIT and DIS. H4 was supported, coefficient was positive, and 95% CI did not contain zero.

Hypothesis Five (H5). H5 examined how different levels of DDIT influence the relationship between PDIT and DIS. We have expected that the relationship between PDIT and DIS would be stronger for customers with high levels of DDIT. Hypothesis testing showed that the coefficient was positive (in line with H5), but the 95% CI contained zero. Thus, the relationship was statistically insignificant. We assumed that this insignificance was due to a small sample size and expected it to increase in the Final full data collection round.

Model's explanatory power. To assess the explanatory power of the model, R-squared values were investigated. R^2 values of >0.75 correspond to substantially high predictive power, the values between 0.75 and 0.50 show moderate predictive power, and the values below 0.25 as weak predictive power (J. F. Hair Jr et al., 2021; Henseler et al., 2009). According to our research model, the following constructs are endogenous: PDIT, DIS, and DDIT. The R squared value for PDIT was 0.73, for DIS was 0.88, and for DDIT was 0.35. Thus, the model has high predicted possibility for outcome latent variable PDIT and DIS, and moderate for DDIT.

Survey revision for full-scale data collection. Based on the data analysis from Pilot Study Two, we revised the survey in a several ways. First, inconsistency was detected in the Product importance that was manipulated in the text of the vignettes using two levels ("high" and "low").

In the survey question, Product importance was operationalized with a 5-point Likert scale, which lead to some issues with results. Thus, it was decided to change the Likert scale to two options only (“high Product importance” and “low Product importance”), which would improve the consistency of the survey results. Second, three items were deleted from Detail orientation. Third, six new vignettes were added to cover the complete pull of combination options for the constructs of Information sharing, Product importance, and Trust in e-retailer. The Final data collection round would consist of 12 vignettes total. Lastly, final changes were made to the wording of the vignettes and questions to ensure no grammatical errors occur in the survey.

4.7 Final Round of Data Collection

4.7.1 Amazon Mechanical Turk and its Use in Academic Research

Writing academic research involves conducting a systematic, detailed investigation of a specific topic, analyzing existing literature on the topic, and, most importantly, collecting data and analyzing it while presenting findings in a structured, scholarly manner. Amazon Mechanical Turk (MTurk) is a valuable and widely used platform for data collection in various academic research domains. This section provides an overview of MTurk's utility in data collection and, thus, explains the reasoning behind using it for the current dissertation.

Amazon MTurk is an online crowdsourcing platform that allows researchers to collect data for their studies by posting Human Intelligence Tasks (HITs) on the website. Workers (Turkers) complete these tasks in exchange for compensation (Mason & Suri, 2012). Researchers can leverage this platform to collect data for a variety of research purposes, including surveys,

experiments, and content analysis. Utilizing MTurk for data collection offers several advantages over alternative commercial platforms, such as Qualtrics. These benefits encompass the acquisition of high-quality data, the cost-effectiveness of the data collection process (Chandler & Shapiro, 2016), and samples of participants that are closely representative of their respective populations (Roulin, 2015). Previous studies have noted that data obtained from MTurk is on par with data derived from student samples and surpasses the quality of data from other professional platforms like Qualtrics and Lightspeed (Kees et al., 2017). Additionally, in a separate investigation, Smith et al. (2016) conducted a comparative analysis between MTurk participants based in the United States and those located elsewhere, in contrast. The findings revealed that MTurk participants from the US required less time to respond to survey items while maintaining quality of the replies. They also accurately responded to attention-check questions randomly placed throughout the surveys (Smith et al., 2016). In general, the results of these studies support the viability of MTurk as a source for procuring high-quality data. For the final data collection round, therefore, we have set several worker requirements that were essential for collecting data of high quality. We have limited the location of the workers to the USA only; have requested the HIT approval rate for workers taking the survey to be over 98%, and for the workers taking the survey to have over 500 approved HITs.

Academic researchers highlight the importance of study design when employing MTurk for data collection. To collect data of high quality, the researchers must follow specific guidelines for the creation of HITs and the design of the survey (Horton et al., 2011). First, quality control measures must be in place. One of the possible mechanisms for quality control is attention check questions. Three attention check questions were placed in different parts of the

survey that was approved for the Final data collection round. If the Turker failed to answer any of the attention check questions correctly, the survey ended, their results were not recorded, and no compensation was provided. Additionally, a first smaller batch of HITs was published prior to the full-scale data collection to ensure no issues with the study design were present (Horton et al., 2011).

To ensure the quality of responses, we have created a survey using the Qualtrics platform and posted the link to it in the HITs published on MTurk. Clear and detailed instructions were provided to ensure that Turkers understood the survey and its requirements. Additionally, we have provided them with informed consent information, explained the nature and the purpose of the study, and how the data would be used. The survey did not ask any questions that would allow the workers to be identified, thus their responses were anonymous. However, IP addresses were recorded to ensure each Mturker only takes the survey once and does not duplicate the efforts. The workers were compensated for the survey at an average of $1.75 per answer.

4.7.2 Survey Design and the use of Qualtrics

To test the research model, we have designed and administered a survey using the Qualtrics platform. Researchers nowadays increasingly use online data collection to gather necessary data for their work. Qualtrics, one of the possible survey software websites, is a powerful and widely used tool for designing surveys for academic research. It aids in administering a wide range of different types of data collection procedures, including questionnaires to randomized experiments (Carpenter et al., 2019).

The final version of the survey was designed in the following way. First, survey questions were divided into three blocks. Block One consisted of demographic questions. Block Two was focused on gathering data on the personal characteristics of respondents (their E-commerce comfort level and Detail orientation). Lastly, Block Three, the main part of the study, contained all the vignettes and the questions pertaining to them. For the full version of the survey, please see Appendix F. Questions within each block were displayed to respondents in random order to avoid response bias (Paulhus, 1991). Additionally, the sub question order was randomized as well. The survey contained three attention check questions, which were used to improve data quality (for example, “Please, select “strongly disagree” for this question). If a respondent failed to answer any of the attention check questions, the survey ended, and the response was not recorded. Lastly, to avoid any missing data, we used the Forced response option in Qualtrics, which did not allow participants to proceed to the next page if they missed an answer to the question.

CHAPTER 5: RESULTS

5.1 Introduction

The Results chapter is one of the most critical sections of this dissertation. Here, in Chapter Five, we present the findings of our research. We do so by first describing the characteristics of the final sample size. Then, we discuss the process of the new measure development. Next, we talk about the measurement model. Lastly, describe the data analysis processes and results of the hypotheses testing.

5.2 Sample Characteristics

Data collection for the Final round was conducted using Amazon MTurk service. To test the research model, we have created a survey using Qualtrics, a cloud-based platform for survey creation. We have included several safeguards to ensure the high quality of the responses. First, we recorded the user's IP address to prevent multiple submissions from the same individuals. Second, we have tracked how long each participant spent answering survey questions. Third, we have created a qualifier question for the respondents, which asked them whether they have shopped online before. Last, we have placed multiple attention check questions in different blocks of the survey to ensure that only respondents who paid close attention to the questions could finish it and get compensated for their effort.

The purpose of the study was explained to the participants in the published HIT postings on MTurk. The workers were assured anonymity of the survey, fair compensation for their effort, and given a link to the published Qualtrics survey. Additionally, they were told that they could

stop taking the survey anytime. They were asked to copy a Survey Completion Code given to them at the end of the Survey (if they passed all the attention check questions) and submit it to the MTurk HIT posting. Once the workers clicked on the survey, they were asked: “Have you purchased products or services online?” If they answered “No,” the survey ended, informing them that they did not meet the qualifications for it. If the participants answered “Yes,” they proceeded to answer the block of demographic questions, followed by the questions about the individual characteristics, and, lastly, the block of questions related to the vignettes. We have checked each submission to determine whether it met our quality standards. We have elected to remove the responses with a duration of less than 3 minutes.

There is no commonly accepted rule for calculating the minimal sample size for the SEM technique. In absolute terms, Kline (2023) recommends a minimal sample size of n=200, but the sample size should be larger in the case of complex models, such as the one examined in our dissertation (Kline, 2023). There is a rule of thumb that ten observations per indicator variable define a low bound of sample size in the case of SEM utilized in research (Nunnally, 1978). Initially, the model included 47 items for measuring latent constructs, translating to 470 as a minimum sample size. However, four control variables (age, gender, education, and employment status) and three dummy variables (Information sharing, Product importance, and Trust), which were defined from vignettes, were also included in the model. Thus, around 56 observed variables corresponded to a minimum of 560 respondents, according to Nunally (1967). Considering the complexity of our model (the model tested in this dissertation includes five moderation effects), the desired sample size was increased to approximately 700 respondents. In

addition, the PLS approach produces robust results even for small sample sizes (J. F. Hair Jr et al., 2021). Therefore, finally, the target sample size was set at 1000 respondents.

After data collection and cleaning processes, the final sample size included 711 respondents. The average age of respondents was 34.37 years. According to Table 5.1, most respondents were from the 23-30- and 31-40-year-old age groups (around 73%). The young and old respondents were not widely represented in the sample (4.1% for the youngest age group and 8.5% for age groups 50+, respectively).

Variable	N (%)
Age	
18-22	29 (4.1%)
23-30	280 (39.4%)
31-40	237 (33.3%)
41-50	104 (14.6%)
51-60	50 (7.0%)
60+	11 (1.5%)
Gender	
Male	383 (53.9%)
Female	327 (46.0%)
Non-binary/third gender	1 (0.1%)
Education	
Less than high school	1 (0.1%)
High school	50 (7.0%)
Bachelor's degree	456 (64.1%)
Master's degree	203 (28.6%)
Doctorate	0 (0.0%)
Other	1 (0.1%)
Employment	
Employed full-time	653 (91.8%)
Employed part-time	34 (4.8%)
Unemployed	5 (0.7%)
Student	19 (2.7%)

Table 5.1 Socio-Demographic Characteristics of Respondents

The proportion of males in the final sample collected was slightly higher than that of females. Only one respondent reported non-binary gender. The majority of respondents were highly educated with bachelor's and master's degrees (>90%), and almost all respondents worked full-time (around 92%). Considering that other employment groups had few respondents, the analysis did not include employment as a control variable. Age and education were recorded as continuous variables (less than high and high school groups were combined in one group).

5.3 Data Analysis Procedures

5.3.1 Use of PLS-SEM for Data Analysis.

The proposed hypotheses were tested empirically using a Partial Least Squares Structural Equation Modeling (PLS-SEM) technique in R (version 4.2.2)(R Core Team, 2022). PLS-SEM is very versatile and, for that reason, is widely used in different fields, such as social sciences, business, engineering, etc. Hair Jr et al. (2019),in their comprehensive work on the use of this approach, state that the researchers should select PLS-SEM:

- "When the analysis is concerned with testing a theoretical framework from a prediction perspective.
- when a complex structural model includes many constructs, indicators, and/or model relationships.
- when the research objective is to better understand increasing complexity by exploring theoretical extensions of established theories (exploratory research for theory development).
- when the path model includes one or more formatively measured constructs.

- when the research consists of financial ratios or similar types of data artifacts.
- when the research is based on secondary/archival data, which may lack a comprehensive substantiation on the grounds of measurement theory.
- when a small population restricts the sample size (e.g., business-to-business research), PLS-SEM also works very well with large sample sizes.
- when distribution issues are a concern, such as lack of normality; and
- when research requires latent variable scores for follow-up analyses." (J. F. Hair Jr et al., 2019, p. 5)

PLS-SEM was chosen for this dissertation for several vital reasons. First, PLS-SEM does not require a large sample size (but works well with large sample sizes, too) (Kock & Hadaya, 2018). Second, the use of this technique does not require the researchers to estimate the model fit using fit indices (J. F. Hair Jr et al., 2019). Instead, the model quality is estimated by calculating loadings, construct reliabilities, validity, etc. (J. F. Hair Jr et al., 2019, 2021). Third, PLS-SEM can handle and analyze complex models (Ringle et al., 2012). Firstly, the most important reason for using PLS-SEM is as follows: as the research model in this dissertation includes constructs that are latent formative (e.g., DDIT), and other constructs are latent reflective constructs (e.g., PDIT), we have no other option but to use PLS-SEM. PLS is the only approach that can work simultaneously with both types of constructs (Afthanorhan, 2014; J. F. Hair Jr et al., 2021; Henseler et al., 2015).

In the case of the PLS approach, formal indicators of model fit can be considered questionable and unreliable. Therefore, J. F. Hair Jr et al. (2021) suggest evaluating the PLS measurement model fit in several steps: 1. assess indicator reliability; 2. assess the internal

consistency of latent constructs included in the model; 3. assess convergent validity; 4. evaluate discriminant validity. We have followed these steps to secure high-quality results. On top of that, moderation effects were estimated by introducing corresponding interaction terms into the model, which is a usual practice for investigation of moderation effects within SEM (Becker et al., 2018). A two-stage approach was used for this. In the first stage, latent variables scores were estimated within the measurement model, and then the interaction term was generated using latent variables scores (Hair et al., 2021).

5.3.2 Internal Consistency of the Scales

The research framework included several latent constructs (DIS, PDIT, E-commerce comfort level, and Detail orientation), measured using multiple-item scales. All these constructs were reflective, excluding DDIT, designed as a formative construct. The main difference between DDIT and other reflective constructs is that each item included in DDIT caused it independently, while, for example, in the case of PDIT and other reflective constructs, a higher score (or level) of any latent constructs simultaneously caused a higher score of all the indicators (because the reflective construct is "reflected" in all its indicators) (Freeze & Raschke, 2007). As the first stage of data analysis, the internal consistency of all the reflective latent constructs was investigated. For this, we have estimated Cronbach's alpha values at the initial stage of analysis using all items included in the scales (Table 5.2).

	Cronbach's alpha	# of items
E-commerce comfort level	0.78	7
Detail orientation	0.82	11
DIS	0.94	5
PDIT	0.86	5

Table 5.2 Internal Consistency of Latent Constructs at the Initial Stage

According to Table 5.2, Cronbach's alpha values of all constructs exceeded the threshold of 0.7 (Nunnally, 1978), indicating an acceptable internal consistency of the scales used to measure constructs.

5.3.3 Measurement model

The SEM model was estimated according to the research framework of this dissertation. To test the hypotheses suggested using PLS-SEM, we have included a measurement model that was tested. Age, Gender, and Education were included as control variables that could affect our outcome variable (DIS). First, the measurement model was examined according to the framework proposed by J. F. Hair Jr et al. (2021). According to this framework, indicator reliability should be estimated using loadings within the measurement model for all the reflective constructs and indicator weights and their significance for formative constructs. Loadings for reflective constructs are reported in Table 5.3.

According to Table 5.3 , there were several loadings with values of < 0.4 that should have been removed from the measurement model (J. Hair Jr et al., 2022) (loadings of items Q7_4 from E-commerce comfort level scale; and Q8_2, Q8_5, Q8_7, Q8_10 from Detail orientation scale). Starting with the lowest, these loadings were removed one by one, as recommended by Awang (2012). Additionally, some loadings were in the range of 0.4-0.708 and could also be considered as candidates for removal in case such removal improved internal consistency or convergent validity of the measurement model.

	PDIT	Detail orientation	E-commerce comfort level	DIS
Q15_1	0.83			
Q15_2	0.82			
Q15_3	0.82			
Q15_4	0.74			
Q15_5	0.83			
Q14_1				0.90
Q14_2				0.56
Q14_3				0.92
Q14_5				0.91
Q14_6				0.93
Q8_1		0.72		
Q8_2		0.26		
Q8_3		0.66		
Q8_4		0.75		
Q8_5		0.30		
Q8_6		0.84		
Q8_7		0.34		
Q8_8		0.43		
Q8_9		0.80		
Q8_10		0.35		
Q8_11		0.81		
Q5_1			0.78	
Q5_2			0.50	
Q6_1			0.57	
Q7_1			0.75	
Q7_2			0.48	
Q7_4			0.33	
Q7_5			0.90	

Table 5.3 Loadings of Reflective Constructs Within the Initial Measurement Model

All constructs had acceptable internal consistency (Table 5.2). However, the Average Variance Extracted (AVE) for the Detail orientation scale was 0.37, and for the E-commerce comfort level – 0.41. These values were lower than an acceptable threshold of 0.5, which is usually used for assessing convergent validity (Awang, 2012; J. F. Hair Jr et al., 2021). Therefore, items Q7_2 (from the E-commerce scale) and Q8_8 (from the Detail orientation

scale) were also removed. After these removals, the model (Appendix G) was re-tested again and did not have any other items with loadings of < 0.4. Additionally, only four of the 21 total loadings had values of < 0.7n (see table 5.4), indicating around 80% of "ideal items" (J. F. Hair Jr. et al., 2010). Four loadings were lower than 0.6 but larger than 0.5, indicating "acceptable" items, according to Hair Jr. et al. (2010).

	Standardized loadings	**Cronbach's alpha**	**rhoC**	**AVE**	**rhoA**
PDIT		0.87	0.90	0.65	0.87
Q15_1	0.83				
Q15_2	0.82				
Q15_3	0.82				
Q15_4	0.74				
Q15_5	0.83				
DIS		0.90	0.93	0.73	0.90
Q14_1	0.90				
Q14_2	0.55				
Q14_3	0.92				
Q14_5	0.92				
Q14_6	0.93				
Detail orientation		0.86	0.90	0.60	0.88
Q8_1	0.72				
Q8_3	0.64				
Q8_4	0.75				
Q8_6	0.87				
Q8_9	0.80				
Q8_11	0.83				
E-commerce comfort level		0.75	0.83	0.51	0.83
Q5_1	0.77				
Q5_2	0.50				
Q6_1	0.56				
Q7_1	0.76				
Q7_5	0.91				

Table 5.4 Loadings and Validity Indicators for Reflective Constructs Within the Final SEM Model

For the formative construct DDIT, the significance of weights was examined according to J. F. Hair Jr et al. (2021). As shown in Table 5.5, all weights had the value of t-statistics > 1.96, and the 95% Confidence Interval did not include zero, which supported the statistical significance of all the weights (J. Hair Jr et al., 2022).

Items	Weights (Original Est.)	Weights (Bootstrap Mean)	T Stat.	2.5% CI	97.5% CI	VIF
Q12_1	0.16	0.16	5.62	0.10	0.21	2.90
Q12_2	0.21	0.21	9.50	0.16	0.25	2.65
Q12_3	0.19	0.19	7.52	0.14	0.23	3.67
Q12_4	0.15	0.15	5.95	0.10	0.20	2.69
Q12_5	0.41	0.41	13.81	0.35	0.47	3.89

Table 5.5 Item Weights for DDIT

As the next step, convergent validity was examined using AVE. AVE values of all constructs after adjusting the measurement model were >0.5 (Table 5.4), indicating the acceptable level of 0.5 of convergent validity (J. F. Hair Jr. et al., 2010). Then, discriminant validity was checked using Fornell-Larcker criteria (Fornell & Larcker, 1981). As shown in Table 5.6, all squared roots of AVE values (shown in the diagonal) were greater than any correlation coefficient with any of the other constructs, supporting discriminant validity (Awang et al., 2015).

	PDIT	Detail Orient.	E-comm. comf.lev	DIS
PDIT	**0.81**			
Detail orientation	-0.005	**0.77**		
E-comm. comf.lev	-0.03	0.55	**0.72**	
DIS	0.25	0.09	-0.01	**0.86**

Table 5.6 Discriminant Validity Evaluation (Fornell-Larcker criteria)[13]

Next, the correlations between all the latent constructs were lower than 0.85 (Table 5.6), thus indicating that there were no redundant constructs (Awang, 2012). Therefore, the model indicated an acceptable level of discriminant validity (J. F. Hair Jr et al., 2021). J. F. Hair Jr et al. (2021) recommend heterotrait–monotrait ratio (HTMT) of correlations as a better alternative to comparisons correlation between construct and AVE. The HTMT is calculated as the average value of the indicator correlations across latent constructs (the heterotrait–heteromethod correlations) relative to the (geometric) mean of the average correlations of the indicators that measure the same construct (the monotrait–heteromethod correlations) (J. F. Hair Jr et al., 2021). According to Henseler et al. (2015), HTMT > 0.9 is acceptable for conceptually close constructs, and HTMT > 0.85 – for conceptually different constructs. As shown in Table 5.7, all HTMT values were < 0.9, indicating no essential overlaps between constructs and supporting discriminant validity (Henseler et al., 2015).

	PDIT	Detail orientation	E-comm. comf.lev
Detail orientation	0.08		
E-comm. comf.lev	0.09	0.69	
DIS	0.28	0.11	0.06

Table 5.7 Discriminant Validity Evaluation Using HTMT

[13] The square root of AVE is on the diagonal and construct correlations on the lower triangle

Thus, as a conclusion, we can state that we have shown that the measurement model had acceptable: 1. indicators of reliability; 2. internal consistency of the constructs included in the model; 3. convergent and discriminant validity. All the above supported the high quality of the measurement model (J. F. Hair Jr et al., 2021).

5.3.4 Evaluation of the Structural Model

After we had completed the measurement model evaluation, a structural model that included relationships among constructs (shown in Figure 5.1) was assessed.

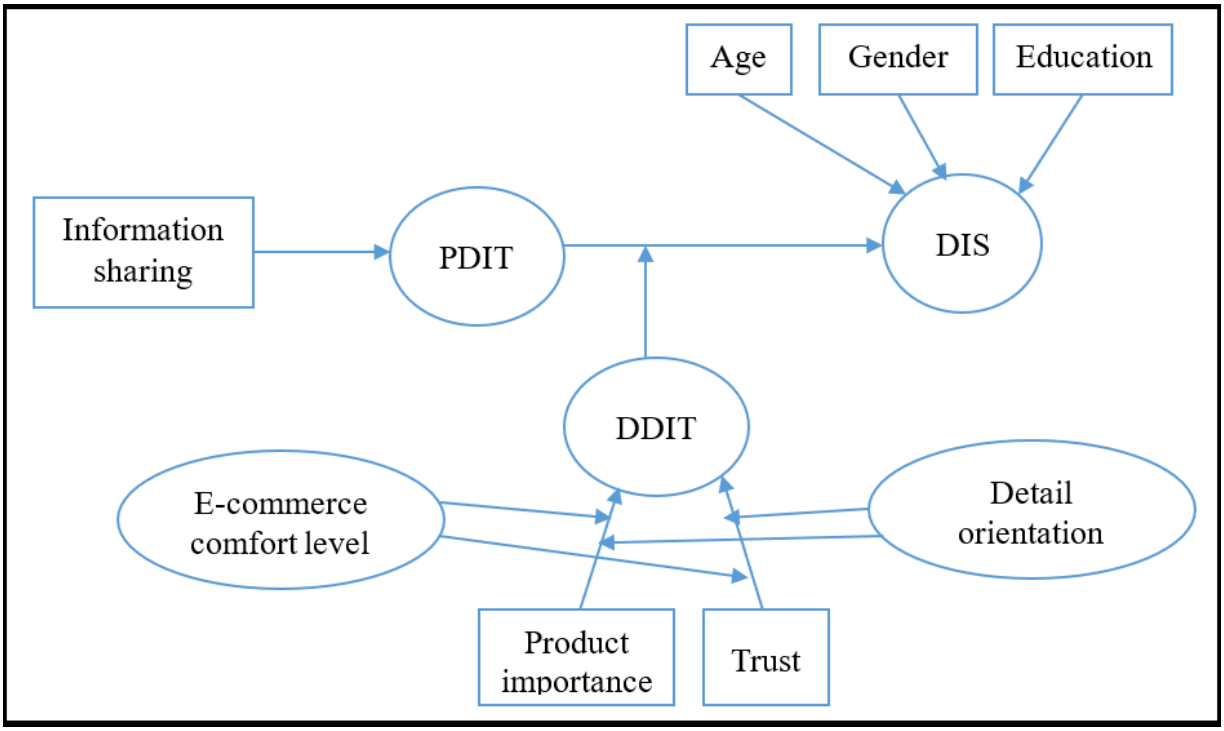


Figure 5.1 The Structural Model Diagram[14]

[14] Indicators used for measurement of the latent construct are not shown in the diagram

At first, a possible collinearity issue was investigated as a necessary preliminary step in PLS structural model evaluation (J. F. Hair Jr et al., 2021). In order to do so, the variance inflation factors (VIF) were calculated. According to Table 5.8, all VIF values were < 5, indicating no issues with collinearity of antecedents (J. F. Hair Jr et al., 2021).

	VIF
DIS as outcome	
PDIT	1.02
DDIT	1.00
PDIT*DDIT (moderation)	1.03
Age	1.10
Gender	1.03
Education	1.10
DDIT as outcome	
TRUST	1.81
Det. Or	3.26
TRUST*Det.Or (moderation)	1.73
E-comm. comf.lev	2.20
TRUST*E-comm.comf.lev (moderation)	1.67
Product. import	1.94
Product.import*Det.Or (moderation)	1.67
Product.import*E-comm.comf.lev (moderation)	1.82

Table 5.8 VIF Values for the PLS Structural Model

The path analysis test was performed to test the hypotheses in the next step. If the corresponding path coefficients differed significantly from zero, the related effects were considered significant. Considering that PLS is a non-parametric method, bootstrapping (1000 replications) was performed to calculate standard errors of the path loadings. The path coefficient was considered significant at a 0.05 significance level if zero did not fall into the bootstrapped 95% CI and t-statistics exceeded 1.96 (J. F. Hair Jr et al., 2021). Table 5.10 reports path analysis results.

	Bootstrap-ped path coefficient	SD	T-stat	lower 95% CI	upper 95% CI
Inform_Sharing_insufficient (baseline sufficient Information sharing) -> PDIT	-0.71	0.03	-27.36	-0.76	-0.66
Inform_Sharing_exessve (baseline sufficient Information sharing) -> PDIT	-0.81	0.02	-33.22	-0.86	-0.76
PDIT -> DIS	0.26	0.04	6.99	0.18	0.33
DDIT -> DIS	-0.02	0.04	-0.52	-0.09	0.06
PDIT*DDIT -> DIS	0.14	0.04	3.45	0.06	0.21
Age -> DIS	0.10	0.04	2.49	0.02	0.17
Gender Males (baseline Females -> DIS	0.04	0.04	1.22	-0.03	0.12
Education -> DIS	0.07	0.04	1.73	-0.01	0.15
TRUST -> DDIT	-0.83	0.02	-38.01	-0.87	-0.78
Det. Or -> DDIT	0.12	0.04	3.18	0.05	0.19
TRUST*Det.Or -> DDIT	-0.17	0.03	-5.14	-0.23	-0.10
E-comm. comf.lev -> DDIT	0.11	0.02	4.81	0.07	0.15
TRUST*E-comm.comf.lev -> DDIT	-0.09	0.02	-4.58	-0.12	-0.05
Product. import -> DDIT	0.05	0.02	2.35	0.01	0.09
Product.import*Det.Or -> DDIT	-0.02	0.03	-0.71	-0.08	0.04
Product.import*E-comm.comf.lev -> DDIT	-0.04	0.02	-2.41	-0.08	-0.01

Table 5.10 Path Analysis Results

According to Table 5.9, path coefficients for Insufficient Information sharing and Excessive Information sharing were negative and significant, indicating that Insufficient and Excessive Information sharing had a negative effect on PDIT compared to Sufficient Information sharing. These results supported H1a. H1b was not supported, as the path coefficient was negative and significant. The coefficient for Trust was negative and significant, supporting H2a. H2b was also supported because the path coefficient for Product importance -> DDIT was positive and significant. The path coefficient for PDIT-> DIS was positive and significant, supporting H4, and the path coefficient of the interaction term for PDIT*DDIT was positive and significant, supporting H5. As shown in Figure 5.2, for high values of DDIT, the slope for the effect of PDIT->DIS was steeper (larger) than for the lower values of DDIT.

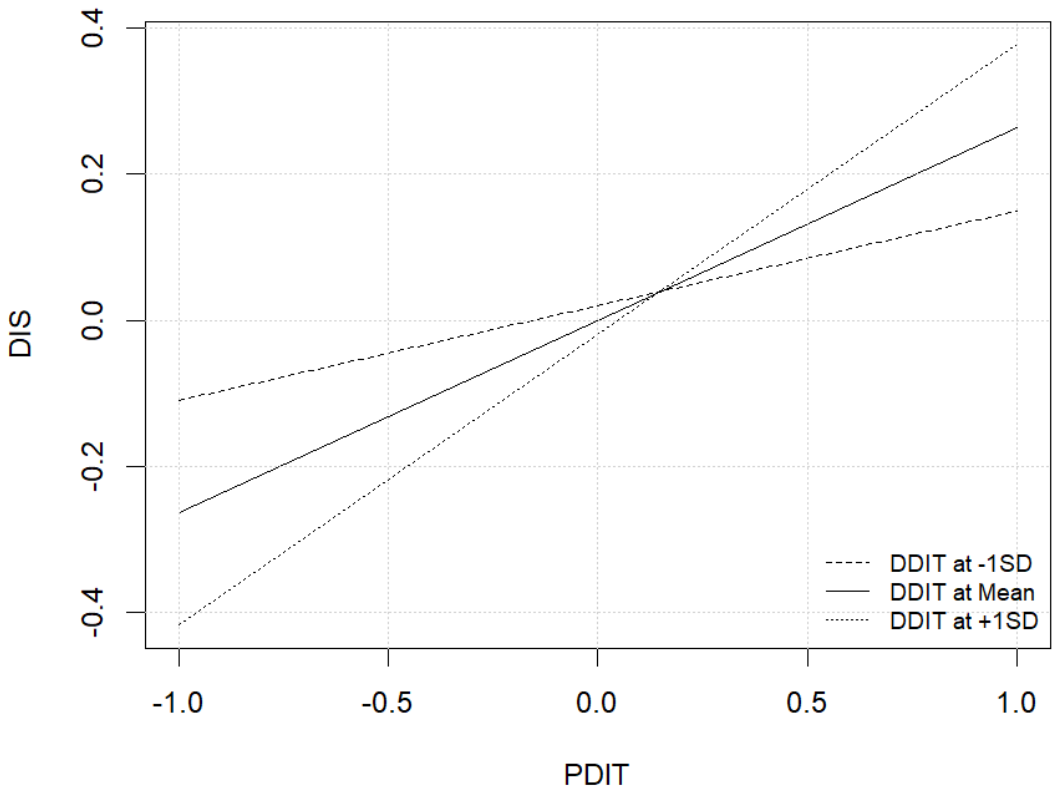


Figure 5.2 Effect of DDIT on the Relationship Between PDIT and DIS[15]

As shown in Table 9, the path coefficient of "TRUST*Det.Or -> DDIT" was negative and significant, indicating that higher levels of Detail orientation led to more negative effects of Trust on DDIT. In other words, it increases the magnitude of the impact of Trust on DDIT, supporting H3a (Figure 5.3).

[15] Standardized scores of PDIT and DIS are presented in the figure

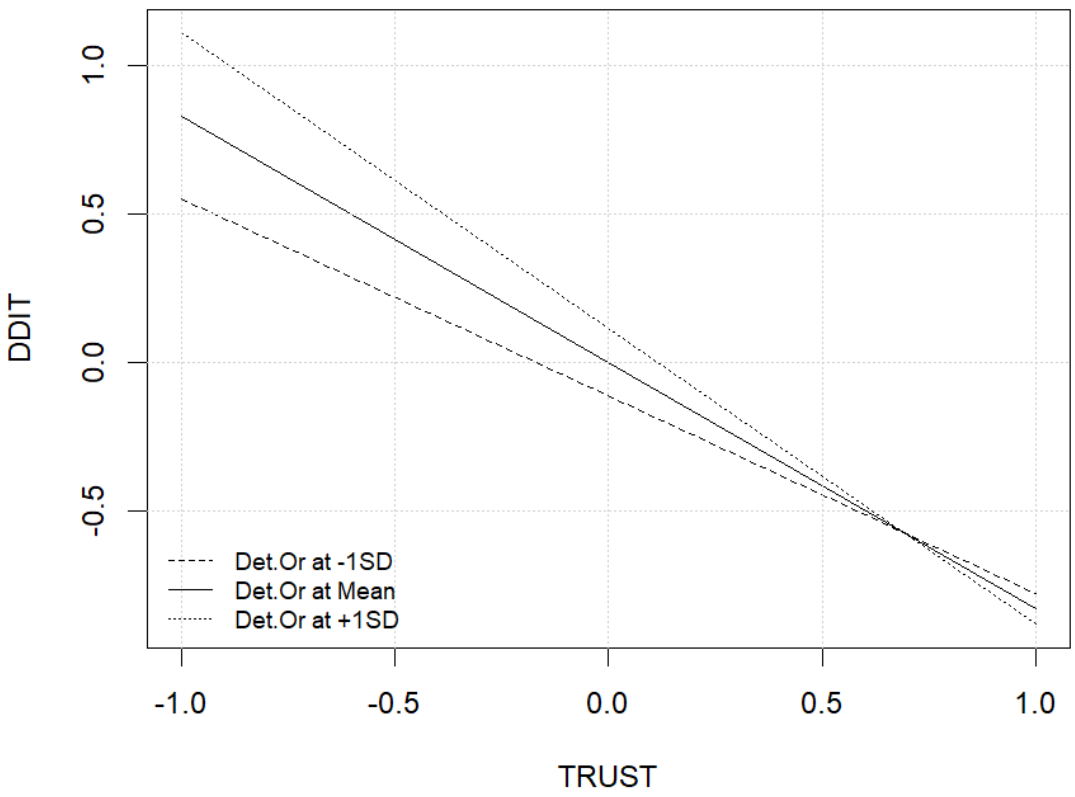


Figure 5.3 Effect of Detailed Orientation on the Relationship Between Trust and DDIT[16]

According to Figure 5.3 above, the decrease of DDIT when the Trust standardized score changes from -1 to 1 was larger for a high level of Detail orientation than the decrease of DDIT for the exact change in Trust at a low level of Detail orientation. On the other hand, the path coefficient "Product.import*Det.Or -> DDIT" was insignificant because its 95% CI included zero. The results pointed out the fact that the effect of Detail orientation on the relationship between trust and DDIT was statistically insignificant. Thus, H3a was only partially supported: it was supported for Trust, but Detail orientation did not have any significant effect on the relationships between product importance and DDIT. The path coefficient "TRUST*E-

[16] Standardized scores of PDIT and DIS are presented in the figure

comm.comf.lev “ was negative and significant. This indicated that for customers with high values of E-commerce comfort level, the magnitude of the effect of trust on DDIT increased (in other words, it became more negative), supporting H3b. As shown in Figure 5.4, the change of Trust at a high value of E-commerce comfort level caused a larger shift in DDIT compared with the exact change of Trust at a low E-commerce comfort level.

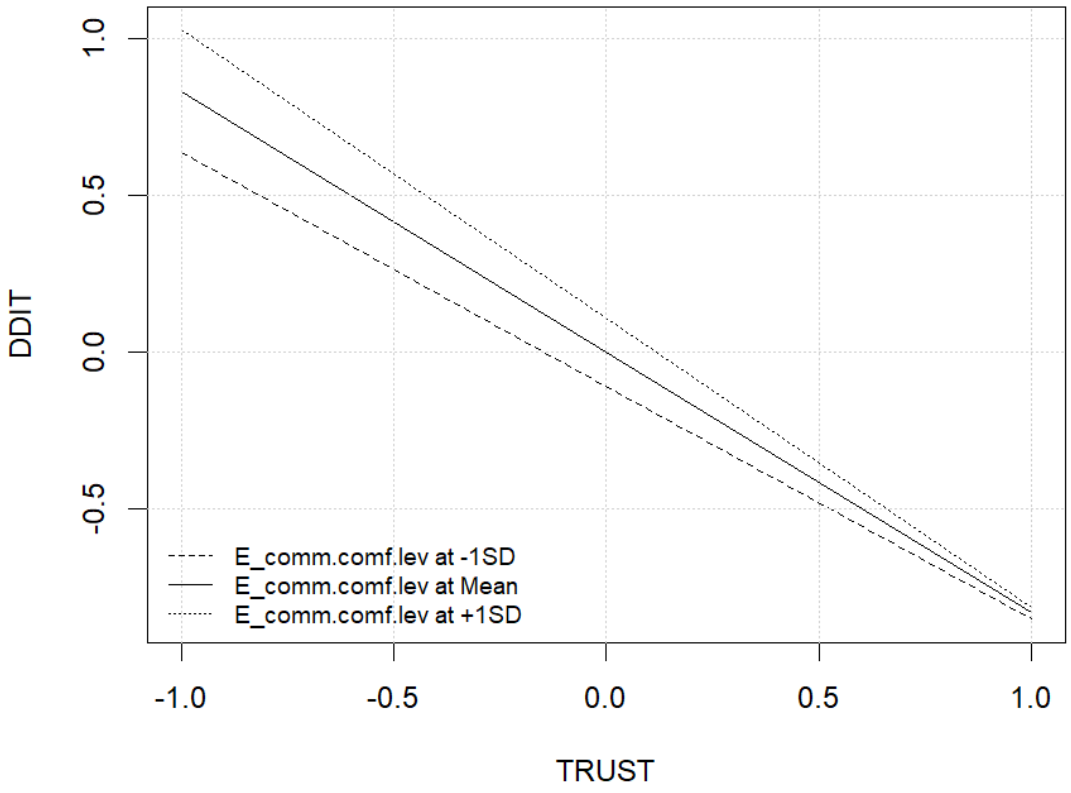


Figure 5.4 Effects of E-commerce Comfort Level on the Relationships Between Trust and DDIT[17]

[17] Standardized scores of PDIT and DIS are presented in the figure

The path coefficient “Product.import*E-comm.comf.lev -> DDIT” was significant and negative, indicating that the magnitude of effect of Product importance on DDIT decreased when E-commerce comfort level was high (see Figure 5.5).

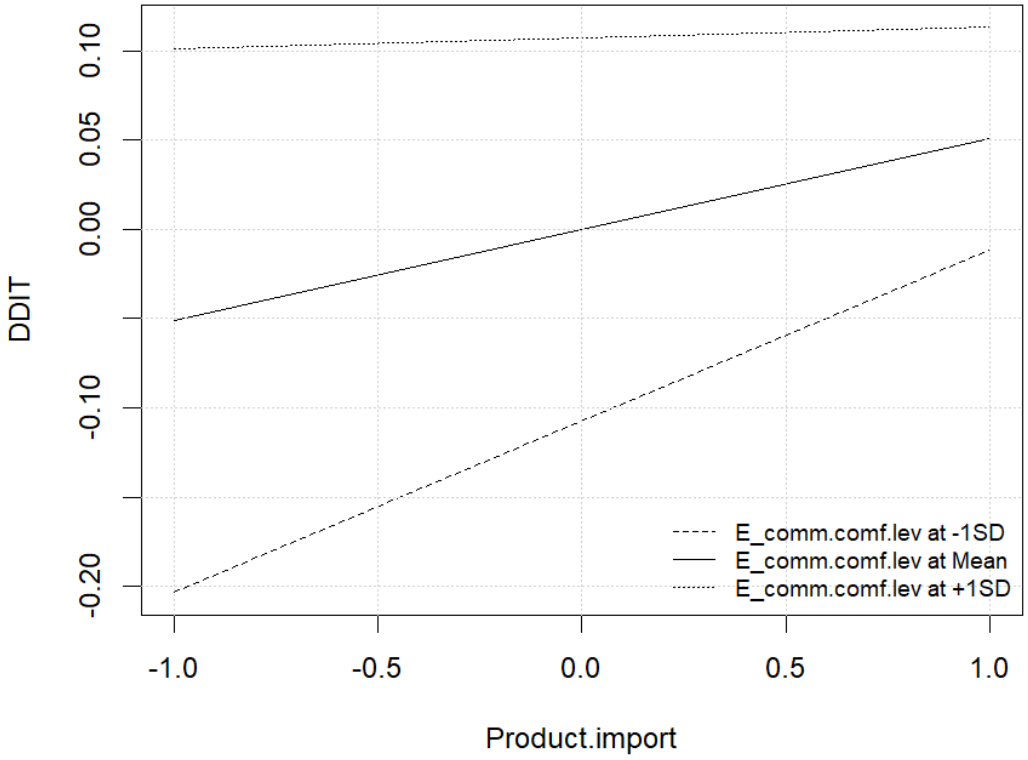


Figure 5.5 Effect of E-commerce Comfort Level on the Relationship Between Product Importance and DDIT[18]

As shown in Figure 5.5, the effect of Product importance on DDIT was much smaller at high values of E-commerce comfort level than at low values of E-commerce comfort level. These results did not support H3b. Thus, hypotheses H3a and H3b were partially supported.

[18] Standardized scores of PDIT and DIS are presented in the figure

To assess the explanatory power of the model, R-squared values were investigated. R-squared is commonly explained as a measure of the model's explanatory power ((Shmueli & Koppius, 2011) or its in-sample predictive power (Rigdon, 2012). According to J. F. Hair Jr et al. (2021), the models with R-squared values of above 0.75 are considered as having substantial predictive power. The models with R-squared values between 0.75 and 0.50 – have moderate predictive power, and the models with below 0.25 R-squared – have weak predictive power. Additionally, in social sciences, in particular, the R-squared of above 0.1 can be considered satisfactory as well (J. F. Hair Jr et al., 2021). According to Figure 5.1 above, we considered PDIT, DIS, and DDIT to be endogenous. The R-squared value for PDIT was 0.61, DIS – 0.10, and DDIT – 0.89. Thus, the model had been found to have high predictive power for the outcome latent variable PDIT and for formative construct DDIT and low predictive power for DIS. Such results could indicate that the relationship between PDIT and DIS produced significant "noise." Additionally, it indicated that the model cannot predict DIS with high accuracy but can be used to test the overall effects of variables included in the model on the outcome variable of DIS.

Post-hoc analysis of the relationship between PDIT and DIS. The results of the SEM model testing clearly indicated a positive linear relationship between PDIT and DIS. Unfortunately, R-possibilities within the "SEMinR" package, as mentioned by Ray et al. (2021), do not allow for the inclusion of the quadratic term of the latent construct to examine a possible inverted u-shape form in such relationships. Therefore, scores for DIS and PDIT were extracted and saved for further follow-up analysis. To reduce the effect of noise caused by the fact that our data contained many different values of DIS for the exact value of PDIT (Figure 5.6), binning was used as a widely acceptable technique to reduce noise and better understand trends and

patterns in data (Han et al., 2022). Ten bins were defined from PDIT, and average values of PDIT and DIS for each bin were calculated for further analysis. As shown in Figure 5.6, the relationship between PDIT and DIS was non-linear and could be approximately presented by an inverse U-shape with the following equation:

$$\boldsymbol{DIS =- 0.01 -0.06 \cdot PDIT^2 + 0.14 \cdot PDIT}$$

Equation 1. Inverse U-shape Equation of PDIT and DIS Relationship

Linear and quadratic terms in Equation 1 were significant, with p-values of 0.005 for the linear term and 0.039 for the quadratic term. The intercept was insignificant (p = 0.0728). The F-statistic value was significant, F(2,7)= 19.25, p= 0.001, indicating that the relationship between PDIT and DIS overall significantly differed from random noise. A possible explanation for that was that model (1) was significantly better at describing relationships between PDIT and DIS than the only-intercept model. The coefficient of determination $R^2 = 0.85$, indicating that the inverse U-shape equation for DIS explained around 85% of DIS variability.

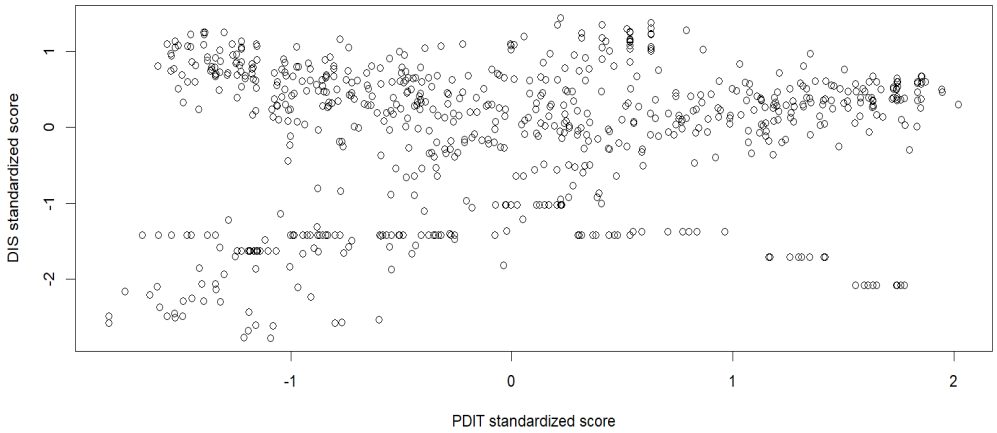


Figure 5.6 Scatterplot DIS vs PDIT

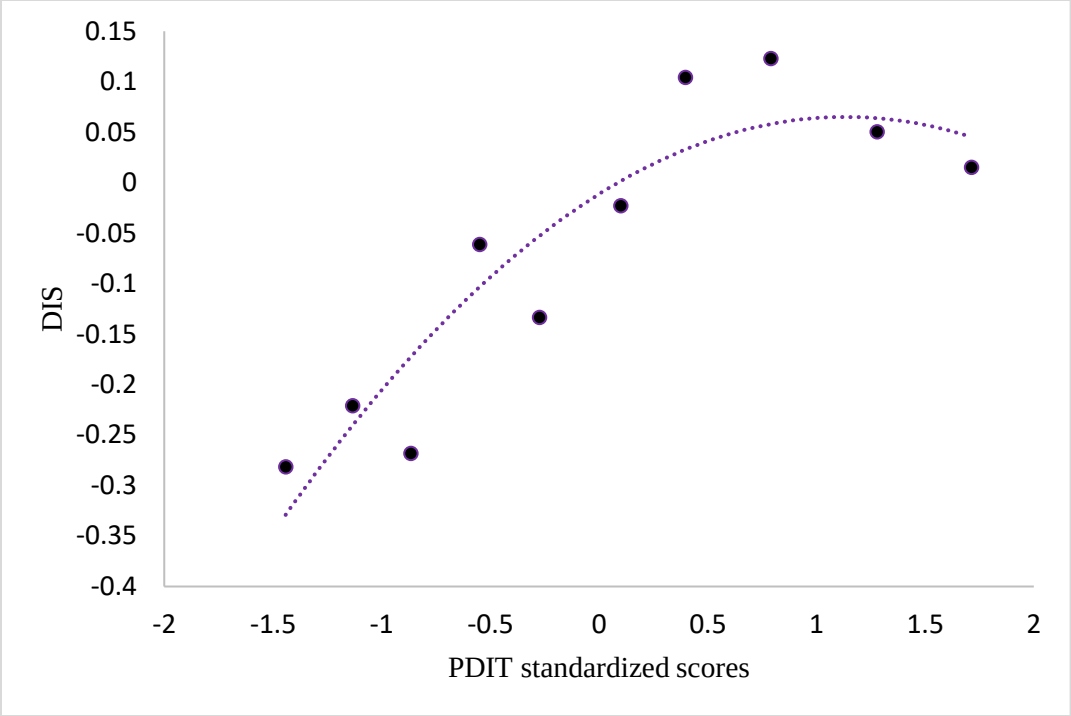


Figure 5.7 Relationship Between PDIT and DIS

As seen from the information presented above, the linear term was positive and significant, which was in line with the results of the SEM model, where the relationship between PDIT and DIS was hypothesized as linear. However, the quadratic term appeared negative, indicating that very large levels of PDIT will lead to a decrease in DIS (it is illustrated in Figure 3). The PDIT score, when DIS was at the maximum level, was (-2*-0.06)/0.14) ≈ 0.88 for standardized scores. This indicated that there was a threshold for PDIT when a further increase in Information transparency reduced DIS levels. However, the level of DIS in such cases was still larger than for low levels of Information transparency.

5.4 Data Analysis Results Summary

The proposed hypotheses were tested empirically, and the statistical procedures are described above in detail. This section will focus on the results of hypotheses testing and present them in a summarized way. First, Figure 5.8 shows the structural SEM model diagram with the corresponding path coefficients of the relationships (β**)** and their significance levels.

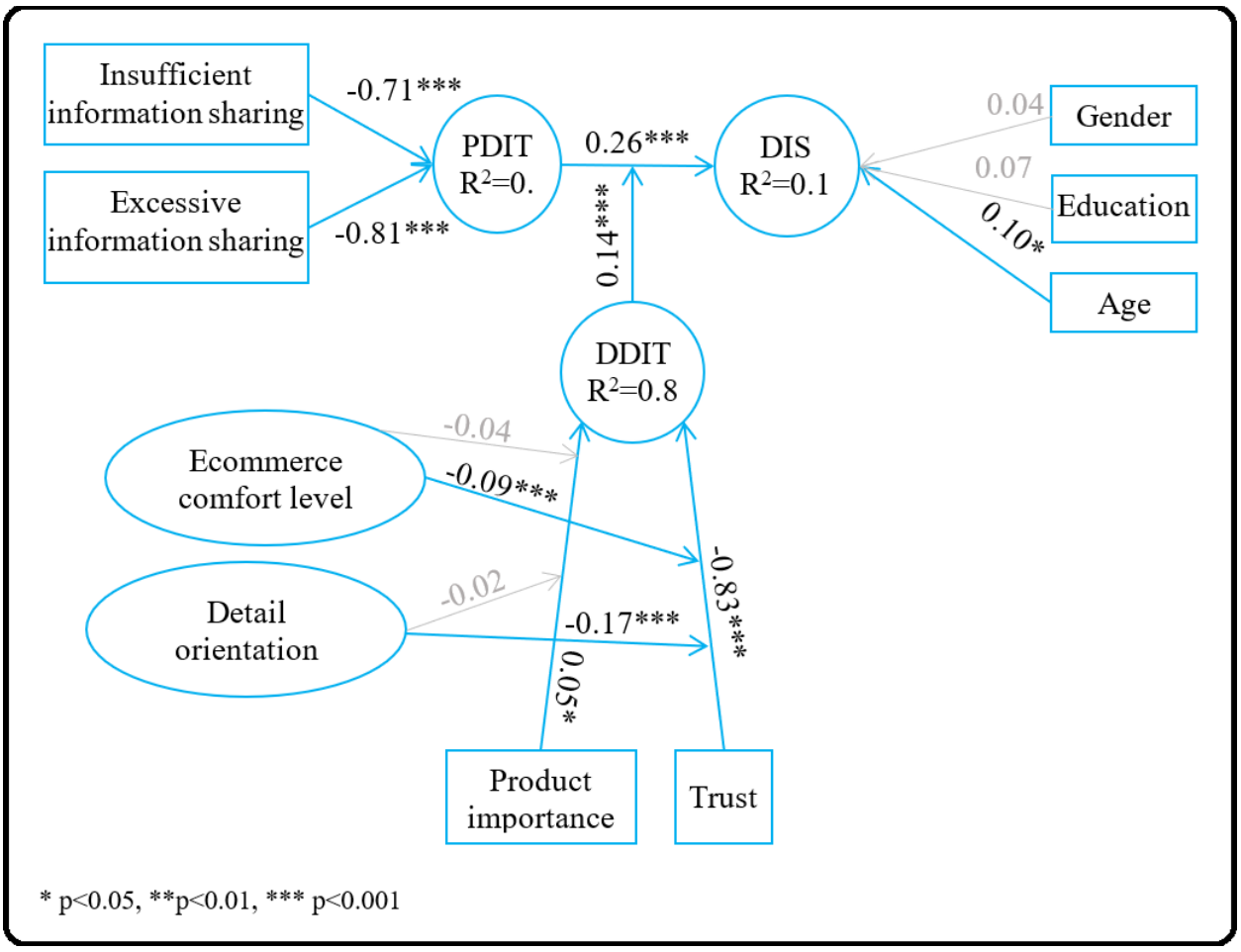


Figure 5.8 Schematic Diagram of the Final SEM Model

Hypothesis 1 (H1). Relationship between Information sharing and PDIT. Pooled concepts of Information sharing were used to test Hypothesis 1. Insufficient, sufficient, and excessive

Information sharing levels were manipulated in the vignettes. Therefore, H1a that was tested in the model stated that an increase in Information sharing from insufficient to sufficient level would increase PDIT. Hypothesis 1b stated that the increase in Information sharing from sufficient to excessive level will also increase PDIT. Table 5.10 above shows that when compared with sufficient level, insufficient and excessive Information sharing has negative and significant path coefficients with PDIT, partially supporting H1. H1a had a coefficient of $\beta = 0.71$ ($p < 0.001$), and H1b - $\beta^* = -0.81$ ($p < 0.001$) (see Table 5.10 below). Therefore, an increase in Information sharing from an insufficient to a sufficient level positively influences customers' perceptions of the level of transparency of the order processes (supporting H1a). However, if too much information is shared, that affects the perceptions of customers negatively – they perceive the order fulfillment process as less transparent (not supporting H1b).

Hypothesis 2 (H2). Relationships between Situational characteristics and DDIT. We hypothesized that the purchasing situation in which the customer is placing an order would affect the level of transparency the customer would want during the order fulfillment process. Specifically, we theorized that a low level of trust will lead customers to want higher levels of transparency, while an increase in the level of trust will lead to a decrease in DDIT (H2a). Additionally, a positive relationship was hypothesized between product importance and DDIT – we stated that an increase in Product importance levels would increase the need for information transparency that the customer would have during the online order fulfillment process. Both hypotheses were supported: the coefficient for Trust was negative and significant ($\beta = -0.83$, $p < 0.001$), and the coefficient for product importance was positive and significant ($\beta = 0.05$, $p = 0.019$) (see Table 5.10 below). Therefore, we can conclude that for products that are especially

important for the customers, they will want to pay more attention to how their order is being processed, thus requiring higher levels of information transparency. At the same time, purchasing from e-retailers with a high level of trust would make customers less attentive to the order fulfillment process, thus requiring less information transparency.

Hypothesis 3 (H3). Relationships between Individual characteristics and DDIT. During the literature review process, we have highlighted two potentially important individual characteristics of customers that could influence the level of information transparency they need in any given purchasing situation – the moderation effect of Detail orientation and E-commerce comfort level. It was hypothesized that people with higher levels of Detail orientation would have, on average, a higher demand for information transparency in online order fulfillment processes. Thus, H3a1 stated that for the customers with high Detail orientation, the relationship between Trust and DDIT will be stronger (more negative). It was supported with a path coefficient of $\beta = -0.17$ ($p < 0.001$). H3a2 stated that for the customers with high Detail orientation, the relationship between Product Importance and DDIT will be stronger (more positive). It was not supported as a path coefficient was not significant ($\beta = 0.02$, $p = 0.478$). H3b hypothesized the moderation effect of E-commerce comfort level on the relationship between Situational characteristics and DDIT. H3b1, stating that for the customers with high E-commerce comfort level, the relationship between Trust and DDIT would be stronger (more negative), was supported ($\beta = -0.09$, $p < 0.001$). H3b2, stating that for customers with high E-commerce comfort levels, the relationship between Product importance and DDIT would be stronger (more positive), was not supported ($\beta = -0.04$, $p = 0.016$).

Hypothesis 4 (H4). Relationship between PDIT and DIS. One of the central premises of this dissertation is that customer satisfaction nowadays depends on multiple factors besides the quality of the main product/service purchased. We believe that informational services provided to the customer during the order fulfillment process will also influence their satisfaction. Notably, in this model, we examine the relationship between PDIT and DIS, which is a part of the total customer satisfaction concept. H4, stating that PDIT will have a positive relationship with DIS, is confirmed as the path coefficient $\beta = 0.26$ ($p<0.001$).

Hypothesis 5 (H5). Moderation effect of DDIT on the relationship between PDIT and DIS. Another relationship with potentially important implications for research and practice is the influence of the desired level of customer transparency on the relationship between their PDIT and DIS. We believe that DDIT will moderate the relationship, whereas for customers with high levels of DDIT, the relationship between PDIT and DIS would be stronger (more positive). This moderation effect is confirmed with the path coefficient $\beta = 0.14$ ($p < 0.001$) (see table 5.10).

Hypotheses		Supported	Path value
H1	***Information sharing will increase PDIT:***	***Partially supported:***	
H1a	– The increase from insufficient to sufficient Information sharing will increase PDIT.	Yes	$\beta = 0.71$ ($p < 0.001$)
H1b	– The increase from sufficient to excessive Information sharing will increase PDIT.	No	β[19] = -0.81 ($p < 0.001$)
H2	***Situational characteristics will influence DDIT:***	***Supported:***	
H2a	– Trust in e-retailer will have a negative effect on DDIT – an increase in trust levels will lead to decreased levels of DDIT.	Yes	$\beta = -0.83$ ($p < 0.001$)
H2b	– Product importance will have a positive effect on DDIT – an increase in importance will lead to increased levels of DDIT.	Yes	$\beta = 0.05$ ($p = 0.019$)
H3	***Individual characteristics will moderate the relationships between Situational characteristics and DDIT:***	***Partially supported:***	
H3a	*For customers with high Detail orientation, the relationship between Situational characteristics and DDIT* will be stronger:		
H3a1	– For customers with high Detail orientation, the relationship between Trust and DDIT will be stronger (more negative).	Yes	$\beta = -0.17$ ($p < 0.001$)
H3a2	– For customers with high Detail orientation, the relationship between Product Importance and DDIT will be stronger (more positive).	No	$\beta = 0.02$ ($p = 0.478$)
H3b	*For customers with high E-commerce comfort levels, the relationship between Situational characteristics and DDIT will be stronger:*		
H3b1	– For customers with high E-commerce comfort levels, the relationship between Trust and DDIT will be stronger (more negative).	Yes	$\beta = -0.09$ ($p < 0.001$)
H3b2	– For customers with high e-commerce comfort levels, the relationship between Product importance and DDIT will be stronger (more positive).	No	$\beta = -0.04$ ($p = 0.016$)
H4	***PDIT will have a positive relationship with DIS up to a certain point, after which diminishing returns will be observed (the increase in PDIT will lead to the decrease in DIS).***	Yes	$\beta = 0.26$ ($p < 0.001$)
H5	***For customers with a high level of DDIT, the relationship between PDIT and DIS will be stronger.***	Yes	$\beta = 0.14$ ($p < 0.001$)

Table 5.9 DITS Model Hypothesis Testing Results

[19] Beta coefficient for excessive information reported using sufficient information sharing as baseline

CHAPTER 6: DISCUSSION AND CONCLUSION

6.1 Introduction

A focal point of this dissertation was placed on the importance of digital information and the aspects of its delivery on the satisfaction that the customer experiences during online shopping. In order to study this particular relationship, we have conducted a thorough analysis of existing publications on the topic, presented a new theoretical framework of Digital Information Transparency and Satisfaction, and tested it using quantitative data analysis techniques. In this Chapter, we are presenting a discussion of the results of the current dissertation, followed by a description of its limitations, implications for academia, and praxis. We conclude by presenting our final thoughts on the future possibilities for further research into the influence of information on customer satisfaction, followed by the general conclusion of this dissertation project.

Our research has been primarily concerned with shedding light on the profound impact of these informational services, especially in the context of the transparency perceived by customers throughout their online shopping journey. In response to this concern, we have introduced and rigorously tested the Digital Informational Transparency and Satisfaction (DITS) model. Through this comprehensive examination, we have contributed valuable insights to understanding the interplay between informational transparency and customer satisfaction in the online shopping experience. Three new concepts were theorized, operationalized, and tested: ***perceived digital information transparency (PDIT)****, defined as the extent to which a customer perceives order fulfillment processes to be visible*; ***desired digital information transparency (DDIT)****, defined as the extent of transparency a customer wants from a company during the*

order fulfillment process, and ***Information sharing****, defined as the extent to which information about the order fulfillment process is communicated to the customer.* Confirmed relationships among the variables in the model allowed us to demonstrate the importance of these new concepts and, thus, make a strong case for their possible practical and scientific contributions.

6.2 Discussion of Findings

A fundamental premise of our work is that supplementary informational services that are provided to customers during online shopping play a crucial role in the formation of overall customer satisfaction in e-commerce. Additionally, such information provided acts through the perceptions of transparency that are formed in each purchasing situation and depend on the individual making the purchase as well. Our work begins by arguing that information is a tool that can be used to influence perceptions of the customers. We then introduce the concept of transparency into the area of e-commerce and demonstrate the importance of its aspects to the overall customer experience during online purchases.

The issue of diminishing levels of customer satisfaction is pressing as the levels continue decreasing in recent years despite the efforts to increase the quality of the products and services. It is crucial that researchers extend sufficient effort to try to shed light on the situation and understand why this phenomenon is taking place despite the continuous improvements in the technological world. Changes in information systems and technologies have transformed the way customers shop, introducing additional elements to overall customer satisfaction, particularly in the realm of online shopping. Due to these changes, a great need exists to understand a more complex overall satisfaction and all the elements that influence it. We believe that in addition to

the satisfaction with the core product or service purchased, customers form their satisfaction levels based on the supplementary informational services that are provided during the order fulfillment process. Therefore, a fundamental premise of our work is twofold. First, we show the importance of information transparency to customers in the e-commerce setting. Second, we demonstrate that too much transparency can have a negative effect on customer digital information satisfaction as a part of the overall satisfaction concept, and, therefore, we expand our understanding of the phenomenon of overall customer satisfaction. In this section, we discuss the results of model testing conducted for the current dissertation. Key findings of this study are summarized in Table 6.1. Implications for research and practice are discussed next.

Key Findings	***Implications for Research and Praxis***
1. Information transparency is useful in predicting the levels of Digital Information Satisfaction, which ultimately influences overall satisfaction levels. 2. Moderation effect of desired levels on the relationships between perceived information transparency and satisfaction proven to be significant	*Explains the role of supplementary informational services on individuals' satisfaction levels during online shopping.* *Provides potential to explain the diminishing levels of overall customer satisfaction through decreased DIS.*
3. Information sharing and its dimensions are key in determining the perceptions of Information transparency of order fulfillment processes.	*Information sharing, a concept beyond information quality, has the potential to be used as a better predictor of the levels of information transparency that customers form.*
4. The variability of desired information transparency levels is explained by different purchasing situations. 5. The variability of desired information transparency levels is explained by individual characteristics of people.	*Provides a starting point of significance of situational and individual factors. More research is needed to delineate other significant factors of influence.* *Practitioners must come up with order fulfillment communication information systems that are flexible and allow the customers to adjust the level of transparency for each order placed.*
6. Too much information sharing creates less transparency as perceived by the customers.	*There is a specific level of information sharing that is optimal for the customers. Thus, further research needs to focus on maximizing the benefits of information sharing through discovering the ways to calculate that optimal level.* *Researchers need to determine the "tipping point" of the relationship between information sharing and PDIT.*

Table 6.1 Key Findings

6.2.1 Information Sharing as a Key Determinant of Perceived Digital Information Transparency

Information quality has been widely studied as an important predictor of various customer outcomes, such as e-commerce satisfaction (Eid, 2011). Additionally, information quality is studied as one of the three aspects of information sharing in the organizational context (Zhou & Benton, 2007). Numerous studies have identified key characteristics that define the quality of information. For example, McCormack (1998) defines four dimensions of information quality: accuracy, frequency, credibility, and availability. Nelson et al. (2005) state that accuracy of information, its completeness, currency, and format contribute to information quality, which, in turn, leads to satisfaction within the context of data warehousing. As there is a plethora of efforts aimed at studying what makes the information be perceived as high quality, there is not enough effort directed at studying the aspects of information sharing that are connected with the way in which that information shared (for example, the media used, the timing, the flexibility, etc.). Thus, we propose a concept of Information sharing defined as the extent to which information about the order fulfillment process is communicated to the customer. We suggest that message informativeness, and timeliness, communication initiator, channel convenience, and redundancy influence the customer satisfaction levels through PDIT and DIS.

There is limited research on order fulfillment processes, the information associated with it, and customer perceptions as a result of the actions taken by the e-retailer to communicate with the customer. We believe that different customers' perceptions of transparency vary depending on the characteristics of the information being sent to them. Different purchasing scenarios differ based on what information is sent and when. In general, more information shared provides a

greater chance that some of it contributes to the perception of digital transparency of the company's business processes. However, if too much information is shared, it hinders the perceptions of transparency developed by the customers. Therefore, we test and confirm the hypothesis that the increase in information sharing will lead to increased transparency perceptions of the customers. The results of the hypothesis testing show us that such an increase is only observed up to a certain point – too much information sharing can harm the transparency levels.

Three pulled levels of Information sharing were tested against the levels of PDIT. The results of the hypothesis testing done for this relationship showed significant results for H1a: an increase in Information sharing from an insufficient to a sufficient level positively influenced customers' perceptions of the level of transparency of the order processes. However, the results of H1b testing revealed surprising and exciting results: if too much information was shared or if the same information was shared multiple times (increase from sufficient to excessive level), that affected the perceptions of customers negatively – they perceived the order fulfillment process as less transparent after a certain threshold. Such insight has important implications for both academic and practical work. First, we confirm that sharing information with the customers during the time when their order is being shipped and delivered influences their perceptions of the order fulfillment process and its transparency. Second, we show an unexpected finding: too much information that is shared with the customer leads to adverse reactions of customers when the order fulfillment process is perceived as less transparent.

6.2.2 Situational Characteristics' influence on the levels of Desired Digital Information Transparency

SOR model, one of the streams of research was used as a theoretical framework for the development of the research model, posits that a response of the organism on any stimulus depends on the situation in which that stimulus is interacting with the organism as well as on the organism itself (Belk, 1975). According to Belk (1975), the stimulus in the model can be divided into two separate constructs – object and situation. Thus, a customer's reaction with respect to a product or service depends not only on the item purchased (object) but also on the factors of the situation in which it is purchased. Situational characteristics have been shown to play an essential role in the success of information provided to consumers during the process of ordering (Zaichkowsky, 1986).

We demonstrate in this dissertation that specific situational characteristics of the placed order determine the levels of information transparency desired by the customers. Our dissertation focuses on two of the possible situational factors – Product importance (defined as the extent to which a customer links a particular product to specific goals) and Trust in e-retailer (defined as the extent to which a customer is willing to accept vulnerability in an online transaction based on positive expectations of the future behavior of an e-retailer). The results of hypothesis testing show the significant relationship between the situation and the level of information transparency the customers need. We demonstrate that the purchasing situation in which the customer is placing an order affects the level of transparency the customer wants during the order fulfillment process.

We found that for more important products purchased, customers want to pay more attention to how their order is being processed, thus requiring higher levels of information transparency (PDIT). For the products with relatively low importance, the levels of information transparency desired are lower as well. Additionally, purchasing from e-retailers with a high level of trust (whether because of their reputation or because of prior customer experience) makes customers less attentive to the order fulfillment process, thus requiring less information transparency. If the order is placed from an unfamiliar or new website or the customer has had a negative experience with the e-retailer before, the amount of attention that a customer would have would translate to a higher level of DDIT.

Such findings provide crucial understanding of the concept of information transparency of the order fulfilment process and the process by which a desired level of such transparency is formed by customers. We now have the knowledge of various situational factors that play role in the formation of the DDIT. Moreover, such findings have a great potential to become the solid base for future research on the purchasing situation and its influence on various customer outcomes.

6.2.3 The Link between Individual Characteristics and Desired Digital Information Transparency

Individuals have specific beliefs about the level of their skills when it comes to IT. Such beliefs, in turn, play an essential role in different outcomes and influence the behavior of people when interacting with technology. One of the most significant findings of this dissertation is that in the similar fashion, individual characteristics influence the desired levels of information

transparency that the customer has during online shopping. Detail orientation of the customer, for example, is shown to influence their desired level of transparency. Additionally, customers that are comfortable using technologies to make purchases online tend to have higher demands when it comes to order fulfillment process transparency. Thus, we conclude that customer's E-commerce comfort level will influence their levels of DDIT.

Another fascinating discovery lies in the moderation effects demonstrated in the model, where for customers with high levels of comfort with e-commerce, the relationship between Situational characteristics and DDIT is stronger and vice versa. Additionally, we hypothesize and partially confirm that for customers with high levels of Detail orientation, the relationship between Situational characteristics and DDIT is stronger and vice versa. The moderation effect of Detail orientation is confirmed for the trust – DDIT relationship but not confirmed for the Product importance – DDIT relationship. Such results are interpreted as follows: if a purchased product has high levels of importance for the customer, they require high levels of DDIT regardless of their level of detail orientation. However, higher levels of detail orientation strengthen the inverse relationship between Trust and DDIT: for highly detailed individuals, DDIT is significantly higher for the situations of low Trust in e-retailer. The moderation effect of E-commerce comfort level is confirmed for the trust-DDIT relationship but not confirmed for the Product importance–DDIT relationship. Such results can be interpreted as follows: if a purchased product has high levels of importance for the customer, they require high levels of DDIT regardless of their E-commerce comfort level. However, higher levels of E-commerce comfort strengthen the inverse relationship between Trust and DDIT: for individuals who are very comfortable using the Internet for purchases, DDIT is significantly higher for situations of

low Trust in e-retailers. If taken together, situational, and individual factors that influence the desired levels of information transparency, which are formed by the customers during the order fulfillment processes.

6.2.4 Information Transparency as a Key Determinant of DIS. Can we have too much of a good thing?

While many studies have examined various aspects of information (quality, satisfaction, etc.), current approaches are limited in their ability to shed light on the nature of information transparency and its influence on satisfaction. In particular, little attention has been given to investigating various factors that influence the overall satisfaction of customers during online shopping that are not tied to the core product or service purchased. Identifying these factors is central to understanding the diminishing rates of satisfaction that have been observed during the last few years. Satisfaction is crucial to the longevity of the firms. Thus, both the researchers and practitioners need to ensure a deep understanding of the factors that influence it. As the quality of the core product or service purchased is no longer sufficient to ensure the highest levels of customer satisfaction, this research sheds the light and brings attention to the increasing importance of information (specifically information sharing and transparency) on the customer outcomes.

In this dissertation, we propose a Digital Information Transparency and Satisfaction model that explains the influence of supplementary informational services on the purchasing outcome (DIS). We show that depending on the situational and individual characteristics, the customers develop a specific desired level of information transparency – the level of service the

customers want to be performed for each order placed online. Then, they compare it to the levels of information transparency they perceive and, depending on the outcome of such comparison, experience various levels of satisfaction. Thus, we believe that as each customer has different levels of desired information transparency depending on the specific situation, the relationship between PDIT and DIS differs based on that. Hypothesis 4, confirmed as a result of data testing, shows that PDIT has a positive relationship with DIS, meaning that the order process DIS of the customers increases with the increase of PDIT. Additionally, Hypothesis 5 tests and confirms the moderation effect of the desired level of transparency the customer has on the relationship between their PDIT and DIS. Thus, for the higher levels of desired transparency, the increase in PDIT leads to a higher increase in DIS. The increase of DIS caused by the increase in PDIT for the situations where DDIT is at the low level is not as high (positive relationship is weaker).

One of the most important findings of this dissertation is a confirmed diminishing effect, or even a curvilinear trajectory of the effect of transparency on satisfaction (see Figure 2.6 for visual explanation). In Chapter 2, we introduce the idea that too much information transparency can, at a certain point, start harming customer outcomes and can lead to a decrease in satisfaction levels. To test this hypothesis, we conduct post-hoc analysis by extracting the scores for DIS and PDIT. Binning is used to reduce the effect of noise caused by the fact that our data contained many different values of DIS for the exact value of PDIT. Ten bins are defined from PDIT, and each bin's average values of PDIT and DIS are calculated for further analysis. As shown in Figure 5.6 in Chapter 5, the relationship between PDIT and DIS is non-linear and can be approximately presented by an inverse U-shape, thus *confirming one of the most important suggested relationships of the dissertation.* Additionally, the coefficient of determination R^2 =

0.85, indicating that the inverse U-shape equation for DIS explains around 85% of DIS variability, indicating our model's high predictive capabilities. Therefore, a threshold exists for PDIT when a further increase in Information transparency reduces DIS levels.

6.3 Limitations

The discussion of the limitations of any academic research is crucial in scholarly writing and research reporting and is considered an ethical responsibility of each researcher. We believe that doing so for this dissertation introduces transparency into our research efforts, as it signals to the readers that we are aware of the study's constraints and wish to suggest ways to eliminate them. Such transparency fosters trust in the research community and, thus, should not be overlooked. Additionally, we feel that we are responsible for disclosing these contextual limitations of the study as it will provide a better context for interpreting the results. Moreover, understanding and acknowledging limitations leads to better quality research through assessment of the validity and reliability of our findings, in addition to the disclosure of limitations to improve future research designs on this specific area of interest. Lastly, research is a never-ending process, and it is not plausible to eliminate all the limitations in a single academic effort like this dissertation. Thus, by identifying them, we hope to highlight the areas where future research can make even more valuable contributions to expand our understanding of information transparency in e-commerce and online shopping.

Scope limitations. The scope of the dissertation, first and foremost, is its primary limitation. A scope, or a domain, is a set of parameters under which the research is conducted (M. K. Simon & Goes, 2013). Taking into account the gap in the literature that was discovered

during the literature review process, we determine the *conceptual* scope of the study to be the relationships between the variables of our theoretical model that take place during online purchases of goods. Additionally, the *temporal* scope is defined by the order fulfillment processes between the moment the customer places the order and the moment the order is delivered to them. Consequently, the contextual limitations of the study are in the absence of data analysis on the service instances when it comes to online shopping. Since many of the economic and consumer behavior phenomena are interconnected with both goods and services, by including the study on goods only, we may potentially miss essential insights into consumer satisfaction during online purchases of services (Zeithaml et al., 1993). The study, thus, may not capture the nuanced aspects of the customer experience, which is crucial in service-dominant industries. It is proven that in services, customer interactions and perceptions play a significant role (Berry et al., 1985) and, thus, need to be included in future studies. To that, a goods-only study may not account for the interplay between products and services in consumer decision-making (Berry et al., 2006).

Considering the temporal scope described above, a temporal limitation of this work is the absence of a discussion of the processes that take place after the product is delivered to the customer (for example, during product maintenance or warranty claims). Additionally, the time constraints of current dissertation research present another limitation. Since this research was conducted as part of the Ph.D. program and had to be conducted within a specific time frame, it had limited abilities to gather a comprehensive understanding of how information transparency affects customer satisfaction over long periods of time.

In addition to the contextual limitations, it is important to note that the Digital Information Transparency and Satisfaction model suggested in this dissertation contains a limited number of situational and individual characteristics, which are studied for their influence on the levels of desired information transparency of online purchases. Thus, another limitation of this work is in using two factors only for the individual (Detail orientation and E-commerce comfort level) and situational (Trust in e-retailer and Product importance) characteristics of the purchasing situation.

Validity limitations. Another significant limitation of current research is its ecological validity and sustainability of long-term impact. Ecological validity of the study refers to the degree to which the results that are achieved in the study with the experimental design are related to the results from a naturalistic environment (Tupper & Cicerone, 1990). In the context of the current dissertation, ecological validity refers to the degree to which digital information transparency and satisfaction perceptions of customers observed in the study correspond to transparency and satisfaction perceptions of customers in real-world situations. This type of validity does not apply to the testing itself but rather to the inferences that are drawn from it. As we make assumptions about a specific technological state that our current study subjects live in, and this technological environment changes rapidly, we introduce specific limitations to the study. Information sharing in the e-commerce order fulfillment status changes almost daily. Therefore, the results of the current study may not be perfectly replicated after a certain period of time.

Survey design limitations. Using vignettes in academic research can be a powerful method for exploring complex real-world situations and understanding various aspects of human

behavior and decision-making. However, the use of vignettes in research is also not without limitations. Thus, another aspect of the ecological validity of current research is due to the use of vignettes. For instance, Van der Heijden (2005) highlights that vignettes/scenarios are not as complex and nuanced as real-world situations and, thus, may not fully capture all the details. Additionally, the vignettes for this dissertation are developed by us with certain assumptions about the present and future state of technology, and these assumptions may not always align with the actual state of things. Lastly, participants may respond differently than they would in real situations when they perceive the vignette scenario as contrived.

The data collection methods chosen for this dissertation introduce the next set of limitations to the study. First, the characteristics of the sample can affect the ecological validity. If the sample is not representative of the broader population or the target group under study, it may limit the ability to generalize findings to those populations. In general, MTurk workers are mostly considered to be younger, more tech-savvy individuals (Buhrmester et al., 2011). Thus, the data collected may be skewed toward people who are more comfortable with online purchases than the general population. This can limit the generalizability of our research findings. The last limitation that can arise from using MTurk workers to collect data lies in participant motivation and incentives. As the participants on MTurk are mainly motivated by the financial incentives they get from completing surveys, the quality of work can vary. Especially due to speedy or careless responses as workers rush through the surveys to take as many of them as possible and receive the most significant financial incentive. (Horton et al., 2011).

Measurement model limitations. The last significant limitation of the current research study is due to the use of the pulled construct of Information transparency. The scope limitations

of the researchers within this dissertation and its requirements have led to limited access to the sample size that was obtained for hypothesis testing for the suggested model. The concept of Information sharing suggested in our theoretical model consists of five dimensions and was to be manipulated in the text of the vignettes. In order to include the complete pull of the vignettes in the survey, we would be required to create 384 vignettes (2*2*2*3*4*2*2 levels of constructs and dimensions), a needed sample size for this dissertation would need to be a minimum of 19 200 respondents. Therefore, the decision was made to pull the Information sharing construct into three levels that would combine the five dimensions to create excessive, sufficient level, and insufficient levels of Information sharing. This has created a limitation of the results of model testing, as not all of the relationships were studied separately. However, as the results of data analysis have shown significant relationships between three pulled levels of Information sharing, there exist possibilities for further research that would study the five dimensions separately.

To conclude, we firmly believe that readers of this dissertation should be aware of these limitations and carefully consider them in their efforts to expand the knowledge base of information transparency. Future research efforts should be aimed at eliminating these suggested study limitations and at increasing the ecological validity of the results.

6.4 Implications

DITS is an important framework for understanding the influence of supplementary informational services on customer satisfaction with digital information during online purchasing. As the landscape of technologies and technology-supported activities has changed drastically, there exists a bigger demand for the understanding of the influence of information that is

provided to the customers during the online purchasing process on the customer satisfaction with the information that is provided to them. This dissertation defines the relationship between informational services that are provided during order fulfillment processes in e-commerce and customer satisfaction. The research conducted extends the emerging literature stream on information transparency and its manifestations in e-commerce and discovers additional determinants of customer satisfaction connected with supplementary informational services provided to these customers. This dissertation advances both theory and praxis by introducing a theoretical model of Digital Information Transparency and Satisfaction.

6.4.1 Implications to Research

Our work has several important implications for academic research. This section describes them in detail further.

6.4.1.1 Implications for Research on Information Transparency

Establishment of Information transparency as the determinant of satisfaction in IS. One of the focal points of the dissertation is an introduction to the concept of information transparency in the area of IS in the realm of e-commerce. Our research seeks to understand the role information transparency plays in the formation of the satisfaction levels of customers. To date, only a limited number of studies have examined transparency in IS. Additionally, they have done so primarily in the context of information disclosure in the area of business strategy (Awad & Krishnan, 2006; Granados & Gupta, 2013), product and price transparency (Dewan et al., 2007; Soh et al., 2006), and information transparency as an output of the IS (Street & Meister, 2004; Zhu, 2005).

This dissertation contributes to the expanding body of IS literature on information transparency by proposing that each customer experiences two distinct levels of digital information transparency for each order (desired and perceived). While previous research in e-commerce has initiated discussions on information in diverse forms and its impact on various e-commerce outcomes, such as product reviews influencing satisfaction (Changchit & Klaus, 2020) or price transparency affecting purchasing decisions (Hanna et al., 2019), there has been limited exploration of the information in its various forms generated and shared with the customer after placing an order. Consequently, this study stands among the pioneers in examining the impact of these perceptions of information transparency during the order fulfillment process and their influence on satisfaction.

Following the logic of the ZOT research by Kettinger & Lee (2005), we conceptualize and find support for the fact that there are different levels of information transparency that are desired by customers depending on a specific situation during which the order is placed. Moreover, in situations when the PDIT is higher than the DDIT level of the customer for a specific order, customer satisfaction is decreased. The results of data collection and analysis show several crucial findings:

- information shared with the customers influences their perceptions of the transparency of the order fulfillment process and further influences the customers' DIS levels.
- the amount of information that is shared, the way it is shared, along with the quality level of such information can also have negative effects on satisfaction levels.

- described relationship between Information sharing and the DIS depends on the levels of information transparency that are desired by the customers in a particular situation.
- both situational and individual characteristics influence the level of information transparency the customer wants for a particular order placed with an e-retailer.

Information sharing as a key determinant of Transparency. Another significant implication lies in the introduction of the concept of Information sharing, defined as the extent to which information about the order fulfillment process is communicated to the customer. The concept of Information sharing is most used in the supply chain domain of research. As information technologies develop, the importance of information technology management increases. In the supply chain, Information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Mohr & Spekman, 1994). It improves the relationships between supply chain partners, leading to more effective communication (Monczka et al., 1998). Additionally, it leads to various positive outcomes, such as price reduction and improved quality of products (Monczka et al., 1998). In the realm of e-commerce, information sharing refers to the communication of vital order information from the company to its consumers, thus becoming a fundamental component of information transparency perceptions.

The results of the data analysis and hypothesis testing revealed unexpected relationships that have serious implications for both researchers and practitioners. We have found that extremely high levels of information sharing lead to decreased levels of PDIT, which implies more is not always better. In fact, it can become a significant predictor of decreased PDIT. Another aspect of information that has been studied widely in different fields, information

quality, has proven to be an important concept. We believe that with all of the technological advancements of recent years, information quality is no longer playing a sole key role in various customer outcomes. Information sharing, a concept beyond information quality, has the potential to be used as a better predictor of the levels of information transparency that customers form.

By highlighting various aspects of the information generated and shared with the customer, we introduce the concept of Information sharing into the IS field and demonstrate its impact on transparency and customer satisfaction with the information. Additionally, we show how it influences the perceptions of information transparency generated during the order fulfillment process. This not only clarifies the role of information in the post-purchase stages but also presents an opportunity for conducting additional research into the factors of information sharing that impact customer satisfaction across all stages of online purchases.

6.4.1.2 Implications for Satisfaction Research

Customer satisfaction in the digital era. There exists a specific understanding of customer satisfaction that is now deficient in the digital age, where satisfaction is formed out of the influence of a large variety of factors. Unfortunately, there is a gap in understanding of the complete array of influences. This study alleviates this deficiency by introducing a theoretical model that places the constructs of digital information transparency and digital information satisfaction in the nomological net, providing their antecedents and consequences. We show that supplementary informational services that are presented to the customer with the purchase of the main product influence the satisfaction levels of customers. Overall customer satisfaction in the modern technological era has been shown to be an extremely complex phenomenon. Similarly, the results of this research effort have sizable implications for customer satisfaction research,

suggesting and showing that satisfaction in e-commerce has multiple dimensions, one of which is Digital Information Satisfaction.

Generally, a consumer is expected to want a detailed version of their e-tail receipt, including the total price charged to their account. However, do customers find value in a three-page report (with original price, reduced price, discount applied, multi-item discount, discounts from customer rewards, and the prices that were saved overall) when all they wanted to know was how much their credit card was charged? Do their requirements change depending on the product they are purchasing or previous experience of buying from a particular website? Considering that existing literature on customer satisfaction does not explain why customers are more easily dissatisfied with purchases made online and the expanding importance of e-commerce, we set up to develop an understanding of the phenomena of information transparency and customer satisfaction in the digital world of e-commerce.

By testing our research model, we show that DIS is formed in customers' perceptions as a result of the interaction between their desired and perceived levels of order fulfillment process information transparency. In line with the findings by Cenfetelli et al. (2008), we find the duality of nature of the influence of core product purchased and the supporting services that accompany the main purchase. This opens a fresh perspective on a set of possible explanations for stagnant customer satisfaction levels in recent years. We suggest that the comparison between expected and actual product quality is no longer a single predictor of customer satisfaction in e-commerce. We show that during online ordering, customers also actively evaluate the quality of the supplementary informational services that are associated with the order fulfillment process (e.g., order tracking, software support, etc.). Such evaluations also influence the customer

outcomes, such as satisfaction. Thus, by conceptualizing digital information transparency, this research extends the current conceptual understanding of customer satisfaction in e-commerce and improves our knowledge and understanding of the new dimension of satisfaction in the era of online shopping.

6.4.1.3 Methodological Implications for IS Research

To collect data necessary to test the suggested theoretical framework, this dissertation utilizes a survey approach with the use of vignettes instead of attitude statements. Using short, detailed descriptions of hypothetical situations in the form of vignettes is effective when it is crucial for research to describe realistic situations. Vignettes are instrumental in ensuring that the respondents answer the questions of the survey based solely on the context given to them and are especially effective when capturing the attitudes or beliefs of respondents (Vargas, 2008). There exist some reservations as to their use in the surveys. For example, Aguinis & Bradley (2014) argue that even though the use of vignettes allows the researchers to effectively introduce a hypothetical situation, the risk is that respondents may not react in the same way to the satiation described in the vignette if this exact situation was presented in real life. In order to eliminate such a shortcoming, current research placed several safeguards throughout the survey, ensuring that we adequately capture the variables' manipulation levels. For example, the concept of Trust in e-retailers was manipulated in the vignettes with different statements that reflected low and high levels of trust, respectively. In parallel, we added a Trust question to the survey itself, thus ensuring that the level of trust that the respondents perceived from reading the vignettes corresponded with the level of trust intended by the researchers. Such manipulation checks performed for Trust in e-retailer Product importance and DIS allowed us to avoid any

interpretation bias. Moreover, the main implication for methodological knowledge lies in the confirmation of the effectiveness of the use of vignettes for behavioral research and IS research in particular.

6.4.2 Implications to Praxis

It is no secret that we live in the world of Big data with its implications in all the areas of human existence. Similarly and for the same reasons, copious amounts of information are generated in e-commerce and are delivered to the customers at all times. A significant portion of this information arises during the ordering processes the customers go through while buying online. This dissertation not only expands the academic knowledge of information sharing and transparency and their influence on satisfaction, but it also has the potential for several practical recommendations.

The single most focal contribution of this dissertation to praxis is in outlining the relationship between the total amount of information communicated to the customer and their perceptions of digital information transparency within the order fulfillment process. We show that not all the information that is shared increases the perceptions of transparency. The dissertation's data analysis results provide valuable insight into the characteristics of information that improve the perceptions of transparency, such as message informativeness, timeliness, or chosen communication channels. Moreover, an unexpected finding of the curvilinear relationships between information sharing and PDIT implies that companies should carefully review their information-sharing management practices to ensure no information overload occurs during the order fulfillment process.

The statistical significance of situational and individual factors and their influence on the levels of Information transparency that are desired by the customers in their particular circumstances points to another practical implication. Information-sharing technologies that companies use need to be flexible in several important aspects: the timeliness of the order communications, the level of detail that is chosen for the message, the format of the communication, and the choice of communication media by the customer. In other words, customers should be able to choose how much information they want to receive, how many times, and how frequently, and be able to choose where they would like to receive it. The principles of flexibility and adaptability need to be embedded into the information systems that are responsible for information dissemination during the fulfillment process of online orders.

Overall, the current research point takeaways that can be offered to the practitioners - the most effective and most overlooked aspect of the communications between the e-retailer and the customer placing an order with them, is Flexibility. As the levels of digital information transparency for each individual is different, and it also differs from a situation to a situation, there is no effective way for the companies to predict how much information transparency their customer will want in this particular order. Therefore, the most crucial advice for the practitioners that is coming from the results of this academic research is that companies need to be flexible, and they need to let the customers choose exactly what information to receive, when to receive it, how to receive it, and whether to ask for it at all or no. Flexibility of the order fulfillment process information transparency has a potential to lead to the gradual increase of the overall customer satisfaction levels, and, consequently, to other positive outcomes, such as customer loyalty, larger profits, etc.

6.5 Future Research

This dissertation contributes to a growing body of literature on information sharing. Our findings reveal several fascinating areas of inquiry that have the potential to extend scientific knowledge even further, specifically in the IS area, contributing to the expansion of our understanding of the phenomenon of information transparency in e-commerce.

Diminishing effects of information on satisfaction. This study makes two findings that are fundamental to future research efforts in the area of Information sharing and transparency in e-commerce. Specifically, hypothesis testing revealed that: 1. excessive information sharing decreases PDIT; 2. Post-hoc analysis showed that PDIT has an inverted u-curve relationship with DIS, in addition to the DDIT as a moderator making the relationships stronger. In addition to explaining the role of supplementary informational services on individuals' satisfaction levels during online shopping, both of these findings point to the same fundamental idea that the dissertation is based on – there can be too much of a good thing. Therefore, based on the results of this research, future efforts should focus on expanding our understanding of the diminishing effects of transparency on satisfaction and the factors that affect such causations.

Decreased levels of PDIT with excessive information sharing was an unexpected finding of this dissertation that has the potential to have a significant impact on future research and praxis. Specifically, in this research, we show that there is a specific level of information sharing that is optimal for specific customers in specific situations (due to situational and individual differences). Up to a certain level, the increase in Information sharing leads to the decrease of PDIT. However, such a positive correlation exists with diminishing returns, turning into a

negative relationship at a certain point. Thus, further research needs to focus on maximizing the benefits of information sharing through discovering ways to calculate that optimal level. Additionally, researchers need to determine the "tipping point" of the relationship between information sharing and PDIT in order to gain knowledge on how to avoid the negative effect of Information sharing on transparency, and, consequently, on satisfaction.

Taking into account the variations in the transparency levels and satisfaction as an outcome of those, we believe that one of the more important factors that needs to be introduce into IS literature is the transparency systems flexibility. As the levels of desired transparency vary on a case-to-case basis, substantial research must be undertaken to develop the understanding of that flexibility. We believe that it has the potential to improve the situation with satisfaction levels. Thus, we believe that knowledge gained as a result of such efforts can lead to a deeper understanding of the most pressing problem of the current online shopping environment – overall customer satisfaction that has been steadily decreasing over the past years.

Exploration of all five dimensions of Information Sharing. Information sharing is the key construct that determines how the perceptions of Information transparency of the order fulfillment processes are formed by the customers during online shopping. At the same time, Information sharing, a concept beyond information quality, has the potential to be used as a better predictor of the levels of information transparency. As mentioned in the Limitations section, one of this dissertation's sizeable shortcomings is using three pulled levels of Information sharing instead of the complete pool of the five dimensions (message informativeness, communication initiator, communication channel convenience, message timeliness, and communication redundancy). Limited access to sample size has led us to explore

only a partial area of influence of Information sharing on PDIT, where the five dimensions of Information sharing were pulled to create three levels of it: insufficient, sufficient, and excessive. We suggest the researcher further explore the influence of these dimensions separately. One of the most interesting questions at the moment, for example, is whether repetitive communication with the customer of the same information leads to decreased perceptions of transparency. Other aspects of Information sharing can be explored as well. Nevertheless, given that the data analysis results revealed significant relationships among these three levels of information sharing, there are opportunities for further inquiries focusing on the individual examination of the five dimensions and their combinations.

Expansion of conceptual and temporal scope of the study of DDIT. The conceptual scope of the study is defined as the set of relationships between the variables of the theoretical model that take place during online purchases. Specifically, the current research examines the mentioned relationships in the realm of purchasing of physical goods only. The study, thus, does not capture the specific aspects of the customer experiences, which are central in service-dominant industries. As numerous economic and consumer behavior phenomena are intertwined with both goods and services and the relationships can vary depending on the type of product purchase (tangible goods or services), future research efforts should be focused on replicating the study for the purchase of services. Additionally, the model presented in the dissertation studies the influence of information transparency during the order fulfillment process, which is defined from the moment the order is placed until it is delivered. Future research, therefore, should focus on expanding the temporal scope past the delivery of the product. This will create a solid base for a comprehensive understanding of the phenomenon of information transparency and its effect on

customer satisfaction. Lastly, the ecological validity and sustainability of the current study should be explored by testing the DITS model in various purchasing situations and with the changed state of technological development.

Expansion of Situational and Individual antecedents of Information Transparency. The difference in the levels of information transparency that are desired by the customers can be explained by two groups of factors: situational and individual. We have shown that there is a significant effect of product importance and trust in e-retailers on how much transparency is wanted during the order fulfillment process. We have also demonstrated the significant moderating effects of detail orientation and e-commerce comfort level on the relationship between situational characteristics and DDIT. Since direct relationships and moderation were confirmed, there is potential for further explorations in the area.

As noted above, only two factors were included in the situational and individual characteristics that influence the level of information transparency that is desired by the customer. This provides the basis for further studies of the significance of situational and individual factors that change the desired levels of information transparency. However, as we understand that real-world situations are complex and include many such factors, we suggest that future efforts in studying this topic be aimed at expanding the pool of characteristics that influence DDIT. For example, possible other situational characteristics may include time constraints, the quantity of the product purchased, the total amount of the order placed, etc. As to the individual characteristics that may be studied, we suggest exploring the possibilities of the influence of five major personality traits (openness, conscientiousness, extroversion, agreeableness, and neuroticism): emotional maturity, excitability, general propensity to trust, etc.

Result replication in different settings. Several aspects of the survey design and data analysis methodology offer potential for further exploration. First, the replicability of the study results should be tested using different research designs. The PLS-SEM technique was used to conduct data analysis and test the relationships between variables. Further studies can attempt to use covariance testing and assess the most effective statistical procedure. Second, the vignettes were used as a method to present the shopping situation to the survey respondents in as much detail as possible. An alternative route for data collection can be to conduct a survey without the vignettes and instead ask the respondents to answer the questions based on their own experience purchasing goods and services online. Lastly, future efforts of researchers can be aimed at conducting additional data using alternative methods, such as focus groups and interviews. Such future efforts can benefit the research as data triangulation can be performed, consequently improving the reliability, validity, and generalizability of the findings.

Overall, such possible future research endeavors, in our opinion, can be beneficial for the IS academic and practical community as they would lead to the expansion of the knowledge base and a better understanding of various phenomena that are connected with informational services and information transparency.

6.6 Conclusion

This dissertation contributes to a growing body of literature on information transparency, expanding its boundaries to the order fulfillment process in online shopping. Through this lens, the suggested theoretical model of DITS is an important conceptual framework for understanding the influence of information transparency on e-commerce customer outcomes, such as

information satisfaction, which, in turn, is an essential part of overall customer satisfaction. As continuous developments in information systems are changing customers' overall shopping experience, especially in e-commerce, it is essential for the academic community and practitioners to understand the newly emerging antecedents and consequences of the updated realm of e-commerce. To do so, we write this dissertation to offer a strategic perspective on the future of the increasing importance of information in customer satisfaction outcomes. In Chapter 1, we introduce our new ideas and set the scene to highlight the importance of this research effort. Chapter 2 is dedicated to the description of the in-depth literature review process conducted to secure the theoretical bases for the relationships suggested in the DITS model. In Chapter 3, we describe the suggested research model, define the main relationships, and define the pool of hypotheses that were tested in this dissertation. Chapter 4 presents a detailed justification for the chosen research methodology, the description of data collection stages, and the data analysis procedures. Chapter 5 presents the results of the statistical analysis and is followed by Chapter 6, which focuses on the discussion of findings, limitations, future research possibilities, and an overall conclusion for the conducted work.

Even with advancements in online shopping technology and an overall increase in the quality of goods and services that are offered, customers have reported a decline in satisfaction with their purchases in recent years. This dissertation presents one of the possible reasons for such a decline - when forming perceptions about online shopping satisfaction, customers evaluate supplementary services in addition to the core product they have purchased. These supplementary services that are provided online are informational. Moreover, in cases where the supplementary informational services do not meet the customers' expectations, their DIS levels

decrease. As we believe DIS to be one of the dimensions of overall customer satisfaction, we suggest that one explanation for the decline in customer satisfaction levels is due to the ineffectiveness of informational services accompanying online purchases. It is no longer sufficient for companies to ensure the high quality of the primary products (goods or services) to secure the high satisfaction rates of their customers. Much of the effort should be aimed at meeting customers' expectations in the realm of these supplementary informational services (e.g., order confirmations, order status updates, shipping, tracking services, etc.). Thus, by introducing the DITS model, this dissertation makes significant contributions to theoretical and practical areas. It enriches our comprehension of satisfaction, providing sturdy groundwork for prospective research on customer satisfaction in a digital context. Additionally, it offers valuable insights for companies aiming to enhance their customer relationships and satisfaction.

In conclusion, we hope that our findings inspire and motivate other researchers to further investigate the impact of information and transparency perceptions on various customer satisfaction outcomes, particularly in the context of the increasing reach of e-commerce and its technologies.

REFERENCES

2018 Global Ecommerce Study. Summary report. (2020). https://www.pitneybowes.com/content/dam/pitneybowes/us/en/ecommerce-study/2018-global-ecommerce-study-overview.pdf

2020 Customer Expectations Report. (2020). https://go.gladly.com/customer-expectations-report-2020

Afthanorhan, W. (2014). Hierarchical component using reflective-formative measurement model in partial least square structural equation modeling (Pls-Sem). *International Journal of Mathematics*, *2*(2), 33–49.

Aguinis, H., & Bradley, K. J. (2014). Best Practice Recommendations for Designing and Implementing Experimental Vignette Methodology Studies. *Organizational Research Methods*, *17*(4), 351–371. https://doi.org/10.1177/1094428114547952

Akkermans, H., Bogerd, P., & Van Doremalen, J. (2004). Travail, transparency and trust: A case study of computer-supported collaborative supply chain planning in high-tech electronics. *European Journal of Operational Research*, *153*(2), 445–456.

Albrecht, U.-V. (2013). Transparency of Health-Apps for Trust and Decision Making. *Journal of Medical Internet Research*, *15*(12), e277. https://doi.org/10.2196/jmir.2981

Al-Jabri, I. M., & Roztocki, N. (2015). Adoption of ERP systems: Does information transparency matter? *Telematics and Informatics*, *32*(2), 300–310. https://doi.org/10.1016/j.tele.2014.09.005

American Customer Satisfaction Index. (2019). https://www.theacsi.org/

Anderson, E. W. (1998). Customer Satisfaction and Word of Mouth. *Journal of Service Research*, *1*(1), 5–17. https://doi.org/10.1177/109467059800100102

Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research. *Methodology*.

Awad, N. F., & Krishnan, M. S. (2006). The Personalization Privacy Paradox: An Empirical Evaluation of Information Transparency and the Willingness to Be Profiled Online for Personalization. *MIS Quarterly*, *30*(1), 13. https://doi.org/10.2307/25148715

Awang, Z. (2012). A handbook on structural equation modeling using AMOS. *Universiti Technologi MARA Press, Malaysia*, 83–102.

Awang, Z., Afthanorhan, A., Mohamad, M., & Asri, M. A. M. (2015). An evaluation of measurement model for medical tourism research: the confirmatory factor analysis

approach. *International Journal of Tourism Policy*, *6*(1), 29. https://doi.org/10.1504/IJTP.2015.075141

Bagozzi, R. P. (1986). *Principles of marketing management: Science Research Associates Chicago*.

Bailey, J. (2012). Informal screencasting: results of a customer-satisfaction survey with a convenience sample. *New Library World*, *113*(1/2), 7–26. https://doi.org/10.1108/03074801211199013

Bailey, J. E., & Pearson, S. W. (1983). Development of a Tool for Measuring and Analyzing Computer User Satisfaction. *Management Science*, *29*(5), 530–545. https://doi.org/10.1287/mnsc.29.5.530

Baird, K., Su, S., & Tung, A. (2018). Organizational Culture and Environmental Activity Management. *Business Strategy and the Environment*, *27*(3), 403–414. https://doi.org/10.1002/bse.2006

Bandura, A. (2010). Self-efficacy. The Corsini encyclopedia of psychology. *John Wiley & Sons, Inc. Doi*, *10*(9780470479216), 1–3.

Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The autism-spectrum quotient (AQ): Evidence from asperger syndrome/high-functioning autism, malesand females, scientists and mathematicians. *Journal of Autism and Developmental Disorders*, *31*, 5–17.

Baroudi, J. J., Olson, M. H., & Ives, B. (1986). An empirical study of the impact of user involvement on system usage and information satisfaction. *Communications of the ACM*, *29*(3), 232–238. https://doi.org/10.1145/5666.5669

Baroudi, J. J., & Orlikowski, W. J. (1988). A Short-Form Measure of User Information Satisfaction: A Psychometric Evaluation and Notes on Use. *Journal of Management Information Systems*, *4*(4), 44–59. https://doi.org/10.1080/07421222.1988.11517807

Barrett, S., & Konsynski, B. (1982). Inter-Organization Information Sharing Systems. *MIS Quarterly*, *6*, 93. https://doi.org/10.2307/248993

Barsky, J. D. (1992). Customer Satisfaction in the Hotel Industry. *Hospitality Research Journal*, *16*(1), 51–73. https://doi.org/10.1177/109634809201600105

Barter, C., & Renold, E. (1999). The use of vignettes in qualitative research. *Social Research Update*, *25*(9), 1–6.

Bartikowski, B., & Merunka, D. (2015). Modeling the effects of the three dimensions of trust towards the e-vendor on online consumer behavior. *Systèmes d'information et Management*, *20*(1), 9–30.

Bawden, D., & Robinson, L. (2009). The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of Information Science*, *35*(2), 180–191. https://doi.org/10.1177/0165551508095781

Becker, J.-M., Ringle, C. M., & Sarstedt, M. (2018). Estimating Moterating effects in PLS-SEM andPLSc-SEM: interaction term gerneration* data treatment. *Journal of Applied Structural Equation Modeling*, *2*, 1–21.

Belk, R. W. (1975). Situational Variables and Consumer Behavior. *Journal of Consumer Research*, *2*(3), 157. https://doi.org/10.1086/208627

Bell, C. R., & Patterson, J. R. (2011). *Wired and dangerous: How your customers have changed and what to do about it*. Berrett-Koehler Publishers.

Bellou, V. (2008). Identifying organizational culture and subcultures within Greek public hospitals. *Journal of Health Organization and Management*, *22*(5), 496–509. https://doi.org/10.1108/14777260810898714

Bellou, V. (2010). Organizational culture as a predictor of job satisfaction: the role of gender and age. *Career Development International*, *15*(1), 4–19. https://doi.org/10.1108/13620431011020862

Berger, J., Sorensen, A. T., & Rasmussen, S. J. (2010). Positive Effects of Negative Publicity: When Negative Reviews Increase Sales. *Marketing Science*, *29*(5), 815–827. https://doi.org/10.1287/mksc.1090.0557

Berghäll, E. (2016). Innovation, competition and technical efficiency. *Cogent Business & Management*, *3*(1), 1199522. https://doi.org/10.1080/23311975.2016.1199522

Berry, L. L., & Parasuraman, A. (1991). Marketing Services (New York. *NY: Free*.

Berry, L. L., Wall, E. A., & Carbone, L. P. (2006). Service Clues and Customer Assessment of the Service Experience: Lessons from Marketing. *Academy of Management Perspectives*, *20*(2), 43–57. https://doi.org/10.5465/amp.2006.20591004

Berry, L. L., Zeithaml, V. A., & Parasuraman, A. (1985). Quality counts in services, too. *Business Horizons*, *28*(3), 44–52.

Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government Information Quarterly*, *27*(3), 264–271. https://doi.org/10.1016/j.giq.2010.03.001

Betzing, H. J., Beverungen, D., & Becker, J. (2018). Design principles for co-creating digital customer experience in high street retail. *Tagungsband Data Driven X---Turning Data into Value---Band V*.

Bhargave, R., Mantonakis, A., & White, K. (2016). The Cue-of-the-Cloud Effect: When Reminders of Online Information Availability Increase Purchase Intentions and Choice. *Journal of Marketing Research*, *53*(5), 699–711. https://doi.org/10.1509/jmr.14.0420

Bhattacherjee, A. (2001). Understanding Information Systems Continuance: An Expectation-Confirmation Model. *MIS Quarterly*, *25*(3), 351. https://doi.org/10.2307/3250921

Bloch, P. H., & Richins, M. L. (1983). A Theoretical Model for the Study of Product Importance Perceptions. *Journal of Marketing*, *47*(3), 69–81. https://doi.org/10.1177/002224298304700308

Bolton, R. N., McColl-Kennedy, J. R., Cheung, L., Gallan, A., Orsingher, C., Witell, L., & Zaki, M. (2018). Customer experience challenges: bringing together digital, physical and social realms. *Journal of Service Management*, *29*(5), 776–808. https://doi.org/10.1108/JOSM-04-2018-0113

Boshoff, C., & Gray, B. (2004). The relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. *South African Journal of Business Management*, *35*(4), 27–37.

Braddy, P. W., Meade, A. W., & Kroustalis, C. M. (2006). Organizational recruitment website effects on viewers' perceptions of organizational culture. *Journal of Business and Psychology*, *20*, 525–543.

Brief, A. P., & Dukerich, J. M. (1991). Theory in organizational-behavior-can it be useful. *Research in Organizational Behavior*, *13*, 327–352.

Bringeland, G. H., Nacu, A., Waje-Andreassen, U., Thomassen, L., & Naess, H. (2016). U-curve relation between cholesterol and prior ischemic stroke. *Brain and Behavior*, *6*(11). https://doi.org/10.1002/brb3.574

Brody, H. (1989). Transparency: Informed Consent in Primary Care. *The Hastings Center Report*, *19*(5), 5. https://doi.org/10.2307/3562634

Brosze, T., Bauhoff, F., Stich, V., & Fuchs, S. (2010). High Resolution Supply Chain Management–Resolution of the polylemma of production by information transparency and organizational integration. *Advances in Production Management Systems. New Challenges, New Approaches: IFIP WG 5.7 International Conference, APMS 2009, Bordeaux, France, September 21-23, 2009, Revised Selected Papers*, 325–332.

Budd, R., & Kandemir, A. (2018). Using vignettes to explore reality and values with young people. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *19*(2), 23.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk. *Perspectives on Psychological Science*, *6*(1), 3–5. https://doi.org/10.1177/1745691610393980

Bushman, R. M., & Smith, A. J. (2003). Transparency, financial accounting information, and corporate governance. *Financial Accounting Information, and Corporate Governance. Economic Policy Review*, *9*(1).

Byrd, T. A., & Turner, D. E. (2000). Measuring the Flexibility of Information Technology Infrastructure: Exploratory Analysis of a Construct. *Journal of Management Information Systems*, *17*(1), 167–208. https://doi.org/10.1080/07421222.2000.11045632

Carpenter, T. P., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J., Isenberg, N., & Chakroff, A. (2019). Survey-software implicit association tests: A methodological and empirical analysis. *Behavior Research Methods*, *51*(5), 2194–2208. https://doi.org/10.3758/s13428-019-01293-3

Cavana, R. Y., Corbett, L. M., & Lo, Y. L. (2007). Developing zones of tolerance for managing passenger rail service quality. *International Journal of Quality & Reliability Management*, *24*(1), 7–31.

Cenfetelli, R. T., Benbasat, I., & Al-Natour, S. (2008). Addressing the What and How of Online Services: Positioning Supporting-Services Functionality and Service Quality for Business-to-Consumer Success. *Information Systems Research*, *19*(2), 161–181. http://www.jstor.org/stable/23015431

Chandler, J., & Shapiro, D. (2016). Conducting clinical research using crowdsourced convenience samples. *Annual Review of Clinical Psychology*, *12*, 53–81.

Chang, H.-J., Eckman, M., & Yan, R.-N. (2011). Application of the Stimulus-Organism-Response model to the retail environment: the role of hedonic motivation in impulse buying behavior. *The International Review of Retail, Distribution and Consumer Research*, *21*(3), 233–249. https://doi.org/10.1080/09593969.2011.578798

Chang, T.-Z., & Wildt, A. R. (1994). Price, product information, and purchase intention: An empirical study. *Journal of the Academy of Marketing Science*, *22*, 16–27.

Changchit, C., & Klaus, T. (2020). Determinants and Impact of Online Reviews on Product Satisfaction. *Journal of Internet Commerce*, *19*(1), 82–102. https://doi.org/10.1080/15332861.2019.1672135

Chau, P. Y. K. (1997). Reexamining a model for evaluating information center success using a structural equation modeling approach. *Decision Sciences*, *28*(2), 309–334.

Chen, S. C., & Dhillon, G. S. (2003). Interpreting dimensions of consumer trust in e-commerce. *Information Technology and Management*, *4*, 303–318.

Chen, Y.-C. (2012). A comparative study of e-government XBRL implementations: The potential of improving information transparency and efficiency. *Government Information Quarterly*, *29*(4), 553–563. https://doi.org/10.1016/j.giq.2012.05.009

Chen, Y.-C., Shang, R.-A., & Kao, C.-Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. *Electronic Commerce Research and Applications*, *8*(1), 48–58. https://doi.org/10.1016/j.elerap.2008.09.001

Chevalier, J. A., & Mayzlin, D. (2006). The Effect of Word of Mouth on Sales: Online Book Reviews. *Journal of Marketing Research*, *43*(3), 345–354. https://doi.org/10.1509/jmkr.43.3.345

Chi, L.-C. (2009). Do transparency and disclosure predict firm performance? Evidence from the Taiwan market. *Expert Systems with Applications*, *36*(8), 11198–11203. https://doi.org/10.1016/j.eswa.2009.02.099

Chiu, C., Wang, E. T. G., Fang, Y., & Huang, H. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. https://doi.org/10.1111/j.1365-2575.2012.00407.x

Choi, E. J., & Kim, S.-H. (2013). The study of the impact of perceived quality and value of social enterprises on customer satisfaction and re-purchase intention. *International Journal of Smart Home*, *7*(1), 239–252.

Chopra, S., & Meindl, P. (2001). Strategy, planning, and operation. *Supply Chain Management*, *15*(5), 71–85.

Churchill, G. A., & Surprenant, C. (1982). An Investigation into the Determinants of Customer Satisfaction. *Journal of Marketing Research*, *19*(4), 491–504. https://doi.org/10.1177/002224378201900410

Cohen, J. B., & Goldberg, M. E. (1970). The Dissonance Model in Post-Decision Product Evaluation. *Journal of Marketing Research*, *7*(3), 315–321. https://doi.org/10.1177/002224377000700305

Compeau, D. R., & Higgins, C. A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, *19*(2), 189. https://doi.org/10.2307/249688

Constant, D., Kiesler, S., & Sproull, L. (1994). What's Mine Is Ours, or Is It? A Study of Attitudes about Information Sharing. *Information Systems Research*, *5*(4), 400–421. https://doi.org/10.1287/isre.5.4.400

Cook, T. D., Campbell, D. T., & Day, A. (1979). *Quasi-experimentation: Design & analysis issues for field settings* (Vol. 351). Houghton Mifflin Boston.

Corbitt, B. J., Thanasankit, T., & Yi, H. (2003). Trust and e-commerce: a study of consumer perceptions. *Electronic Commerce Research and Applications*, *2*(3), 203–215. https://doi.org/10.1016/S1567-4223(03)00024-3

Cronin, J. J., & Taylor, S. A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing*, *56*(3), 55–68. https://doi.org/10.1177/002224299205600304

Cutler, D., & Dafny, L. (2011). Designing Transparency Systems for Medical Care Prices. *New England Journal of Medicine*, *364*(10), 894–895. https://doi.org/10.1056/NEJMp1100540

Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. *Englewood Cliffs, NJ*, *2*(4), 169–187.

Cyr, D., Head, M., Larios, H., & Pan, B. (2009). Exploring Human Images in Website Design: A Multi-Method Approach. *MIS Quarterly*, *33*(3), 539. https://doi.org/10.2307/20650308

Dai, Y. N., Viken, G., Joo, E., & Bente, G. (2018). Risk assessment in e-commerce: How sellers' photos, reputation scores, and the stake of a transaction influence buyers' purchase behavior and information processing. *Computers in Human Behavior*, *84*, 342–351.

Danaher, P. J., Wilson, I. W., & Davis, R. A. (2003). A Comparison of Online and Offline Consumer Brand Loyalty. *Marketing Science*, *22*(4), 461–476. https://doi.org/10.1287/mksc.22.4.461.24907

Danker, M. (2013). *Understanding Stakeholder Activism, Managing Transparency Risk* (pp. 33–72). https://doi.org/10.1108/S2043-0523(2013)0000005006

Danniswara, R., Sandhyaduhita, P., & Munajat, Q. (2020). The impact of EWOM referral, celebrity endorsement, and information quality on purchase decision: A case of Instagram. In *Global branding: Breakthroughs in research and practice* (pp. 882–905). IGI Global.

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Harvard Business Press.

Davis-Sramek, B., Mentzer, J. T., & Stank, T. P. (2008). Creating consumer durable retailer customer loyalty through order fulfillment service operations. *Journal of Operations Management*, *26*(6), 781–797. https://doi.org/10.1016/j.jom.2007.07.001

Dawes, S. S. (2010). Stewardship and usefulness: Policy principles for information-based transparency. *Government Information Quarterly*, *27*(4), 377–383. https://doi.org/10.1016/j.giq.2010.07.001

de Macedo, J. Q., Khanlou, N., & Luis, M. A. V. (2015). Use of vignettes in qualitative research on drug use: Scoping review and case example from Brazil. *International Journal of Mental Health and Addiction*, *13*, 549–562.

Dellarocas, C., Zhang, X. (Michael), & Awad, N. F. (2007). Exploring the value of online product reviews in forecasting sales: The case of motion pictures. *Journal of Interactive Marketing*, *21*(4), 23–45. https://doi.org/10.1002/dir.20087

DeLone, W. H., & McLean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, *3*(1), 60–95. https://doi.org/10.1287/isre.3.1.60

Dewan, R. M., Freimer, M. L., & Jiang, Y. (2007). A Temporary Monopolist: Taking Advantage of Information Transparency on the Web. *Journal of Management Information Systems*, *24*(2), 167–194. https://doi.org/10.2753/MIS0742-1222240207

Diehl, K., Kornish, L. J., & Lynch, J. G. (2003). Smart Agents: When Lower Search Costs for Quality Information Increase Price Sensitivity. *Journal of Consumer Research*, *30*(1), 56–71. https://doi.org/10.1086/374698

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, *48*(2), 147. https://doi.org/10.2307/2095101

Djatmiko, T., & Pradana, R. (2016). Brand image and product price; Its impact for Samsung smartphone purchasing decision. *Procedia-Social and Behavioral Sciences*, *219*, 221–227.

Dornisch, M. (2013). The Digital Divide in Classrooms: Teacher Technology Comfort and Evaluations. *Computers in the Schools*, *30*(3), 210–228. https://doi.org/10.1080/07380569.2012.734432

Duan, W., Gu, B., & Whinston, A. B. (2008). Do online reviews matter? — An empirical investigation of panel data. *Decision Support Systems*, *45*(4), 1007–1016. https://doi.org/10.1016/j.dss.2008.04.001

Duffelmeyer, B. B. (2000). Critical computer literacy: computers in first-year composition as topic and environment. *Computers and Composition*, *17*(3), 289–307. https://doi.org/10.1016/S8755-4615(00)00036-0

Duncan, N. B. (1995). Capturing Flexibility of Information Technology Infrastructure: A Study of Resource Characteristics and Their Measure. *Journal of Management Information Systems*, *12*(2), 37–57. https://doi.org/10.1080/07421222.1995.11518080

Dvir, N., & Gafni, R. (2018). When less is more: empirical study of the relation between consumer behavior and information provision on commercial landing pages. *Informing Science*, *21*, 19.

Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing buyer-seller relationships. *Journal of Marketing*, *51*(2), 11–27.

Eastin, M. S., & LaRose, R. (2006). Internet Self-Efficacy and the Psychology of the Digital Divide. *Journal of Computer-Mediated Communication*, *6*(1), 0–0. https://doi.org/10.1111/j.1083-6101.2000.tb00110.x

Edmunds, A., & Morris, A. (2000). The problem of information overload in business organisations: a review of the literature. *International Journal of Information Management*, *20*(1), 17–28. https://doi.org/10.1016/S0268-4012(99)00051-1

Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78.

Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, *14*(1), 57–74. https://doi.org/10.5465/amr.1989.4279003

Eklof, J., Podkorytova, O., & Malova, A. (2020). Linking customer satisfaction with financial performance: an empirical study of Scandinavian banks. *Total Quality Management & Business Excellence*, *31*(15–16), 1684–1702. https://doi.org/10.1080/14783363.2018.1504621

El-Adly, M. I. (2019). Modelling the relationship between hotel perceived value, customer satisfaction, and customer loyalty. *Journal of Retailing and Consumer Services*, *50*, 322–332. https://doi.org/10.1016/j.jretconser.2018.07.007

Eppler, M. J., & Mengis, J. (2008). The Concept of Information Overload-A Review of Literature from Organization Science, Accounting, Marketing, MIS, and Related Disciplines (2004) The Information Society: An International Journal, 20 (5), 2004, pp. 1–20. *Kommunikationsmanagement Im Wandel: Beiträge Aus 10 Jahren= Mcminstitute*, 271–305.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing. *Journal of Business Research*, *54*(2), 177–184. https://doi.org/10.1016/S0148-2963(99)00087-9

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology & Marketing*, *20*(2), 139–150. https://doi.org/10.1002/mar.10064

Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Finch, J. (1987). The Vignette Technique in Survey Research. *Sociology*, *21*(1), 105–114. https://doi.org/10.1177/0038038587021001008

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.1177/002224378101800104

Freeze, R., & Raschke, R. L. (2007). *An assessment of formative and reflective constructs in IS research*.

Frost, F. A., & Kumar, M. (2001). Service quality between internal customers and internal suppliers in an international airline. *International Journal of Quality & Reliability Management*, *18*(4), 371–386. https://doi.org/10.1108/02656710110386996

Furner, C. P., Zinko, R., & Zhu, Z. (2016). Electronic word-of-mouth and information overload in an experiential service industry. *Journal of Service Theory and Practice*, *26*(6), 788–810. https://doi.org/10.1108/JSTP-01-2015-0022

Gefen, D. (2000). E-commerce: the role of familiarity and trust. *Omega*, *28*(6), 725–737. https://doi.org/10.1016/S0305-0483(00)00021-9

George, J. (2000). The role of time in theory and theory building. *Journal of Management*, *26*(4), 657–684. https://doi.org/10.1016/S0149-2063(00)00051-9

Geraats, P. M. (2002). Central Bank Transparency. *The Economic Journal*, *112*(483), F532–F565. https://doi.org/10.1111/1468-0297.00082

Ghobadian, A., Speller, S., & Jones, M. (1994). Service Quality. *International Journal of Quality & Reliability Management*, *11*(9), 43–66. https://doi.org/10.1108/02656719410074297

Gigone, D., & Hastie, R. (1993). The common knowledge effect: Information sharing and group judgment. *Journal of Personality and Social Psychology*, *65*(5), 959–974. https://doi.org/10.1037/0022-3514.65.5.959

Gómez, M. I., McLaughlin, E. W., & Wittink, D. R. (2004). Customer satisfaction and retail sales performance: an empirical investigation. *Journal of Retailing*, *80*(4), 265–278. https://doi.org/10.1016/j.jretai.2004.10.003

Goodhue, D. L., Lewis, W., & Thompson, R. (2012). Does PLS have advantages for small sample size or non-normal data? *MIS Quarterly*, 981–1001.

Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *The Journal of Strategic Information Systems*, *19*(3), 207–228. https://doi.org/10.1016/j.jsis.2010.05.001

Granados, N., & Gupta, A. (2013). Transparency strategy: Competing with information in a digital world. *MIS Quarterly*, 637–641.

Granados, N., Gupta, A., & Kauffman, R. J. (2006). The impact of IT on market information and transparency: A unified theoretical framework. *Journal of the Association for Information Systems*, *7*(3), 7.

Granados, N., Gupta, A., & Kauffman, R. J. (2010). Research Commentary—Information Transparency in Business-to-Consumer Markets: Concepts, Framework, and Research Agenda. *Information Systems Research*, *21*(2), 207–226. https://doi.org/10.1287/isre.1090.0249

Grant, L. (1998). Your customers are telling the truth. *Fortune*, *137*(3), 164-+.

Grimmelikhuijsen, S. G., & Welch, E. W. (2012). Developing and Testing a Theoretical Framework for Computer-Mediated Transparency of Local Governments. *Public Administration Review*, *72*(4), 562–571. https://doi.org/10.1111/j.1540-6210.2011.02532.x

Gundersen, M. G., Heide, M., & Olsson, U. H. (1996). Hotel Guest Satisfaction among Business Travelers. *Cornell Hotel and Restaurant Administration Quarterly*, *37*(2), 72–81. https://doi.org/10.1177/001088049603700222

Hair Jr., J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2010). *Multivariate Data Analysis (ed.): Pearson Prentice Hall*.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer Nature.

Hair Jr, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24.

Hair Jr, J., Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

Han, J., Pei, J., & Tong, H. (2022). *Data mining: concepts and techniques*. Morgan kaufmann.

Hanif, M., Hafeez, S., & Riaz, A. (2010). Factors affecting customer satisfaction. *International Research Journal of Finance and Economics*, *60*(1), 44–52.

Hanna, R. C., Lemon, K. N., & Smith, G. E. (2019). Is transparency a good thing? How online price transparency and variability can benefit firms and influence consumer decision making. *Business Horizons*, *62*(2), 227–236. https://doi.org/10.1016/j.bushor.2018.11.006

Hansemark, O. C., & Albinsson, M. (2004). Customer satisfaction and retention: the experiences of individual employees. *Managing Service Quality: An International Journal*, *14*(1), 40–57. https://doi.org/10.1108/09604520410513668

Happé, F., & Frith, U. (2006). The Weak Coherence Account: Detail-focused Cognitive Style in Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, *36*(1), 5–25. https://doi.org/10.1007/s10803-005-0039-0

Harris, N. (2001). Private exchanges may allow B-to-B commerce to thrive after all. *Wall Street Journal*, *16*.

Hart, P., & Saunders, C. (1997). Power and Trust: Critical Factors in the Adoption and Use of Electronic Data Interchange. *Organization Science*, *8*(1), 23–42. https://doi.org/10.1287/orsc.8.1.23

Häubl, G., & Trifts, V. (2000). Consumer Decision Making in Online Shopping Environments: The Effects of Interactive Decision Aids. *Marketing Science*, *19*(1), 4–21. https://doi.org/10.1287/mksc.19.1.4.15178

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (Vol. 20, pp. 277–319). Emerald Group Publishing Limited.

Hess Jr., R. L., Ganesan, S., & Klein, N. M. (2003). Service Failure and Recovery: The Impact of Relationship Factors on Customer Satisfaction. *Journal of the Academy of Marketing Science*, *31*(2), 127–145. https://doi.org/10.1177/0092070302250898

Hill, M. (1997). Participatory research with children. *Child & Family Social Work*, *2*(3), 171–183. https://doi.org/10.1046/j.1365-2206.1997.00056.x

Hinsch, M., Kaddar, M., & Schmitt, S. (2014). Enhancing medicine price transparency through price information mechanisms. *Globalization and Health*, *10*(1), 1–11.

Ho, A., Sharma, P., & Hosie, P. (2015). Exploring customers' zone of tolerance for B2B professional service quality. *Journal of Services Marketing*, *29*(5), 380–392. https://doi.org/10.1108/JSM-06-2014-0212

Holden, H., & Rada, R. (2011). Understanding the Influence of Perceived Usability and Technology Self-Efficacy on Teachers' Technology Acceptance. *Journal of Research on Technology in Education*, *43*(4), 343–367. https://doi.org/10.1080/15391523.2011.10782576

Homburg, C., Hoyer, W. D., & Fassnacht, M. (2002). Service Orientation of a Retailer's Business Strategy: Dimensions, Antecedents, and Performance Outcomes. *Journal of Marketing*, *66*(4), 86–101. https://doi.org/10.1509/jmkg.66.4.86.18511

Horton, J. J., Rand, D. G., & Zeckhauser, R. J. (2011). The online laboratory: conducting experiments in a real labor market. *Experimental Economics*, *14*(3), 399–425. https://doi.org/10.1007/s10683-011-9273-9

Horton Jr, F. W. (1983). Information literacy vs. computer literacy. *Bulletin of the American Society for Information Science*, *9*(4), 14–16.

Hossain, M. A., & Quaddus, M. (2012). Expectation–confirmation theory in information system research: A review and analysis. *Information Systems Theory: Explaining and Predicting Our Digital Society, Vol. 1*, 441–469.

Howard, J. A. (1974). The Structure of Buyer Behavior, Consumer Behavior; Theory and Application. *Bostone, Allyn & Bacon*.

Howard, J. A., & Sheth, J. N. (1969). The theory of buyer behavior. *New York, 63*, 145.

Hoyer, W. D. (1984). An Examination of Consumer Decision Making for a Common Repeat Purchase Product. *Journal of Consumer Research*, *11*(3), 822. https://doi.org/10.1086/209017

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Sage.

Hsieh, J. J. P.-A., Sharma, P., Rai, A., & Parasuraman, A. (2013). Exploring the Zone of Tolerance for Internal Customers in IT-Enabled Call Centers. *Journal of Service Research*, *16*(3), 277–294. https://doi.org/10.1177/1094670513478831

Hu, K. (2010). Evaluating City Bus Service Based on Zone of Tolerance of Expectation and Normalized Importance. *Transport Reviews*, *30*(2), 195–217. https://doi.org/10.1080/01441640902884780

Hu, M., Rabinovich, E., & Hou, H. (2015). Customers complaints in online shopping: The role of signal credibility. *Journal of Electronic Commerce Research*, *16*(2), 95.

Hughes, R., & Huby, M. (2002). The application of vignettes in social and nursing research. *Journal of Advanced Nursing*, *37*(4), 382–386. https://doi.org/10.1046/j.1365-2648.2002.02100.x

Hult, G. T. M., Sharma, P. N., Morgeson, F. V., & Zhang, Y. (2019). Antecedents and Consequences of Customer Satisfaction: Do They Differ Across Online and Offline Purchases? *Journal of Retailing*, *95*(1), 10–23. https://doi.org/10.1016/j.jretai.2018.10.003

Hur, Y., Ko, Y. J., & Valacich, J. (2011). A Structural Model of the Relationships Between Sport Website Quality, E-Satisfaction, and E-Loyalty. *Journal of Sport Management*, *25*(5), 458–473. https://doi.org/10.1123/jsm.25.5.458

Hwang, J. S., Leem, C. S., & Moon, H. J. (2008). A Study on Relationships among Accounting Transparency, Accounting Information Transparency, and XBRL. *2008 Third International Conference on Convergence and Hybrid Information Technology*, *1*, 502–509. https://doi.org/10.1109/ICCIT.2008.221

Hwong, C. (2018). *The E-Commerce Ecosystem: The State of Cross-Device Digital Shopping*.

Information Literacy Competency Standards for Higher Education . (2000). https://alair.ala.org/bitstream/handle/11213/7668/ACRL%20Information%20Literacy%20Competency%20Standards%20for%20Higher%20Education.pdf?sequence=1&isAllowed=y

Ives, B., & Learmonth, G. P. (1984). The information system as a competitive weapon. *Communications of the ACM*, *27*(12), 1193–1201. https://doi.org/10.1145/2135.2137

Ives, B., Olson, M. H., & Baroudi, J. J. (1983). The measurement of user information satisfaction. *Communications of the ACM*, *26*(10), 785–793. https://doi.org/10.1145/358413.358430

Jacoby, J. (2002). Stimulus-Organism-Response Reconsidered: An Evolutionary Step in Modeling (Consumer) Behavior. *Journal of Consumer Psychology*, *12*(1), 51–57. https://doi.org/10.1207/S15327663JCP1201_05

Jaeger, P. T., & Bertot, J. C. (2010). Transparency and technological change: Ensuring equal and sustained public access to government information. *Government Information Quarterly*, *27*(4), 371–376. https://doi.org/10.1016/j.giq.2010.05.003

Jahanshahi, A. A., Gashti, M. A. H., Mirdamadi, S. A., Nawaser, K., & Khaksar, S. M. S. (2011). Study the effects of customer service and product quality on customer satisfaction and loyalty. *International Journal of Humanities and Social Science*, *1*(7), 253–260.

Jamal, A., & Naser, K. (2002). Customer satisfaction and retail banking: an assessment of some of the key antecedents of customer satisfaction in retail banking. *International Journal of Bank Marketing*, *20*(4), 146–160. https://doi.org/10.1108/02652320210432936

Jarvenpaa, S. L., & Staples, D. S. (2000). The use of collaborative electronic media for information sharing: an exploratory study of determinants. *The Journal of Strategic Information Systems*, *9*(2–3), 129–154. https://doi.org/10.1016/S0963-8687(00)00042-1

Johnson, M. D., Hollenbeck, J. R., Humphrey, S. E., Ilgen, D. R., Jundt, D., & Meyer, C. J. (2006). Cutthroat Cooperation: Asymmetrical Adaptation To Changes In Team Reward Structures. *Academy of Management Journal*, *49*(1), 103–119. https://doi.org/10.5465/amj.2006.20785533

Johnston, R. (1995). The zone of tolerance. *International Journal of Service Industry Management*, *6*(2), 46–61. https://doi.org/10.1108/09564239510084941

Joo, Y.-J., Bong, M., & Choi, H.-J. (2000). Self-efficacy for self-regulated learning, academic self-efficacy, and internet self-efficacy in web-based instruction. *Educational Technology Research and Development*, *48*(2), 5–17. https://doi.org/10.1007/BF02313398

Kachalia, A. (2013). Improving patient safety through transparency. *The New England Journal of Medicine*, *369*(18), 1677.

Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: the role of customer satisfaction and image. *International Journal of Contemporary Hospitality Management*, *12*(6), 346–351. https://doi.org/10.1108/09596110010342559

Kaufmann, D., & Bellver, A. (2005). Transparenting transparency: Initial empirics and policy applications. *Available at SSRN 808664*.

Keen, P. G. W. (1981). *Telecommunications and business policy: the coming impacts of communication on management*.

Kees, J., Berry, C., Burton, S., & Sheehan, K. (2017). An analysis of data quality: Professional panels, student subject pools, and Amazon's Mechanical Turk. *Journal of Advertising*, *46*(1), 141–155.

Kerlinger, F. N. (1966). *Foundations of behavioral research.*

Kettinger, & Lee. (2005). Zones of Tolerance: Alternative Scales for Measuring Information Systems Service Quality. *MIS Quarterly*, *29*(4), 607. https://doi.org/10.2307/25148702

Kettinger, W. J., & Lee, C. C. (1997). Pragmatic Perspectives on the Measurement of Information Systems Service Quality. *MIS Quarterly*, *21*(2), 223. https://doi.org/10.2307/249421

Kettinger, W. J., & Lee, C. C. (1999). Replication of Measures in Information Systems Research: The Case of IS SERVQUAL. *Decision Sciences*, *30*(3), 893–899. https://doi.org/10.1111/j.1540-5915.1999.tb00912.x

Kim, C., Tao, W., Shin, N., & Kim, K.-S. (2010). An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic Commerce Research and Applications*, *9*(1), 84–95. https://doi.org/10.1016/j.elerap.2009.04.014

Kim, D. J. (2012). An investigation of the effect of online consumer trust on expectation, satisfaction, and post-expectation. *Information Systems and E-Business Management*, *10*, 219–240.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and Satisfaction, Two Stepping Stones for Successful E-Commerce Relationships: A Longitudinal Exploration. *Information Systems Research*, *20*(2), 237–257. https://doi.org/10.1287/isre.1080.0188

Kim, H.-R. (2005). Developing an index of online customer satisfaction. *Journal of Financial Services Marketing*, *10*(1), 49–64. https://doi.org/10.1057/palgrave.fsm.4770173

Kim, J., & Lennon, S. J. (2013). Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention. *Journal of Research in Interactive Marketing*, *7*(1), 33–56. https://doi.org/10.1108/17505931311316734

Kim, S. S., & Malhotra, N. K. (2005). A Longitudinal Model of Continued IS Use: An Integrative View of Four Mechanisms Underlying Postadoption Phenomena. *Management Science*, *51*(5), 741–755. https://doi.org/10.1287/mnsc.1040.0326

Kim, S., & Stoel, L. (2004). Apparel retailers: website quality dimensions and satisfaction. *Journal of Retailing and Consumer Services*, *11*(2), 109–117. https://doi.org/10.1016/S0969-6989(03)00010-9

Kimery, K. M., & McCord, M. (2002). Third party assurances: mapping the road to trust in eretailing. *Journal of Information Technology Theory and Application (JITTA)*, *4*(2), 7.

Klaus, P. (2014). Towards practical relevance—Delivering superior firm performance through digital customer experience strategies. *Journal of Direct, Data and Digital Marketing Practice*, *15*, 306–316.

Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford publications.

Kock, N., & Hadaya, P. (2018). Minimum sample size estimation in PLS-SEM: The inverse square root and gamma-exponential methods. *Information Systems Journal*, *28*(1), 227–261.

Kolstad, I., & Wiig, A. (2009). Is Transparency the Key to Reducing Corruption in Resource-Rich Countries? *World Development*, *37*(3), 521–532. https://doi.org/10.1016/j.worlddev.2008.07.002

Kotler, P. (1997). Managing service businesses and product support services. *Marketing Management. Analysis, Planning, Implementation, and Control*, 465–492.

Kotrlik, J., & Higgins, C. (2001). Organizational research: Determining appropriate sample size in survey research appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, *19*(1), 43.

Lalonde, B. J. (1998). Building a supply chain relationship. *Supply Chain Management Review*, *2*(2), 7–8.

Lamming, R. C., Caldwell, N. D., Harrison, D. A., & Phillips, W. (2001). Transparency in supply relationships: concept and practice. *Journal of Supply Chain Management*, *37*(3), 4–10.

Lassar, W. M., Manolis, C., & Lassar, S. S. (2005). The relationship between consumer innovativeness, personal characteristics, and online banking adoption. *International Journal of Bank Marketing*, *23*(2), 176–199. https://doi.org/10.1108/02652320510584403

Laud, R. L., & Schepers, D. H. (2009). Beyond Transparency: Information Overload and a Model for Intelligibility. *Business and Society Review*, *114*(3), 365–391. https://doi.org/10.1111/j.1467-8594.2009.00347.x

Lee, H. L., So, K. C., & Tang, C. S. (2000). The Value of Information Sharing in a Two-Level Supply Chain. *Management Science*, *46*(5), 626–643. https://doi.org/10.1287/mnsc.46.5.626.12047

Lee, H. L., & Whang, S. (2000). Information sharing in a supply chain. *International Journal of Manufacturing Technology and Management*, *1*(1), 79. https://doi.org/10.1504/IJMTM.2000.001329

Lee, J.-N., & Kim, Y.-G. (1999). Effect of Partnership Quality on IS Outsourcing Success: Conceptual Framework and Empirical Validation. *Journal of Management Information Systems*, *15*(4), 29–61. https://doi.org/10.1080/07421222.1999.11518221

Lee, Y. W., Strong, D. M., Kahn, B. K., & Wang, R. Y. (2002). AIMQ: a methodology for information quality assessment. *Information & Management*, *40*(2), 133–146. https://doi.org/10.1016/S0378-7206(02)00043-5

Lenox, M., & King, A. (2004). Prospects for developing absorptive capacity through internal information provision. *Strategic Management Journal*, *25*(4), 331–345. https://doi.org/10.1002/smj.379

Levesque, T., & McDougall, G. H. G. (1996). Determinants of customer satisfaction in retail banking. *International Journal of Bank Marketing*, *14*(7), 12–20. https://doi.org/10.1108/02652329610151340

Lewis, B. R., Reid, I., & Bamford, D. (2016). Managing Service Quality. In *Managing Quality 6e* (pp. 119–139). Wiley. https://doi.org/10.1002/9781119302735.ch6

Li, H., Daugherty, T., & Biocca, F. (2002). Impact of 3-D Advertising on Product Knowledge, Brand Attitude, and Purchase Intention: The Mediating Role of Presence. *Journal of Advertising*, *31*(3), 43–57. https://doi.org/10.1080/00913367.2002.10673675

Li, L. (2002). Information Sharing in a Supply Chain with Horizontal Competition. *Management Science*, *48*(9), 1196–1212. https://doi.org/10.1287/mnsc.48.9.1196.177

Li Miao, & Mattila, A. S. (2007). How and How Much To Reveal? The Effects of Price Transparency On Consumers' Price Perceptions. *Journal of Hospitality & Tourism Research*, *31*(4), 530–545. https://doi.org/10.1177/1096348007302354

Li, S., & Lin, B. (2006). Accessing information sharing and information quality in supply chain management. *Decision Support Systems*, *42*(3), 1641–1656. https://doi.org/10.1016/j.dss.2006.02.011

Liebermann, Y., & Stashevsky, S. (2002). Perceived risks as barriers to Internet and e-commerce usage. *Qualitative Market Research: An International Journal*, *5*(4), 291–300. https://doi.org/10.1108/13522750210443245

Liljander, V., & Strandvik, T. (1993). Estimating Zones of Tolerance in Perceived Service Quality and Perceived Service Value. *International Journal of Service Industry Management*, *4*(2), 6–28. https://doi.org/10.1108/09564239310037909

Lin, C.-C., Wu, H.-Y., & Chang, Y.-F. (2011). The critical factors impact on online customer satisfaction. *Procedia Computer Science*, *3*, 276–281. https://doi.org/10.1016/j.procs.2010.12.047

Livingstone, S., & Helsper, E. (2010). Balancing opportunities and risks in teenagers' use of the internet: the role of online skills and internet self-efficacy. *New Media & Society*, *12*(2), 309–329. https://doi.org/10.1177/1461444809342697

Lobo, A. (2008). Zone of Tolerance as an Effective Management Tool to Assess Service Quality in Singapore's Stockbroking Industry. *Services Marketing Quarterly*, *30*(1), 39–53. https://doi.org/10.1080/15332960802467664

MacKenzie, Podsakoff, & Podsakoff. (2011). Construct Measurement and Validation Procedures in MIS and Behavioral Research: Integrating New and Existing Techniques. *MIS Quarterly*, *35*(2), 293. https://doi.org/10.2307/23044045

Mahmood, M. A. (1987). System Development Methods-A Comparative Investigation. *MIS Quarterly*, *11*(3), 293. https://doi.org/10.2307/248674

Malone, T. W., Grant, K. R., Turbak, F. A., Brobst, S. A., & Cohen, M. D. (1987). Intelligent information-sharing systems. *Communications of the ACM*, *30*(5), 390–402. https://doi.org/10.1145/22899.22903

Maltz, E. (2000). Is All Communication Created Equal?: An Investigation into the Effects of Communication Mode on Perceived Information Quality. *Journal of Product Innovation Management*, *17*(2), 110–127. https://doi.org/10.1111/1540-5885.1720110

Mason, W., & Suri, S. (2012). Conducting behavioral research on Amazon's Mechanical Turk. *Behavior Research Methods*, *44*(1), 1–23.

Matzler, K., Würtele, A., & Renzl, B. (2006). Dimensions of price satisfaction: a study in the retail banking industry. *International Journal of Bank Marketing*, *24*(4), 216–231. https://doi.org/10.1108/02652320610671324

McCormack, K. (1998). What supply chain management practices relate to superior performance. *DRK Research Team, Boston, MA*, *16*.

McKinney, V., Yoon, K., & Zahedi, F. "Mariam." (2002). The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach. *Information Systems Research*, *13*(3), 296–315. https://doi.org/10.1287/isre.13.3.296.76

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and Validating Trust Measures for e-Commerce: An Integrative Typology. *Information Systems Research*, *13*(3), 334–359. https://doi.org/10.1287/isre.13.3.334.81

Meesala, A., & Paul, J. (2018). Service quality, consumer satisfaction and loyalty in hospitals: Thinking for the future. *Journal of Retailing and Consumer Services*, *40*, 261–269. https://doi.org/10.1016/j.jretconser.2016.10.011

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. the MIT Press.

Meijer, A. (2009). Understanding modern transparency. *International Review of Administrative Sciences*, *75*(2), 255–269. https://doi.org/10.1177/0020852309104175

Menéndez-Viso, A. (2009). Black and white transparency: contradictions of a moral metaphor. *Ethics and Information Technology*, *11*(2), 155–162. https://doi.org/10.1007/s10676-009-9194-x

Mesmer-Magnus, J. R., & DeChurch, L. A. (2012). Information sharing and team performance: a meta-analysis. *IEEE Engineering Management Review*, *40*(1), 119–136.

Miller, J. A. (1977). Studying satisfaction, modifying models, eliciting expectations, posing problems, and making meaningful measurements. *Conceptualization and Measurement of Consumer Satisfaction and Dissatisfaction*, 72–91.

Miron-Spektor, E., Erez, M., & Naveh, E. (2007). Balancing Innovation Attention-to-Detail and Outcome-Orientation to Enhance Innovative Performance. *Academy of Management Proceedings*, *2007*(1), 1–7. https://doi.org/10.5465/ambpp.2007.26508076

Miyazaki, A. D., & Fernandez, A. (2001). Consumer Perceptions of Privacy and Security Risks for Online Shopping. *Journal of Consumer Affairs*, *35*(1), 27–44. https://doi.org/10.1111/j.1745-6606.2001.tb00101.x

Moberg, C. R., Cutler, B. D., Gross, A., & Speh, T. W. (2002). Identifying antecedents of information exchange within supply chains. *International Journal of Physical Distribution & Logistics Management*, *32*(9), 755–770. https://doi.org/10.1108/09600030210452431

Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: Partnership attributes, communication behavior, and conflict resolution techniques. *Strategic Management Journal*, *15*(2), 135–152. https://doi.org/10.1002/smj.4250150205

Monczka, R. M., Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (1998). Success Factors in Strategic Supplier Alliances: The Buying Company Perspective. *Decision Sciences*, *29*(3), 553–577. https://doi.org/10.1111/j.1540-5915.1998.tb01354.x

Moorman, C., Deshpandé, R., & Zaltman, G. (1993). Factors Affecting Trust in Market Research Relationships. *Journal of Marketing*, *57*(1), 81–101. https://doi.org/10.1177/002224299305700106

Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*, *58*(3), 20–38. https://doi.org/10.1177/002224299405800302

Moss, A. J., Rosenzweig, C., Robinson, J., Jaffe, S. N., & Litman, L. (2023). Is it ethical to use Mechanical Turk for behavioral research? Relevant data from a representative survey of MTurk participants and wages. *Behavior Research Methods*, 1–20.

Nadiri, H., & Hussain, K. (2005). Diagnosing the zone of tolerance for hotel services. *Managing Service Quality: An International Journal*, *15*(3), 259–277. https://doi.org/10.1108/09604520510597818

Nadiri, H., Kandampully, J., & Hussain, K. (2009). Zone of tolerance for banks: a diagnostic model of service quality. *The Service Industries Journal*, *29*(11), 1547–1564. https://doi.org/10.1080/02642060902793425

Neumann, S., & Segev, E. (1979). A case study of user evaluation of information characteristics for systems improvement. *Information & Management*, *2*(6), 271–278. https://doi.org/10.1016/0378-7206(79)90025-9

Nunnally, J. C. (1978). *Psychometric Theory: 2d Ed*. McGraw-Hill.

Öğüt, H., & Onur Taş, B. K. (2012). The influence of internet customer reviews on the online sales and prices in hotel industry. *The Service Industries Journal*, *32*(2), 197–214. https://doi.org/10.1080/02642069.2010.529436

Oh, H. (1999). Service quality, customer satisfaction, and customer value: A holistic perspective. *International Journal of Hospitality Management*, *18*(1), 67–82. https://doi.org/10.1016/S0278-4319(98)00047-4

Oktareza, M. E. T., Halin, H., & Handayani, S. (2020). The Effect of Service on Customer Satisfaction at PT Pandu Siwi Sentosa. *International Journal of Community Service & Engagement*, *1*(01), 19–26.

Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, *17*(4), 460–469. https://doi.org/10.1177/002224378001700405

Oliver, R. L. (1997). *Satisfaction: A Behavioral Perspective on the Consumer*. Routledge. https://doi.org/10.4324/9781315700892

Oliver, S. (1997). A model for the future of electronic commerce. *Information Management & Computer Security*, *5*(5), 166–169. https://doi.org/10.1108/09685229710187221

Online Etymology Dictionary. Transparency (n.). (2019). Https://Www.Etymonline.Com/Word/Transparency#etymonline_v_39350. https://www.etymonline.com/word/transparency#etymonline_v_39350

O'Reilly, C. A., Chatman, J., & Caldwell, D. F. (1991). PEOPLE AND ORGANIZATIONAL CULTURE: A PROFILE COMPARISON APPROACH TO ASSESSING PERSON-ORGANIZATION FIT. *Academy of Management Journal*, *34*(3), 487–516. https://doi.org/10.5465/256404

Otim, S., & Grover, V. (2006). An empirical study on Web-based services and customer loyalty. *European Journal of Information Systems*, *15*(6), 527–541. https://doi.org/10.1057/palgrave.ejis.3000652

Ozer, L., & Gultekin, B. (2015). Pre- and post-purchase stage in impulse buying: The role of mood and satisfaction. *Journal of Retailing and Consumer Services*, *22*, 71–76. https://doi.org/10.1016/j.jretconser.2014.10.004

Pagano, M., & Jappelli, T. (1993). Information Sharing in Credit Markets. *The Journal of Finance*, *48*(5), 1693–1718. https://doi.org/10.1111/j.1540-6261.1993.tb05125.x

Pagano, M., & Roell, A. (1996). Transparency and Liquidity: A Comparison of Auction and Dealer Markets with Informed Trading. *The Journal of Finance*, *51*(2), 579–611. https://doi.org/10.1111/j.1540-6261.1996.tb02695.x

Palmer, C. J., Paton, B., Enticott, P. G., & Hohwy, J. (2015). 'Subtypes' in the Presentation of Autistic Traits in the General Adult Population. *Journal of Autism and Developmental Disorders*, *45*(5), 1291–1301. https://doi.org/10.1007/s10803-014-2289-1

Parasuraman, A., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12–40.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, *49*(4), 41–50. https://doi.org/10.1177/002224298504900403

Park, J., Lennon, S. J., & Stoel, L. (2005). On-line product presentation: Effects on mood, perceived risk, and purchase intention. *Psychology and Marketing*, *22*(9), 695–719. https://doi.org/10.1002/mar.20080

Parker, C., & Mathews, B. P. (2001). Customer satisfaction: contrasting academic and consumers' interpretations. *Marketing Intelligence & Planning*, *19*(1), 38–44. https://doi.org/10.1108/02634500110363790

Patkar, P. (2018). *Difference Between Translucent, Transparent, and Opaque Materials*. Https://Sciencestruck.Com/Difference-between-Translucent-Transparent-Opaque-Materials.

Paulhus, D. L. (1991). *Measurement and control of response bias.*

Pavlou, P. A., & Fygenson, M. (2006). Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior. *MIS Quarterly*, *30*(1), 115. https://doi.org/10.2307/25148720

Pavlou, P. A., & Gefen, D. (2004). Building Effective Online Marketplaces with Institution-Based Trust. *Information Systems Research*, *15*(1), 37–59. https://doi.org/10.1287/isre.1040.0015

Peelen, J. G. J. (1979). Transparent hot-pressed alumina. *Ceramurgia International*, *5*(3), 115–119. https://doi.org/10.1016/0390-5519(79)90016-4

Perea y Monsuwé, T., Dellaert, B. G. C., & de Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. https://doi.org/10.1108/09564230410523358

Peter, J. P., Grunert, K. G., & Olson, J. C. (2010). *Consumer behavior & marketing strategy*. McGraw-hill.

Petersen, K. J. (1999). *The effect of information quality on supply chain performance: An interorganizational information system perspective*. Michigan State University.

Pham, T. S. H., & Ahammad, M. F. (2017). Antecedents and consequences of online customer satisfaction: A holistic process perspective. *Technological Forecasting and Social Change*, *124*, 332–342. https://doi.org/10.1016/j.techfore.2017.04.003

Piccoli, G., Spalding, B. R., & Ives, B. (2001). The customer-service life cycle: a framework for improving customer service through information technology. *The Cornell Hotel and Restaurant Administration Quarterly*, *42*(3), 38–45. https://doi.org/10.1016/S0010-8804(01)81023-5

Piotrowski, S. J., & Van Ryzin, G. G. (2007). Citizen Attitudes Toward Transparency in Local Government. *The American Review of Public Administration*, *37*(3), 306–323. https://doi.org/10.1177/0275074006296777

Pitard, J. (2016). Using vignettes within autoethnography to explore layers of cross-cultural awareness as a teacher. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, *17*(1).

Pitt, L. F., Watson, R. T., & Kavan, C. B. (1995). Service Quality: A Measure of Information Systems Effectiveness. *MIS Quarterly*, *19*(2), 173. https://doi.org/10.2307/249687

Prashar, S., Sai Vijay, T., & Parsad, C. (2017). Effects of Online Shopping Values and Website Cues on Purchase Behaviour: A Study Using S–O–R Framework. *Vikalpa: The Journal for Decision Makers*, *42*(1), 1–18. https://doi.org/10.1177/0256090916686681

Qomariah, N., Fahrurrozi, A., & Rozzaid, Y. (2020). Efforts to Increase Retail Customer Satisfaction. *International Journal of Economics and Management Studies (SSRG-IJEMS)*, *7*(7), 25–31.

R Core Team. (2022). *R: A language and environment for statistical computing. R Foundation for Statistical Computing*. R Core Team. https://www.R-project.org/

Ramamurthy, B., Feng, H., Datta, D., Heritage, J. P., & Mukherjee, B. (1999). Transparent vs. opaque vs. translucent wavelength-routed optical networks. *OFC/IOOC . Technical Digest. Optical Fiber Communication Conference, 1999, and the International Conference on*

Integrated Optics and Optical Fiber Communication, *1*, 59–61 vol.1. https://doi.org/10.1109/OFC.1999.767791

Ramya, N., & Ali, S. M. (2016). Factors affecting consumer buying behavior. *International Journal of Applied Research*, *2*(10), 76–80.

Ravand, H., & Purya Baghaei. (2016). Partial least squares structural equation modeling with R. *Practical Assessment, Research, and Evaluation*, *21*(1), 11.

Ray, S., Danks, N., & Calero Valdez, A. (2021). SEMinR: Domain-specific language for building, estimating, and visualizing structural equation models in R. *Estimating, and Visualizing Structural Equation Models in R (August 6, 2021)*.

Razak, I., Nirwanto, N., & Triatmanto, B. (2016). *The Impact of Product Quality and Price on Customer Satisfaction with the Mediator of Customer Value*. *Vol.30 2016*.

Rigdon, E. E. (2012). Rethinking Partial Least Squares Path Modeling: In Praise of Simple Methods. *Long Range Planning*, *45*(5–6), 341–358. https://doi.org/10.1016/j.lrp.2012.09.010

Ringle, C. M., Sarstedt, M., & Straub, D. W. (2012). Editor's comments: a critical look at the use of PLS-SEM in" MIS Quarterly". *MIS Quarterly*, iii–xiv.

Roodt, G., Rieger, H., & Sempane, M. E. (2002). Job satisfaction in relation to organisational culture. *SA Journal of Industrial Psychology*, *28*(2), 23–30.

Rothschild, M. L. (1977). Advertising strategies for high and low involvement situations. . *University of Wisconsin-Madison*.

Rotter, J. B. (1967). A new scale for the measurement of interpersonal trust1. *Journal of Personality*, *35*(4), 651–665. https://doi.org/10.1111/j.1467-6494.1967.tb01454.x

Roulin, N. (2015). Don't throw the baby out with the bathwater: Comparing data quality of crowdsourcing, online panels, and student samples. *Industrial and Organizational Psychology*, *8*(2), 190–196.

Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not So Different After All: A Cross-Discipline View Of Trust. *Academy of Management Review*, *23*(3), 393–404. https://doi.org/10.5465/amr.1998.926617

Ruggles, R. (1998). The State of the Notion: Knowledge Management in Practice. *California Management Review*, *40*(3), 80–89. https://doi.org/10.2307/41165944

Saeed, K. A., Grover, V., & Hwang, Y. (2005). The Relationship of E-Commerce Competence to Customer Value and Firm Performance: An Empirical Investigation. *Journal of Management Information Systems*, *22*(1), 223–256. https://doi.org/10.1080/07421222.2003.11045835

Saini, Y. K., & Lynch, J. G. (2016). The effects of the online and offline purchase environment on consumer choice of familiar and unfamiliar brands. *International Journal of Research in Marketing*, *33*(3), 702–705. https://doi.org/10.1016/j.ijresmar.2016.02.003

Schafer, J. Ben, Konstan, J., & Riedl, J. (1999). Recommender systems in e-commerce. *Proceedings of the 1st ACM Conference on Electronic Commerce*, 158–166. https://doi.org/10.1145/336992.337035

Scheibehenne, B., Greifeneder, R., & Todd, P. M. (2010). Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload. *Journal of Consumer Research*, *37*(3), 409–425. https://doi.org/10.1086/651235

Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, *58*(5), 878–891. https://doi.org/10.1037/0022-3514.58.5.878

Shankar, V., Smith, A. K., & Rangaswamy, A. (2003). Customer satisfaction and loyalty in online and offline environments. *International Journal of Research in Marketing*, *20*(2), 153–175. https://doi.org/10.1016/S0167-8116(03)00016-8

Sharma, G., & Baoku, L. (2013). Customer satisfaction in Web 2.0 and information technology development. *Information Technology & People*, *26*(4), 347–367. https://doi.org/10.1108/ITP-12-2012-0157

Sherif, C. W. (1979). Social values, attitudes, and involvement of the self. *Nebraska Symposium on Motivation*, *27*, 1–64.

Sheu, D. F., & Lin, H. S. (2006). A Study on the Information Transparency of the Involvements by Venture capital--Case from Taiwan IT Industry. . *Journal of American Academy of Business*, *10*(1), 227–233.

Shmueli, G., & Koppius, O. R. (2011). Predictive analytics in information systems research. *MIS Quarterly*, 553–572.

Simon, C. (2006). Corporate information transparency. *Journal of Management Development*, *25*(10), 1029–1031. https://doi.org/10.1108/02621710610708685

Simon, M. K., & Goes, J. (2013). *Scope, limitations, and delimitations*.

Sinha, R., & Swearingen, K. (2002). The role of transparency in recommender systems. *CHI '02 Extended Abstracts on Human Factors in Computing Systems*, 830–831. https://doi.org/10.1145/506443.506619

Sitkin, S. B., & Roth, N. L. (1993). Explaining the Limited Effectiveness of Legalistic "Remedies" for Trust/Distrust. *Organization Science*, *4*(3), 367–392. https://doi.org/10.1287/orsc.4.3.367

Sitser, T., van der Linden, D., & Born, M. P. (2013). Predicting sales performance criteria with personality measures: The use of the general factor of personality, the Big Five and narrow traits. *Human Performance*, *26*(2), 126–149.

Smith, S. M., Roster, C. A., Golden, L. L., & Albaum, G. S. (2016). A multi-group analysis of online survey respondent data quality: Comparing a regular USA consumer panel to MTurk samples. *Journal of Business Research*, *69*(8), 3139–3148.

Soh, Markus, & Goh. (2006). Electronic Marketplaces and Price Transparency: Strategy, Information Technology, and Success. *MIS Quarterly*, *30*(3), 705. https://doi.org/10.2307/25148746

Soto-Acosta, P., Jose Molina-Castillo, F., Lopez-Nicolas, C., & Colomo-Palacios, R. (2014). The effect of information overload and disorganisation on intention to purchase online. *Online Information Review*, *38*(4), 543–561. https://doi.org/10.1108/OIR-01-2014-0008

Spekman, R. E., Kamauff, J. W., & Myhr, N. (1998). An empirical investigation into supply chain management: a perspective on partnerships. *Supply Chain Management: An International Journal*, *3*(2), 53–67. https://doi.org/10.1108/13598549810215379

Spreng, R. A., & Mackoy, R. D. (1996). An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing*, *72*(2), 201–214. https://doi.org/10.1016/S0022-4359(96)90014-7

Spreng, R. A., & Olshavsky, R. W. (1992). A Desires-As-Standard Model of Consumer Satisfaction: Implications for Measuring Satisfaction. *The Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *5*.

Stank, T. P., Goldsby, T. J., Vickery, S. K., & Savitskie, K. (2003). LOGISTICS SERVICE PERFORMANCE: ESTIMATING ITS INFLUENCE ON MARKET SHARE. *Journal of Business Logistics*, *24*(1), 27–55. https://doi.org/10.1002/j.2158-1592.2003.tb00031.x

Start.io. (2023). *Distribution of mobile e-commerce shoppers in the United States as of March 2023, by age group [Graph]*. https://www.statista.com/statistics/1343467/ecommerce-shoppers-mobile-audience-united-states-age/

Strandvik, T. M. (1994). *Tolerance zones in perceived service quality.* [Dissertation]. Svenska Handelshogskolan (Finland).

Straub, D., & Gefen, D. (2004). Validation Guidelines for IS Positivist Research. *Communications of the Association for Information Systems*, *13*. https://doi.org/10.17705/1CAIS.01324

Street, & Meister. (2004). Small Business Growth and Internal Transparency: The Role of Information Systems. *MIS Quarterly*, *28*(3), 473. https://doi.org/10.2307/25148647

Suddaby, R. (2010). Editor's Comments: Construct Clarity in Theories of Management and Organization. *Academy of Management Review*, *35*(3), 346–357. https://doi.org/10.5465/amr.35.3.zok346

Suki, N. M. (2011). Assessing patient satisfaction, trust, commitment, loyalty and doctors' reputation towards doctor services. *Pakistan Journal of Medical Science*, *27*(5).

Sun, H. (2010). Sellers' Trust and Continued Use of Online Marketplaces. *Journal of the Association for Information Systems*, *11*(4), 182–211. https://doi.org/10.17705/1jais.00226

Tam, J. L. M. (2011). The moderating effects of purchase importance in customer satisfaction process: An empirical investigation. *Journal of Consumer Behaviour*, *10*(4), 205–215. https://doi.org/10.1002/cb.330

Tepeci, M., & Bartlett, A. L. B. (2002). The hospitality industry culture profile: a measure of individual values, organizational culture, and person–organization fit as predictors of job satisfaction and behavioral intentions. *International Journal of Hospitality Management*, *21*(2), 151–170. https://doi.org/10.1016/S0278-4319(01)00035-4

Thong, J. Y. L., Hong, S.-J., & Tam, K. Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *International Journal of Human-Computer Studies*, *64*(9), 799–810. https://doi.org/10.1016/j.ijhcs.2006.05.001

Traylor, M. B. (1981). Product involvement and brand commitment. *Journal of Advertising Research*, *12*.

Tupper, D. E., & Cicerone, K. D. (1990). *Introduction to the Neuropsychology of Everyday Life* (pp. 3–18). https://doi.org/10.1007/978-1-4613-1503-2_1

Turilli, M., & Floridi, L. (2009). The ethics of information transparency. *Ethics and Information Technology*, *11*(2), 105–112. https://doi.org/10.1007/s10676-009-9187-9

Turner, R. E., & Kotler, P. (1997). *Marketing Management, by Kotler and Turner, Canadian Ninth Edition*. Prentice-Hall Canada Incorporated.

Turrent, B., del Carmen, G., & Rodríguez, L. (2012). Corporate Information Transparency on the Internet by Listed Companies in Spain (IBEX35) and Mexico (IPYC). *The International Journal of Digital Accounting Research*, *12*. https://doi.org/10.4192/1577-8517-v12_1

Tyebjee, T. T. (1979). Refinement of the involvement concept: An advertising planning point of view [Article]. *Attitude Research Plays for High Stakes*, *3*, 94–11.

Vaccaro, A., & Madsen, P. (2009). Corporate dynamic transparency: the new ICT-driven ethics? *Ethics and Information Technology*, *11*(2), 113–122. https://doi.org/10.1007/s10676-009-9190-1

Valla, J. M., & Belmonte, M. K. (2013). Detail-oriented cognitive style and social communicative deficits, within and beyond the autism spectrum: Independent traits that grow into developmental interdependence. *Developmental Review*, *33*(4), 371–398. https://doi.org/10.1016/j.dr.2013.08.004

Van Belleghem, S. (2012). *The Conversation Manager: The Power of the Modern Consumer, the End of the Traditional Advertiser*. Kogan Page Publishers.

Van der Heijden, K. (2005). *Scenarios: the art of strategic conversation*. John Wiley & Sons.

van Dyke, T. P., Kappelman, L. A., & Prybutok, V. R. (1997). Measuring Information Systems Service Quality: Concerns on the Use of the SERVQUAL Questionnaire. *MIS Quarterly*, *21*(2), 195. https://doi.org/10.2307/249419

Van Riel, A., Semeijn, J., & Janssen, W. (2003). E-service quality expectations: A case study. *Total Quality Management & Business Excellence*, *14*(4), 437–450. https://doi.org/10.1080/1478336032000047255

Vargas, P. (2008). Vignette question. *Encyclopedia of Survey Research Method*, 948–949.

Vieira, V. A. (2013). Stimuli–organism-response framework: A meta-analytic review in the store environment. *Journal of Business Research*, *66*(9), 1420–1426. https://doi.org/10.1016/j.jbusres.2012.05.009

Walther, B. R. (2004). Discussion of Information Transparency and Coordination Failure: Theory and Experiment. *Journal of Accounting Research*, *42*(2), 197–205. http://www.jstor.org/stable/3542359

Wang, A. Y., & Newlin, M. H. (2002). Predictors of web-student performance: the role of self-efficacy and reasons for taking an on-line class. *Computers in Human Behavior*, *18*(2), 151–163. https://doi.org/10.1016/S0747-5632(01)00042-5

Wells, G. L. (1993). What do we know about eyewitness identification? *American Psychologist*, *48*(5), 553.

Wenhart, T., & Altenmüller, E. (2019). A Tendency Towards Details? Inconsistent Results on Auditory and Visual Local-To-Global Processing in Absolute Pitch Musicians. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.00031

Xiao, & Benbasat. (2007). E-Commerce Product Recommendation Agents: Use, Characteristics, and Impact. *MIS Quarterly*, *31*(1), 137. https://doi.org/10.2307/25148784

Xiao, L., Guo, Z., D'Ambra, J., & Fu, B. (2016). Building loyalty in e-commerce. *Program*, *50*(4), 431–461. https://doi.org/10.1108/PROG-04-2016-0040

Xu, J. (David), Benbasat, I., & Cenfetelli, R. T. (2013). Integrating Service Quality with System and Information Quality: An Empirical Test in the E-Service Context. *MIS Quarterly*, *37*(3), 777–794. http://www.jstor.org/stable/43825999

Xue, F. (2008). The moderating effects of product involvement on situational brand choice. *Journal of Consumer Marketing*, *25*(2), 85–94. https://doi.org/10.1108/07363760810858828

Yap, K. B., & Sweeney, J. C. (2007). Zone-of-tolerance moderates the service quality-outcome relationship. *Journal of Services Marketing*, *21*(2), 137–148. https://doi.org/10.1108/08876040710737895

Ye, Q., Law, R., & Gu, B. (2009). The impact of online user reviews on hotel room sales. *International Journal of Hospitality Management*, *28*(1), 180–182. https://doi.org/10.1016/j.ijhm.2008.06.011

Zaichkowsky, J. L. (1986). Conceptualizing Involvement. *Journal of Advertising*, *15*(2), 4–34. https://doi.org/10.1080/00913367.1986.10672999

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1993). The Nature and Determinants of Customer Expectations of Service. *Journal of the Academy of Marketing Science*, *21*(1), 1–12. https://doi.org/10.1177/0092070393211001

Zhang, Z., Zhang, Z., & Law, R. (2013). Regional effects on customer satisfaction with restaurants. *International Journal of Contemporary Hospitality Management*, *25*(5), 705–722. https://doi.org/10.1108/IJCHM-Aug-2012-0148

Zhou, H., & Benton, W. C. (2007). Supply chain practice and information sharing. *Journal of Operations Management*, *25*(6), 1348–1365. https://doi.org/10.1016/j.jom.2007.01.009

Zhu, K. (2002). Information Transparency in Electronic Marketplaces: Why Data Transparency May Hinder the Adoption of B2B Exchanges. *Electronic Markets*, *12*(2), 92–99. https://doi.org/10.1080/10196780252844535

Zhu, K. (2004). Information Transparency of Business-to-Business Electronic Markets: A Game-Theoretic Analysis. *Management Science*, *50*(5), 670–685. https://doi.org/10.1287/mnsc.1040.0226

Zhu, K. (2005). Information Transparency Hypothesis. In *Advances in the Economics of Information Systems* (pp. 15–42). IGI Global. https://doi.org/10.4018/978-1-59140-444-6.ch002

APPENDICES

Appendix A. Literature Review Summary

Table A1. Transparency Literature Review

Research Area	Article	Definition	FYI
Politics & Government	Kolstad, I., & Wiig, A. (2009).	Transparency is defined in the following as public access to information, or more precisely, ‘‘timely and reliable economic, social and political information . . . accessible to all relevant stakeholders”. Bellver and Kaufmann (2005)	Transparency is increasingly viewed as central to curbing corruption and other dysfunctions of resource-rich developing countries. Transparency is a necessary but not sufficient condition to reduce corruption. In addition to access to information, you need an ability to process the information and the ability and incentives to act on the processed information. Transparency may cause problems.
	Jaeger, P. T., & Bertot, J. C. (2010).	Transparency is now held to be a crucial part of democratic governance. Transparency is now seen to include a legal right to request access to specific documents that are not being provided online (Fuchs, 2006).	First, many members of the public lack internet access in their homes, while others with access may lack the levels of technological sophistication or government literacy to use these channels of access or the newest types of social media. Second, an essential part of transparency is long-term access to the information, but the use of social media may make preservation for long-term access difficult. To truly provide access to the information and data, transparency must encompass all aspects of information access. Users must have physical access (be able to reach the content), intellectual

			access (be able to understand the content), and social access (be able to share the content) for government information to become completely transparent (Burnett, Jaeger, & Thompson, 2008; Jaeger & Burnett, 2010). In a practical sense, transparency can only exist when things that are being sought can be located and retrieved.
	Chen, Y. C. (2012).	Transparency entails truthful communication of government operation and performance (Koppell, 2005, p. 96).	Bertot et al. (2010) make a strong case for the use of information and communication technologies to further enhance transparency, which underlies the present study.
	Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010).		Government transparency generally occurs through one of four primary channels (Piotrowski, 2007): 1. proactive dissemination by the government; 2. release of requested materials by the government; 3. public meetings; and 4. leaks from whistleblowers. ICTs offer countries a new approach to creating transparency and promoting anti-corruption.
	Dawes, S. S. (2010).	Meijer considered transparency in light of larger societal trends regarding legitimacy, trust, and openness. He argued that transparency – defined as a lack of secrecy and openness to public scrutiny – is traditionally considered a means	This paper is a conceptual and empirical exploration of the tensions inherent in the drive to increase openness and transparency in government utilizing information access and dissemination. Unlike direct, face-to-face forms of transparency, computer-mediated transparency is unidirectional (i.e., not interactive), decontextualized (i.e.,

		for reducing uncertainty and increasing public trust.	removed from shared social experience), and overly structured (i.e., highly selective and simplified with a bias toward quantitative info).
	Mitchell, R. B. (1998).	Transparency, as used here, refers to the availability of regime-relevant information	Effectiveness-oriented transparency focuses on the question, "how well are we collectively doing at achieving regime goals?" Compliance-oriented transparency focuses on the question, "how well are particular actors doing at fulfilling regime commitments?" The key distinction between these two types of transparency lies not in the content of the information collected but in the uses to which that information is put.
	Gupta, A. (2008).		The few scholars who have written explicitly about transparency in the global environmental realm have discussed the concept in relation to information flows about state behavior in complying with international environmental regimes.
	Bertot, Jaeger, & Grimes (2010).	Transparency in the activities of governments, specifically using ICTs to develop e-government.	Some of the most important points focus on the ability for transparency to increase participation, collaboration, and empowerment in populations.
	Grimmelikhuijsen, S. G., & Welch, E. W. (2012).		Decision-making transparency, Policy information transparency, and Policy outcome transparency

Economics, Accounting, Finance, Banking	Bloomfield & O'Hara, 1999	Transparency, as being acted upon by trade disclosure and acting upon other aspects. The relationship is found between market transparency and market-maker welfare, and market equilibrium.	Regulatory bodies, globally, contribute to increased transparency in the markets. The increased transparency can have multiple effects in the marketplace, sometimes negative; however, overall, the transparency helps create equilibrium.
	Angeletos, G. M., & Pavan, A. (2004).		We interpret an increase in the transparency of public information either as a reduction in the level of common uncertainty for a given level of idiosyncratic uncertainty (that is, an increase in the absolute precision of public information) or as a reduction in the heterogeneity of expectations across market participants for a given level of overall uncertainty (that is, an increase in the relative precision of public information). The optimal transparency depends on the aggressiveness or leniency of market expectations. Finally, our result that more transparency in public information increases welfare even though it may also increase volatility contrasts with the result of Morris and Shin (2002).
	Lin, Y. C., Huang, S. Y., Chang, Y. F., & Tseng, C. H. (2011).		In this paper, we examine the association between information transparency and the informativeness of accounting earnings. We measure information transparency using both ITDRS ranking results and the ratio of long-term investment in stocks. Overall, after controlling other factors that may affect ERC, the empirical results show that transparency, measured by

			ITDRS, cannot increase the informativeness of earnings. On the contrary, transparency level, measured by the ratio of long-term stock investment, can further increase the informativeness of accounting earnings.
	Chi, L. C. (2009).		As discussed above, transparency and information disclosure practices have been considered a comprehensive corporate governance mechanism both to mitigate agency costs by increasing the monitoring of management's actions and limiting managers' opportunistic behavior (Ashbaugh, Collins, & LaFond, 2004), and promoting the integrity of the securities market. As predicted, firms ranked higher in terms of corporate transparency and information disclosure have greater firm performances.
	Walther, B. R. (2004).	Information transparency refers to how informative a private signal is concerning the projects	There is a common belief that increased transparency of information is desirable. The intuition underlying this belief is simple as the quality of information improves, users of this information should be able to make a better decision. Although increased transparency may provide improved information about economic fundamentals, the increased strategic uncertainty may negate these benefits of more transparent information.
	Al-Jabri, I. M., & Roztocki, N. (2015).	In an interview (Lazarus and McManus, 2006), McManus described transparency as the openness and access to information, the	This study extends previous research on ERP adoption by examining the direct and indirect effects of perceived information transparency that result from the adoption of ERP systems.

		free flow of information, and the right to own some information. In a corporate or organizational environment, information transparency prevails when internal employees receive, at their desktops, the information necessary to make business decisions (Simon, 2006). Street and Meister (2004) argued that there are two types of information transparency: internal and external. They defined internal transparency as ‘‘an outcome of communication behaviors within an organization that reflects the degree to which employees have access to the information requisite for their responsibilities’’ (Street and Meister, 2004, p. 477). For example, a supervisor sharing information with subordinates is an example of internal transparency. Opposite to internal transparency, external transparency may be defined as an	Several research studies indicated the importance of IT in increasing transparency (Alavi and Leidner, 2001; Day and Wensley, 1988; Min et al., 2002) through Information sharing between individuals (Alavi and Leidner, 1999) and organizations (Braunstein, 1999). Adopting large systems such as ERP substantially affects business procedures and organizational structures and induces a shift in managerial power. Moreover, an ERP implementation supports the sharing of data and knowledge (Erat et al., 2006). This sharing of data and information leads to a higher level of information transparency. Therefore, information transparency, resulting from data sharing, may be an important factor in explaining the acceptance or rejection of IT systems among various stakeholders. In this research, we extend the TAM by incorporating perceived information transparency as an antecedent to the perceived usefulness, perceived ease of use, and attitude towards ERP system use.

		outcome of communication behaviors directed outside the organization (Bushman et al., 2004). The exchange of information between supply chain partners is an example of external transparency.	
	Hwang, J. S., Leem, C. S., & Moon, H. J. (2008).	IMF defines accounting transparency as a process by which information about existing conditions, decisions, and actions is made accessible, visible, and understandable [13]. PwC documents that accounting opacity refers to the lack of clear, accurate, formal, and widely accepted practices regarding accounting rules and procedures [14]. The US SEC explains corporate accounting transparency as the degree of understandability, comprehensiveness, and reliability, enabling an efficient market system and rational decision-making.	To achieve transparency, a company must provide timely, accurate, relevant, and sufficient disclosures of qualitative and quantitative information that enables users to properly assess the institution's activities and risk profile [20]. Transparent accounting information needs to be objective and understandable, which should be offered promptly [18]. Park et al. documented that transparent accounting information should be accessible [16], and Choi defined accounting transparency as the reliability and relevance of accounting information that should be offered timely [17]. Han et al. emphasized timeliness, completeness, consistency, reliability, accessibility, visibility, and understandability of information for accounting transparency [21].
	Briano Turrent, G. D. C., &	Transparency is viewed as "ensuring timely and accurate	Corporate transparency has become an important dimension of corporate governance and

	Rodríguez Ariza, L. (2012).	disclosure on all material matters regarding the corporation, including financial situation, performance, ownership and corporate governance of the company" (OECD, 2004).	positively impacts the market evaluation of businesses (Mercer, 2004; Hodge et al., 2006). More transparency helps investors understand management decisions, reduces information asymmetry, enhances confidence in the capital market, and increases foreign direct investment (Bushman and Smith, 2001). AICPA issued recommendations to improve corporate transparency, which cover four main areas: 1) business environment; 2) strategy; 3) resources and processes; and 4) the performance of the firm (AICPA, 2010). The Centre for International Financial Analysis and Research (CIFAR) identified five important aspects of corporate transparency: 1) the intensity of financial disclosures; 2) the intensity of disclosures on corporate governance; 3) the accounting principles used to measure financial disclosures; 4) the timeliness of financial information; 5) the quality of auditing in financial reporting.
	Gu, F., & Li, J. Q. (2012).	Our primary measure for the firm's information transparency is based on disclosure scores published in the AIMR reports.	Find a negative relation between information transparency and stock price reaction to news of insider trading. On the one hand, research indicates that increases in transparency reduce information asymmetry between insiders and investors, pointing to a negative relation between information transparency and insider trading (e.g., Merton, 1987; Diamond and Verrecchia, 1991). On the other hand, it is shown that transparency-enhancing activities,

			such as information disclosure, facilitate trading by insiders who possess private information and enhance insiders' ability to gain from trading on private information (e.g., Bushman and Indjejikian, 1995; Hong and Huang, 2005).
	Bushman, R. M., & Smith, A. J. (2003).	Corporate transparency is defined as the the widespread availability of relevant, reliable information about the periodic performance, financial position, investment opportunities, governance, value, and risk of publicly traded firms.	Corporate transparency measures fall into three categories: 1) measures of the quality of corporate reporting, including the intensity, measurement principles, timeliness, and credibility (that is, audit quality) of disclosures by firms listed domestically, 2) measures of the intensity of private information acquisition, including analyst following, and the prevalence of pooled investment schemes and insider trading activities, and 3) measures of the quality of information dissemination, including the penetration and private versus state ownership of the media.
	Pagano, M., & Röell, A. (1996).	Trading systems differ in their degree of transparency, here defined as the extent to which market makers can observe the size and direction of the current order flow. Degree of transparency, defined as the extent of intermediaries' knowledge of the rest of the current order flow when they price and satisfy a particular order.	IT IS A WIDELY HELD BELIEF among economists studying securities markets that greater transparency in the trading process enhances market liquidity by reducing the opportunities for taking advantage of less informed or nonprofessional participants. Auction markets are inherently more transparent than dealer markets because more information can be made directly available to all market participants. They provide greater pre-trade transparency, i.e., greater visibility of the best price at which any incoming order can be executed. Post-trade transparency, i.e., the public visibility of recent trading

		Our results support the view that the transparency of the market mechanism generally enhances liquidity. In our model, the more transparent a market, the more price-setters know about the order flow.	history, also tends to be lower in dealer markets. We model transparency as the degree to which the size and direction of the current order flow are visible to the competing market makers involved in setting prices. Both pre-and post-trade information is useful in gauging the order flow. We compare the price formation process in various types of auction and dealer markets.
	Geraats, P. M. (2002).	Transparency refers to the physical property of an object to transmit light, which means one can see through it. When applied to concepts, transparent means clear, so colloquially, it conveys a positive attribute. In an economic context, a useful definition of transparency is the presence of symmetric information; lack of transparency, or opacity, then refers to asymmetric information. This means that opacity generates uncertainty. However, transparency is not equivalent to complete certainty or perfect information.	Winkler (2000) proposes to view transparency in terms of openness, clarity, honesty, and common understanding. Following Geraats (2000), one can distinguish five aspects of transparency: political, economic, procedural, policy, and operational transparency. 1 Political transparency refers to openness about policy objectives and institutional arrangements that clarify the motives of monetary policymakers. 2 Economic transparency focuses on the economic information used for monetary policy, including economic data, policy models, and central bank forecasts. 3 Procedural transparency describes the way monetary policy decisions are taken. This includes the monetary policy strategy and an account of policy deliberations, typically through minutes and voting records. 4 Policy transparency means a prompt announcement and explanation of policy decisions and an indication of likely future policy actions in the form of a policy inclination. 5 Operational transparency concerns

			the implementation of monetary policy actions, including a discussion of control errors for the operating instrument and macroeconomic transmission disturbances. Although the theoretical literature has made much progress recently, there is as yet no academic consensus on the economic desirability of transparency of monetary policy
Management	Frentrup, & Theuvsen, 2006	Trust is an influencing factor in the need for transparency in the supply chain.	Within food chains, transparency of information requires that trust mechanisms be present to be effective.
	Akkermans, H., Bogerd, P., & Van Doremalen, J. (2004).		We look specifically at how supply chain transparency is created in a collaborative planning setting in the high-tech electronics sector. We argue that here, transparency is not just the result of the algorithms and DSS employed, but, organizationally speaking, also the result of reinforcing dynamic interactions between trust levels between partners and the level of transparency that is in line with that trust level. The model reads as follows: Supply chain transparency is the result of self-enforcing dynamic interactions between _shared hard-working or toiling_ (travail), _believe in the honesty, integrity, reliability, justice of the partners_ (trust), and _open sharing of all relevant information_ (transparency). It is the struggling on the long and winding path towards transparency that determines the level of success of the collaboration between supply

			chain partners, rather than its definition by management.
	Berkelaar, 2014	The focus is proactive transparency expectations between organizations and workers, specifically in the digital social contract.	Cybervetting is ruled by social constructs, focusing on ethical use and changing when society changes. Organizations should focus on clearly identifying the relationship between employees and their careers within the organization.
	Brosze, T., Bauhoff, F., Stich, V., & Fuchs, S. (2009).		The higher the knowledge about the facts, the more sophisticated decisions can be made. Thus, higher information transparency on all levels of the PPC is a precondition for the implementation of a decentralized planning system.
	Simon, C. (2006).	In a corporate environment, information transparency is reached when internal decision-makers receive, at their desktop, the internal and external information necessary to make sound business decisions.	Transparency in the practice of accountancy within financial markets such as bond or currency trading is not the same as transparency between governments or central banks. Transparency also has a cultural component - expectations for transparency in the US are not identical to transparency in Europe or India. What is information transparency? For the purposes of this discussion, at its most elemental level, it is the convergence of information streams and their delivery to interested parties (stakeholders) at the time of perceived information need.
	Chiang, H. T., & He, L. J. (2010).		This study focuses on the capacity, compensation, and structure of boards of directors and how they relate to company transparency.

			Taiwan SFI's transparency ranking system includes five categories of criteria: disclosure of compliance with laws and regulation; timeliness of the disclosure; disclosure of forecasted financial information; disclosure of information in the annual report (including financial and operating information and board and ownership structure); and disclosure on the company Web page.
	Miao, L., & Mattila, A. S. (2007).	transparency framework (sufficiency and diagnosticity of pricing information) The notion of information transparency originated from the finance literature, specifically in the areas of stock market regulations and banking policies. Definitions of information transparency in financial market studies tend to be context-specific. For example, Vishwanath and Kaufmann (2001) identified five dimensions of information transparency: access, comprehensiveness, relevance, quality, and reliability. Hofstede (2002), on the other hand, defined the quality of	This study investigated the effects of price transparency on consumers' price perceptions. The HSM (Chaiken et al., 1989) is a general framework for understanding information processing underlying attitude change. Central to the HSM are two key principles: sufficiency and efficiency (Chaiken et al., 1989). The sufficiency principle assumes that information processors strike a balance between minimizing processing effort and maximizing judgmental confidence. On the other hand, the efficiency principle assumes that information processors are inclined to avoid systematic processing, and heuristic cues are likely to influence people's judgments. Consistent with the efficiency and sufficiency principles, we conceptualize information transparency as a transparency continuum that is a function of the degree of information sufficiency and the degree of information diagnosticity. The information sufficiency dimension reflects the notion that

		information along with the attributes of relevance, accuracy, factuality, quantity, reliability, and timeliness. In the marketing literature, Zhu (2002) defined information transparency as the degree of availability, accessibility, and visibility of information. Walther (2004) suggested that info transparency is also an attribute of the understandability of information.	people only engage in sufficient information processing to achieve judgmental confidence. Conversely, the diagnosticity dimension captures the influence of heuristic cues in consumers' evaluations and judgments. The construct of perceived diagnosticity is generally defined as the extent to which consumers believe the information is useful in evaluating purchasing choices (Kempf & Smith, 1998). (have items).
	Lamming, R. C., Caldwell, N. D., Harrison, D. A., & Phillips, W. (2001).	Transparency - Information is shared on a selective and justified basis. The development of information leads to shared knowledge and collaborative abilities.	Instead of identifying transparency fundamentally as a property of a system (i.e., claiming that the entire relationship between two organizations could be termed transparent), the work presented here is based upon a more selective and particular application of the concept: as an element of supply relationships. That is, managers in a specific, focused relationship may bring the concept into play, in a variety of forms, for a specific purpose. As such, transparency might be one of several elements built into the specific relationship, along with others such as agreed procedures, equity sharing, joint patents, long-term acquaintance, and so on.
	Newell, G., Kim Hiang, L., Ooi, J., & Haihong, Z. (2005).	Website information 1. Is there a corporate website? 2. Is the corporate website available in the domestic	Information transparency score criteria. Annual report 1. Is the annual report published in the domestic language or English? 2. Is there a mission statement in the annual report?

		language and/or English? 3. Is a financial calendar available online? 4. Is the corporate website highly detailed? 5. Is stock quote information available? 6. Is the website being updated? 7. Is investor relationship contact information easily accessible? 8. Is there property information online? 9. Is their annual reports online? Analyst coverage 1. Are many analysts following the stock? 2. Do many leading investment banks follow the stock? 3. Is there a high consensus among the analysts? 4. Do the analyst forecasts match reality?	3. Is there a future outlook of the market and the company? 4. Does the company provide efficiency indicators (ROA, ROE, etc.)? 5. Does the company provide segment analysis? 6. Is info available on the composition and background of firm management? 7. Is information available on the address of each property? 8. Is information available on the usage of each property? 9. Is information available on the occupancy rate of the property? 10. Is information available on the site area of the property? 11. Is information available on the tenure of the property? 12. Does the annual report contain contact information? 13. Is rental income specified by location and property type? 14. Does the company provide methods of property valuation? 15. Does the company provide depreciation methods? 16. Is there a clear dividend policy? 17. Is information detailed on the shareholders?
	Vaccaro, A., & Madsen, P. (2006).	Define a firm's external information transparency as the degree of completeness of the information provided by each company to the market concerning its business activities1 [2]. A. Vaccaro, Privacy, Security and	Firm transparency can be affected by the privacy requests of employees, customers, and suppliers. While ICT can today lead to a complete transparency level for a business organization, this technical possibility cannot be achieved due to employees' privacy rights.

		Transparency: ICT-related ethical perspectives and contrasts in contemporary firms.	
	Zhu, K. (2004).	Information transparency is defined as the degree of visibility and accessibility of information (Zhu 2002). Certain types of companies (e.g., high-cost suppliers of substitute products) will lack the incentives to join the exchange as information transparency hurts more than helps them. In contrast to the widely held belief about its benefits (the so-called information transparency hypothesis, Zhu 2004), information transparency is indeed a double-edged sword	Our results challenge the "information transparency hypothesis" (i.e., open sharing of information in electronic markets is beneficial to all participating firms). In contrast to popular belief, we show that information transparency could be a double-edged sword. Data are real-time, more transparent, and more synchronized; information flows more instantaneously in electronic markets (Grover et al. 1999). In this regard, information transparency becomes one of the key features that distinguish digital exchanges from traditional markets (Zhu 2004). The Internet increases information transparency in several ways. In general, the Internet contains abundant information and reduces the search cost for that information (Bakos 1997). Transparent information is typically regarded as a good thing because of possible efficiencies arising from the more widespread dissemination of accurate information. A transparent environment is not necessarily a good thing for all participants. This may partially explain the difficulty of most public B2B exchanges in signing up suppliers and the recent phenomenon that many firms switch from public exchanges to private exchanges (Harris 2001).

	Bushman, R. M., Piotroski, J. D., & Smith, A. J. (2004).	We investigate corporate transparency, defined as the availability of specific information to those outside publicly. We factor analyze a range of measures capturing countries' specific information environments, isolating two distinct factors. The first factor, interpreted as financial transparency, captures the intensity and financial disclosures and their interpretation and dissemination by and the media. The second factor, interpreted as governance transparency, captures the intensity	2We conceptualize corporate transparency within a country as the joint output of a multifaceted system whose components collectively produce, gather, validate, and disseminate information to market participants outside the firm.

		of governance disclosures used by outside investors to hold officers and directors accountable.	
	Eisenhardt, K. M. (1989).	Agency Theory Overview:	Organizational assumption - Information asymmetry between principal and agent, Information as a purchasable commodity. In short-term agency relationships, the information asymmetry between principal and agent is likely to be greater, making outcome-based contracts more attractive. They assume that individuals are boundedly rational and that information is distributed asymmetrically throughout the organization. Johnson argues further that transparency per se is less important than users' awareness of and agreement to the degree of transparency of the product. She says (1997, p. 65): "…what seems most important for computer networks is that individuals be informed about what to expect when they enter an online environment and that the environment be what it purports to be."
	Agency Theory Susan P. Shapiro		First, because information and knowledge asymmetries ("know what" and "know-how") are characteristic of many agency relationships…
	Vaccaro, A., & Madsen, P. (2009).	The term transparency derives from the Medieval Latin word ''transparentem'', which can be traced back originally to 1413 or 1592 when it	Radical transparency refers to the capability of a firm's top management to employ Internet-based technologies, such as blogs and collaborative websites, in order to create a direct and continuous dialogue with customers and other stakeholders.

		acquired its figurative meaning. The original meaning was to ‘‘show light through’’, which in figurative use became ‘‘easily seen through’’ (Online Etymological Dictionary 2007). The word continued to be used throughout succeeding centuries and was taken up in many Latin-derived languages such as Italian, Spanish, Portuguese, French, and English. Financial studies analyze the impact of price transparency on the efficiency and liquidity of financial markets (e.g., Gemmill 1996) or on price movements in electronic marketplaces (e.g., Soh et al. 2006). This literature defines transparency as the ability of market participants to have access to information on trading processes. Although the definitions of transparency and the perspectives provided by these research areas differ, the idea of transparency is always related to unidirectional	Transparency is associated with the idea of continuous proactive interactions between firms and their stakeholders. In scholarly research, corporate transparency is often used to indicate the unidirectional flow of information from the firm to its stakeholders (e.g., Owen et al. 2000; Gray 2001; Henriques 2001; Owen and Swift 2001; Dando and Swift 2003). To this end, this paper introduces and proposes the definition and operational practice of ‘‘dynamic transparency’’ in which corporate organizations and stakeholders interact intensively using Internet-enabled media to exchange vital information. Corporations can use Internet-based technologies to leverage three processes that characterize dynamic transparency. First, companies can develop a set of virtual infomediaries1 (Sison 2001) that provide useful information in the format, level of detail, and electronic medium (e.g., blogs, mailing lists, corporate website) enable acquisition and understanding by stakeholders. Second, Internet-based tools can be used to develop a marketplace where two-way Information sharing—from firm to stakeholders and vice versa—leads to collaborations between firms and their constituents. Third, the information and experience acquired from these two processes can be used by companies to modify their business practice in order to become more transparent,

		information disclosure. In The Naked Corporation, Tapscott and Ticoll (2003) point out that ICTs can transform firms from opaque into naked organizations. In their view, transparency is defined as the ‘‘accessibility of information to stakeholders of institutions, regarding matters that affect their interests’ (Tapscott and Ticoll 2003, p. 22)	accountable, and socially responsible organizations. Following the publication of The Naked Corporation, three main research areas on the impact of ICT on corporate transparency emerged. The first is public policy, which focuses on transparency as a policy measure and the related contribution of ICT (e.g., Fung et al. 2003, 2004a, b, 2007). The second comes from the computer ethics community (e.g., Turilli and Floridi 2008; Vaccaro 2006, Vaccaro and Madsen 2006, 2007; Vaccaro et al. 2008), and the third is represented by a single paper that is part of the social accounting and CSR field (i.e., Unerman and Bennett 2004).
	Information Asymmetry and Levels of Agency Relationships Authors: Debi Prasad Mishra, Jan B. Heide, and Stanton G. Cort	Marketing relationships between buyers and sellers often are characterized by information asymmetry, in the sense that the supplier possesses more information about the object of an exchange (e.g., a product or service) than the buyer.	The general problem faced by the customer is information asymmetry, or the inability to evaluate quality accurately prior to purchase. In summary, information asymmetry creates a severe moral hazard problem because suppliers have both the ability and the motivation to cheat. According to Wolinsky (1993, p. 380), in the automotive repair industry, "information asymmetry creates obvious incentives for opportunistic behavior."
	Professional as Agent: Knowledge Asymmetry in Agency Exchange Auth: Anurag Sharma	It is important to note that this knowledge asymmetry-arising from a difference in task-related knowledge-is distinct from the information asymmetry with which much of the mainstream literature is concerned.	Not knowing how the agent does a job is distinctly different from and compounds the problem of not knowing what the agent does. The mainstream literature either ignores this distinction between know-what and know-how or does not consider it important,

	Hsu, C., Lai, S., & Li, H. (2016).		Government/Legal/Outside forces requirements of information supply Website/Corporate governance supply of information Information is supplied about key areas of the organization.
	Schnackenberg, A. K., & Tomlinson, E. C. (2016).		Disclosure Clarity Accuracy As aspects of quality of transparency and influences on trust and part of trustworthiness
	Jehiel, P. (2015).		Disclosure policies Completeness of information The ability of the receiver to understand and obtain information
International studies	Mitchell, R. B. (1998).	Transparency, as used here, refers to the availability of regime-relevant information.	Transparency facilitates compliance, effectiveness, and the ability to assess both (Sands, 1993:372; Young, 1991:176). In short, transparency provides the foundation for a regime to "do well" as well as to "know how well it is doing."
Marketing	Hung, H., & Wong, Y. H. (2009).	The first concern is information transparency, which is the degree of visibility and accessibility of the service information of e-service marketers to their customers (Brounen et al., 2001; Evans and Wurster, 1999). Information transparency is about e-service marketers' willingness to provide service and company information	We develop a model of the interaction between information transparency in e-services and three types of digital privacy (information, communication, and individual privacy). Based on the central premise that the exchange of tangible and intangible resources is a fundamental form of human interaction, social exchange theory can be used to explain how e-marketers' concern for information transparency can be related to other variables and factors of interactions and exchanges, especially about the protection of privacy (Kelley and Thibaut, 1978).

		to their customers (Van Riel et al., 2001).	
	Mills, K. E., Han, Z., Robbins, J., & Weary, D. M. (2018).		Availability of information Access to information Purposeful sharing of information Ability to gather more information
	Kramer, T. (2007).		Understanding information Control of information Availability of more information
	Danniswara, Sandhyaduhita, & Munajat, 2017	Influence e-WOM and other dimensions, where the results were that the transparency factors information take on a variety of different marketing areas.	Elements of the work that are most important are that the availability of information throughout most of the processes has value based on the transparency of where the information is coming from and correlation in other sources of information.
Research and Academia	Lyon, L. (2016).		Access to information Complete information Participation of information
Medical	Lee, Roehrer, & Cummings, 2017	Transparency influences information overload in health information provided to consumers.	Health information for consumers suffers from information overload, including understanding which information to trust.

Appendix B. Vignette Pool Used for Data Collection

Table B1. Items manipulated within the vignettes

Vign #	Information sharing	Trust	Product importance(+Price)
1	Sufficient	High	High
2	Sufficient	High	Low
3	Insufficient	Low	High
4	Insufficient	Low	Low
5	Excessive	Low	Low
6	Excessive	Low	High
7	Excessive	High	Low
8	Excessive	High	High
9	Insufficient	High	Low
10	Insufficient	High	High
11	Sufficient	Low	Low
12	Sufficient	Low	High

Section B2. Vignette pool

Vignette One

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	High
Message Informativeness	High
Communication Channel Convenience	Able to choose channels
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All chosen channels, one time

You are purchasing a gift for a loved one's birthday. This gift is expensive and special for you, and you are hoping it will be very special for the person you are buying it for. That is why you have done a lot of research and know what you want to purchase. You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well). Considering how important the purchase was for you, you felt like this seller was a good choice – the seller's website is reliable and safe (you do not need to worry about the money you spent).

Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls). All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc.

When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed order information. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and detailed.

You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Two

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	High
Message Informativeness	High
Communication Channel Convenience	Able to choose channels
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All chosen channels, one time

You need to get more laundry detergent as you will run out of it in a few weeks. It is not your top priority, but you decided to add it to your shopping cart as a reminder to yourself. You checked a website you always use, and the detergent you usually get was on sale. It came up to be very cheap with that discount, so you placed an order.

Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls). All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc.

When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed order information. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. In general, all the information provided to you in the email communications was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and detailed.

You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Three

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	Low
Message Informativeness	Low
Communication Channel Convenience	Not able to choose channels
Communication Initiator	Customer
Message Timeliness	Delayed
Communication redundancy	All channels, multiple times

You wanted to purchase a limited-edition autographed album of your favorite music performer. You found out about the release too late, so the official website was sold out. Therefore, you had to use a new resale website to purchase from, and you were not quite sure if they were trustworthy. Since you really wanted that autographed album, you decided to get it even though you were not sure if the website was reliable. You ended up paying a lot of money for the album.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you an email once your order ships." An hour after placing the order, you finally received an email about it, but it did not contain any of the necessary order information. In the span of the next 15 minutes, you have received three more identical emails. A few days later, you received another email showing that the status of your order had changed to "shipped," but no other details were provided. Later, you got another three identical emails.

You had to call customer support and inquire about the tracking information for your purchase. They could not provide you with the tracking number during the call; instead, the customer support representative said they would email you the details in the next hour or so. Two hours later, you received the email with the updates; however, the information in the email was not about your order (the order number, shipping address, and the rest of the details were wrong). Therefore, you had to call them again. Finally, an hour or so after the second call, you received an email with tracking details. A few days later, your order was delivered. You have received an email that your package was delivered the next day after the actual delivery day.

Vignette Four

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	Low
Message Informativeness	Low
Communication Channel Convenience	Not able to choose channels
Communication Initiator	Customer
Message Timeliness	Delayed
Communication redundancy	All channels, multiple times

You will run out of paper towels soon, so you need to purchase more in the next few weeks. You've heard about this new website recently starting its business, so you decided to check them out. That website had a very good deal for the brand of paper towels you usually get, much cheaper than you normally pay. You decided to try this new website and place an order with them.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." ." An hour after placing the order, you finally received an email, a text message, and an app notification. A few minutes later, the same notifications repeated. In total, four identical emails, messages, and app notifications were received. Unfortunately, your order update notifications did not contain any of the necessary order information.

A week after placing the order, you had to email customer support and ask for order updates and an invoice. The next day you received an email, a text message, and an app notification from the company that your package shipped. A few minutes later, the same notifications repeated. No order number, shipping details, or tracking information was provided to you. A day prior, you also received a separate email from a third-party shipper that a package from the vendor's website was heading your way. Yet, no invoice has been sent to you. You decided to call the company and ask for the invoice one more time. Finally, a few hours later, the email was in your inbox. When you opened it, you realized they had sent you the wrong invoice for someone else's order. After calling them once again, the correct invoice was finally sent.

In general, you felt like you had to ask for every single piece of information about your order and its progress. About 12 hours after the order was delivered to you, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated. In general, you have received multiple emails, multiple text messages, and multiple app notifications about each status update, but none of them contained enough information about your order or correct information at all.

Vignette Five

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	Low
Message Informativeness	Excessive
Communication Channel Convenience	Not able to choose channels
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All channels, multiple times

You will run out of paper towels soon, so you need to purchase more in the next few weeks. You've heard about this new website recently starting its business, so you decided to check them out. That website had a very good deal for the brand of paper towels you normally buy, much cheaper than you normally pay. You decided to try this new website and place an order with them.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." ." As soon as you placed the order, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated. In total, four identical emails, messages, and app notifications were received. The content of the notifications was very detailed and included an itemized invoice with the order number, detailed full item names, item numbers, pictures of the items, their full prices, discounted prices, taxes, order total, shipping address, payment method details, billing address, estimated delivery date, etc. In addition, these notifications contained details on the current and future planned sales and promotions and a lot of other information about the company.

When the order shipped, you received another three identical emails, text messages, and app notifications with tracking information, the expected delivery date, and the rest of the detailed order information again. A few minutes later, the same notifications repeated. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and extremely detailed.

You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Six

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	Low
Message Informativeness	Excessive
Communication Channel Convenience	Not able to choose channels, all
Communication Initiator	Customer
Message Timeliness	Delayed
Communication redundancy	All channels, multiple times

You wanted to purchase a limited-edition autographed album of your favorite music performer. You found out about the release too late, so the official website was sold out. Therefore, you had to use a new resale website to purchase from, and you were not quite sure if they were trustworthy. Since you really wanted that autographed album, you decided to get it even though you were not sure if the website was reliable. You ended up paying a lot of money for the album.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." An hour after placing the order, you finally received an email, a text message, and an app notification. A few minutes later, the same notifications repeated. In total, four identical emails, messages, and app notifications were received. Unfortunately, your order update notifications did not contain any of the necessary order information.

A week after the order was placed. you had to send an email to customer support and ask for order updates and an invoice for it. The next day you received an email, a text message, and an app notification from the company that your package shipped. A few minutes later, the same notifications repeated. No order number, shipping details, or tracking information was provided to you. A day prior, you also received a separate email from UPS that a package from the website was heading your way, so you knew the email from the website was late. Additionally, no invoice was still sent to you. You decided to call the company and ask for the invoice one more time. Finally, a few hours later, the email was in your inbox. When you opened it, you realized that they had sent you the wrong invoice for someone else's order. After calling them once again, the correct invoice was finally sent.

In general, you felt like you had to ask for every single piece of information about your order and its progress. About 12 hours after the order was delivered to you, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated. In general, you have received multiple emails, multiple text messages, and multiple app notifications about each status update, but none of them contained enough information about your order or correct information at all.

Vignette Seven

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	High
Message Informativeness	Excessive
Communication Channel Convenience	Not able to choose channels, all
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All channels, multiple times

You need to get more laundry detergent as you will run out of it in a few weeks. It is not your top priority, but you decided to add it to your shopping cart as a reminder to yourself. You checked a website you always use and trust, and the brand of paper towels you usually get was on sale. It turned out to be very cheap with that discount, so you placed an order.

When placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." As soon as you placed the order, you received an email, a text message, and an app notification. A few minutes later, the same notifications repeated. Four identical emails, messages, and app notifications were received. The content of the notifications was very detailed and included an itemized invoice with the order number, detailed full item names, item numbers, pictures of the items, their full prices, discounted prices, taxes, order total, shipping address, payment method details, billing address, estimated delivery date, etc. In addition, these notifications contained details on the current and future planned sales and promotions and a lot of other information about the company.

When the order shipped, you received another three identical emails, text messages, and app notifications with tracking information, the expected delivery date, and the rest of the detailed order information again. One day before the scheduled delivery, you received a set of notifications (emails, messages, and app notifications) stating that your order would be delivered tomorrow. Another set was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. Three sets of notifications of product delivery were received that day.

All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and extremely detailed. You did not have to contact customer support to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Eight

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	High
Message Informativeness	Excessive
Communication Channel Convenience	Not able to choose channels, all
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All channels, multiple times

You are purchasing a gift for a loved one's birthday. This gift is expensive and special for you, and you are hoping it will be very special for the person you are buying it for. That is why you have done a lot of research and know what you want to purchase. You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well). Considering how important the purchase was for you, you felt like this seller was a good choice – the seller's website is reliable and safe (you do not need to worry about the money you spent).

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates, text messages, and app notifications as the status of your order changes." As soon as you placed the order, you received an email, a text message, and an app notification about it. A few minutes later, the same notifications repeated. In total, four identical emails, messages, and app notifications were received. The content of the notifications was very detailed and included an itemized invoice with the order number, detailed full item names, item numbers, pictures of the items, their full prices, discounted prices, taxes, order total, shipping address, payment method details, billing address, estimated delivery date, etc. In addition, these notifications contained details on the current and future planned sales and promotions and a lot of other information about the company.

When the order shipped, you received another three identical emails, text messages, and app notifications with tracking information, the expected delivery date, and the rest of the detailed order information again. One day before the scheduled delivery day, you received a set of notifications (emails, messages, and app notifications) stating that your order would be delivered tomorrow. Another set was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. Three sets of notifications of product delivery were received that day.

All the information provided to you in the email communications during the order fulfillment process was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and extremely detailed. You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Nine

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	High
Message Informativeness	Low
Communication Channel Convenience	Not able to choose channels, one channel only
Communication Initiator	Customer
Message Timeliness	Delayed
Communication redundancy	One channel, one time

You will run out of paper towels soon, so you need to purchase more in the next few weeks. You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well). You checked the website, and the brand of paper towels you usually get was on sale. It turned out to be very cheap with that discount, so you placed an order.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates as the status of your order changes." An hour after placing the order, you finally received an email about it.

A week after placing the order, you had to email customer support and ask for order updates and an invoice. The next day you received an email from the company that your package shipped. No order number, shipping details, or tracking information was provided to you. A day prior, you also received a separate email from a third-party shipper that a package from the vendor's website was heading your way. Yet, no invoice has been sent to you. You decided to call the company and ask for the invoice one more time. Finally, a few hours later, the email was in your inbox. When you opened it, you realized they had sent you the wrong invoice for someone else's order. After calling them once again, the correct invoice was finally sent.

In general, you felt like you had to ask for every single piece of information about your order and its progress, which is very unusual for Buybuybuy.com and you have never experienced that with them before. Only about 12 hours after the order was delivered to you, did you receive an email about it. Over the course of the order fulfillment period, you have received emails from the company, but none of them contained enough information about your order or even correct information at all.

Vignette Ten

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	High
Message Informativeness	Low
Communication Channel Convenience	Not able to choose channels, one channel only
Communication Initiator	Customer
Message Timeliness	Delayed
Communication redundancy	One channel, many times

You wanted to purchase a limited-edition autographed album of your favorite music performer. You found out about the release too late, so the official website was sold out. You decided to buy it from Buybuybuy.com (the website you have used many times in the past that has a good reputation as well). Considering how important the purchase was for you, you felt like this seller was a good choice – the seller's website is reliable and safe (you do not need to worry about the money you spent). You ended up paying a lot of money for the album.

When you were placing an order, there was no option to choose your notification preferences. Instead, the page said: "We will send you email updates as the status of your order changes." An hour after placing the order, you finally received an email about it.

A week after placing the order, you had to email customer support and ask for order updates and an invoice. The next day you received an email from the company that your package shipped. No order number, shipping details, or tracking information was provided to you. A day prior, you also received a separate email from a third-party shipper that a package from the vendor's website was heading your way. Yet, no invoice has been sent to you. You decided to call the company and ask for the invoice one more time. Finally, a few hours later, the email was in your inbox. When you opened it, you realized they had sent you the wrong invoice for someone else's order. After calling them once again, the correct invoice was finally sent.

In general, you felt like you had to ask for every single piece of information about your order and its progress, which is very unusual for Buybuybuy.com and you have never experienced that with them before. Only about 12 hours after the order was delivered to you, did you receive an email about it. Over the course of the order fulfillment period, you have received emails from the company, but none of them contained enough information about your order or even correct information at all.

Vignette Eleven

Construct	Level
Product importance	Low
Product Price	Low
Trust in E-retailer	low
Message Informativeness	High
Communication Channel Convenience	Able to choose channels
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All chosen channels, one time

You need to get more laundry detergent as you will run out of it in a few weeks. It is not your top priority, but you decided to do it now anyway. You've heard about this new website recently starting its business, so you decided to check it out. That website had a very good deal for the brand of laundry detergent you usually buy, much cheaper than you normally pay. You decided to try this new website and place an order with them.

Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls). All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc.

When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed order information. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. In general, all the information provided to you in the email communications was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and detailed.

You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Vignette Twelve

Construct	Level
Product importance	High
Product Price	High
Trust in E-retailer	Low
Message Informativeness	High
Communication Channel Convenience	Able to choose channels
Communication Initiator	Company
Message Timeliness	On-time
Communication redundancy	All chosen channels, one time

You are purchasing a gift for a loved one's birthday. This gift is expensive and special for you, and you are hoping it will be very special for the person you are buying it for. That is why you have done a lot of research and know what you want to purchase. You've heard about this new website recently starting its business, so you decided to check it out. That website had a very good deal for the gift, so you went ahead and purchased it there even though you weren't sure if you should do it considering that it costs a lot of money.

Once the order was placed and paid for, you were redirected to the next page with the order number and other details. Additionally, the seller's webpage gave you the option to choose how you wanted to receive order updates. It was very easy to do, as there was a whole list of options (email, text message, app notifications on your phone, automated phone calls). All you had to do was put check marks on the notification preferences you wanted. You decided to only get email order updates. Just a few seconds later, you received an email with all the necessary information about this purchase, such as your order number, order total, estimated delivery date, prices, taxes, total, etc.

When the order shipped, you received another email with tracking information, the expected delivery date, and the rest of the needed order information. One day before the scheduled delivery day, you received an email stating that your order would be delivered tomorrow. Another email was sent immediately when the order was delivered to your door the next day, notifying you that you had received it. In general, all the information provided to you in the email communications was about your current order, did not contain any errors or inaccuracies, and was authentic, thorough, and detailed.

You did not have to contact customer support at all to receive order status updates; they were sent to you automatically and received very promptly. The whole experience seemed explicit and clear.

Appendix C. Variable Correlations

Table C1. PDIT1 Correlations

	Q21_1	Q21_2	Q21_3	Q21_4	Q21_5	Q21_6
Q21_1	1.00	0.78	0.86	0.90	0.93	0.88
Q21_2		1.00	0.78	0.81	0.74	0.73
Q21_3			1.00	0.86	0.89	0.87
Q21_4				1.00	0.89	0.85
Q21_5					1.00	0.91
Q21_6						1.00

Appendix D. SEM Model Testing

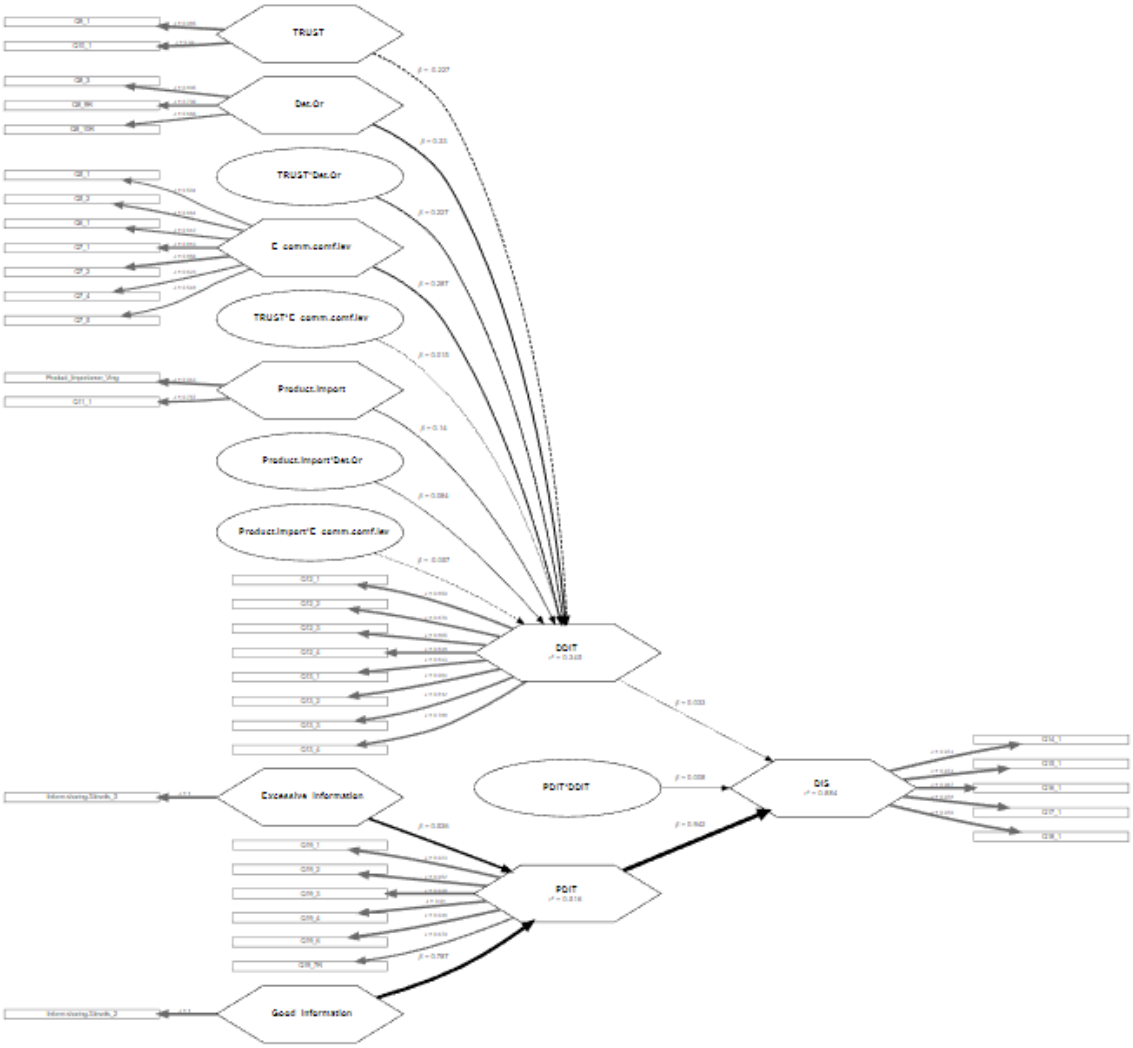
Table D1. The SEM measurement model with estimated loadings and validity and reliability statistics (Pilot 2 study dataset, 63 respondents)

	Loading	Cronbach's α	Composite reliability ω	AVE
PDIT		**0.949**	**0.960**	**0.804**
Q19_1	0.923			
Q19_2	0.953			
Q19_3	0.938			
Q19_4	0.911			
Q19_6	0.946			
Q19_7R	0.676			
DDIT		**0.945**	**0.954**	**0.722**
Q12_1	0.863			
Q12_2	0.878			
Q12_3	0.867			
Q12_4	0.851			
Q13_1	0.842			
Q13_2	0.902			
Q13_3	0.808			
Q13_4	0.783			
TRUST		**0.929**	**0.962**	**0.927**
Q9_1	0.985			
Q10_1	0.940			
Detailed Orientation		**0.490**	**0.579**	**0.177**
Q8_1	0.295			
Q8_2	0.157			
Q8_3	0.739			
Q8_4	-0.284			
Q8_5	0.072			
Q8_6	0.389			
Q8_7R	0.398			
Q8_8R	0.358			
Q8_9R	0.613			
Q8_10R	0.587			
Q8_11	0.203			

E-comm.comf.lev		**0.816**	**0.850**	**0.455**
Q5_1	0.503			
Q5_2	0.663			
Q6_1	0.642			
Q7_1	0.813			
Q7_2	0.857			
Q7_4	0.621			
Q7_5	0.546			
Product.import		0.664	0.843	0.731
Product_Importance_Vingette	0.943			
Q11_1	0.757			
DIS		**0.986**	**0.989**	**0.948**
Q14_1	0.974			
Q15_1	0.973			
Q16_1	0.967			
Q17_1	0.978			
Q18_1	0.976			

Appendix E. SEM Model Testing

Figure E1. Adjusted SEM model



Appendix F. Final Survey

Table F1. Intro statement

Dear respondent! Thank you for participating in our research and agreeing to take the survey. We are interested in learning your opinion on various online shopping situations. We have a few different blocks of questions for you. Please try to answer them as accurately as possible.

Table F2. Block One, Demographics

Construct and question #	Question
Intro statement	**Please answer the following questions that would tell us a little about you.**
Q1. AGE	Please select your age range: 18 or younger 18-22 23-30 31-40 41-50 51-60 60 or older
Q2. Gender	Please select your gender: Male Female Other
Q3. Education	What is the highest level of education you have completed? Less than high school High school Bachelor's degree Master's degree Doctorate
Q4. Employment	Which category best describes your employment status? Employed full-time (35 hours a week or more) Employed part-time (less than 35 hours a week) Unemployed Student Retired

Table F3. Block Two, Individual Characteristics

Construct and question #	Question
Intro	***Please answer the following questions to reflect your personality as accurately as possible.*** **Please answer the following questions about your relationship with technology and online shopping to reflect your personality as accurately as possible.**
Q5. E-Commerce Comfort Level	- How comfortable do you feel using computers and smartphones in general? - How comfortable do you feel using the Internet for online purchases? Very uncomfortable Somewhat uncomfortable Neither uncomfortable nor comfortable Somewhat comfortable Very comfortable
Q6. E-Commerce Comfort Level	How satisfied are you with your current skills for using the Internet for online purchases? Extremely dissatisfied Somewhat dissatisfied Neither dissatisfied nor satisfied Somewhat satisfied Extremely satisfied
Q7. E-Commerce Comfort Level	- Using the Internet for purchases is a good idea. - I like the idea of using the Internet to purchase. Very uncomfortable. - I feel good about how things go when I do purchasing or other activities on the Internet. - I am comfortable making purchases on the Internet. Strongly disagree Somewhat Disagree Neither disagree nor agree Somewhat Agree Strongly agree
Q8. Detail orientation	- I usually notice car number plates or similar strings of information. - I am fascinated by dates. - I tend to notice details that others do not. - I am fascinated by numbers. - I notice patterns in things all the time. - I often notice small sounds when others do not. - I usually concentrate more on the whole picture rather than the small details.

	- I am not very good at remembering phone numbers. - I don't usually notice small changes in a situation or a person. - I am not very good at remembering people's date of birth. REVERSE - I like to collect information about categories of things (e.g., types of cars, birds, trains, plants, etc.). Strongly disagree Somewhat Disagree Neither disagree nor agree Somewhat Agree Strongly agree

Table F4. Vignettes

Construct and question #	Question
Intro	**Please read the hypothetical online purchase situation presented below. Considering the hypothetical situation, please answer the following questions as accurately as possible.** *(See Appendix B for full vignette text)*
Q9. Trust in E-Retailer	I would trust this e-retailer to deliver my order without me having to monitor it: Strongly disagree Somewhat disagree Neither disagree nor agree Somewhat agree Strongly agree
Q10. Trust in E-Retailer	I trust this e-retailer. Strongly disagree Somewhat disagree Neither disagree nor agree Somewhat agree Strongly agree
Q11. Product importance	In the situation described above, how important to you was the product purchased: Unimportant Important
Q12. DDIT	- What level of visibility of the order fulfillment process would you like to have for the purchasing situation described above? - Thinking about the purchasing situation described above, what level of visibility of the order fulfillment process would you like to have? - What level of visibility of the processes would you desire as your order is being carried out for the purchasing situation described above? - Considering the purchasing situation described above, what level of visibility of the processes would you desire as your order is being carried out? - Thinking about the purchasing situation described above, how much information transparency would you like to have? - How much information transparency would you want in the purchasing situation described above? - How much information transparency would you like to have in the purchasing situation described above? Very low Low Moderate High Very high

Q14. DIS	**Thinking about the situation described above, please rate the following:** - How satisfied were you with the reliability of the information you received about the order fulfillment process? - How satisfied were you with the accuracy of the information you received about the order fulfillment process? - How satisfied were you with the completeness of the information you received about the order fulfillment process? - How satisfied were you with the relevancy of the information you received about the order fulfillment process? - How satisfied were you with the precision of the information you received about the order fulfillment process? Extremely dissatisfied Somewhat dissatisfied Neither dissatisfied nor satisfied Somewhat satisfied Extremely satisfied
Q15. PDIT	**Please rate the following statements based only on the information you are given in the hypothetical situation above:** - I believe the seller has been forthright about the progress of my order after I paid for it. - I believe the seller provided me with clear details about the order process. - I believe that after I paid for my order, the seller was forthright about the processes concerning my order. - I believe that the process of executing my order was visible. - I feel like there was detailed visibility regarding how my order was carried out. - I believe the seller has not been forthright about my order details after I paid for it. Strongly disagree Somewhat disagree Neither disagree nor agree Somewhat agree Strongly agree

Appendix G. SEM model tested

Figure G1. Schematic diagram of the final SEM model