

MODELING AND TESTING CONSUMERS' OVERALL TRUST IN E-COMMERCE BASED ON TRUST PRODUCTION ANTECEDENTS

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Approval of the Graduate School of Social Sciences

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## **ABSTRACT**

### **MODELING AND TESTING CONSUMERS' OVERALL TRUST IN E-COMMERCE BASED ON TRUST PRODUCTION ANTECEDENTS**

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E-commerce is a platform that grows in parallel with the widespread use of internet among consumers and offers various benefits to internet users. Literature suggests that trust is in many cases the key aspect to determine the level of a user-vendor relationship in e-commerce. Numerous models for trust in e-commerce have been produced so far. However, none of them have tested consumer trust in e-commerce based on characteristic-based, process-based, and institution-based trust. In this thesis, these three elements of trust are examined as antecedents of overall trust in e-commerce. Accordingly, the effects of consumers' overall trust in e-commerce on the intention to share personal information and continuance intention on a website were measured. Based on the survey conducted with 170 participants from Turkey, characteristic-based, process-based and institution-based trust were found to have positive effects on overall consumer trust in e-commerce. While overall trust had a significant impact on the desire to continue to use the website, it had no effect on the willingness to disclose personal information. The findings were compared with other studies and recommendations were presented.

**Keywords:** E-Commerce, Trust Production Antecedents, Overall Trust, Personal Disclosure, Continuance

## ÖZ

### TÜKETİCİLERİN E-TİCARETTEKİ TOPLAM GÜVENİNİN GÜVEN ÜRETİM ÖNCÜLLERİNE BAĞLI OLARAK MODELLENMESİ VE TEST EDİLMESİ

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E-ticaret, yakın zamanda internetin tüketiciler arasında yaygınlaşması ile paralel olarak büyüyen ve internet kullanıcılarına çeşitli menfaatler sunan bir platformdur. Literatüre göre güven, birçok durumda e-ticarette bir kullanıcı-satıcı ilişkisinin seviyesini belirleyen anahtar unsur durumundadır. Şimdiye kadar e-ticarette güven için birçok model üretilmiştir. Bununla birlikte, hiçbiri e-ticarette karakteristik-tabanlı, süreç tabanlı ve kurum-tabanlı güvene dayalı tüketici güvenini test etmemiştir. Bu tez çalışmasında, bu üç güven unsuru e-ticarette toplam güvenin öncülleri olarak incelenmiştir. Buna göre tüketicilerin e-ticaretteki toplam güveninin, kişisel bilgi paylaşma niyeti ve web sitesini devam etme isteği üzerindeki etkileri ölçülmüştür. Türkiye'den 170 katılımcı ile gerçekleştirilen anket çalışmasına göre; karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı güven, tüketicilerin e-ticaretteki toplam güveni üzerinde olumlu yönde etkilidir. Toplam güvenin, web sitesi kullanımına devam etme isteği üzerinde önemli etkisi olurken, kişisel bilgi paylaşma isteği üzerinde tesiri görülmemiştir. Elde edilen bulgular diğer çalışmalar ile karşılaştırılmış ve öneriler sunulmuştur.

**Anahtar Kelimeler:** E-Ticaret, Güven Üretim Öncülleri, Toplam Güven, Kişisel Açığa Vurma, Devamlılık

To Banner Davut

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## LIST OF ABBREVIATIONS

- AVE:** Average Variance Extracted
- B2B:** Business-to-Business
- B2C:** Business-to-Consumer
- C2B:** Consumer-to-Business
- C2C:** Consumer-to-Consumer
- CBT:** Characteristic-Based Trust (model construct)
- CFA:** Confirmatory Factor Analysis
- CFI:** Comparative Fit Index
- CMIN:** Chi-Square Divided by Degrees of Freedom
- CON:** Continuance Intention on a Website (model construct)
- CR:** Construct Reliability
- EDI:** Electronic Data Interchange
- IBT:** Institution-Based Trust (model construct)
- IOS:** Interorganizational System
- MSV:** Maximum Shared Variance
- OT:** Overall Trust in E-Commerce (model construct)
- PBT:** Process-Based Trust (model construct)
- PD:** Personal Disclosure on a Website (model construct)
- RMR:** Root Mean Square Residual
- RMSEA:** Root Mean Square Error of Approximation
- SEM:** Structural Equation Modeling
- TÜİK:** Turkish Statistical Institute
- TÜSİAD:** Turkish Industry & Business Association

## **CHAPTER 1**

### **INTRODUCTION**

E-commerce is the way of conducting transactions on electronic platforms at light velocity (Han & Noh, 1999). It has been an attractive environment for consumers since the proliferation of the internet in the 1990s (Senn, 2000). While it first emerged as electronic transactions between businesses in the 1960s, the consumer side of this area later developed along with the advancement of the internet and websites. Over the past few decades, e-commerce has become an alternative market for firms to grow their businesses, a way for consumers to have wider access to products and services, and a platform that redefined the shopping habits of consumers (Aydin & Kavaklioglu, 2011). Today, the global e-commerce volume in 2020 is estimated to be approximately \$ 2.9 trillion, more than twice the value of \$1.3 trillion in 2015 (Turkish Industry & Business Association [TÜSİAD], 2017).

A recent development in e-commerce is that online firms have started converting from a transactional view, which underlines the user satisfaction and experience after an online purchase, to a relational view, which deals with longer-term relationships relying on consumer trust and website commitment (Vargo & Lusch, 2004; Wang, Wang, & Liu, 2016). As the ‘consumer side’ of the e-commerce environment is becoming more important, the role of trust has gained momentum (Urban, Amyx, & Lorenzon, 2009). Doney and Cannon (1997) argued that trust was only a mediator for consumer purchase decisions in traditional commerce. However, it has become more salient over the years. Firms have centralized trust by improving their service quality and providing value for their customers (Harris & Goode, 2004).

So far, numerous academic studies have contributed to the development of trust in online markets. Fundamentally, trust is a bridge between website and buying activity (Urban et al., 2009). Building trust takes a considerable amount of time, and an online customer enters a learning process until the trust is achieved. However, not all of the customers are the same, so the level of trust may depend on individual characteristics and experience with the related products (Shankar, Urban, & Sultan, 2002). For online vendors, consumer characteristics play a significant role in advertising to the right customer (Oliveira, Alinho, Rita, & Dhillon, 2017). This is especially important before purchasing. After the purchasing period, a consumer starts gaining experience with the product. Therefore, the existing trust relationship takes shape with respect to post purchase behavior (Sullivan & Kim, 2018).

Obviously, trust is a much broader concept than its existence in e-commerce. In its widely accepted form, trust can be categorized in three major elements, namely *ability*, *integrity*, and *benevolence* (Mayer, Davis, & Schoorman, 1995), where ability and integrity are the forms of cognitive dimensions, and benevolence is an affective dimension of trust (Hwang & Lee, 2012). Ability, also named as “competence” in the literature, refers to the capability of a company to accomplish its promises. Integrity is achieved when a company is performing honestly and consistently. Benevolence represents the willingness to favor consumers’ welfare and interests. These three terms align themselves with consumer and firm characteristics, website infrastructure, and interactions between seller and buyer (Chen & Dhillon, 2003). Chen and Dhillon (2003) stated that competence, integrity, and benevolence together form an overall consumer trust in online sellers, and the overall trust triggers consumers’ purchase intention in the internet. Hwang and Lee (2012) also examined the cognitive dimensions of trust, and confirmed the positive effects of ability and integrity on the intention to purchase online.

Literature suggests that the existence of trust alleviates the privacy and security concerns and risks in online transactions (Metzger & Pure, 2015). Therefore, an intimacy between an institution and its customer appears. This may

lead to voluntary disclosure of personal information and intention to continue using a website. The term *personal disclosure* stands for voluntary consumer actions to share individual information on a website without any pressure (Zimmer, Arsal, Al-Marzouq, Moore, & Grover, 2010). Trust is a very good motivation to reduce the perceived risks of personal disclosure (Mesch, 2012). Overall trust also has a positive impact on *continuance* intentions on a website. The willingness to continue using a website in e-commerce is supported by purchase intentions and loyalty, which are widely associated with trust (Metzger & Pure, 2015).

This study brings consumers' overall trust in e-commerce, personal disclosure, and continuance intention together. It is inspired by Luo's (2002) trust production for the online environment consisting of three terms: *characteristic-based trust*, *process-based trust*, and *institution-based trust*. Characteristic-based trust refers to cultural proximities of a society such as community, family and ethnicity. It uses shared habits and feelings to build trust. The key terms are culture, similarity, group and membership. Process-based trust has repetitions, past experiences and future expectations in hand. It requires long-term relationships and high level of personal knowledge. Brands, gifts, involvement and habit are the key terms for this concept. Institution-based trust is the most formal one and is offered as the most likely solution to the privacy concerns in e-commerce. This type of trust requires less time and effort than the process-based trust due to spending less time building past experiences and transactions. Insurance, certifications, agencies and regulations are the keywords of this concept (Luo, 2002). Although the three trust production terms can be combined with overall trust in e-commerce and its impacts, the effects of overall e-commerce trust on personal disclosure and continuance have not been tested in terms of characteristic-based, process-based, and institution-based trust so far.

The three trust production terms, which are characteristic-based trust, process-based trust, and institution-based trust, rely on *social exchange theory* (Blau, 1964) and *relationship marketing* (Dwyer, Schurr, & Oh, 1987; Morgan & Hunt, 1994). The social exchange theory focuses on behavioral exchanges for

shorter period, whereas the relationship marketing requires a trust-building process in the long run (Luo, 2002).

Although there have been remarkable developments recently in e-commerce in Turkey, still a large gap exists compared to the rest of the world. Turkey is one of the important developing countries in the world with over 80 million people and a high percentage of young population. Nevertheless, e-commerce penetration in Turkey is quite low. While the average percentage of global e-commerce transactions over total retail is 8.5 percent by 2016, this ratio is only 3.5 percent in Turkey (TÜSİAD, 2017). Shopping on websites is hardly preferred compared to physical stores. Online users have access to the internet primarily for social media use, watching videos, reading online newspapers and magazines, information search, and listening to music. On the other hand, online shopping rate is quite lower than those activities. A research in 2016 made by the Turkish Statistical Institute found that only 34 percent of the internet users in Turkey ever made at least one transaction online (TÜSİAD, 2017). The gap exists in academic studies as well. Some studies performed in Turkey have contributed to the e-commerce research in terms of trust (Alagoz & Hekimoglu, 2012; Esen, Esen, & Sirkintioglu Yildirim, 2018), web design (Ilbahar & Cebi, 2017), cultural dimensions (Esen et al., 2018), loyalty (Zehir, Sehitoglu, Narcikara, & Zehir, 2014), and comparison of a firm's online activities with its brick-and-mortar commerce (Aydin & Kavaklioglu, 2011). However, more studies are needed to understand the behavior of firms and customers for electronic businesses.

In this thesis, we would like to find out how the antecedents of trust production terms, i.e., characteristic-based, process-based, and institution-based trust, have impact on consumers' overall trust in e-commerce, and how the overall trust in e-commerce has influence on personal disclosure on a website and continuance to use the website. In order to do this, we conducted a survey with Turkish internet users. They were asked to pick a website they had had an experience with, and were requested to answer several questions addressing to the related constructs.

This study will contribute to the academic literature in several ways. First, it will measure online consumers' trust in e-commerce websites toward an overall thinking, and find if they intend to provide personal information and continue using a particular website according to their overall trust. Second, it will analyze the sources of characteristic-based, process-based and institution-based trust based on the existing literature and discuss which of these will be related. Finally, it will reduce the current large gap of e-commerce knowledge between Turkey and the rest of the world.

The forthcoming chapters of this thesis are as follows: Chapter 2 covers the literature on e-commerce and trust, then builds the model and the hypotheses, Chapter 3 explains the methodology, Chapter 4 provides the findings of the study, and Chapter 5 makes discussions and implications from the findings.

## **CHAPTER 2**

### **CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT**

#### **2.1. The Theoretical Background of E-Commerce**

The rapid and steady development of e-commerce has led to a pursuit of defining and understanding its subject field and actors in various environments. In fact, the way of using e-commerce differs when companies define the term as either commercial activities performed on electronic platforms, or document transfers carried out on computers (Vehovar, Manfreda, & Batagelj, 2001). Since the electronic document transfers were the main e-commerce activities in early stages, older definitions mostly emphasize the interchange of data instead of its commercial use. For instance, according to Wigand (1997), electronic commerce is the utilization of the flow of information and communication that are administered electronically to serve a purpose or a process. Despite being an old study as well, Treese and Stewart (1998) put an emphasis on the commercial side, and defined e-commerce as “the use of the global Internet for purchase and sale of goods and services, including service and support after the sale” (p.5). Shopify, a website that sells infrastructure to mostly small enterprises for the creation of their e-commerce websites, broadly defines e-commerce as “the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions” (Shopify, 2019, para.1). Today, the context of e-commerce can go beyond its past definitions. For instance, the definitions of e-commerce do not cover social media, though online retailers integrate the features of social media with e-commerce. Using social media, they provide customers the opportunity to chat directly and set prices as well as offer them assistance for less painful transition from physical to online shopping (Miller et al., 2016).

### **2.1.1. Types of E-Commerce**

E-commerce has several types in operation, where the most common types are between businesses (called business-to-business or B2B e-commerce), between consumers (called consumer-to-consumer or C2C e-commerce), and between a business and a consumer (called business-to-consumer or B2C e-commerce). The B2B e-commerce has the greatest portion among all. In 2017, the global B2B volume was more than 2.5 times the volume of business-to-consumer (B2C) e-commerce (Shopify, 2019). According to Zwass (1996), e-commerce was initially considered as an electronic integration to the traditional commerce between businesses, such as telecommunications and computer network, and electronic data interchange (EDI). EDI is an example of an interorganizational system (IOS), which refers to an information system used between at least two organizations having a network (Crook & Kumar, 1998). Business documents can be exchanged more efficiently and with less costs and errors. Therefore, a sustainable trust relationship can be maintained in various business platforms, such as finance, insurance, manufacturing, and banking (Zwass, 1996).

On the other hand, the business-to-consumer e-commerce relies on consumer marketing perspectives. Wigand (1997), having performed one of the first studies on B2C e-commerce, identified three types of orientations for this concept, which are customer orientation, product orientation, and profit orientation. Customer orientation deals with consumer behavior. Firms need to be interested with what consumers want, and check whether they manage to meet consumers' requests. Product orientation is related with the quality of products or services, and how they are perceived by consumers. Profit orientation indicates how a product or service is profitable and in high demand. However, these terms do not concentrate on a trust structure. Kim, Song, Braynov, and Rao (2005) identified three B2C ingredients from the viewpoint of online trust, which are buyers, sellers, and environment. Buyers represent consumers who act as trustors. Sellers can be online vendors, suppliers or intermediaries; and act as trustees. Environment covers

technology and third-party agencies which help online transactions to be made easier.

Ren and Hassan (2008) developed an e-business transaction lifecycle to address trust building issues for both B2B and B2C e-commerce. The first step is user registration, where the e-vendor requests the validity of a user's personal information. The user is requested to accept the "Terms and Conditions" that is prepared by the website and includes legal statements that bring on new issues: whether the statements are read entirely, and how they bound the rights of online users. The next step is partner finding and data searching, where the greatest trust issue is how to trust another party. Some of the websites have their ranking system to distinguish reputable sellers from others. The ranks are determined based on user ratings and seller activity. The next step, contract negotiation, is easier for B2C since the pricing and delivery system is predetermined. However, this step is more complex in B2B environment. Businesses need to prepare contract templates and make the deals on a negotiation platform, and then track the process of their contracts. The final step is post-contract fulfillment. At this stage, businesses are required to keep the contract records for a certain amount of time.

The economic benefits of e-commerce were analyzed in B2B and B2C perspectives by Kauffman and Walden (2001). They argued that the electronic data generated on what a unit costs, how many units will be sold electronically, how a company performs with electronic business, and how the dynamics in a competitive market operate rely on the field of econometrics. Similarly, Kracher and Corritore (2004) identified five driven features of e-commerce under the internet, which are interconnectedness, simplicity, speed, virtuality, and cost. Interconnectedness gives opportunity to share ideas and experiences, and make transactions globally regardless of location. Simplicity refers to low entry barriers for businesses and ease of web use for consumers. According to Kracher and Corritore (2004), e-commerce is a virtual environment where consumers are able to meet their own needs more quickly while saving time and money.

The consumer-to-consumer (C2C) e-commerce is another common type of e-commerce, where the sellers are consumers as well. C2C e-commerce is the one where consumers are more active in online communities such as discussion forums (Yoon & Occena, 2015) and social media (Urban et al., 2009). A major difference between B2C and C2C is that in B2C e-commerce, the main actor is the institution that will protect its consumers' rights in accordance with the standardized policies and regulations. On the other hand, a C2C website generally remains in the background when a transaction is performed between consumers. Hence, trust becomes more problematic in C2C e-commerce compared to B2C (Yoon & Occena, 2015).

A non-common type of e-commerce is consumer-to-business (C2B) e-commerce, where the value is created by consumers and used up by firms. Online group buying is a decent example of the C2B e-commerce (Wang et al., 2016). A group buying website offers different types of products or services to online consumers, and can provide huge discounts on a particular product or service when a vast amount of people have tendency to buy it. Since the price of a product depends on the quantity of potential buyers on a group buying website, consumers are highly dependent on each other to decide whether to buy the product or not. There may be situations where some customers show themselves as potential buyers, but then do not participate in the buying process (Wang et al., 2016). Therefore, the trust issues in the C2B e-commerce are related to its specific concerns, which are irrelevant to this study.

To sum up, B2B, B2C and C2C are the most well-known types of e-commerce. In this study, the focus is to contribute to the field of business-to-consumer (B2C) e-commerce while placing trust at the center. From this point forward in the thesis, the term e-commerce will refer to the online commercial transactions between a business and a consumer.

### **2.1.2. Past Studies on the Development of E-Commerce**

The existence and importance of e-commerce on the consumer side has been widely recognized over the past two decades. For instance, Han and Noh (1999) conducted one of the first surveys about e-commerce. They examined the obstacles that could cause failure to the growth of this field. According to their survey, the most important failure factors that affect e-commerce use and online satisfaction are unstable computer systems and lack of data security. The result is interesting as consumers were failing to lean toward e-commerce when the hardware or software is incapable of conducting online transactions. However, today's technology allows much faster computer systems, which has radically overcome this failure factor. On the other hand, data security problems still exist and are widespread.

Another relevant study was performed about why consumers prefer not to use e-commerce (Iglesias-Pradas, Pascual-Miguel, Hernández-García, & Chaparro-Peláez, 2013). The authors defined four types of consumers according to their online non-shopping behavior. The first group is skeptical non-shoppers, who have a common distrust in personal information and web security. They form the highest percentage group among the others. Infrastructure-conditioned people are the ones avoiding online shopping due to lack of computer or internet connection. They generally find it costly to have resources in order to make online transactions. Another group is product-conditioned people, who do not prefer online shopping since they already feel that it is easier and less costly to buy the necessary products in physical stores than online websites. Others are the last group of online non-shoppers. They have multiple reasons, but their common behavior is about lack of internet or computer knowledge.

However, as time passes, more users are transitioning from traditional commerce to e-commerce due to less costs and time. Although trust is a great concern, technological developments help mitigate the trust issues of people. They mostly prioritize their economic and behavioral benefits over their concerns (Safa & Ismail, 2013). Consumers tend to save their time in front of their computers or

smart devices instead of spending their time inside stores. One drawback of e-commerce is that they were likely to wait for days until the ordered product is delivered. However, companies are organizing campaigns to overcome the waiting time, such as “same day delivery” by n11.com, a well-known Turkish open market online seller founded in 2013. The website promises the same day delivery for products that are ordered before 15:00 o’clock (n11, 2019). Even when e-commerce users order a product via websites from a different country, they can receive it in just a few days (Esen et al., 2018).

The transformation from traditional to online environment is an ongoing major shift. Nevertheless, the more important point is how companies are using this online technology to create value for customers (Kauffman & Walden, 2001). Today, selling online is only a portion of online retailers’ use of e-commerce. They prepare digital catalogs where a product or a service can be easily found using a convenient search bar. A product or a service has a description, and often has several user comments depending on its quality or experience. After buying online, consumers are given product or service recommendations which can be similar or complementary to what they bought. Those technological features are helpful to bring value to customers (Kauffman & Walden, 2001).

While developing trust and creating value for consumers, the online firms need to overcome their ethical concerns as well. Cheng, Yang, Chen, and Chen (2014) described five ethical issues of today’s online consumers. These are *sales behavior*, *privacy*, *security*, *fulfillment*, and *service recovery*. Ethical sales is different in e-commerce when the sales experience is through the website. In this case, a user could, for instance, perceive a manipulative ad rather than a face-to-face selling activity. Privacy and security are two of the most important ethical concerns in e-commerce, and both must be examined carefully. Any risks caused by privacy and security issues can be mitigated by the existence of trust in the internet and vendor (McCole, Ramsey, & Williams, 2010). Fulfillment refers to delivery of orders in a proper manner. Consumers are concerned with fulfillment since they lack control over the delivery system of a company, where this lack of

control necessitates trust in the company. The final dimension is service recovery, which is evaluated for mostly repeated purchases. Sellers could respond to consumers' special needs by service recovery, which in turn increases ethical satisfaction and intention to purchase again (Cheng et al., 2014).

### **2.1.3. E-Commerce on Mobile Platforms**

A decent portion of e-commerce is the one where the electronic transactions are performed on mobile devices. This is called mobile commerce or *m-commerce*. M-commerce refers to the meaning of “an extension of e-commerce, whereby the transactions of businesses are conducted in a mobile environment using mobile devices” (Chong, Chan, & Ooi, 2012, p. 34). The definition implies that the same transactions on the internet can be performed flexibly using a smart electronic device, and this flexibility is expected to attract more internet users over time (Sumita, & Yosjii, 2010). Some studies argue that mobile commerce should be considered differently from e-commerce (Schramm-Klein & Wagner, 2014), because it is evaluated as a different way of online shopping by consumers. Nevertheless, Schramm-Klein and Wagner (2014) also indicate that online consumers perceive the mobile environment as a useful addition to the overall e-commerce. Trust concerns in m-commerce are also similar to the ones in the generic e-commerce. For instance, mobile users require simple, flexible, fast, reliable, and safe devices (Büyüközkan, 2009); and those design and security factors are essential for trust in m-commerce (Siau & Shen, 2003; Li & Yeh, 2010). Therefore, we argue that mobile commerce cannot be separated from e-commerce, but the fact remains that m-commerce can serve for several purposes better than the generic e-commerce. To illustrate, mobile users have more social integrity while performing regular commercial transactions (Hew, Lee, Ooi, & Lin, 2016). Kucukcay and Benyoucef (2014) call this integration mobile social commerce or ms-commerce, and define it as “the set of e-commerce activities performed in a mobile environment and enhanced by user-generated content” (p.2). All of these

novelties imply that the current massive e-commerce environment will continue growing and branching.

## **2.2. The Theoretical Background of Trust**

Scholars have reviewed many theories over the years to make sense of the word trust. In general, most of the academic studies preferred defining trust considering their area of specialization (McKnight & Chervany, 2001). Therefore, no consensus has been achieved about the trust definition so far. McKnight and Chervany (2001) argue that the trust definitions need to be standardized so that the classification of studies and communication with practitioners would be clearer. However, we think that although there is no consensus among past studies on trust definitions, scholars managed to identify a common root idea, and then enhanced the trust definition by putting an emphasis on their fields. For instance, psychologists defined trust based on individual characteristics, and economists emphasized the economic benefits and costs (Lewicki & Bunker, 1994). We believe that such differentiations in defining trust are usual, and combining them to a single definition could result in loss of emphasis on the specific area. Hence, in the commercial framework, the general idea of trust should include an individual willingness to have some exchange without any exposure. For instance, Farris, Senner, and Butterfield (1973) identified trust as a personal trait such that one of the partners would expect trustworthiness from other parties. Mayer et al. (1995) pointed out vulnerability in a trust relationship. In a risky environment, trust refers to the willingness to be vulnerable against another party. However, the trustor should be confident or have belief that his or her vulnerability will not be abused by the merchant (Shankar et al., 2002).

With the addition of the internet environment to the meaning of trust, Bahmanziari, Odom, and Ugrin (2009) defined trust as “a consumer’s belief in the capability, integrity, and goodwill of the e-commerce site regarding the privacy and security of online transactions” (p.154). Although we support the ideas of this definition, vulnerability needs to be emphasized as well, since the trusted party

should not abuse the vulnerability of a person. Consumers are vulnerable to online vendors, since they disclose their critical personal information such as credit cards, mail addresses, and identities to the websites (Bhattacharjee, 2002). From this point of view, we favor Hong and Cha's (2013) definition the most, which is "the consumer's belief that the online merchant will not behave in an opportunistic manner and that the e-commerce environment is secure enough to provide risk-free transactions" (p.928-929).

### **2.2.1. The Key Terms of Trust**

Trust consists of a relationship between a trustor and a trustee. In B2C e-commerce, trustor is the consumer and trustee is the business. As mentioned before, *ability* (also known as *competence*), *integrity* and *benevolence* are the three key terms of building trust, which are the major characteristics of a trustee (Mayer et al., 1995). Ability corresponds to skills and characteristics that provide authority to a party. The domain of ability is bounded inside the area of expertise of a person or an organization (Mayer et al., 1995). A competent person needs to become knowledgeable at a particular work and do his or her job quite effectively (McKnight, Choudhury, & Kacmar, 2002). E-commerce users can perceive the trustee's ability in two ways: when the company is highly skilled for their work, or when the company has availability to have access to related knowledge for that behavior (Bhattacharjee, 2002).

Integrity refers to adherence to particular standards between the partners. It is essential that the parties find the standards acceptable (Mayer et al., 1995). In e-commerce, integrity occurs in website transactions, online services during or after purchase, and the use of data generated by users (Bhattacharjee, 2002). Keeping promises and behaving honestly are the two key actions of a website to ensure its integrity (McKnight et al., 2002).

Benevolence is the trustee's belief of willingness to do good to his or her partner. Put differently, benevolence suggests that an individual is likely to perceive fair ambitions from others (Metzger & Pure, 2015). A benevolent website

may help its users without being obliged to help or expecting any reward from them (Bhattacharjee, 2002). The benevolence of a website is dependent upon how it is concerned about user problems, whether it offers a good amount of help, and whether it cares about user well-being (McKnight et al., 2002). A mentor-mentee relationship could represent the benevolence of the trustee as a mentor, while the trustor acts as a protégé (Mayer et al., 1995).

Ability, integrity and benevolence are interdependent terms, yet they are separable among each other. In fact, each term is separable between subsequent activities. How to obtain high scores from each depends on the trustor's perceptions (Mayer et al., 1995). This human perception defines the propensity to trust (Farris et al., 1973). For instance, if a trustee is perceived to have a high integrity but low benevolence, the propensity of the trustor to entirely trust him or her would be questionable. This is applicable for online trust as well, where websites are trustees and users are trustors (Bhattacharjee, 2002).

Besides ability, integrity and benevolence, McKnight and Chervany (1996) introduced *predictability* as the fourth term. Predictability refers to a party's forecast to the trust beliefs of a partner. High predictability means that there is a consistent behavior in the trust relationship so that one would not change its willingness to serve in a given time. However, this term is not supported or measured in the literature, presumably because it represents more of a trustor characteristic instead of trustee.

Although many articles use trust and trustworthiness interchangeably, some of them allege that they have different meanings. For instance, Gefen, Benbasat, and Pavlou (2008) state that trust is a human intention of the trustor to the trustee, whereas trustworthiness is a belief, not a willingness, of the trustor. Trustworthiness is a term that is perceived as an influential factor of overall trust, i.e., perceived trustworthiness causes trust (Hong & Cho, 2011). In other words, overall trust can be influenced by the trustworthiness of other people, website, or internet.

### 2.2.2. Trust in the Online Environment

Companies are required to assimilate how both online and offline trust are interrelated and in what aspects they differ (Shankar et al., 2002). The three key terms of a trust relationship, which are ability, integrity, and benevolence, can be applicable for both offline and online trust. In the literature, there are several studies that correlated offline and online trust such that people with high level of trust in general tend to have more positive perceptions toward trust in the online environment, or vice versa (Uslander, 2000; Katz & Rice, 2002). According to Corritore, Kracher, and Wiedenbeck (2003), online trust has similar characteristics with offline trust since the situations are similar in both environments. However, from customer perspective, while it is enough to trust the vendor in traditional commerce, a user has to trust both the website and the vendor in the internet (Boyd, 2003). According to Mesch (2012), offline and online trust are associated, but their impact may be different due to their context. For example, disclosure of user information is more related with the online trust.

Urban et al. (2009) listed the transformation of trust as a result of its engagement with the internet. First, trust is becoming more strategic than a minor topic in marketing perspective. Second, firms' trust in customers has become as important as customers' trust in online vendors. Third, more studies from behavioral perspective are needed to better predict human actions toward online trust. Fourth, globalization also affects trust, and different countries may form different trust levels. And fifth, the internet media is evolving constantly and is making room for new forms of existing trust approaches through social media (Urban et al., 2009).

The stakeholders of online trust are defined by Shankar et al. (2002). They identified seven stakeholders as follows: *Customers* are the most remarkable among the others as well as the most important group for this thesis. They often question the website trustworthiness and transaction safety to decide whether or not to give their personal information. *Stockholders, suppliers, distributors* and *regulators* in general check whether they can receive accurate and unbiased

information from the company. *Employees* are more interested with the company's interior reliability. *Partners* look for their offerings and benefits as a result of their trust relationship. However, other stakeholders exist apart from this study. Chua, Straub, Khoo, and Kadiyala (2005) grouped them as *indirect stakeholders* including media, competitors, researchers, and criminals. The indirect stakeholders do not have a direct contact with the focal firm, but do exist around the organization and may have a benefit or threat to it.

A survey at the early stages of online trust, performed in the United States, reveals that nearly 95 percent of online users rejected letting websites have their personal information, mostly because they hardly knew how their data would have been used (Hoffman, Novak, & Peralta, 1999). However, their study also indicates that over 90 percent of the consumers would provide their demographic information if a statement that tells the purpose of collecting their information was published by websites. It can be inferred that users are more receptive to the collection of their information when they are clearly notified, but the lack of an informative message could be destructive for online trust.

Likewise, trust systems could be harmed by users. Ruan and Durreesi (2016) identified four factors explaining the user attack as follows: *Naïve attack* is defined as poor recommendations that are made unconsciously without knowing the system. Although the recommending user does not mean it, his or her inaccurate evaluations could affect the trusted and distrusted products. *Traitor attack* occurs when a user gains reputation from accurate recommendations initially and then changes his or her behavior to the opposite. This is also called on-off attack (Wang, Muller, Liu, & Zhang, 2014). Another one is *whitewashing attack*, which happens quite often in the online environment. A distrusted user may delete his or her own account and get a new one to clean the bad reputation. The final one is *collusion attack*, which occurs when using multiple accounts individually or in an organized behavior in order to change the established trust system (Ruan & Durreesi, 2016). In general, websites need to prevent those attacks to maintain trust with their customers.

Another critical point to mention is that trust is both cumulative and interactive (Kim et al., 2005). A proper trust relationship can superimpose over an existing trust level, and trust elements can make interactions between each other. However, the loss of trust could be quicker and heavier than the trust building process (Shankar et al., 2002). As mentioned in the above paragraph, preventing the trust harming processes becomes even more important. In fact, not only does the loss of online trust depend on online activities, but it could also be caused by offline trust betrayals (Shankar et al., 2002).

Through an exchange between a consumer and a firm, trust varies depending on contextual and situational factors. Trust does not have to exist in such a relationship, though the present circumstances determine whether or to what extent the trust exists between the two sides (Singh & Sirdeshmukh, 2000). That is, trust does not emerge with instruction, it appears by nature. A paradox in trust is that when a website tells its consumer to trust itself, this might cause a side effect of being evaluated in a skeptical manner (Boyd, 2003). Trust must grow naturally.

### **2.2.3. Online Trust versus Trust in E-commerce**

From the literature above, we can see that trust has diversified beyond e-commerce so far. In fact, trust in e-commerce is only a part of the massive online trust (Yoon, 2002). Although the underlying theoretical backgrounds of both overall trust in e-commerce and the general online trust are the same, overall trust in e-commerce is specialized toward the aspects of online shopping. This also refers to consumer trust in internet shopping (Lee & Turban, 2001), defined as follows:

*The willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant (p.79).*

For the e-commerce perspective, it is important to build website trust in order to achieve overall trust. To build website trust, a vendor should provide accurate and unbiased information, fulfill what is promised, make its products or services competitive, and make use of innovative technologies to get user confidence and loyalty (Urban, Sultan, & Qualls, 2000).

A challenging fact of the trust in e-commerce is that data can be collected much easier in e-commerce than the traditional commerce, which could increase the possibility of exploiting consumer information with other parties (Pavlou & Fygenon, 2006). In addition, the private information might be breached by an unauthorized access when there is a lack of internal security control (Culnan & Armstrong, 1999). It can be inferred that consumers are vulnerable against websites about their personal information. A website could abuse this vulnerability by providing inaccurate information and violating the privacy and security of users (Gefen, Karahanna, & Straub, 2003). Such actions harm an established or emerging trust relationship.

### **2.3. Theories for the Trust Production Terms**

As mentioned in the beginning of this study, Luo (2002) identified three trust production terms within e-commerce: characteristic-based trust, process-based trust, and institution-based trust. These terms are originated from *relationship marketing* (Dwyer et al., 1987; Morgan & Hunt, 1994) and *social exchange theory* (Blau, 1964). Both of the theories are explained in the following sections.

#### **2.3.1. The Theory of Relationship Marketing**

Starting from the 1980s, marketing was considered as a combination of economic and social processes addressing to relational purposes (Vargo & Lusch, 2004). Fundamentally, a transaction could be discrete or may include relational exchange. Discrete transactions are one-time purchases that are delineated with little or no communication. On the other hand, relational exchange requires time to be constructed (Dwyer et al., 1987). Under relational exchange, transactions are

evaluated according to their history, their current value, and future expectations related with them. Morgan and Hunt (1994) defined relationship marketing as “all marketing activities directed toward establishing, developing, and maintaining successful relational exchanges” (p.22). The partners that make relational exchange with the focal firm in relationship marketing are good and service suppliers, competitors, government, non-profit organizations, intermediate and ultimate customers, and internal elements such as employees, departments and business units. The existence of trust and commitment is essential for the nature of relationship marketing in order to preserve the relationship with the partners, minimize any risks incurred in the relationship, and prevent the partners to switch to another alternative (Morgan & Hunt, 1994). Doyle and Roth (1992) used the word “trust” in their relational marketing concept, and stated that “the goal of relationship selling is to earn the position of preferred supplier by developing trust in key accounts over a period of time” (p.59). As one can see, relationship marketing favors an established trust and willingness to pursue the relationship between partners. If both the buyer and the seller have high level of motivation to invest in their relationship, then the reciprocation can be maintained (Dwyer et al., 1987). All in all, a successful relationship marketing needs cooperation between partners (Morgan & Hunt, 1994).

### **2.3.2. The Social Exchange Theory**

The social exchange theory suggests looking for trustworthy parties in a strategic relationship (Morgan & Hunt, 1994). It refers to an individual behavior conducted voluntarily to have its expectations in return from other parties (Blau, 1964). At first, an actor does a favor to another one, then expects a reciprocity. This repayment is not planned, specified, or bargained; hence the accommodator has to trust the other party. By the reciprocal behavior, the trust between both partners can be developed (Luo, 2002). As in the shopping perspective, a user initially tends to make small transactions since the perceived risk toward an unknown retailer would be high. While the trust between both sides grows, the size of the exchange

increases as the risks and boundaries start fading away (Chang, Cheung, & Tang, 2013). The user has had his or her expectations met already by trusting the online vendor. An online user may, for example, perceive website enjoyment as a benefit and share personal information to contribute to reciprocation (Wakefield, 2013). On the other hand, the social exchange theory suggests that a failure to reciprocate will result in loss of reputation on the opposite side and distrust by the accommodator (Blau, 1964). When building online trust, consumers would want to be informed accurately at each level. Any inconsistency might lead the established trust relationship to be harmed (Shankar et al., 2002). When this happens, the trust relationship becomes harder to repair (Chang et al., 2013).

An activity of a social exchange depends on several factors, which are the stage and characteristic of the relationship, related benefits and costs, and the social context of the exchange (Blau, 1964). Blau explained these terms as follows: at the beginning of a social exchange, one has to prove trustworthiness to the other. Proof of trust requires some commitment, yet the excess commitment could bring the partner into an advantageous position. Having less alternatives in a relationship necessitates more commitment to a person. Benefits of a social exchange are rewards that can be intrinsic or extrinsic, and spontaneous reactions or calculated responses depending on interactions between the parties. Rewards can be unilateral as well if one side is showing a superior power or prestige. Possible costs of a social exchange are direct cost, investment cost, and opportunity cost. Direct costs are straight expenses for quick social gains. To acquire benefits in the long run, investment costs are incurred. Opportunity costs refer to alternatives given up for the existing action. Finally, the effects of social context are determined by partner roles, size of the exchange, coalitions in a multi partnership, and power changes among partners (Blau, 1964).

#### **2.4. The Trust Production Terms in E-Commerce**

Luo (2002) proposed that characteristic-based, process-based and institution-based trust could be a proper solution to consumer privacy concerns in e-

commerce. However, these three terms have not been tested altogether for their effects on overall trust in e-commerce until this time. Their definitions and the keywords associated with them are listed in Table 1.

In the literature, the characteristic-based trust also refers to disposition to trust. Disposition to trust refers to a consumer’s propensity to trust other people on the web (Gefen, 2000; McKnight et al., 2002). This could occur in the form of trust in people in the same community, or people who are providing online support of the website. Disposition to trust can also be explained with psychological terms such as traits, as individual traits have effect on trusting other people (McKnight & Chervany, 2001). Yoon and Occena (2015) explained this as a communication part of the characteristic-based trust. They also examined national propensity to trust under this term, where the trust in other people stems from cultural background.

The process-based trust can refer to experience-based trust, which is related to consumers’ familiarity and their experiences toward a website and the internet (Kim, Ferrin, & Lao, 2008). Consumer satisfaction, relationship length, and online marketing activities are critical for building trust through experience (Chen & Dhillon, 2003). Due to the necessity of a long-term interaction, building the process-based trust is harder than the other two terms (Luo, 2002).

Table 1. Trust Production Terms

<b>Term</b>	<b>Definition</b>	<b>Keywords</b>
Characteristic-based trust	Trust based on other people from a website or a community	Community, similarities, people-driven services, reputation
Process-based trust	Trust gained by direct personal experience with web attributes	Transactions, experience, web features, product price
Institution-based trust	Trust based on structural assurances provided directly or by external source	Web seals, protection, policies, data privacy and security

The literature suggests that the institution-based trust is reviewed in two forms. First, it depends on the fact that success is achieved through *situational normality*. Situational normality indicates that one would likely to do his or her own business because the internet environment is in normal condition (McKnight et al., 2002). Second, success can be maintained when a company owns *structural assurances* (McKnight, Cummings, & Chervany, 1998). It signals to a consumer's perceptions on the structural mechanisms on the internet, such as security, protection, and guarantees (McKnight et al., 2002). We focus on the structural aspects of the institution-based trust in order to examine the assurances of a website in depth.

Based on Luo's (2002) suggestions to characteristic-based, process-based, and institution-based trust; and the field of relationship marketing and social exchange theory detailed in the previous section, the three trust production terms are explained below:

#### **2.4.1. Relationship between Characteristic-Based Trust and Overall Trust in E-Commerce**

The characteristic-based trust centralizes the disposition to trust and trust in other people, where the main antecedents are people, similarities, and values (Luo, 2002). Community, shared values, people-driven web services, and perceived reputation are important aspects of the characteristic-based trust.

Community is an important antecedent to the characteristic-based trust, which is formed by social similarities to share common feelings and ideas (Luo, 2002). Websites may encourage their users to become active and supportive toward other people to integrate their communities. On the other hand, such integration has been achieved with only few of the community users in the online environment (Ruan & Durresi, 2016). An integrated community is effective for the generation of shared ethical values. Users may perceive similar ethical and moral behavior to a website as well (Luo, 2002).

To increase the online trust based on characteristic perspective, a website needs to build a closer relationship with users (Luo, 2002). One proper way to do this is having a quick help section on the website. The features of internet communication technologies such as chat/voice/mail help address the focus of personal trust (Corritore et al., 2003). Many B2C websites have their online customer services working 24 hours a day to help their consumers quickly (Yoon & Occena, 2015). Since building a trust relationship via face-to-face conversations or signals is hard to perform in e-commerce (Kracher & Corritore, 2004), having a help section and a quick response behavior could ensure trust in the website personnel, thus trust in the website. Another way to build an overall trust through relationship is having a good delivery and aftersales system. Sullivan and Kim (2018) revealed the affirmative effects of both a company's delivery system and its aftersales quality on online trust. Another study found that a website's failure of product or service delivery could result in consumer distrust (Zhang et al., 2011). To sum up, consumers attach significant importance to online service quality. The firm performance in delivering orders is a major determinant of the quality of user-vendor trust relationship (Zhang et al., 2011).

Doney and Cannon (1997) introduced size and reputation that generate a combined effect on online trust. Like many items, size and reputation of online companies are perceived terms instead of their actual levels according to the literature. The two terms were used for testing their effects on traditional B2B trust (Doney & Cannon, 1997), trust in B2C e-commerce (Jarvenpaa, Tractinsky, & Vitale, 2000), and initial trust in an online company (Koufaris & Hampton-Sosa, 2004). In this study, firm size is omitted as we focus more on the subjective perceived reputation. According to Metzger and Pure (2015), consumer feedbacks and seller ratings are good sources to identify the reputation of a seller. They help the creation of a positive buzz for the website. Therefore, perceived reputation and positive comments are vital for overall trust in e-commerce.

Consequently, the main idea of the characteristic-based trust is the overall confidence toward people from community and website personnel, and the

perceived reputation based on this. In accordance with the literature, we define the first hypothesis as follows:

**H1:** *Characteristic-based trust shows a positive relationship with overall trust in e-commerce.*

#### **2.4.2. Relationship between Process-Based Trust and Overall Trust in E-Commerce**

The transaction process-based trust, or simply the process-based trust, is mainly formed by transactions performed in the past and the consumer involvement related with the website (Luo, 2002). The key antecedents of the process-based trust are experience, product or service price, and website features for transactional purposes.

Once a person gets a product on trial or by purchase, the trust gaining process starts (Urban et al., 2009). According to Zucker (1986), trust consists of background and constitutive expectations. The former component refers to daily attitudes and mutualism in a reciprocal way. The latter one, however, relies on rules defining a specific situation and are easier to interpret compared to user background. As the difficult point of trust is examining the past experience, the process-based trust necessitates a long-term human and web interactions (Luo, 2002). A good shopping experience leads to satisfaction and trust, thus an intention to repurchase from the website (Rose, Clark, Samouel, & Hair, 2012). The repeated buying process turns out to be a habit over time. At this point, consumers think less about their trust concerns on the website (Chiu, Hsu, Lai, & Chang, 2012).

One way to reduce such concerns is to construct a gift-giving mechanism at the initial stage (Zucker, 1986). This may also refer to website promotions and their pricing policies. A website may charge fair prices to attract online users, and then start the trust building process. Trust can be influenced by perceived value and perceived competitive price when users are deciding whether to repurchase online (Sullivan & Kim, 2018). Singh and Sirdeshmukh (2000) proposed that perceived price fairness of an online seller is associated with consumer trust. According to

Singh and Sirdeshmukh, price fairness is associated with a trustor's benevolence. If a vendor charges premium prices and treats its customers genuinely at the same time, this action is expected to be perceived fair. Therefore, consumers will tend to maintain their trusting intentions to the vendor. In addition, websites may offer lower prices, and special campaigns to reduce perceived risks and gain more personal information (Metzger & Pure, 2015). A study in Turkey demonstrated that cheapness is the most important value proposition according to Turkish online customers (TÜSİAD, 2017). Therefore, price fairness could be another antecedent of the process-based trust.

Considering website transactions, ease of use and design are the two main antecedents to the process-based trust. Ease of use is originated from Davis' (1989) technology-acceptance model. The technology-acceptance model infers that e-commerce is highly technology-oriented (Pavlou, 2003). Davis (1989) identified perceived usefulness and perceived ease of use as the antecedents of user acceptance in information technology. According to his article, perceived usefulness refers to the belief that using an application will increase a user's performance; and perceived ease of use is a construct that a user will spend less effort when using that application. When comparing those terms, easiness is a more direct attribute than user performance in terms of online trust, so we picked the perceived ease of use for the process-based trust. Several studies are in the same direction with our selection. Pavlou (2003) found that ease of use is directly related with consumer trust in e-commerce, but website usefulness has only a direct effect on willingness to transact. Gefen et al. (2003) stated that trust is positively affected by perceived ease of use, but perceived usefulness is affected by trust instead of the opposite. Website design has a similar effect on trust in e-commerce. An e-commerce website is perceived as well-designed if it has a good information content and design, good visual design, and proper navigation (Cyr, 2013). Likewise, users think that high quality website has a good content quality and technical competence, and website quality is an important feature to define consumer trust (Liao, Palvia, & Lin, 2006). As a result, a well-designed website

increases trust, and this leads to online engagements that increase sales and profits (Urban et al., 2009).

As the literature suggests, the process-based trust focuses on trust based on consumers' direct purchasing experience that they perceive. In line with the presented above, we define the second hypothesis as follows:

**H2:** *Process-based trust shows a positive relationship with overall trust in e-commerce.*

### **2.4.3. Relationship between Institution-Based Trust and Overall Trust in E-Commerce**

The institution-based trust is mainly about structural assurances instead of situational normality in this study. It is related to web assurance seals, protection and policies of privacy and security, cookies, payment security, and the loss of data called data breach.

One of the elements of the institution-based trust is third-party guarantors (Luo, 2002). Those guarantors are the provider of web seals such as BBBOnline, TRUSTe, and VeriSign. According to Hu, Wu, Wu, and Zhang (2010), each of the seals have their main function. BBBOnline provides assurance for transaction integrity, TRUSTe assures consumer privacy, and VeriSign makes sure the transaction is secure. The seals generally take small space from a website and demonstrate its logo on it. Firms use the internet seals to show customers that their website is secure, hence the users can perform transactions safely (Kerkhof & Noort, 2010). Fundamentally, the internet seals have several functions when existing on a website: they validate that the website is legit, ensure the online security of the website, and protect consumers during their online transactions. The seal providers may endorse product authentication, privacy protection, technology, or customer feedbacks depending on which type of service the website is in need (Kasiran & Meziane, 2004).

Several studies have showed the affirmative effects of trust seals on the overall trust. Li, Jiang, and Wu (2014) demonstrated the effect of the existence of

a seal on online users' initial trust. Likewise, Kaplan and Nieschwietz (2003) found that the existence of the web seals has a positive influence on trust; and this relationship is positively associated with intention to purchase, perceived risk, and perceived product quality. LaRose and Rifon (2007) indicated that users provide more personal information to websites with seals compared to those with no seal. Despite the testing of those studies, the internet seals also have several drawbacks. First, the seals may not necessarily provide an exact security. While they can be helpful to reduce the perceived risks of online consumers, it is not guaranteed that a website using an internet seal becomes safer (Kerkhof & Noort, 2010). Second, there may still be a high amount of consumers who have no idea about the trust seals on an e-commerce website (Aiken & Boush, 2006). In this case, an education might be a solution to raise consumer awareness.

Almost all online vendors have their own privacy and security policies to ensure the protection of personal information, credit card details, and passwords. In fact, the internal policies of a website seem to be more important than third-party seals (Bahmanziari et al., 2009). But more importantly, do people actually read pages of statements that contain privacy and security policies? Steinfeld (2016) conducted an experimental study about whether or how users read the policy statements of a website. According to her experiment, if the terms and conditions exists on the signup page by default, users tend to take a look at the statement before accepting it. However, if the terms and conditions statement appears as a link to a pop-up page, most of the users become unwilling to click to open it on a new tab, and accept the statement before reading. It can be seen that at least some users actually read the whole statement and are willing to learn about the use of their personal information. Still, the existence of such statements are necessary for all users in the risky online environment, since the perceived risks in online payment negatively affects purchase intention (Hong & Cha, 2013). A user may disallow to provide personal information while surfing on e-commerce websites. However, at the payment stage, the online vendor has the superiority against the buyer (Metzger & Pure, 2015). It is essential that e-commerce websites provide

ability to protect consumers and ensure a secure payment system for users' perceived security control (Koufaris & Hampton-Sosa, 2004).

Cookies also lead to an increase in perceived risk, and users may question their trust relationship if their personal data are collected for illicit activities. Today, websites ask users to track their web logs using internet cookies for several purposes (Metzger & Pure, 2015). As the users accept giving their internet activities to a website, they are assured to have an improved web experience, such as faster transactions and customized recommendations. Nevertheless, the collection of cookies may also address to consumers' trust issues.

The final antecedent of the institution-based trust is data breach, which corresponds to "the unauthorized disclosure of personal information by an organization" (Romanosky, Hoffman, & Acquisti, 2014, p.78). A data breach might occur due to hacker or insider attacks, weak security, illegal transfer of consumer data, loss of information, or violating the data of other parties (Acquisti, Friedman, & Telang, 2006). As a result of stolen data, companies could be punished immediately (such as penalties by the institution) and in the long term (such as less trust by partners). Consumers, on the other hand, have to deal with potential individual threats such as phishing (Acquisti et al., 2006). Therefore, such data scandal could harm the trust relationship between a company and its users.

From the literature above, we focused on overall trust in e-commerce based on the structural assurance mechanisms of the institution-based trust, and reviewed the external web seals as well as internal security features of a website. From this point of view, we defined our third hypothesis as follows:

**H3:** *Institution-based trust shows a positive relationship with overall trust in e-commerce.*

## **2.5. Disclosure and Continuance**

According to Luo (2002), the three trust production terms, which are characteristic-based trust, process-based trust, and institution-based trust, are offered as a solution for reducing consumer privacy concerns. Although privacy is

associated more with disclosing private information on a website, it may be useful for consumers' intention to continue using the website as well. The two outcomes can be achieved with the impact of overall consumer trust in e-commerce.

### **2.5.1. Relationship between Overall Trust in E-Commerce and Personal Disclosure**

We define the willingness to disclose personal information as a dependent variable associated with the overall trust in e-commerce. Disclosure of online information refers to an individual's end of resistance to share his or her personal data (Zimmer et al., 2010). Trust is a strong element for willingness to share personal information. It is even stronger when the privacy concerns are low (Wu, Huang, Yen, & Popova, 2012). In the literature, personal disclosure is negatively associated with online privacy concerns. Privacy refers to any personal information to be revealed under particular conditions or be preferred not to disclose (Mason, 1986). In conjunction with this, the term *privacy concerns* on the internet is basically defined as "an individual's subjective assessment of information privacy risk" (Choi, Park, & Jung, 2018, p.42). Usually a consumer's private information on a website include identity or social security number, credit card information, mail address, and phone number. However, some of the users could identify all of their information to be private, and become unwilling to share their personal information. For such cases, trust mechanisms are helpful for reducing vulnerability risks of consumers and preventing any opportunistic behavior by vendors (Metzger, 2006). Institutions need to assure their users by explaining their actual reasons to collect personal information. By doing this, online users will have more intention for disclosure (Zimmer et al., 2010).

Literature suggests that whether to disclose personal information on a website is assessed by users according to their calculated benefits through the exchange, which has been identified as "privacy calculus" (Milne & Gordon, 1993; Culnan & Armstrong, 1999). According to this construct, potential risks and benefits can be assessed by a consumer (Smith, Dinev, & Hu, 2011). Costs and

benefits in privacy are both monetary and non-monetary (Acquisti, 2004). For both monetary and non-monetary cases, internet users are likely to continue sharing their information as long as they perceive more benefits than risks (Culnan & Armstrong, 1999). In general, consumers are willing to share their personal information on a website if they have positive feelings toward it (Li, Luo, Zhang, & Xu, 2017). Similarly, a study from the United States shows that fresh internet users' intention to disclose personal information on a website highly depends on their positive affect such as website trust and enjoyment (Wakefield, 2013). One way to assure the positive feelings on a website is to be transparent at explaining the purpose of data collection. An experimental study conducted in the United States indicates that the more relevant a website is collecting user data for its functional use, the more the users are willing to share their personal information (Zimmer et al., 2010).

In general, the voluntary disclosure of personal information is suggested as a positive outcome of trust in e-commerce. To test this relation with the three trust production terms, we define the fourth hypothesis as follows:

**H4:** *Overall trust in e-commerce has a positive impact on the intention to disclose personal information.*

### **2.5.2. Relationship between Overall Trust in E-Commerce and Continuance**

Like personal disclosure, we identify the willingness to continue visiting a website which is positively related with overall trust in e-commerce. This continuance intention has been defined with several alternative terms in the literature so far. For instance, Safa and Ismail (2013) used the term *loyalty* in e-commerce, and defined it as “customer commitment and favorable attitude toward an online retailer” (p.559). Lopez-Miguens and Gonzalez (2017) developed an e-loyalty model for online banking concept. They identified three antecedents that have a direct effect on loyalty, which are online trust, website quality, and online satisfaction. Another study revealed that consumer loyalty is influenced by

perceived value, trust, and satisfaction (Harris & Goode, 2004). Bilgihan (2016) studied Generation Y on their loyalty intentions to online shopping. According to his study, the loyalty of Gen Y users depends on trust, brand equity and online experience. However, they prefer less loyalty and more experience when shopping from online vendors compared to older generations. Their loyalty level depends more on utilitarian features than hedonic compared to older generations. While both utilitarian and hedonic features have an effect on Gen Y consumers, websites should prioritize utilitarian features to give better shopping experience to them. For example, having a price comparison option and up-to-date information could make a website better in terms of utilitarian features (Bilgihan, 2016). Finally, Singh and Sirdeshmukh (2000) identify loyalty as a behavioral intention of a user. Therefore, loyalty is conceptualized under the extent of relationship marketing. The primary purpose of a consumer's loyalty is to continue his or her existing trust relationship with a vendor (Singh & Sirdeshmukh, 2000).

Another similar term to the willingness to continue using a website is repurchase intention. In fact, "repurchase intention is a manifestation of customer loyalty" (Zhang et al., 2011, p.192). Zhang et al. (2011) state that the intention to repurchase from a website depends on the quality of user-vendor relationship. As mentioned previously, such high quality can be built with trust in the long run. One another close definition to continuance was made by Schramm-Klein and Wagner (2014). They named the term as "usage intention", and defined as the willingness to use an online vendor's website or app in the future as a result of satisfaction (Schramm-Klein, & Wagner, 2014). The common aspects of those definitions are trust. Trust plays a critical role by reducing the uncertainty of online users and provides them confidence with future transactions (Pavlou & Fyngenson, 2006). Put differently, users' continuance intention on a website is strongly correlated with trust and habit (Liao et al., 2006).

Literature has defined multiple terms corresponding to the intention to continue using a website up to now. However, the past studies relate this term as a

positive antecedent of overall trust in e-commerce. Hence, we define our fifth and last hypothesis as follows:

**H5:** *Overall trust in e-commerce has a positive impact on the continuance intention of using a website.*

## 2.6. Development of the Model

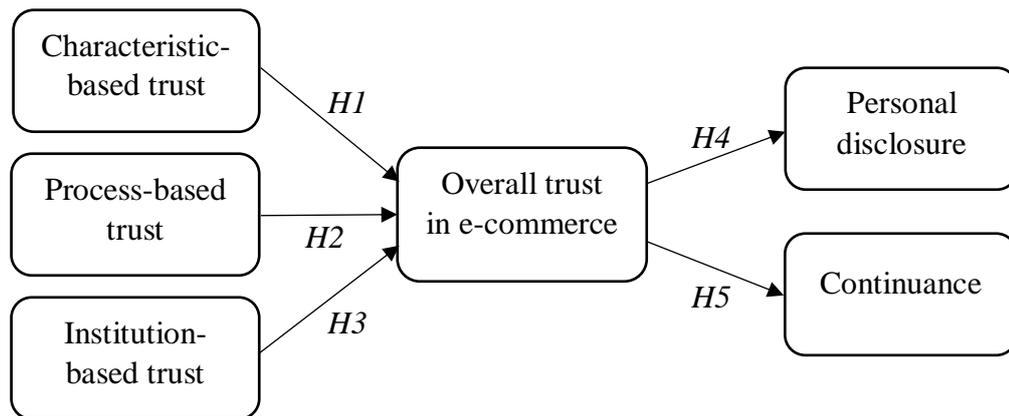


Figure 1. The Representation of the Model

Figure 1 demonstrates the research model of this study. The model is built under the context of B2C e-commerce. The three trust production terms, which are characteristic-based trust, process-based trust, and institution-based trust, are modeled as exogenous variables. Overall trust in e-commerce is the mediator between these three items and users' intention for disclosure and continuance. The terms are connected with five arrows, each representing one hypothesis as presented above.

The model represents a new study to the academic literature. In previous studies, trust was tested or measured using similar terms to this study. However, none of them used characteristic-based, process-based and institution-based trust together to test their effects. This model aims to bring these three terms together for overall trust in e-commerce, and intends to further test the effects of overall trust on willingness to disclose personal information on a website and the intention to continue the website use.

## CHAPTER 3

### METHODOLOGY

#### 3.1. Overview of Methodology

As explained in the previous chapters, the purpose of this research is to determine consumers' overall trust in e-commerce through characteristic-based, process-based, and institution-based trust; and to measure the effects of their overall trust on personal disclosure and continuance. The methodology of the study contains the developed items based on the literature, a survey application and its procedures, and data analysis.

#### 3.2. Measurement Development

The research model consists of six constructs, which are *characteristic-based trust* (CBT), *process-based trust* (PBT), *institution-based trust* (IBT), *overall trust* in e-commerce (OT), *personal disclosure* (PD), and *continuance* (CON). CBT, PBT and IBT are exogenous constructs, whereas OT, PD and CON are endogenous. The exogenous constructs are also independent variables and have a dependence relationship with OT. PD and CON are dependent variables where there are no direct arrows drawn from them to another construct. OT is both a dependent variable to CBT, PBT and IBT; and an independent variable to PD and CON. In other words, OT acts as a mediator between the three independent trust production terms and the other two dependent variables.

Table 2. Measurement Items

	Measurement item	Source	Tested before?
<b>Characteristic-based trust (CBT)</b>			
CBT1	Generally on this website, I prefer products/services which are popular among other people who use the website.	Luo (2002)	Not tested
CBT2	I feel like I am a member of this e-commerce institution's community.	Luo (2002)	Not tested
CBT3	I feel like I have similar ethical and moral values with this e-commerce firm.	Luo (2002), Maury and Kleiner (2002)	Not tested
CBT4	I can get a quick help from the website's chat/voice/email section.	Luo (2002)	Not tested
CBT5	I feel like the company has a good reputation.	Jarvenpaa et al. (2000), Koufaris and Hampton-Sosa (2004)	Tested
CBT6	I hear a lot of positive buzz about this e-commerce institution.	Zhao et al. (2018)	Not tested
CBT7	I am satisfied with the company's delivery system.	Zehir et al. (2014), Sullivan and Kim (2018)	Tested
CBT8	I think this company has a good aftersales service quality (about product return/change etc.).	Sullivan and Kim (2018)	Tested
<b>Process-based trust (PBT)</b>			
PBT1	I have performed my recent transactions on this website without any problem.	Luo (2002), Pavlou (2003)	Tested
PBT2	I have been using this website for a long time.	Luo (2002), Pavlou (2003)	Tested
PBT3	I can use this website easily.	Davis (1989), Gefen et al. (2003), Pavlou (2003)	Tested

Table 2 (cont'd). Measurement Items

	Measurement item	Source	Tested before?
<b>Process-based trust (PBT)</b>			
PBT4	I think the website is well-designed.	Davis (1989), Gefen et al. (2003), Pavlou (2003)	Tested
PBT5	I feel like the website charges fair prices.	Metzger and Pure (2015)	Not tested
<b>Institution-based trust (IBT)</b>			
IBT1	I check which trust seals (TRUSTe, McAfee, Norton, Visa etc.) this website is using.	Lee and Turban (2001), Luo (2002)	Tested
IBT2	I don't feel the need to read the privacy and security policies of this website.	Steinfeld (2016)	Tested
IBT3	I have no concerns with the website's cookie use.	Metzger and Pure (2015)	Not tested
IBT4	I am satisfied with the website's actions for password protection.	Koufaris and Hampton-Sosa (2004)	Tested
IBT5	I think the website prepares a secure environment during the payment.	Koufaris and Hampton-Sosa (2004), Luo (2002)	Tested
IBT6	I haven't heard any data scandal/breach news about this company.	Goode et al. (2017)	Tested
<b>Overall trust in e-commerce (OT)</b>			
OT1	I feel like people in general trust this e-commerce institution.	Luo (2002)	Not tested
OT2	I feel like this website is trustworthy for my family or kin.	Luo (2002)	Not tested
OT3	In general, I am satisfied with using this website.	Pavlou (2003), Chiu et al. (2012)	Tested
OT4	In general, the company is trustworthy for me.	Pavlou (2003), Chiu et al. (2012)	Tested

Table 2 (cont'd). Measurement Items

	Measurement item	Source	Tested before?
<b>Personal disclosure (PD)</b>			
PD1	I feel like I don't have to be concerned with my personal information on the website.	Zimmer et al. (2010), Zehir et al. (2014)	Tested
PD2	I feel like I don't have to be concerned with my credit card information on the website.	Zimmer et al. (2010)	Not tested
PD3	I can accept providing more personal information to the website when needed.	Gefen et al. (2003), Choi et al. (2018)	Tested
PD4R	I think this company shares my personal information with other parties without my permission.	Modified as reverse	Not applicable
<b>Continuance (CON)</b>			
CON1	I will continue using this e-commerce website.	Pavlou (2003), Chiu et al. (2012)	Tested
CON2	This e-commerce firm is one of my favorites.	Chiu et al. (2012)	Tested
CON3R	I am willing to switch to a website of similar e-commerce institution in the near future.	Modified as reverse	Not applicable
CON4	I will recommend this e-commerce company to other people.	Li et al. (2013)	Not tested
CON5	I feel like people around me will continue using this website.	New item	Not tested

Based on the defined six constructs, measurement items were developed. Table 2 shows the detailed measurement item table including the questionnaire with their abbreviations, the references behind each item, and a column indicating whether that term has been used in a survey before this study. In general, the exogenous constructs have eight, five, and six items, respectively. In addition, four measurement items were related with the overall trust in e-commerce, four were the items of personal disclosure, and five were the items of continuance. As a result, 32 measurement items were derived in total. Two of those, namely PD4 and CON3,

were switched to reverse items in order to find out possible inconsistencies in a participant's answers.

According to Table 2, a total of 32 items were prepared to be measured under six constructs. All of the items are generated from past studies except the last one (CON5), which is offered as new to the literature. Among the items that exist in the literature, 18 of them have been tested in a survey or a questionnaire up until this study. Nine of them are only proposed by several studies but not tested yet, and the two reverse items are the opposite portrayals of the related items.

### **3.3. Survey Administration**

To measure how consumers show their trust and intentions based on the antecedents explained in the previous section, we conducted a survey online and by hand. The whole survey is put in Appendix M. The survey lasts eight minutes on average and has two parts. At the first step of the survey, 13 questions were asked, where seven of them are about demographics and six are about the use of internet and e-commerce. This part is only for generating the initial data from the participants, not for testing the measurement items.

In the next section, the participants were asked to select an e-commerce website they use today or used in the past, and then to answer multiple choice questions on the basis of a 7-point Likert scale. In this survey, the Likert scale numbers from 1 to 7 correspond to *totally disagree*, *mostly disagree*, *slightly disagree*, *indecisive*, *slightly agree*, *mostly agree*, and *totally agree*, respectively. We decided to use the 7-point Likert scale so that the participants could select their agreement level more easily and precisely. For example, 7-point scale is stronger than 5-point scale, since increasing the scale range provides more chance for participants to choose a more realistic option (Joshi, Kale, Chandel, & Pal, 2015). However, when the scale is above seven, a human brain could have difficulty in processing so many scale items at a time (Miller, 1956).

Before the actual surveying, a pretest was conducted both online and by hand. The purpose of pretesting was to eliminate mistakes and unclear parts before the

actual surveying stage. According to Perneger, Courvoisier, Hudelson, and Gayet-Ageron (2014), “to achieve a power of 90% to detect a problem present for one out of ten respondents, 22 participants would be needed” (p.150). Our pretest consisted of exactly 22 participants, 11 from online and the same amount by hand. The pretest participants were requested to be watchful so as to increase the chance of detecting a problem. As a result, some of the demographic and internet usage questions were slightly modified (such as adding a multiple choice option for the type of e-commerce use question), yet the measurement items were kept the same.

Like the pretesting, the actual survey was performed both physically and on the internet as well. The offline surveys were conducted by hand in Ankara, the capital city of Turkey. Ankara is a metropolitan city consisting of 5.5 million people by February 2019 (Turkish Statistical Institute, 2019). It contains a variety of urban people, hence being a good representation of the overall urban population of Turkey. To increase the variety of participants and avoid making a convenience sampling, different locations around the city were selected for data collection including student events, shopping malls, campus areas, and workplaces. On the other hand, location was not taken into consideration for the online surveying. Some participants were directly asked to fill the survey via emails or messaging. Other online participants were asked to participate by clicking a shared post on social media websites such as LinkedIn and Facebook.

Both online and offline surveys contained the same questions with the same order. The only difference between these versions is the physical location as detailed in the previous paragraph. In both cases, the participants were required to be at least 18 years old; since most of the e-commerce websites require consumers to be adult citizens so that they are able to make transactions with their own consent (one has to be 18 years old to become an adult citizen in Turkey). The whole survey was first prepared in English, and then translated to Turkish for domestic participants.

As a result, 77 offline and 128 online participants joined the survey, making a total of 205 participants. We eliminated the data of 22 participants due to the lack

of demographic information, missing or invalid website selection, and inconsistent answers to the measurement items. Therefore, a total of 183 valid answers were ready for the analysis.

### **3.4. Data Analysis**

This section covers the applied criteria for data preparation, attributes of confirmatory factor analysis (CFA), and details about structural equation modeling (SEM) related with the model.

#### **3.4.1. Data Preparation**

The data to be obtained from the questions in the second part of the survey were prepared using IBM SPSS Statistics 22. The total sample of 183 participants answered a total of 32 questions on the Likert scale of 1 to 7 in the second part, where the detailed information of each question including mean, standard deviation, median, mode, skewness, kurtosis, and frequencies are put in Appendix B. There was not any missing value issue at this stage.

As a whole, most of the questions have their means greater than 4, and show negative (left) skewness. This means that the participants usually behaved in an affirmative manner towards the survey questions. Only the items CBT2, IBT1 and PD3 have both positive (right) skewness and the means less than 4. In addition, CBT3 has almost zero skewness but has a mean less than 4. It is highly possible that the participants might have been undecided or negative about those questions. The possible reasons behind the difference in these measurement items will be discussed in Chapter 5.

To be more specific, the mean responses for the CBT items range from 3.06 to 5.72 with standard deviations between 1.3 and 1.8. While the first four items have lower mean scores, items 5-8 show more consistent means ranging from 5.25 to 5.72 with standard deviations between 1.3 and 1.5.

The mean responses for the PBT items are more affirmative than the CBT items, ranging from 5.26 to 6.43 with standard deviations between 0.75 and 1.52. Many of the participants picked either 6 or 7 to the PBT related questions.

The IBT items again have high mean responses except IBT1. While the other five items have means between 5.15 and 6.03 and standard deviations between 1.16 and 1.66, IBT1 is quite different by having 3.26 and 2.21 for mean and standard deviation, respectively. The reason for this difference is also a discussion topic for Chapter 5.

All four of the means and standard deviations for the OT items are close to each other, ranging from 5.79 to 6.03 and from 1.01 and 1.17, respectively. Therefore, the measurement items of OT are the most consistent between each other among the other construct items.

On the other hand, PD and CON have one reverse measurement item per each called PD4 and CON3. That is, any answer to disagree with one of those questions would refer to an affirmative result for this survey. Hence, the data were converted into their opposite meanings (e.g. 1 changed with 7, 2 changed with 6, and so on) to make new measurement items called PD4R and CON3R. PD4R has the average equal to 4.89, having a greater mean score than PD3 but lower mean than the other PD items. However, CON3R has the lowest mean among the CON items. In short, the mean responses for PD ranges between 3.31 and 5.30 with standard deviations between 1.46 and 1.74. CON has more on average and less on deviation, having means between 5.05 and 5.90, and standard deviations between 1.13 and 1.47.

### **3.4.2. Confirmatory Factor Analysis**

As the data analysis was completed, we moved on with whether the acquired data are able to represent the model and the hypotheses within given constructs and their items. To test this, a two-step structural equation modeling (SEM) was applied on IBM SPSS AMOS 22. We applied the six stages of the SEM based on the book published by Hair, Black, Babin, and Anderson (2014). The first four stages of the

SEM represent the first step of the method and the remaining two stages represent the second step. The book presented the stages as follows:

- I) Individual constructs are defined.
- II) Measurement model is developed.
- III) Study design is performed to get empirical results.
- IV) Measurement model validity is tested.
- V) If valid, the measurement model is converted to structural model.
- VI) Structural model validity is tested.

The stages from one to four in SEM correspond to the application of a confirmatory factor analysis (CFA). CFA is a way of testing how well measured variables represent a smaller number of constructs (Hair et al., 2014). In CFA, the constructs are exogenous and correlated; and no structural relationships are associated among each. After ensuring that the measurement model is valid, required procedures are applied for the structural model as well.

The first two stages are about defining constructs and their corresponding items to build the measurement model. Specific to this study, we have a total of 32 measurement items under a total of six constructs, where all of the constructs are assumed to be unidimensional. That is, each measurement indicator is an explanation of only one construct. Last but not least, Hair et al. (2014) recommends at least three indicators per one construct so as to explain the theory behind the constructs.

In Stage 3, we designed the study and examined sample size adequacy and estimation methods. Approaches to missing data are also the concerns of this stage. However, we do not have any missing data issues at our sample size  $N=183$ . Besides the missing data issues, sample size issues address the lack of stability in a model. The appropriateness of sample size depends on several factors. Hair et al. (2014) mention that a large sample size is required if more constructs exist in the model, a construct has less than three variables, or if missing data exist. They argue that a sample size of around 150 is acceptable if there are less than seven constructs

and each construct is identified with at least three variables. Therefore, our sample size looks proper.

Finally at this stage, maximum likelihood estimation (MLE) method is selected. MLE is a method that finds the most likely parameter estimations to get the most optimal model fit, and is the default and most widely used estimation technique in SEM (Hair et al., 2014).

In stage 4, the measurement model is tested for its validity. Several fit indices are useful for determining if the measurement model is valid to proceed for testing the structural model. These are explained below:

**Chi-square statistic:** Basically, the chi-square ( $\chi^2$ ) statistic measures the difference between observed and estimated covariance matrices (Hair et al., 2014). The chi-square value over degrees of freedom is a simple and proper goodness-of-fit measure for model fit, called *normed chi-square*. It is labeled as CMIN/DF on SPSS AMOS. Hair et al. (2014) suggest that a normed chi-square value less than 3 seems to be fine for model fit.

**RMR:** Referring to the abbreviation of *root mean square residual*, RMR is an absolute fit index which refers to the square root of the average of residuals (Hair et al., 2014). The desired RMR value would be less than 0.1 for model fit.

**CFI:** The *comparative fit index* (CFI) is one of the incremental fit indices which is developed from normed fit index (NFI), but is more insensitive to complex models than NFI (Hu & Bentler, 1999). A CFI value closer to 1 indicates better fit, and the values above 0.90 are necessary for a good model fit. A CFI value around 0.95 would be very good for validating the model fit (Hair et al., 2014).

**RMSEA:** It is also an absolute fit index and is a referral to *root mean square error of approximation*. RMSEA stands for how well a measurement model fits a population represented by its related sample (Hu & Bentler, 1999; Hair et al., 2014). A good RMSEA value lies between 0.03 and 0.08.

Once the fit indices are satisfactory, a construct validity is applied for the measurement model. Hair et al. (2014) define construct validity as the “extent to which a set of measured variables actually represent the theoretical latent construct

they are designed to measure” (p.543). In other words, it checks if the latent constructs are made up of its predefined measurement items. There are several ways to ensure the construct validity which are defined below:

**CR:** The first and foremost way to ensure construct validity is construct reliability (CR), which measures the internal consistency of measurement variables in a construct (Hair et al., 2014). To assess the construct reliability, a construct should have a CR value of at least 0.7.

**AVE:** Average variance extracted (AVE) is a convergence measure that represents the average percentage of variation explained among construct items (Hair et al., 2014). AVE is calculated by dividing the sum of squares of factor loadings by the number of variables. It is essential that the AVE value for a construct be at least 0.5.

**Discriminant validity:** Discriminant validity refers to how distinct a construct is from others. If a construct has high discriminant validity, it will have more evidence to explain a unique phenomenon. The most basic way to ensure discriminant validity is to obtain AVE values greater than the square of the correlation between two factors (Hair et al., 2014).

### **3.4.3. Structural Equation Modeling**

Structural equation modeling (SEM) is a multivariate technique that combines factor analysis and multiple linear regression to examine dependence relationships among latent constructs and their measured variables (Hair et al., 2014). SEM can be approached in either a one-step or two-step process. Since this thesis has both measurement and structural models to be tested, we apply a two-step SEM process. The first step was about measurement model fit. In this section, however, the second step of SEM will be explained. This step refers to the SEM stages 5 and 6.

If the measurement model has an acceptable fit, the fifth stage of the SEM is applied. The measurement model is converted into a structural model. The difference between a measurement model and a structural model is that the

structural model does not have every correlation between each construct, and some of the constructs have dependence relationship between them. Therefore, it is common that model fit indices are better for the measurement model than for the structural model (Hair et al., 2014). Still, if the fit indices are acceptable for the structural model, the sixth stage will become successful and the model fit will be achieved.

## **CHAPTER 4**

### **RESULTS**

#### **4.1. Introduction**

In the previous chapter we introduced the measurement variables of each construct, provided information about the survey and pretesting, and defined the confirmatory factor analysis (CFA) and the structural equation modeling (SEM). In this chapter, we will first examine the sample based on their demographic information, then move on with measurement and structural model analyses.

#### **4.2. Sample Demographics**

As described in the previous chapter, the first part of the survey is about gathering demographic information from the sample. In this part, the participants were requested to provide their age, gender, education status, marital status, primary occupation status, monthly household income, and weekly hours spent on the internet according to the corresponding intervals they match to in an alternative. They were also asked to pick the purpose of their e-commerce use, which types of online shopping they prefer, and the channels they use to access e-commerce websites and applications. They were able to pick more than one alternative for these questions. Finally, they were requested to answer weekly internet hours spent for e-commerce purposes, preference of e-commerce over a physical store on a scale from 1 to 7, and average money spent on e-commerce.

The demographic part of the survey had several improvements before the actual surveying process. To illustrate, we divided the age groups into 18-24, 25-34, 35-44, 45-54, and over 54 in the pretesting stage. However, we preferred to update the middle age groups as 25-30, 31-40, and 41-54 in the actual surveying stage. The new intervals rely upon both different generations by the year 2019, and

the portrayal of the generation differences in Turkey. Kotler and Armstrong (2016) identified the generations as the baby boomers according to their birth years between 1946 and 1964, Generation X between 1965 and 1976, Generation Y between 1977 and 2000, and Generation Z afterwards. Although the split is similar for other studies, some of them argue that the birth year of Generation Z starts in 1995 (Bassiouni & Hackley, 2014; Priporas, Stylos, & Fotiadis, 2017). In our case, the age group 18-24 represents the adult group of Generation Z, who are either university students or high school graduates having started their business life recently. The age group 25-30 is representative of the late Y, who are university graduates and on a way to gain job experience, or having started their academic life studying a master's or a PhD program. The age group 31-40 is another representative of Generation Y, and they are already employees at work. The age group 41-54 in general refers to Generation X, and the oldest group at the age of 55 or more corresponds to the baby boomers.

Another point to mention about the demographics is monthly household income in Turkish Lira (TRY). The income group differentiation was inspired from quality of life in Turkey (Sandikci, Peterson, Ekici, & Simkins, 2016), and the current salary levels. The 0-1,000 TRY group represents people earning below the minimum wage (the minimum wage is 2,020 TRY by the year 2019) who struggle to make a living, such as students living far from their family and earning little allowance. The interval 1,000-2,500 refers to minimum wage earners. The next group refers to families earning two minimum wages or single participants earning nearly two times the minimum wage. The other groups are classified as 5,001 to 8,000, 8,001 to 12,000, 12,001 to 20,000, and more than 20,000 in terms of TRY. At each level, the quality of life and ability to spend on e-commerce increases.

Table 3 demonstrates the demographic distribution of the surveyed group as seen below. The sample demographics of the overall data are shown on the table. Although the number of participants are close in terms of gender, the amount of males are slightly larger than females. The overall sample shows good examples

of normal distribution on monthly household income and weekly hours spent on the internet.

The same distribution for the pretested group is put in Appendix C as well for the reader's information.

Table 3. Sample Demographics for Overall Participants

<b>Combined data</b>	<b>Frequency</b>	<b>% of sample</b>
Age		
18-24	50	27.32
25-30	85	46.45
31-40	30	16.39
41-54	11	6.01
55 or more	7	3.83
<b>Total</b>	<b>183</b>	<b>100.00</b>
Gender		
Female	85	46.45
Male	97	53.01
Do not want to specify	1	0.55
<b>Total</b>	<b>183</b>	<b>100.00</b>
Highest education level		
Mid-school or less	0	0
High school	41	22.40
Associate's degree	7	3.83
Bachelor's degree	92	50.27
Master's or PhD degree	43	23.50
<b>Total</b>	<b>183</b>	<b>100.00</b>
Marital status		
Single	139	75.96
Married	44	24.04
<b>Total</b>	<b>183</b>	<b>100.00</b>
Primary occupation status		
Not working	13	7.10
Student	62	33.88
Public sector	40	21.86
Private sector	68	37.16
<b>Total</b>	<b>183</b>	<b>100.00</b>

Table 3 (Cont'd). Sample Demographics for Overall Participants

<b>Combined data</b>	<b>Frequency</b>	<b>% of sample</b>
HH monthly income (in TRY)		
0-1,000	9	4.92
1,001-2,500	20	10.93
2,501-5,000	47	25.68
5,001-8,000	51	27.87
8,001-12,000	26	14.21
12,001-20,000	22	12.02
More than 20,000	8	4.37
<b>Total</b>	<b>183</b>	<b>100.00</b>
Weekly hours spent on the internet		
0-10	18	9.84
11-20	35	19.13
21-30	45	24.59
31-50	44	24.04
51-75	19	10.38
More than 75	22	12.02
<b>Total</b>	<b>183</b>	<b>100.00</b>

Below, Tables 4 to 7 show further information about the total sample of 183 people. Tables 4, 5 and 6 are measuring frequencies where a participant could select more than one alternative. According to this, nearly 9 out of every 10 participants use e-commerce for the purpose of shopping. Also there are a fair amount of people using e-commerce for banking, order placement, and market search. Among various types of shopping, more than half of the sample often prefer buying electronic goods, apparel, cultural products, and travel-related stuff from online platforms. The majority of people access e-commerce websites and applications from portable devices such as smartphones and laptop computers.

Table 7 shows the participants' preference of using e-commerce over going to traditional stores on the scale of 1 to 7. The average is 4.84, which is above average indicating a negative (left) skewness. Approximately two thirds of the surveyed people picked either 5, 6 or 7. This means that participants are generally

in favor of handling most of their commercial issues online, but they still cannot completely give up physical stores in some cases.

Table 4. Participants' Purpose to Use E-Commerce

<b>For what purposes do you generally use e-commerce websites and applications?</b>		
<b>Alternatives</b>	<b>Frequency</b>	<b>% of total</b>
Shopping	166	90.71
Banking	141	77.05
Orders / reservation	123	67.21
Market search / gathering information	106	57.92
Aftersales follow-up	70	38.25

Table 5. Participants' Preferred Types of E-Commerce

<b>Which types of shopping do you prefer on e-commerce?</b>		
<b>Alternatives</b>	<b>Frequency</b>	<b>% of total</b>
Electronic goods	116	63.39
Clothing	105	57.38
Culture and art	102	55.74
Tourism-travel	102	55.74
Telecommunication	68	37.16
Food	66	36.07
Cosmetics-skin care	60	32.79
Sports-gaming	56	30.60
Education	53	28.96
Home and garden equipment	45	24.59
Insurance services	17	9.29
Other	4	2.19

Table 6. Participants' Channels to Access E-Commerce

<b>From which channels do you access e-commerce websites and applications?</b>		
<b>Alternatives</b>	<b>Frequency</b>	<b>% of total</b>
Mobile phone	169	92.35
Laptop	147	80.33
Desktop computer	65	35.52
Tablet	45	24.59
Other (Smart TV etc.)	8	4.37

Table 7. Participants' Preference of E-Commerce over Traditional Stores on a Scale of 1-7

<b>Participants' preference of e-commerce over traditional stores</b>		
<b>Scale</b>	<b>Frequency</b>	<b>% of total</b>
1 – Never	1	0.55
2	12	6.56
3	17	9.29
4	32	17.49
5	59	32.24
6	48	26.23
7 – Always	14	7.65
<b>Total</b>	<b>183</b>	<b>100</b>
<b>Average Preference</b>	<b>4.84/7</b>	

#### 4.3. Website Selection Analysis

We mentioned that the survey participants were requested to pick an e-commerce website that they had had an experience with at the beginning of the second step of the survey so far. No other criteria were defined besides their own past experience for website selection. Table 8 demonstrates the selected websites with their names and frequency.

From the table, we can see that the majority of the participants wanted to select one of the commonly used websites and evaluate it. Especially e-commerce shopping sites such as Trendyol and Hepsiburada are among the first brands that come to the mind of consumers. This shows the success of those brands in creating

brand awareness. Like Trendyol and Hepsiburada, N11 and Yemeksepeti are other e-commerce websites that were frequently picked by the participants. Amazon was less frequently selected as the company started operating in Turkey recently.

Table 8. Participants' Selected Website for the Survey

<b>Website Name</b>	<b>Frequency</b>	<b>% of Total</b>
Trendyol	45	24,59
Hepsiburada	33	18,03
N11	24	13,11
Yemeksepeti	24	13,11
Amazon	11	6,01
Steam	6	3,28
Kitapyurdu	5	2,73
Netflix	4	2,19
Sahibinden	3	1,64
Gittigidiyor	3	1,64
D&R	3	1,64
Booking	2	1,09
Biletix	2	1,09
Ciceksepeti	2	1,09
Migros Sanal Market	2	1,09
Aliexpress	2	1,09
Spotify	1	0,55
Kamil Koc	1	0,55
iTunes	1	0,55
Etstur	1	0,55
Domino's	1	0,55
Garanti	1	0,55
Itopya	1	0,55
Biletiva	1	0,55
U.S. Polo	1	0,55
Boyner	1	0,55
Robotistan	1	0,55
Idefix	1	0,55
<b>Total</b>	<b>183</b>	<b>100</b>

As the survey was conducted with Turkish internet users, almost all of them picked a website that operates domestically. Among the selected websites, only Booking and Aliexpress do not operate in Turkey, which were picked by a total of four participants. A possible research extension for the future is to compare foreign e-commerce websites with domestic ones.

#### **4.4. Analysis of the Measurement Model**

The procedures and application criteria were explained in the Methodology chapter. Essentially, a measurement model is “a SEM model that (1) specifies the indicators for each construct and (2) enables an assessment of construct validity” (Hair et al., 2014, p.544). In this section, we will develop the measurement model based on our hypotheses and constructs, then test the measurement model for its reliability and validity, and finally explain the results.

##### **4.4.1. Measurement Model Development**

Our measurement model was developed in IBM SPSS AMOS 22. Figure 2 shows the measurement model. The model has a total of 79 estimated parameters. 32 of them are loading estimates from constructs to items, 32 are error estimates from items to error terms, and the remaining 15 are between-construct correlation estimates among the constructs. The names of the items are listed in Table 2. Error terms are automatically named by AMOS.

As seen from Figure 2, a total of 32 measurement variables are presented under six constructs. We then extracted their factor loadings in order to test how well each variable would represent its construct.

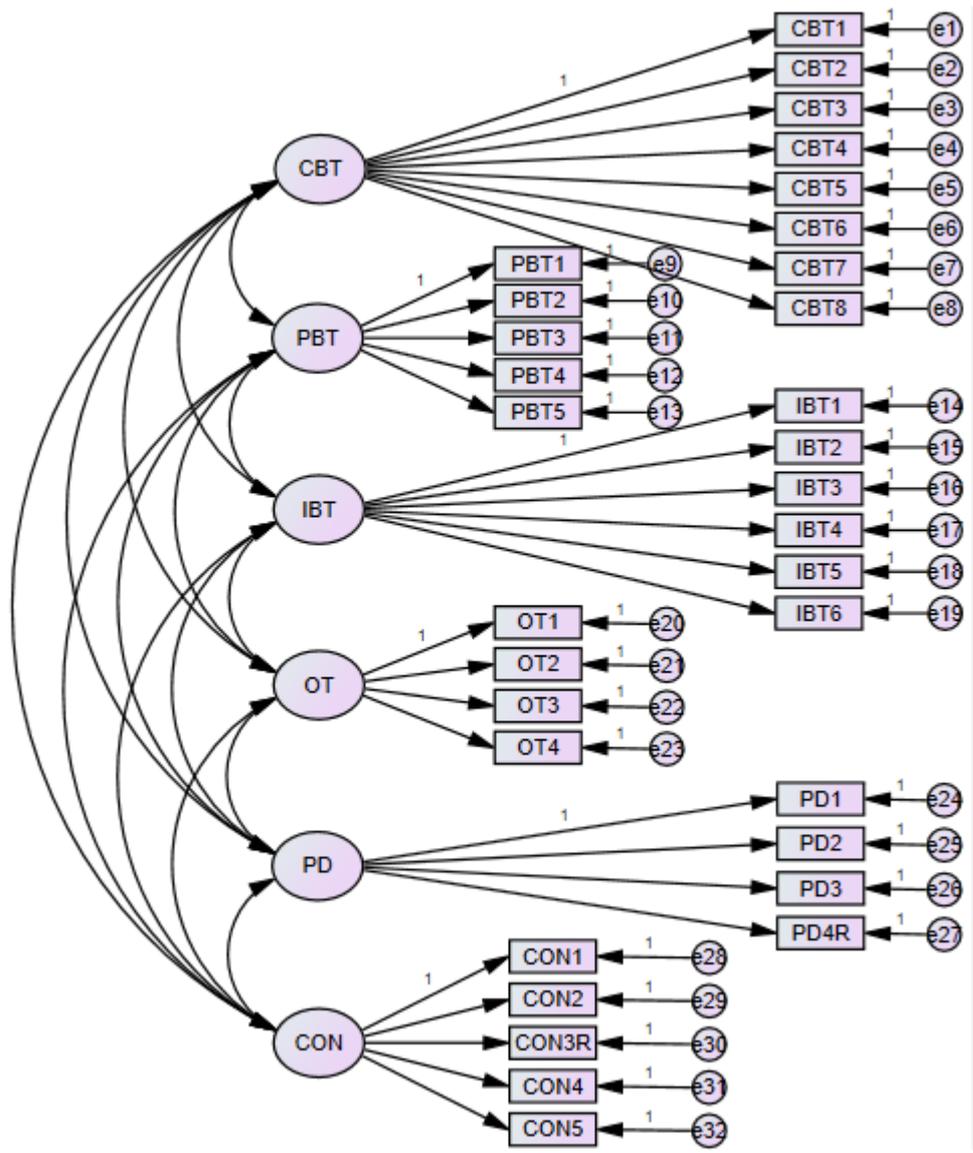


Figure 2. Measurement Model of the Study

#### 4.4.2. Measurement Model Reliability and Validity Testing

After defining the constructs, correlation estimates, measurement variables, and error terms, we ran the measurement model on AMOS to see factor loadings of the variables and then interpret the model fit. Figure 3 demonstrates the factor loadings with all of the measurement items included.

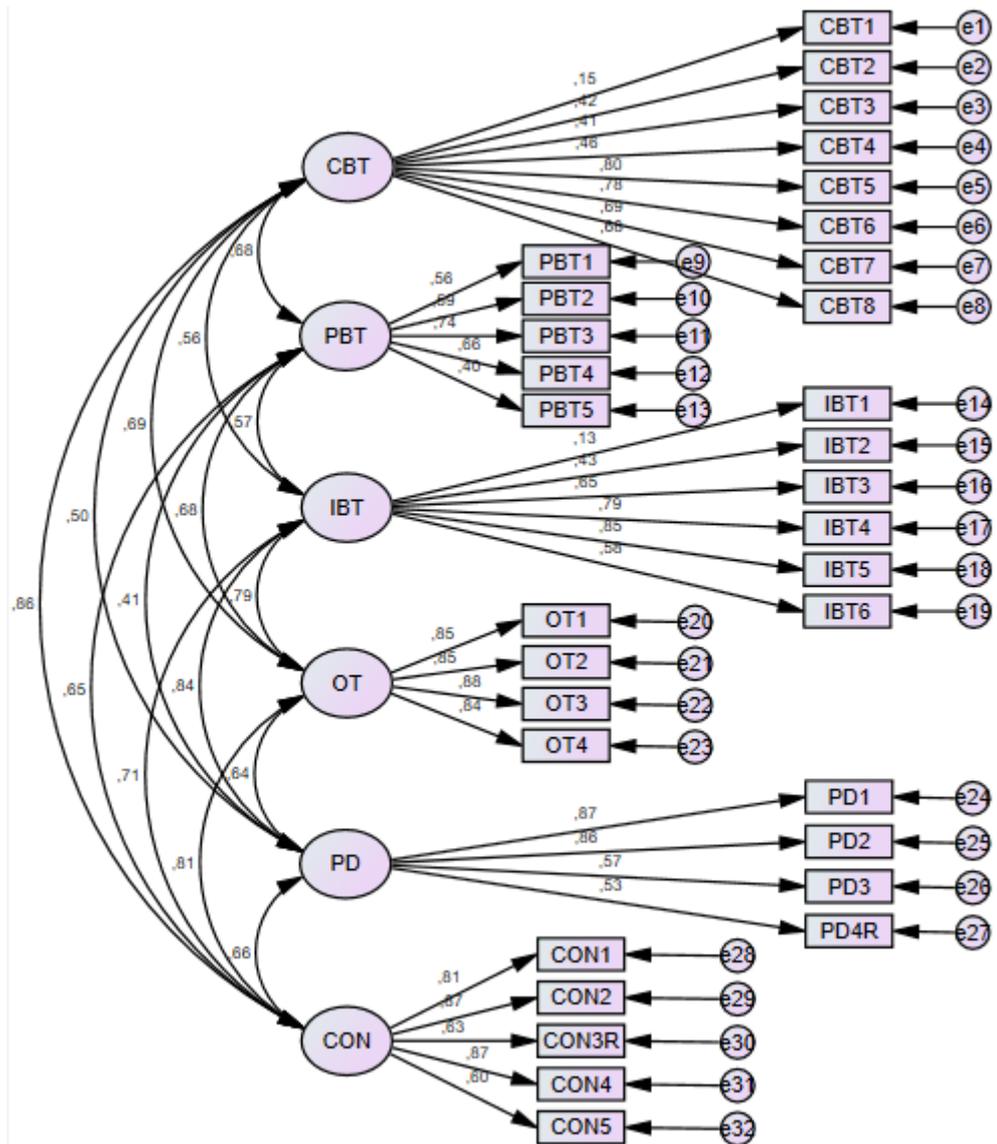


Figure 3. Measurement Model Output with All Items When N=183

As is seen, some of the variables have quite low loadings. Especially the items CBT1 and IBT1 have such low loadings for their constructs (.15 and .13) that they are unusable in this model. In general, we eliminated the items having a factor loading less than 0.5 according to Hair et al. (2014). In other words, CBT1, CBT2, CBT3, CBT4, PBT5, IBT1, and IBT2 are removed from the measurement model since their factor loadings are less than 0.5. Also we decided to delete the reverse items which are PD4R and CON3R for two reasons. First, they were created from

existing items in the survey, so their main purpose was to slow down participants with opposite indication. Second, their factor loadings are sufficient but not the greatest.

After the removal of nine items with the reasons explained above, the model is tested for its validity with a total of 23 measurement items. According to Hair et al. (2014), using three or four indices for a latent construct provides sufficient evidence to validate the model fit. Those fit indices are explained in the previous chapter. In accordance with this, several model fit indices are used to ensure validity as follows:

**Chi-square statistic:** The normed chi-square (CMIN/DF on AMOS) value for this model is 2.261, which is below 3 and acceptable.

**RMR:** The model has the root mean square residual (RMR) value of 0.127, which is greater than the desired value below 0.1.

**CFI:** The comparative fit index (CFI) value of this model is 0.898, which is nearly equal to the minimum threshold 0.9 but may need an improvement.

**RMSEA:** The measurement model has the value 0.083 for root mean square error of approximation (RMSEA), which is close to the upper threshold value of 0.08 but might become lower with some adjustments.

The detailed model fit tables for the sample size  $N=183$  with  $m=23$  variables are put in Appendix E. As seen from the fit indices, the model has several fit issues. Furthermore, the measurement model has a high correlation between the constructs CBT and CON, and IBT and PD, both of which are not supposed to have a direct connection in between. Several approaches can be taken to fix those problems. Hair et al. (2014) offer the reduction of some *measurement variables* or part of the *sample size*. Nevertheless, the reduction of those could create other problems if not performed properly. For instance, eliminating some items from a construct may lead to inability in making the theoretical explanation of the construct in a model. In this context, a construct should have no less than three items to at least keep its theoretical domain. Reducing the sample size is a more proper approach, but this

may also lead to possible statistical problems and less accurate estimates in a model (Hair et al., 2014). Therefore, those methods require a careful approach.

To validate the model fit, we first checked if any outliers spoil the measurement model. The Mahalanobis d-squared distance table is a good approach to detect which observation becomes an outlier to the sample (Hair et al., 2014). The Mahalanobis distance table of the model for the sample size  $N=183$  is put in Appendix E. We detected 19 entries which had high Mahalanobis d-squared value, and hence eliminated those from the total sample. After the data reduction, the sample size became equal to 164 as demonstrated in Figure 4.

A significant improvement occurred after the data reduction. The correlation between CBT and CON dropped from 0.86 to 0.77. There was also a slight decrease for the correlation between IBT and PD, reducing from 0.84 to 0.82. A new measurement model was applied with the new sample size. However, the reduction of the sample and the items caused the factor loadings to change. The factor loading value of PBT1 showed 0.45. Since the loading is less than .5, we eliminated PBT1 from the model as well. In addition, CBT7 has a factor loading of 0.51, which will bring problems for construct validity that we will mention later. Therefore, CBT7 was also eliminated from the measurement model. As a result, the model with a total of 21 variables became ready to check for its validity with a sample size  $N=164$ .

Lastly, we checked the modification indices in AMOS output in order to detect if any covariance between error terms in same construct occurred. The modification indices table is put in Appendix F. According to the table, the error terms of CON2 and CON5 could be covaried due to the high value between their corresponding error terms e29 and e32. After performing this, the final results of the model fit validity were achieved as demonstrated below:

**Chi-square/degrees of freedom:** Improved from 2.261 to 1.613.

**RMR:** Improved from 0.127 to 0.077.

**CFI:** Improved from 0.898 to 0.943.

**RMSEA:** Improved from 0.083 to 0.061.

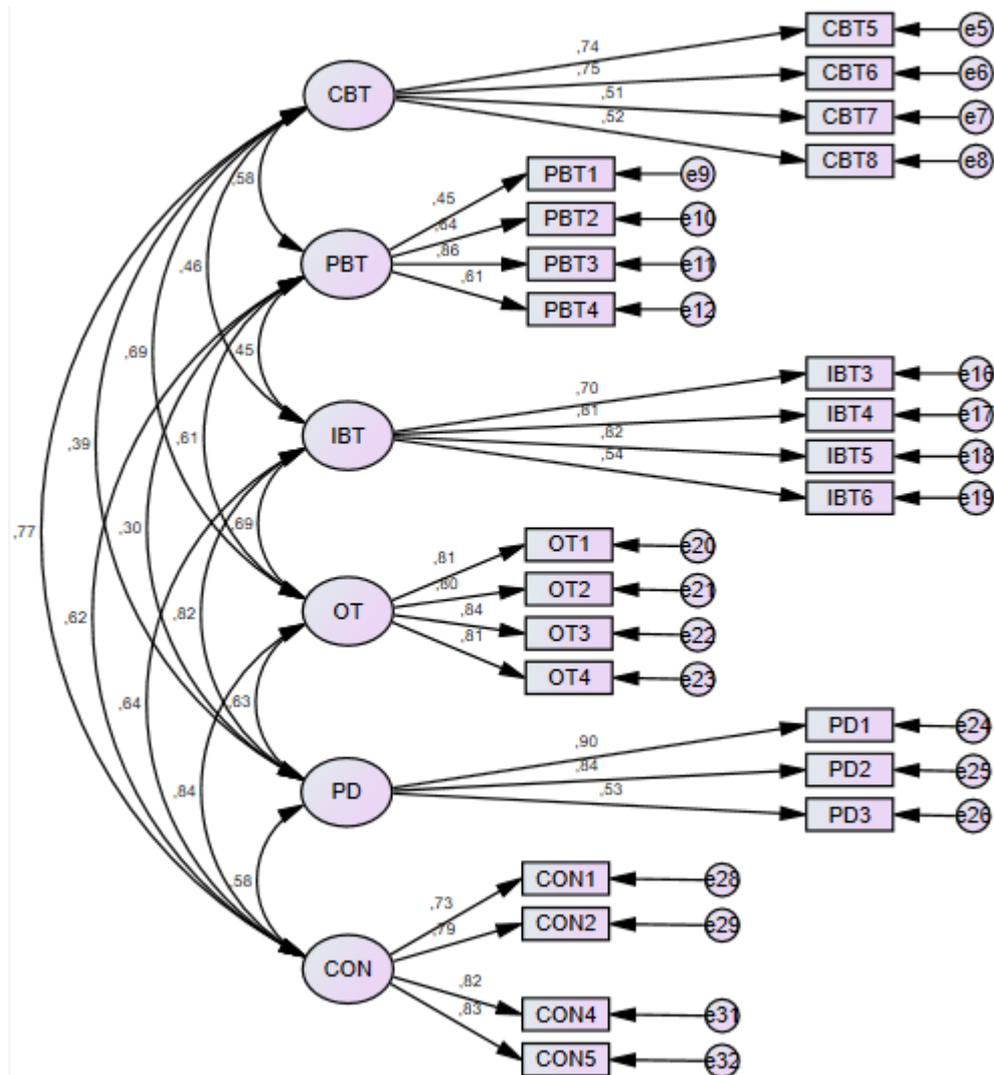


Figure 4. Measurement Model Output When Sample Size N=183 and m=23 Variables

The details of the improved model fit tables are in Appendix F. The new results are satisfying as all are within the desired intervals. Now we move on with construct validity. Construct validity and its related terms were defined in the Methodology chapter. According to them, we derived the construct validity values using a ready-made Excel document that has the validity formulas. Table 8 shows the values for the sample size N=164 and m=21 variables.

The values in Table 9 are mostly satisfying in terms of construct reliability (CR) and average variance extracted (AVE). However, the AVE value for CBT is below 0.5, which means that no more than half of the variance could be explained with those variables with the sample size N=164. Despite deleting CBT7 considering the validity issues in this step, we could not validate CBT in terms of variance explanation.

Table 9. Construct Validity When N=164, m=21 Variables

	<b>CR</b>	<b>AVE</b>	<b>MSV</b>	<b>MaxR(H)</b>	<b>CON</b>	<b>PBT</b>	<b>IBT</b>	<b>OT</b>	<b>PD</b>	<b>CBT</b>
<b>CON</b>	0,886	0,661	0,677	0,898	0,813					
<b>PBT</b>	0,767	0,531	0,332	0,847	0,576	0,729				
<b>IBT</b>	0,812	0,525	0,672	0,839	0,597	0,432	0,725			
<b>OT</b>	0,888	0,664	0,677	0,889	0,823	0,566	0,694	0,815		
<b>PD</b>	0,813	0,602	0,672	0,880	0,513	0,286	0,820	0,634	0,776	
<b>CBT</b>	0,719	0,470	0,524	0,760	0,724	0,506	0,454	0,677	0,402	0,685

In this case, there are two alternatives to proceed: either removing a measured variable from CBT, or removing more data from the sample. Since removing another variable would lead to CBT having less than three constructs, we decided to delete more data to validate the construct. We retrieved another Mahalanobis d-squared distance table to detect outliers. As a result, 11 more responses were removed from the sample. The Mahalanobis d-squared table for N=164 is also put in Appendix F.

As a consequence, we obtained a measurement model with satisfactory fit indices and ensured construct validity when sample size is equal to 153. The results of this model will be explained in the following section.

#### 4.4.3. Measurement Model Results

To sum up, we operated different processes to fix several issues in our measurement model. In the beginning of the measurement model analysis, some of the measurement variables were loaded with too low factor loadings, which resulted in their elimination from the model. However, the remaining factors did not validate the measurement model fit; so we went back to check the data in order

to find any outlier responses that do not match with the usual sample. After a few iterations, we ended up with six constructs, 21 measured variables, and the sample size N=153.

Figure 5 shows the output. Although the high correlation between IBT and PD still exists, the one between CBT and CON reduced dramatically to 0.67. Furthermore, all of the remaining factor loadings are greater than 0.50 under their specified latent constructs. The model fit indices give satisfactory outputs as well. While the whole model fit tables are in Appendix G, we retrieve the previously explained four fit indices as follows:

**Chi-square/degrees of freedom:** Improved even better from 1.613 to 1.523.

**RMR:** Slightly improved from 0.077 to 0.074.

**CFI:** Also improved from 0.943 to 0.948.

**RMSEA:** Changed from 0.061 to 0.059 with a little improvement.

All of the model fit indices are more satisfactory at N=153 compared to the previous sample size N=164. Nevertheless, there were few model fit issues when the sample size was equal to 164. Table 10 summarizes the construct validity of the final measurement model. All CR (construct reliability) values are greater than 0.7, and the AVE (average variance extracted) values are above 0.5. This means that the model fit has been ensured, and we may advance to the structural model analysis.

Table 10. Construct Reliability of the Measurement Model When N=153

	<b>CR</b>	<b>AVE</b>	<b>MSV</b>	<b>MaxR(H)</b>	<b>CON</b>	<b>PBT</b>	<b>IBT</b>	<b>OT</b>	<b>PD</b>	<b>CBT</b>
<b>CON</b>	0,871	0,629	0,642	0,884	0,793					
<b>PBT</b>	0,781	0,550	0,305	0,863	0,552	0,742				
<b>IBT</b>	0,827	0,548	0,704	0,847	0,583	0,398	0,740			
<b>OT</b>	0,891	0,671	0,642	0,893	0,801	0,517	0,686	0,819		
<b>PD</b>	0,812	0,603	0,704	0,888	0,446	0,227	0,839	0,592	0,777	
<b>CBT</b>	0,767	0,534	0,446	0,842	0,668	0,461	0,383	0,630	0,300	0,731

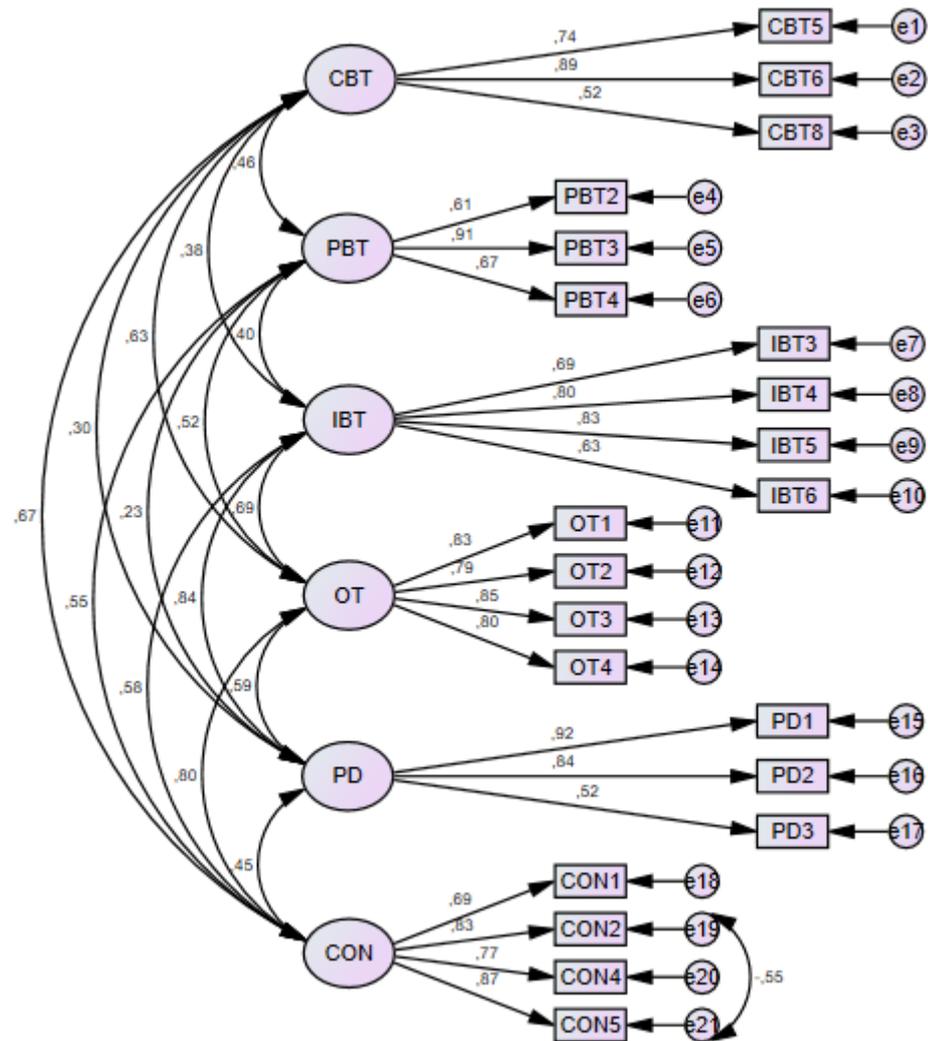


Figure 5. Measurement Model Output When N=153, m=21 Variables

#### 4.5. Analysis of the Structural Model

Our measurement model was validated in the first four stages of the six-stage (and two-step) SEM process based on the criteria explained in Chapter 3. In this section, we will apply the final two stages of the SEM to our structural model. The processes of development, fit analysis, and validity testing will be very similar to the one applied in the previous section.

#### 4.5.1. Structural Model Development

The fifth stage of SEM involves a conversion of the measurement model to the structural model. We applied this process in AMOS using the remaining 21 variables with the sample size N=153. Figure 6 shows the structural model that represents the model input. The model has all of the six latent constructs, 21 measured variables, and a total of 24 error terms. Twenty one of the error terms are automatically assigned to each measurement item by AMOS. The remaining three error terms are manually assigned to each dependent latent construct, because AMOS would not run the model unless they are connected to the constructs. Last but not least, only the three independent latent constructs, which are CBT, PBT and IBT, have two-sided arrows between each other indicating correlation in the structural model. The other correlations do not exist due to direct dependence relationships at this stage.

From our proposed structural model, two levels of dependence relationships exist. On the first level, overall trust (OT) is the dependent variable of characteristic-based trust (CBT), process-based trust (PBT), and institution-based trust (IBT). This can be formulized in a linear regression format as follows:

$$OT = \beta_0 + \beta_1 * CBT + \beta_2 * PBT + \beta_3 * IBT + e_0 \quad (4.1)$$

On the second level though, overall trust (OT) becomes an independent variable for personal disclosure (PD) and continuance (CON). Therefore, two separate formulas exist for defining the dependence relationships from OT to PD and CON:

$$PD = \gamma_0 + \gamma_1 * OT + e_1 \quad (4.2)$$

$$CON = \lambda_0 + \lambda_1 * OT + e_2 \quad (4.3)$$

So, the combined formulas distinctly for PD and CON are represented below:

$$PD = \gamma_0 + \gamma_1 * (\beta_0 + \beta_1 * CBT + \beta_2 * PBT + \beta_3 * IBT + e_0) + e_1 \quad (4.4)$$

$$CON = \lambda_0 + \lambda_1 * (\beta_0 + \beta_1 * CBT + \beta_2 * PBT + \beta_3 * IBT + e_0) + e_2 \quad (4.5)$$

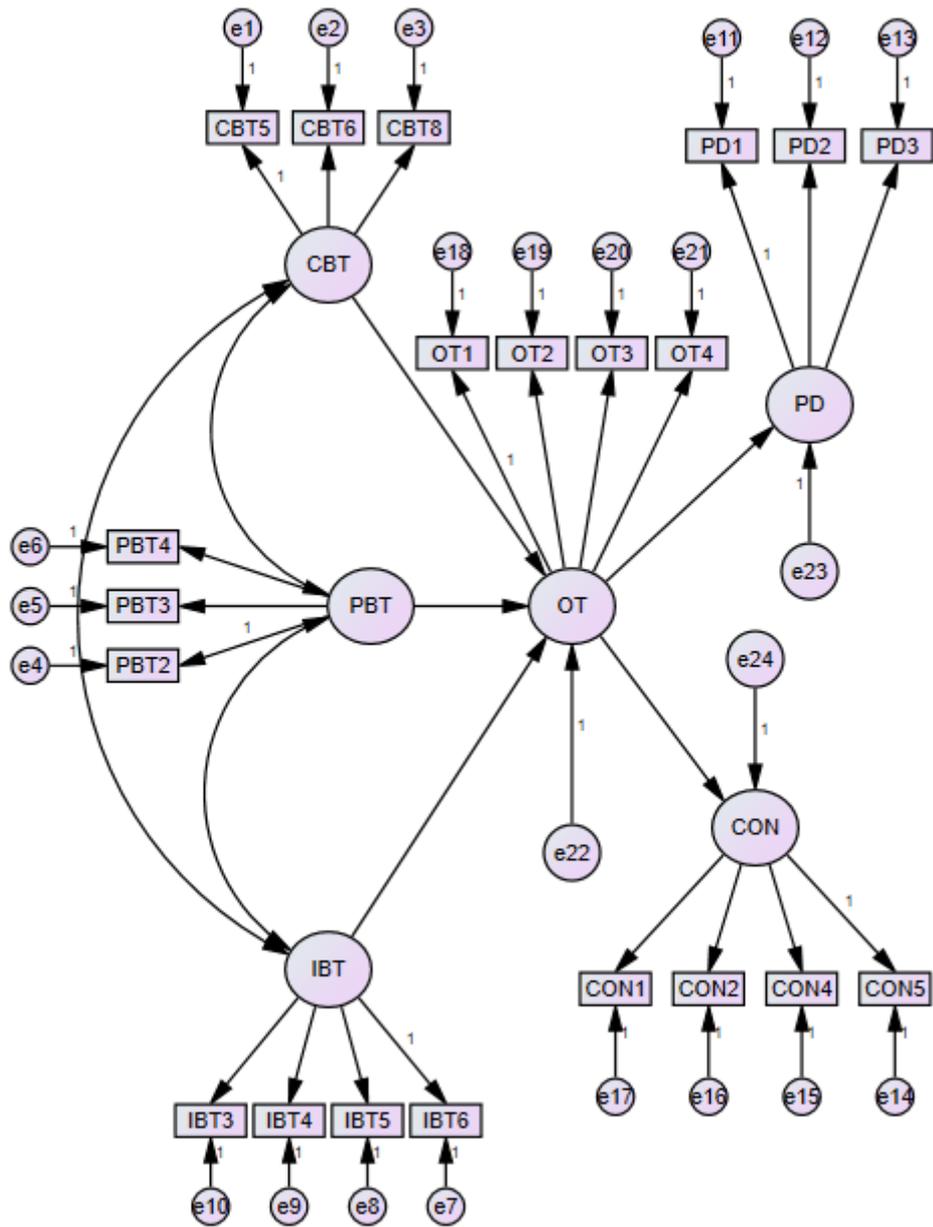


Figure 6. Structural model input when N=153, m=21 variables

The application of these regression formulas are less complicated than described above. In general, the formulas explain the fact that both PD and CON are directly influenced by OT; while CBT, PBT and IBT have an indirect effect on them.

#### 4.5.2. Structural Model Reliability and Validity Testing

Reliability and validity testing of the model is the sixth and the final stage of SEM. This stage has similar methods to the fourth stage except that a regression analysis is performed instead of construct validity. Like the fourth stage of SEM, model fit analyses are also made at this phase. However, the fit index scores of the structural model cannot be better than the ones derived from the measurement model, since some of the correlations among latent constructs are omitted in the structural model (Hair et al., 2014). The structural model fit table is put in Appendix H. Based on the reports obtained on AMOS, the fit indices are below:

**Chi-square/degrees of freedom:** The chi-square divided by degrees of freedom value is 1.929. While this value is adversely greater than the measurement model CMIN value which was 1.523, it is below 3 and satisfactory.

**RMR:** The root mean square residual (RMR) value is equal to 0.113, which is slightly greater than the maximum preferred value of 0.1.

**CFI:** The structural model has the comparative fit index (CFI) value equal to 0.904, which is barely over the threshold value 0.9 and acceptable.

**RMSEA:** The root mean square error of approximation (RMSEA) value is just inside the desired interval between 0.03 and 0.08, and is equal to 0.078.

As we see from the model fit indices, three out of four are within acceptable interval. Nonetheless, RMR is unlikely to be satisfactory. This indicates high value of residual (error) means for the structural model. Still, Hair et al. (2014) recommend at least one absolute fit index and one incremental fit index in addition to chi-square divided by degrees of freedom. As RMSEA is an absolute fit index and CFI is an incremental fit index, the structural model passes the minimum fit standards.

Table 11 shows regression weights and significance levels of the latent constructs with 21 measured variables when the sample size is 153. As a result, at 95 percent significance level, all of the dependence relationships except the one between PBT and OT have p-values less than 0.05. The p-value of PBT to OT

relationship is 0.062, which is just above the 95 percent threshold and indicates a partial significance.

Finally, Table 12 shows standardized regression weights at 95 percent significance level. The first five rows on the table refer to regression coefficients of the constructs. To be more precise, those values can be placed on the regression formulas defined in the structural model development section, as written below:

Table 11. Regression Weights and Significance Levels of the Structural Model  
When p=0.05, N=153, m=21 Variables

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Label</b>
<b>OT</b>	<---	<b>CBT</b>	,284	,061	4,633	***	
<b>OT</b>	<---	<b>PBT</b>	,137	,074	1,865	,062	
<b>OT</b>	<---	<b>IBT</b>	,409	,069	5,913	***	
<b>CON</b>	<---	<b>OT</b>	1,037	,114	9,133	***	
<b>PD</b>	<---	<b>OT</b>	1,097	,139	7,876	***	
<b>CBT5</b>	<---	<b>CBT</b>	,727	,086	8,492	***	
<b>CBT6</b>	<---	<b>CBT</b>	1,000				
<b>CBT8</b>	<---	<b>CBT</b>	,646	,106	6,100	***	
<b>PBT2</b>	<---	<b>PBT</b>	1,000				
<b>PBT3</b>	<---	<b>PBT</b>	,785	,112	6,986	***	
<b>PBT4</b>	<---	<b>PBT</b>	,813	,122	6,660	***	
<b>IBT6</b>	<---	<b>IBT</b>	,610	,090	6,779	***	
<b>IBT5</b>	<---	<b>IBT</b>	,820	,097	8,450	***	
<b>IBT4</b>	<---	<b>IBT</b>	,880	,108	8,153	***	
<b>IBT3</b>	<---	<b>IBT</b>	1,000				
<b>PD1</b>	<---	<b>PD</b>	1,000				
<b>PD2</b>	<---	<b>PD</b>	,904	,084	10,710	***	
<b>PD3</b>	<---	<b>PD</b>	,665	,107	6,203	***	
<b>CON5</b>	<---	<b>CON</b>	,881	,082	10,806	***	
<b>CON4</b>	<---	<b>CON</b>	1,000				
<b>CON2</b>	<---	<b>CON</b>	,909	,089	10,233	***	
<b>CON1</b>	<---	<b>CON</b>	,651	,072	9,008	***	
<b>OT1</b>	<---	<b>OT</b>	,936	,085	11,033	***	
<b>OT2</b>	<---	<b>OT</b>	1,000				
<b>OT3</b>	<---	<b>OT</b>	,845	,075	11,256	***	
<b>OT4</b>	<---	<b>OT</b>	,778	,072	10,760	***	

$$PD = 0.639 * OT \quad (4.6)$$

$$PD = 0.639 * (0.378 * CBT + 0.140 * PBT + 0.548 * IBT) \quad (4.7)$$

$$PD = 0.242 * CBT + 0.089 * PBT + 0.350 * IBT \quad (4.8)$$

$$CON = 0.848 * OT \quad (4.9)$$

$$CON = 0.848 * (0.378 * CBT + 0.140 * PBT + 0.548 * IBT) \quad (4.10)$$

$$CON = 0.321 * CBT + 0.119 * PBT + 0.465 * IBT \quad (4.11)$$

Table 12. Standardized Regression Weights of the Structural Model When

p=0.05, N=153, m=21 Variables

	<b>Estimate</b>
<b>OT &lt;--- CBT</b>	,378
<b>OT &lt;--- PBT</b>	,140
<b>OT &lt;--- IBT</b>	,548
<b>CON &lt;--- OT</b>	,848
<b>PD &lt;--- OT</b>	,639
<b>CBT5 &lt;--- CBT</b>	,725
<b>CBT6 &lt;--- CBT</b>	,904
<b>CBT8 &lt;--- CBT</b>	,516
<b>PBT2 &lt;--- PBT</b>	,615
<b>PBT3 &lt;--- PBT</b>	,901
<b>PBT4 &lt;--- PBT</b>	,677
<b>IBT6 &lt;--- IBT</b>	,633
<b>IBT5 &lt;--- IBT</b>	,843
<b>IBT4 &lt;--- IBT</b>	,796
<b>IBT3 &lt;--- IBT</b>	,662
<b>PD1 &lt;--- PD</b>	,968
<b>PD2 &lt;--- PD</b>	,793
<b>PD3 &lt;--- PD</b>	,490
<b>CON5 &lt;--- CON</b>	,809
<b>CON4 &lt;--- CON</b>	,808
<b>CON2 &lt;--- CON</b>	,774
<b>CON1 &lt;--- CON</b>	,698
<b>OT1 &lt;--- OT</b>	,817
<b>OT2 &lt;--- OT</b>	,787
<b>OT3 &lt;--- OT</b>	,829
<b>OT4 &lt;--- OT</b>	,801

### 4.5.3. Structural Model Results

Figure 7 represents the structural model output. On this figure, the correlations between CBT, PBT and IBT are at an acceptable level, specifying that the three constructs are unique from each other. The figure also shows factor loadings on each of the loading estimate arrows. In general, the factor loadings are above 0.7 and strongly loaded. However, after data and variable reduction, the factor loading of PD3 changed and dropped below 0.5. As Hair et al. (2014) suggest at least three items for a construct, we do not remove PD3 despite its factor loading value.

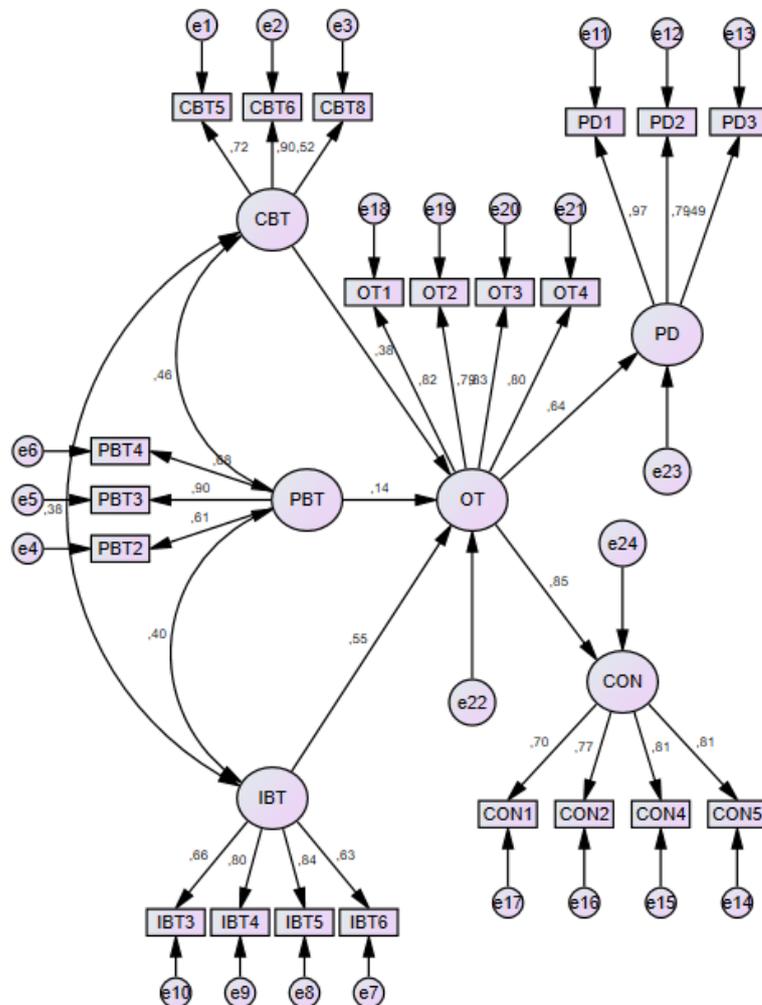


Figure 7. Structural Model Output When N=153, m=21 Variables

At this point, the SEM stages are completed. Before moving on with discussion, we will check if any improvement can be made on the structural model.

#### **4.6. Post Hoc Analysis of the Model**

So far, we have developed our measurement and structural models according to the confirmatory factor analysis (CFA) and the two-step structural equation modeling (SEM). We have obtained an arguably satisfactory result by taking several actions. For instance, while the model was built with 32 measurement variables and 183 participants, 11 of the variables and 30 of the sample were pruned. Only then the measurement model fit was achieved. However, several problems still existed during the structural model analysis. As Hair et al. (2014) mentioned that the structural model fit indices cannot be better than the fit indices of the measurement model, we did not expect such a large difference between measurement and structural model fit indices. In fact, one of the structural model fit indices was outside the desired interval while two of the other three were close to a threshold.

Problems with the structural model do not end here. The reduction of a large amount from the sample caused one of the factor loadings to be less than 0.5. In addition, decreasing the sample size might have caused the PBT-OT relationship to become partially significant. In such cases, Hair et al. (2014) recommend conducting post hoc analyses, defined as “after-the-fact tests of relationships for which no hypothesis was theorized” (p.653). In other words, new arrows between constructs may be drawn for empirical testing while those arrows were not hypothesized in the original model.

During the data analysis, the correlation between IBT and PD was above 0.80 despite the fact that they have no direct connection in between. To perform an empirical testing, we drew an arrow from IBT to PD without removing any further data or variable, as the model output is shown in Figure 8. The results are interesting. With the arrow from IBT to PD, the relationship became 0.84 between the two constructs. On the other hand, the relationship between OT and PD was

zero. We can infer that there is no significant relationship between OT and PD when PD is linked with IBT. To put it differently, the model suggests that the effect of OT on PD was led by IBT only.

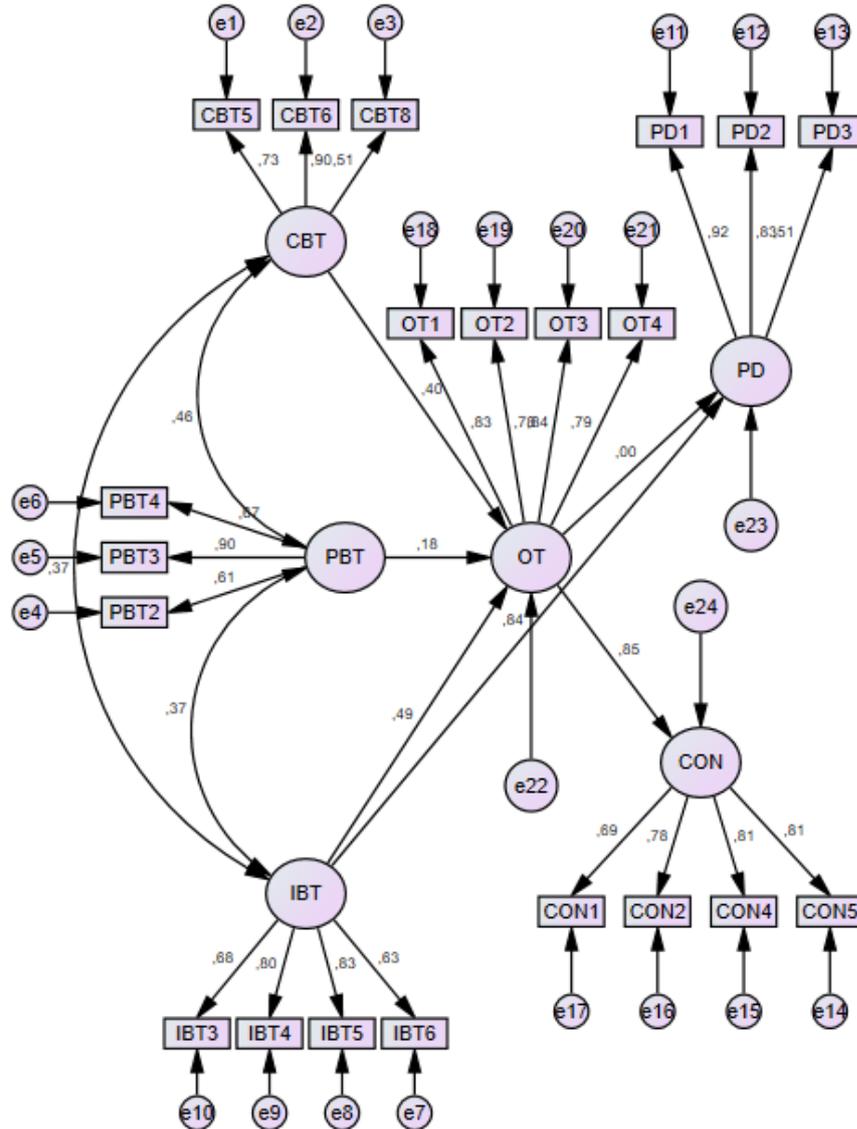


Figure 8. Post Hoc Analysis with an Additional Arrow from IBT to PD When N=153, m=21 Variables

The detailed model fit tables are put in Appendix I. The previously mentioned four model fit indices are retrieved again for testing. In summary, the

values of CMIN, RMR, CFI, and RMSEA are 1.631, 0.76, 0.935, and 0.064, respectively (for the structural model, those values were 1.929, 0.113, 0.904, and 0.078, respectively). The results are very close to the measurement model when the sample size is 153 with 21 variables, which means that the structural model would be optimal if the arrow from IBT to PD had a theoretical basis.

As a result, we think that keeping the construct PD would be unpreferable for the model, so we designed a new measurement and structural model without PD. The following subsections will be about developing and testing the new measurement and structural model without the construct PD.

#### **4.6.1. Measurement Model Analysis**

According to the post hoc analysis, we constructed a new model without specifying the fourth hypothesis. Like the old one, the other hypotheses rely on the same theoretical background. We started over with the initial sample size equal to 183. Since the construct PD and its measurement items were removed, the number of measured variables became equal to 18. The new model is represented in Figure 9. As the model fit details are in Appendix J, we retrieved the fit indices and then performed construct validity. The results are written below:

**Chi-square/degrees of freedom:** 2.291, which is below 3.

**RMR:** 0.089, which is less than 0.1.

**CFI:** 0.922, which is satisfactorily above 0.9.

**RMSEA:** 0.084, which is just above the upper threshold 0.08.

With the full sample size, three out of four model fit indices are satisfactory. However, an unexpectedly high correlation between CBT and CON exists. The reason could be outliers of the sample, so we retrieve another Mahalanobis d-squared distance table to check if the outliers cause such correlation. The Mahalanobis distance table for the measurement model without PD when N=183 is in Appendix J. On the table, 13 of the sample were found to have high d-squared value, so they were eliminated from the total sample. The new sample size became 170, and its measurement model output is shown in Figure 10.

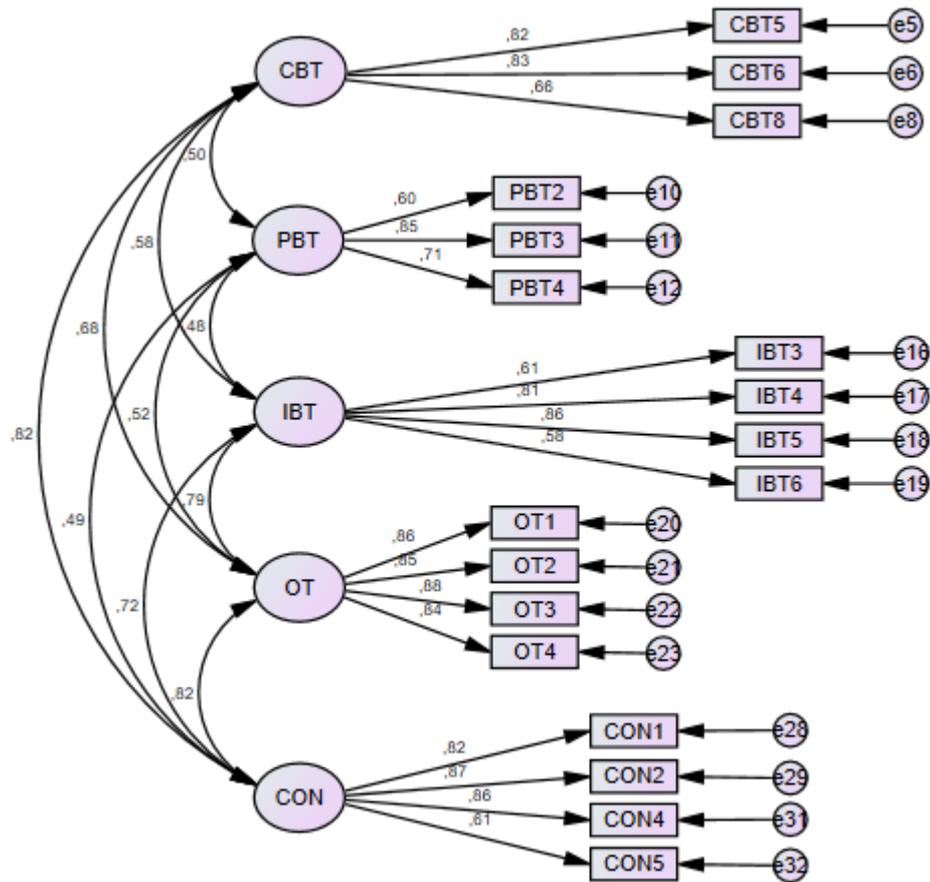


Figure 9. Measurement Model Output without PD When N=183, m=18 Variables

With the sample size equal to 170, the new model fit index values are presented below:

**Chi-square/degrees of freedom:** 1.911, which is below 3.

**RMR:** 0.069, which is less than 0.1.

**CFI:** 0.929, which is above 0.9.

**RMSEA:** 0.073, which is below the upper threshold 0.08.

When N=170, all four indices were satisfactory. Moreover, the correlation between CBT and CON dropped significantly. Now we performed the construct validity. According to Table 13, all five latent constructs have CR value above 0.7 and AVE value above 0.5, meaning that they are theoretically reliable and at least half of their variances can be explained in this model.

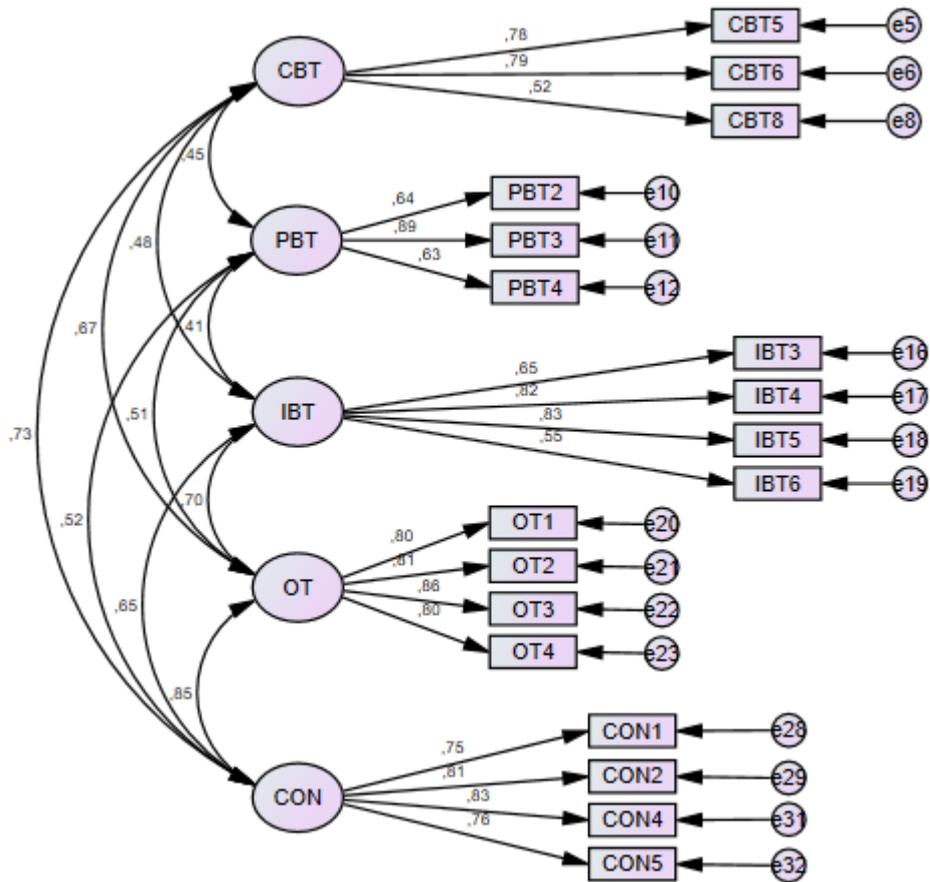


Figure 10. Measurement Model Output without PD When N=170, m=18 Variables

Table 13. Construct Reliability of the Measurement Model without PD When N=170

	CR	AVE	MSV	MaxR(H)	CON	PBT	IBT	OT	CBT
<b>CON</b>	0,868	0,622	0,717	0,872	0,789				
<b>PBT</b>	0,769	0,533	0,266	0,841	0,516	0,730			
<b>IBT</b>	0,810	0,522	0,489	0,846	0,650	0,415	0,723		
<b>OT</b>	0,890	0,670	0,717	0,892	0,847	0,514	0,699	0,818	
<b>CBT</b>	0,747	0,503	0,536	0,784	0,732	0,454	0,478	0,675	0,710

#### 4.6.2. Structural Model Analysis and Results

As the measurement model fit is achieved when N=170, we continue with the structural model analysis. Figure 11 exhibits the structural model output. The model output shows that the correlations between trust production constructs are

reasonable, and all of the factor loadings are greater than 0.50. The fit indices for the structural model are close to the ones in the measurement model, as shown below:

**Chi-square/degrees of freedom:** 1.959, which is below 3.

**RMR:** 0.074, which is less than 0.1.

**CFI:** 0.924, which is above 0.9.

**RMSEA:** 0.075, which is inside the interval between 0.03 and 0.08.

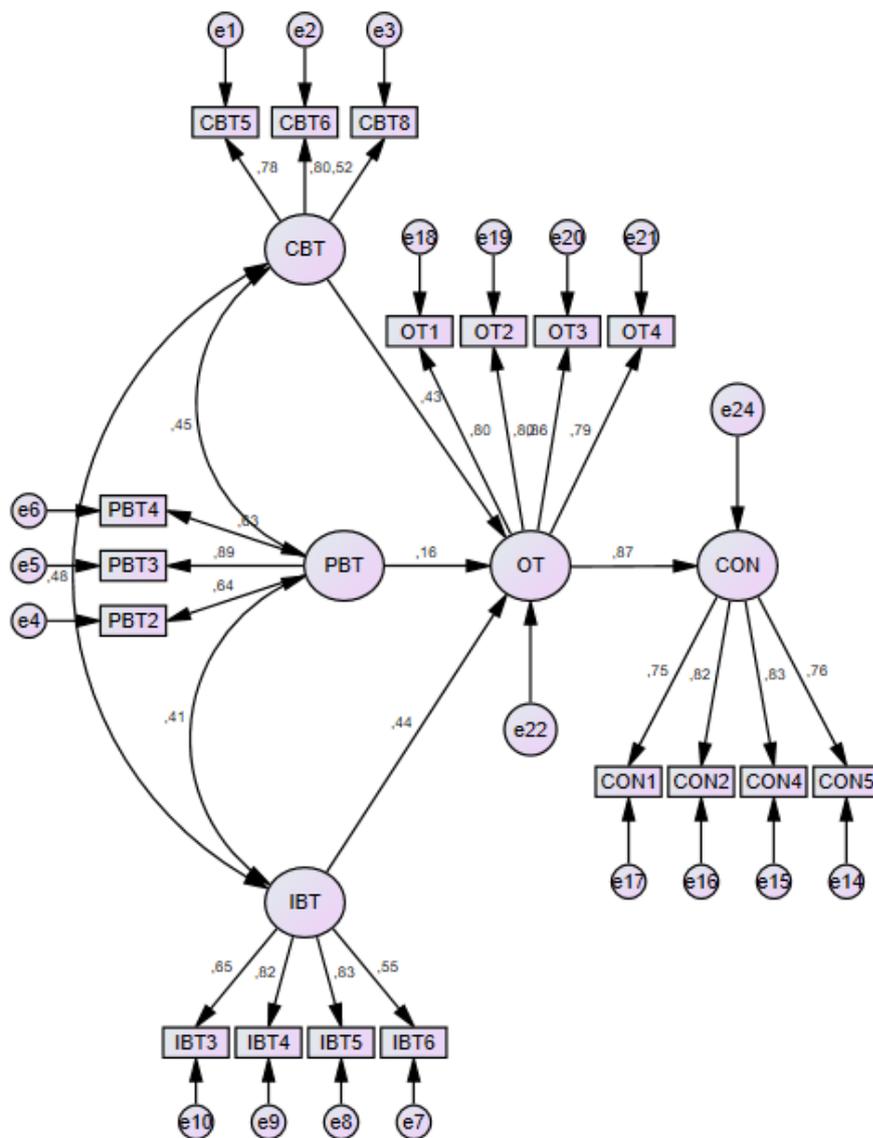


Figure 11. Structural Model Output without PD When N=170, m=18 Variables

From Figure 11, the direct arrows among the constructs are above 0.1 which imply significance for the construct relationships (Hair et al., 2014). The significance levels are detailed in Table 14. The table implies that each relationship is significant at 95% level. Table 15 shows the standardized regression weights where we can derive the final regression formulas. As CON is the only pure dependent latent construct, one formula is developed as presented below:

$$CON = 0.875 * OT \quad (4.12)$$

$$CON = 0.875 * (0.432 * CBT + 0.156 * PBT + 0.439 * IBT) \quad (4.13)$$

$$CON = 0.378 * CBT + 0.137 * PBT + 0.384 * IBT \quad (4.14)$$

Table 14. Regression Weights and Significance Levels of the Structural Model  
When p=0.05, N=170, m=18 Variables

			<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Label</b>
<b>OT</b>	<---	<b>CBT</b>	,359	,073	4,921	***	
<b>OT</b>	<---	<b>PBT</b>	,155	,073	2,111	,035	
<b>OT</b>	<---	<b>IBT</b>	,347	,069	5,036	***	
<b>CON</b>	<---	<b>OT</b>	1,105	,107	10,359	***	
<b>CBT5</b>	<---	<b>CBT</b>	,979	,111	8,794	***	
<b>CBT6</b>	<---	<b>CBT</b>	1,000				
<b>CBT8</b>	<---	<b>CBT</b>	,704	,115	6,142	***	
<b>PBT2</b>	<---	<b>PBT</b>	1,000				
<b>PBT3</b>	<---	<b>PBT</b>	,748	,102	7,328	***	
<b>PBT4</b>	<---	<b>PBT</b>	,718	,106	6,776	***	
<b>IBT6</b>	<---	<b>IBT</b>	,538	,087	6,200	***	
<b>IBT5</b>	<---	<b>IBT</b>	,914	,107	8,529	***	
<b>IBT4</b>	<---	<b>IBT</b>	,952	,112	8,484	***	
<b>IBT3</b>	<---	<b>IBT</b>	1,000				
<b>CON5</b>	<---	<b>CON</b>	,839	,077	10,973	***	
<b>CON4</b>	<---	<b>CON</b>	1,000				
<b>CON2</b>	<---	<b>CON</b>	,952	,079	12,057	***	
<b>CON1</b>	<---	<b>CON</b>	,677	,063	10,764	***	
<b>OT1</b>	<---	<b>OT</b>	,883	,077	11,484	***	
<b>OT2</b>	<---	<b>OT</b>	1,000				
<b>OT3</b>	<---	<b>OT</b>	,920	,073	12,678	***	
<b>OT4</b>	<---	<b>OT</b>	,822	,072	11,433	***	

Lastly, Table 16 demonstrates the factor loadings of the remaining measurement items and the eliminated ones after the construct PD is eliminated and the same analyses have been performed with a sample size equal to 170.

Table 15. Standardized Regression Weights of the Structural Model without PD

When  $p=0.05$ ,  $N=170$ ,  $m=18$  Variables

	<b>Estimate</b>
<b>OT &lt;--- CBT</b>	,432
<b>OT &lt;--- PBT</b>	,156
<b>OT &lt;--- IBT</b>	,439
<b>CON &lt;--- OT</b>	,875
<b>CBT5 &lt;--- CBT</b>	,781
<b>CBT6 &lt;--- CBT</b>	,795
<b>CBT8 &lt;--- CBT</b>	,516
<b>PBT2 &lt;--- PBT</b>	,636
<b>PBT3 &lt;--- PBT</b>	,894
<b>PBT4 &lt;--- PBT</b>	,629
<b>IBT6 &lt;--- IBT</b>	,550
<b>IBT5 &lt;--- IBT</b>	,831
<b>IBT4 &lt;--- IBT</b>	,822
<b>IBT3 &lt;--- IBT</b>	,648
<b>CON5 &lt;--- CON</b>	,761
<b>CON4 &lt;--- CON</b>	,827
<b>CON2 &lt;--- CON</b>	,816
<b>CON1 &lt;--- CON</b>	,750
<b>OT1 &lt;--- OT</b>	,796
<b>OT2 &lt;--- OT</b>	,800
<b>OT3 &lt;--- OT</b>	,857
<b>OT4 &lt;--- OT</b>	,793

Table 16. Measurement Items with Factor Loadings without PD When N=170,  
m=18 Variables

	Measurement item	Factor loading
<b>Characteristic-based trust (CBT)</b>		
CBT1	Generally on this website, I prefer products/services which are popular among other people who use the website.	Eliminated
CBT2	I feel like I am a member of this e-commerce institution's community.	Eliminated
CBT3	I feel like I have similar ethical and moral values with this e-commerce firm.	Eliminated
CBT4	I can get a quick help from the website's chat/voice/email section.	Eliminated
CBT5	I feel like the company has a good reputation.	0.78
CBT6	I hear a lot of positive buzz about this e-commerce institution.	0.80
CBT7	I am satisfied with the company's delivery system.	Eliminated
CBT8	I think this company has a good aftersales service quality (about product return/change etc.).	0.52
<b>Process-based trust (PBT)</b>		
PBT1	I have performed my recent transactions on this website without any problem.	Eliminated
PBT2	I have been using this website for a long time.	0.64
PBT3	I can use this website easily.	0.89
PBT4	I think the website is well-designed.	0.63
PBT5	I feel like the website charges fair prices.	Eliminated
<b>Institution-based trust (IBT)</b>		
IBT1	I check which trust seals (TRUSTe, McAfee, Norton, Visa etc.) this website is using.	Eliminated
IBT2	I don't feel the need to read the privacy and security policies of this website.	Eliminated
IBT3	I have no concerns with the website's cookie use.	0.65
IBT4	I am satisfied with the website's actions for password protection.	0.82

Table 16 (Cont'd). Measurement Items with Factor Loadings without PD When

N=170, m=18 Variables

	Measurement item	Factor loading
<b>Institution-based trust (IBT)</b>		
IBT5	I think the website prepares a secure environment during the payment.	0.83
IBT6	I haven't heard any data scandal/breach news about this company.	0.55
<b>Overall trust in e-commerce (OT)</b>		
OT1	I feel like people in general trust this e-commerce institution.	0.80
OT2	I feel like this website is trustworthy for my family or kin.	0.80
OT3	In general, I am satisfied with using this website.	0.86
OT4	In general, the company is trustworthy for me.	0.79
<b>Personal disclosure (PD)</b>		
PD1	I feel like I don't have to be concerned with my personal information on the website.	Eliminated
PD2	I feel like I don't have to be concerned with my credit card information on the website.	Eliminated
PD3	I can accept providing more personal information to the website when needed.	Eliminated
PD4R	I think this company shares my personal information with other parties without my permission.	Eliminated
<b>Continuance (CON)</b>		
CON1	I will continue using this e-commerce website.	0.75
CON2	This e-commerce firm is one of my favorites.	0.82
CON3R	I am willing to switch to a website of similar e-commerce institution in the near future.	Eliminated
CON4	I will recommend this e-commerce company to other people.	0.83
CON5	I feel like people around me will continue using this website.	0.76

## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **5.1. Introduction**

The purpose of this master's thesis was to build a model for trust in e-commerce based on Luo's (2002) trust production terms, and then test the model for consumers' overall trust in e-commerce, disclosing personal information on an e-commerce website, and continuance intention with the website. After building the model, the latent constructs and related measurement items, a survey was conducted with Turkish e-commerce users. Following the data collection, we performed the required analyses and have achieved several results.

Chapter 3 was about the details of the methods for data collection and analyses. In Chapter 4, we performed a confirmatory factor analysis (CFA) and a two-step structural equation modeling (SEM), and then presented the results. In this final chapter, we will discuss the findings in theoretical and practical perspectives, address the limitations of the study, and suggest further research topics and applications.

#### **5.2. Theoretical Discussions**

We will begin with discussing the results of the hypothesis testing. The basis is the model developed in Section 4.6 with five latent constructs and the sample size equal to 170. According to the model, all of the hypotheses except H4 were supported, since their relationship coefficients were greater than 0.10 on AMOS (see Figure 11 and Table 15) and their p-values were less than 0.05 (see Table 14). On the other hand, we could not find a direct support from overall trust (OT) to personal disclosure (PD). Therefore, H4 was not supported. The results of the hypotheses are summarized in Table 17 below.

Table 17. Results of the Testing of the Hypotheses

<b>Hypothesis</b>	<b>Definition</b>	<b>Supported or not</b>
H1	Characteristic-based trust shows a positive relationship with overall trust in e-commerce.	Supported
H2	Process-based trust shows a positive relationship with overall trust in e-commerce.	Supported
H3	Institution-based trust shows a positive relationship with overall trust in e-commerce.	Supported
H4	Overall trust in e-commerce has a positive impact on the intention to disclose personal information.	Not supported
H5	Overall trust in e-commerce has a positive impact on the continuance intention of using a website.	Supported

Now we will discuss the theoretical results one at a time; starting from trust production antecedents, which are followed by overall trust, personal disclosure, and continuance.

### **5.2.1. Trust Production Antecedents**

As has been explained in detail, the three trust production antecedents used in this study were characteristic-based trust (CBT), process-based trust (PBT), and institution-based trust (IBT). They were identified as the antecedents of overall trust in e-commerce (OT). After testing the model, the effects of all three of them were found to be significantly positive. While the effect of PBT was positive at 95 percent significance level ( $p < 0.05$ ), the other two had positive effects at 99 percent significance ( $p < 0.01$ ). We will move on with each construct to explore the details of their significance levels.

#### **5.2.1.1. Characteristic-Based Trust**

In Chapter 2, CBT was defined as disposition to trust based on similarities with either a website or other people. According to this, eight measurement items

for CBT were derived from the literature. However, there is a distinction among the CBT items. CBT1, CBT2 and CBT6 are the representation of disposition to trust based on similarities with other people. On the other hand, the other five measurement items refer to a consumer's perceived individual proximity to a website.

In the end, five of the measurement items were eliminated due to low factor loadings. Only three items, which are perceived reputation toward an e-commerce company (CBT5), the positive word-of-mouth about a company (CBT6), and company responses related with aftersales service quality (CBT8), remain in the model. CBT5 and CBT8 refer to similarities with the website, and CBT6 refers to that with other consumers. According to Jarvenpaa et al. (2000), the reputation of an internet store means less risk to a consumer. Lower risk brings more intimacy between the consumer and the website. The consumer becomes more lenient with the vendor in case of any post-sales issue (Oghazi, Karlsson, Hellström, & Hjort, 2018). In addition, Hillman and Neustadter (2017) used the characteristic-based trust for m-commerce, and revealed that the features of CBT is powerful when users are encouraged with recommendation by a family member or friend. This argument supports the power of positive buzz spread among people for a trust building process.

Nevertheless, there are other CBT items which failed to represent the characteristic-based trust. Especially the first three measurement items, which are product/service selection based on other people (CBT1), the feeling of community membership (CBT2), and similarity of ethical values with a company (CBT3), did not represent CBT at all. Therefore, we partially differ from Luo's (2002) definition of characteristic-based trust and exclude those items from the term. We think that consumers would not take into account intangible attributes such as ethics and belonging as a factor of trust. Instead, they want to take actions based on what they *directly* perceive from a company or other people. As both CBT1 and CBT6 refer to trust based on similarities with other people, this is the reason why participants answered CBT6 with high mean score and CBT1 with low means. In

other words, they perceived word-of-mouth and adapted them to their shopping style, but the products that other people chose did not create a perception in participants' own minds.

Likewise, the measurement items CBT4 (chat/voice/email help on a website) and CBT7 (delivery system of a company) were eliminated due to low factor loadings as well. However, their loadings were greater than 0.4. As they were not able enough to represent the theoretical definition of the characteristic-based trust, we excluded them from the model. Nonetheless, we recommend including these two items for further testing as they might bring good factor loadings for CBT with different sample groups.

In a nutshell, we have kept similarities to both a website and other users in this structure together. One might ask about a possible distinction between the CBT items: could there have been two constructs for CBT instead of one? The answer is, perhaps. But if this was the case, four different trust antecedents would have been defined for the model instead of three, which would contradict Luo's (2002) article. We primarily intended to test his proposal consisting of three trust antecedents, not creating new antecedents from the terms.

#### **5.2.1.2. Process-Based Trust**

In this study, the process-based trust (PBT) was simply explained with the words *transaction* and *experience*. The construct is represented by the duration of using a website (PBT2), ease of website use (PBT3), and website design (PBT4). All of those ideas match the technology-acceptance model (TAM) that was initially developed by Davis (1989) and later extended for e-commerce by Gefen et al. (2003). We have defined TAM and explained its fields in Chapter 2. In this study, we put perceived website design and perceived ease of website use, and combined with online transactions and personal web experience. These two terms are essential for building an overall trust through PBT. According to Hillman and Neustaedter (2017), process-based trust is important in creating the first impression for new users and for those who are experienced to continue their habits. Therefore,

the authors consider the advanced stages of PBT as *routine-based trust*. As Luo (2002) suggested that building PBT lasts longer than any other trust term, the faster achieving routine-based trust faster means shortening the overall process of PBT.

On the other hand, whether recent transactions were performed without a problem (PBT1) and whether prices are charged on a website fairly (PBT5) were not included in the PBT definition. There might be several reasons behind this. For PBT1, it may seem to be an unexpected result since the measurement item was about transactions. Admittedly, we think that the question was too specific in terms of time interval. This might have misled the participants. For the item PBT5, the result was simpler: the participants did not associate price conditions with overall trust based on their internet experiences. This finding is supportive with Kim, Xu, and Gupta's (2012) research. Kim et al. (2012) found that the effect of perceived trust is greater than that of perceived price on purchase intentions for both potential and current consumers in e-commerce. To sum up, website features accelerate trust production through a consumer's own transactions and experience. However, price is not an important determinant of the process-based trust.

#### **5.2.1.3. Institution-Based Trust**

We defined the institution-based trust (IBT) as perceived structural assurances such as *security* and *protection*. Six measurement items were identified for this term, where four of them remained within its theoretical definition. These are a website's cookie use (IBT3), password protection (IBT4), payment security (IBT5), and data breach (IBT6). Among the measured variables, only IBT3 has not been tested in a survey so far. While the other three items were tested in different studies, this study brings all four items together for the first time and include them in the theoretical definition of IBT.

In particular, it was important to include the use of cookie policy of websites in IBT. Although e-commerce websites frequently use cookies to obtain a variety of data, the participants of this study were generally not disturbed by the cookie policy of their chosen website. This is consistent with the study performed by

Hoffman et al. (1999). They found that users become more acceptable toward data collection if websites tell the actual purpose of collecting user information.

The findings of the study on password protection and payment security are in line with the literature. The participants fundamentally expect this type of security from the structural assurance of IBT. Hillman and Neustaedter (2017) have a remarkable finding on this field. When a payment is directed to a pop-up website owned by a different company, consumers see the external payment screen as part of the actual website and therefore, they continue to trust the payment screen (Hillman and Neustaedter, 2017). We have confirmed and improved this finding. A person who trusts the name of Trendyol.com is paying less attention to the security seals used by the website or the new website that appears on the payment screen. Although Hillman and Neustaedter (2017) reported this finding only for external payment sites, we think that this will also apply to other external websites. For example, a Booking.com customer who is directed to a hotel's own website can trust that hotel's website as he/she trusts Booking.com. In general, structural assurances of a website, such as password protection and secure payment, help build an overall trust. For this, it is important that the website has never experienced a data breach before. On the other hand, the entire institution-based trust of an e-commerce company with data breach could be harmed and it may take a very long time to recover.

If we analyze the eliminated measurement items, the results are very surprising for IBT1 and IBT2. As IBT1 was about third-party internet seals, which is one of the central topics of structural assurance; the item had to be eliminated due to its very low factor loading (see Figure 3). This is quite interesting for the Turkish case. Such a low factor loading refers to the fact that the participants did not perceive the seals as trustworthy. As the third party internet seals provide a risk-free shopping environment (Hong & Cho, 2011), some of the participants were even unaware of whether or not a website was using a seal as the means of web assurance. This huge difference for the Turkish case needs a further and deeper investigation. Besides, IBT2 was about the necessity of reading a website's privacy

and security policies. The goal of this question was to see if participants perceive that they would not have to read the policies since they trust the institution already. However, we suppose a misunderstanding in this measurement item. While a user does not fully read the security and privacy statement of a website, there may be cases where at least he or she looks at the title or length of the text. This may not have given the expected answer. Like IBT1, this antecedent needs a further examination as well.

### **5.2.2. Overall Trust in E-Commerce**

Overall trust in e-commerce (OT) refers to the combination of CBT, PBT, and IBT, and is a bridge between these three terms and continuance. One can have a complete feeling of trust in e-commerce if he or she intends to trust in people and the website, acquires satisfactory shopping experience, and perceive enough assurance from the website and the internet. Therefore, we have introduced the measurement items of OT relating to the three trust production terms. These are the relationship built by the attributes of the characteristic-based trust (OT1 and OT2), the combination of both process-based and institution-based trust (OT3), and a broader item related with each trust production term (OT4). Among these terms, OT1 and OT2 were derived from Luo's (2002) article and have not been tested before. With these items, we have revealed that overall trust in e-commerce is determined by consumers' intention to trust someone or something, especially family and friends. This finding coincides with Blau's (1964) social exchange theory as follows: a family member or a friend made a recommendation to the consumer. In return, he or she is expecting a reciprocation such as use of the same website for shopping. This exchange is a good example of the similarity aspect of the characteristic-based trust (Luo, 2002).

Similarly, the satisfaction of website use (OT3) can be explained with relationship marketing (Morgan & Hunt, 1994). In order to obtain satisfaction from a website, it is necessary to pass through a positive relationship process. Satisfaction can be obtained with a combination of good shopping experiences in

a safe environment. In a similar vein, Safa and Ismail (2013) made a similar definition to this term, which is “pleasurable fulfillment accumulated over multiple transaction experiences” (p.559). Although they emphasized multiplicity for the definition, we think that safety should be included as well. Last but not least, about 78 percent of the participants answered either six or seven to the question “In general, the company is trustworthy for me.” (OT4). This indicates that the majority of them picked a website that they actually trust.

### **5.2.3. Personal Disclosure**

We defined personal disclosure (PD) as an individual’s willingness to share his or her information on a website. Trust was considered to be effective at reducing consumer privacy concerns and encouraging personal disclosure (Zimmer et al., 2010). However, our post hoc analyses showed that personal disclosure is affected by *only* institution-based trust (IBT). Overall trust (OT) do not completely influence the willingness to share personal information. This is an important finding to further explore the relationship between IBT and PD. In fact, both constructs have their terms related with assurance and security. We mentioned that the features of IBT arose from structural assurances. Likewise, the PD items contain individual privacy and security concerns, which are the ones with existing personal and credit card information on a website, and willingness to provide more personal information if requested by the website. Nevertheless, our thesis study revealed that these features are unlikely to be influenced by overall trust in e-commerce.

### **5.2.4. Continuance**

The intention to continue using a website, or simply continuance (CON), was regarded as a combination of *loyalty*, *repurchase*, and *commitment* in the literature. We have defined the CON items as continuation of website use (CON1), whether favorite or not (CON2), recommendation to other people (CON4), and the feeling of other users’ continuation (CON5). Contrary to personal disclosure, continuance

is significantly influenced by overall trust in e-commerce. We infer that when consumers have strong trust feelings in an e-commerce website, they would like to maintain their relationships instead of a switch. This contributes to the finding that trust is an important antecedent to the intention of B2C website use (Gefen et al., 2003). What we have done differently from the literature is to explain this based on the three trust production antecedents.

### **5.3. Practical Discussions**

Besides the theoretical discussions, this thesis also has a handful of practical findings. Since the publication of Luo's (2002) article, the trust production terms have gained new premises. Luo (2002) suggested that trust generation terms could be a solution to privacy concerns in e-commerce, with institution-based trust (IBT) being the most likely solution. We agree that IBT has a more similar background of privacy than the others. But while Luo (2002) analyzed the trust production terms separately, we showed the importance of measuring them together.

The remainder of this section will be primarily about how the previously acquired theoretical findings could be applicable in practical terms. We have identified two main topics for practical implications, which are for e-commerce markets and marketers.

#### **5.3.1. Implications for E-Commerce Markets**

This study has once again demonstrated how important the word “trust” is for the e-commerce markets. It examined the word trust in detail and showed that overall trust in e-commerce consisting of three trust production terms positively affected the intention to continue using the website. For every e-commerce industry, gaining trust of consumers is essential. However, it is a long-term process. Our valid measurement items justify the essence of this long-term trust development. We advise companies to follow an overall approach when building trust relationships. Thus, companies will act not only on a single element of trust in e-commerce, but on all aspects of it. For instance, when an internet user can get

quick help with a product or service from a website, he or she should also be able to use the website easily and afterwards feel that credit card information will not be misused when making payments. An overall trust relationship with an online consumer can be established by combining such aspects on the website. Finally, the key is to extend this process over a period of time.

Currently, the web-based e-commerce is dominated by a few major firms, most of which were picked by our survey participants in the website selection process of the survey. The three pioneers of e-commerce, namely Amazon, eBay and Alibaba, are projected to have nearly 40 percent of the total global e-commerce market by 2020 (TÜSİAD, 2017). Therefore, it is nearly impossible to build a website and dominate the sector in the short-run. An easy way to enter the market is to create a seller account on a major and trusted e-commerce website such as Amazon. The vendors can create a sense of trust among their customers by using the high level of trust of large websites (Hong & Cho, 2011). However, despite the fact that websites like Amazon are generally perceived as trustworthy, the seller has to build its own trust to keep its customers and attract more.

Hence, the trust production antecedents we have defined for websites also apply to the sellers. Yemeksepeti.com is a good example for this. The website serves as a massive roof for online restaurants. However, the restaurants usually have more responsibilities against their customers compared to a regular online retailer, since the website puts more emphasis on user reviews and restaurant ratings. In this case, the restaurant accounts should also be more sensitive to using trust production terms. Surely, they will not be able to use institution-based features such as user password security, but they can at least take possible steps, such as proximity to the consumers.

Our final recommendation to the e-commerce markets is to take into account the relationship between overall trust and continuance. This study has shown that a consumer's overall trust in e-commerce strongly influences the intention to continue using the website. In other words, the customer will unlikely intend to switch to a different one if he or she still has overall trust feelings on the website.

This is practically useful when a website itself or its vendor makes a mistake against a customer. If a mistake is made, it is not the end of the world. For example, when a defective product is delivered, an appropriate return policy must be applied by the website and the seller, and the customer's grievance must be eliminated (Oghazi et al., 2018). Although being generous at product return is more costly than being restrictive, earning consumers' trust brings much more benefit to the website and its vendors. At the very least, the consumer's switch intention will be mitigated.

### **5.3.2. Implications for Marketers**

This study has several recommendations to marketers as well. Since the 1980s, marketing has evolved to a combination of economic and social processes (Vargo & Lusch, 2004). Leading companies are today giving importance to building social relationships as well as making profits. Here the social relations part coincides with the theories used in this study. Having said that, there is a need to better understand the society involved in the survey.

To get to know a society better, marketers need to analyze people culturally. Since the survey was applied to the urban population in Turkey, marketers should examine the cultural dimensions of this group. According to Hofstede (2001), several cultural dimensions are defined for nations, two of which are long-term/short-term orientation and individualism/collectivism. To explain these concepts, long- or short-term orientation describes how people in society make plans. While societies with long-term orientation pay attention to accumulation and consistency, people with a short-term orientation want to earn benefits in a short time. The individualist or collectivist structure, on the other hand, examines whether people make personal or collective decisions while doing a job (Hofstede, 1980; Hofstede, 2001). These cultural dimensions may have influenced the survey results. For instance, Hallikainen and Laukkanen (2018) found that collectivism and long-term orientation have positive effects on disposition to online trust. On the other hand, Turkish people exhibit a collectivistic but short-term oriented

behavior (Göregenli, 1997). It is necessary to investigate whether such differences give the same results in terms of disposition to trust and other trust production terms. For example, why were most of the survey participants unaware of third-party internet seals? Or why did they not intend to disclose their personal information while they were trusting the website? To find the reasons, we recommend marketers to go deeper to explore and understand the cultural dimensions of their country.

We lastly advise marketers to focus on mobile adoption in addition to the regular e-commerce. Although m-commerce was not specifically focused on this study, the same trust production processes could be implemented for mobile platforms. In Turkey, 44 percent of the e-commerce transactions were made via mobile devices by 2016 (TÜSİAD, 2017). In the same year, smartphone penetration was found to be above the global average. While the country is behind the world in e-commerce, it has a brighter future for mobile platforms.

#### **5.4. Implications for Future Research**

In addition to the findings obtained in this study, there are a number of research topics that researchers might be interested in. One research topic is the relationship between institution-based trust and personal disclosure. We found that the intention to disclose personal information is not fully affected by overall trust. Instead, the institution-based trust has a similar theoretical background to personal disclosure as explained in the previous chapters. Both constructs contain similar measurement items related with privacy and security. Therefore, these two terms are likely to be correlated. We recommend researchers to further explore how they are similar, and for what aspects they are correlated in between.

Another possible research area is again part of the institution-based trust, which is third-party internet seals. According to the results of this study, many people in Turkey do not check which internet seals e-commerce websites are using. While websites spend tons of money on internet seals, it is important that most of

the consumers are not aware of the existence of seals. This needs an additional theoretical investigation.

In this study, we requested the participants to choose a website that they had experienced before. On the other hand, we did not question whether the website was their first experience or the one they routinely used. Our current trust production model does not separate the level of website experience. Therefore, we did not separate a consumer's initial trust from overall trust in e-commerce. In fact, applications of initial trust and overall trust rely on the same definitions in the literature. However, the main difference between the two terms is that initial trust is specific to users' trust in an online vendor after their initial interaction (Koufaris & Hampton-Sosa, 2004). Hence it is necessary to consider online seller profiles differently from an e-commerce website. For future studies, we recommend researchers to explore users' first-time e-commerce experience and their relationship with online vendors through this model. As mentioned earlier, future research could also explore a comparison of trust between foreign versus local e-commerce websites.

Another recommendation for future research is about young consumers. As noted in the beginning, the internet penetration rate in Turkey is low since older people are more distant to the internet (TÜSİAD, 2017). However, with new generations, the internet penetration rate in the country will increase. This reveals the necessity of e-commerce research specific to the young population. We recommend that future studies analyze in depth who young internet users are familiar with when using e-commerce, what features they pay attention to on the website, and which security criteria they will consider in the Internet. In addition, participants under the age of 18 should be included in these studies. We focused on people with at least 18 years old in our thesis. However, there are a large number of citizens under the age of 18 who use e-commerce. More academic studies specific to minors are needed.

We finally recommend further research about the antecedents of distrust in e-commerce. In the literature, distrust is not the exact opposite of trust. Distrust in

e-commerce refers to the belief that a website will not fulfill what it promises (Zhang et al., 2011). So while trust is the combination of ability, integrity and benevolence, distrust is more of a negative feeling about the lack of ability. Future researchers are advised to examine this difference further and explore the premises of consumers' overall distrust in e-commerce by applying the related measurement items of this study to their models.

### **5.5. Limitations of the Thesis**

This thesis is not without limitations. One major limitation is about age and education status of the survey participants. People who are between 25 and 30 years old, and who have at least a university diploma were more positive towards our survey participation request. On the other hand, we could hardly find older or less educated people to complete the survey. Today in Turkey, generally younger people are found to have more access to the internet. In 2000, internet penetration rate was only 4 percent in Turkey (TÜSİAD, 2017). While this rate scaled up to 58 percent in 2016, older generations are today still less accustomed to the internet use. This means that the penetration rate will continue increasing over time with the emergence of further generations. We still believe the sample is representative of younger and educated urban dwellers in Turkey, who are a crucial e-commerce segment, and will continue to be in the future.

Another limitation of the study is that we did not separate web seller accounts from an e-commerce website. Instead, we considered the sellers together with the website. For instance, if a Yemeksepeti.com user is having issues with a registered restaurant on the website, we assumed that this is a problem between the consumer and Yemeksepeti.com. Although this was a remarkable limitation, it made the study easier and clearer. However, we point out the importance of further studies related with trust and web sellers within the Turkish borders.

The final limitation is about the website selection part of the survey. The participants were requested to select only one website and then answer the survey questions based on what they picked. The purpose of requesting the selection of

only one website is to see whether the participant perceive overall trust feelings due to the trust production antecedents the related website had. If we allowed the participants to think of multiple websites, participants might think of one website for characteristic-based trust for example, and a different website for institution-based trust, which would disrupt the consistency of the questionnaire. However, this is also a survey limitation. A recent bad experience of one of the participants with a website may have caused her to be biased during the website selection. Nevertheless, it was essential that we make this restriction to ensure consistency in the survey.

## **5.6. Conclusion**

This master's thesis took Luo's (2002) trust production terms in e-commerce as the basis, and combined with overall trust (OT), personal disclosure (PD), and continuance (CON). We proposed that building an overall consumer trust in e-commerce has three main antecedents, which are characteristic-based trust (CBT), process-based trust (PBT), and institution-based trust (IBT). We also argued that the overall trust created from these terms further lead to personal disclosure of private information on an e-commerce website and continuance intention to use the website. After building the model and the hypotheses, we conducted a survey which was held both online and by hand. Participants were requested to pick an e-commerce website, and afterwards answer to the scale questions according to the website they selected. A two-step and six-stage structural equation modeling (SEM) was applied to the collected data, where the first step of SEM corresponded to a confirmatory factor analysis (CFA). The data mostly supported the proposed model, showing that all of our hypotheses except the relationship between overall trust in e-commerce and disclosure of personal information were supported. The results have been discussed and further recommendations have been given through this chapter.

At the very end, we think that e-commerce still has a bright future in practical terms. Although the e-commerce market is growing rapidly and e-commerce firms

are becoming the largest companies in the world, there are many potential changes and innovations in this sector. Nevertheless, the word “trust” will still remain central for the future of e-commerce. We hope that this thesis has contributed to the study of trust in e-commerce, which is likely to foster solid and lasting relationships between websites and consumers.

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## APPENDICES

### A. STATISTICAL MEASURES OF THE CONSTRUCTS

Table A-1. Statistical measures for CBT items

	CBT1	CBT2	CBT3	CBT4	CBT5	CBT6	CBT7	CBT8
N Valid	183	183	183	183	183	183	183	183
Missing	0	0	0	0	0	0	0	0
Mean	4,32	3,06	3,53	4,70	5,50	5,25	5,72	5,32
Median	5,00	3,00	4,00	5,00	6,00	6,00	6,00	6,00
Mode	5	1	4	6	6	6	6	6
Std. Deviation	1,690	1,795	1,693	1,752	1,378	1,387	1,303	1,474
Skewness	-,469	,508	-,073	-,635	-1,330	-1,162	-1,445	-,915
Std. Error of Skewness	,180	,180	,180	,180	,180	,180	,180	,180
Kurtosis	-,758	-,836	-,955	-,510	1,633	1,119	2,452	,588
Std. Error of Kurtosis	,357	,357	,357	,357	,357	,357	,357	,357

Table A-2. Statistical measures for PBT items

	PBT1	PBT2	PBT3	PBT4	PBT5
N Valid	183	183	183	183	183
Missing	0	0	0	0	0
Mean	6,06	5,96	6,43	5,96	5,26
Median	7,00	6,00	7,00	6,00	6,00
Mode	7	7	7	6	6
Std. Deviation	1,516	1,266	,752	1,050	1,439
Skewness	-2,054	-1,347	-1,372	-1,103	-,940
Std. Error of Skewness	,180	,180	,180	,180	,180
Kurtosis	3,708	1,564	2,153	1,357	,606
Std. Error of Kurtosis	,357	,357	,357	,357	,357

Table A-3. Statistical measures for IBT items

		IBT1	IBT2	IBT3	IBT4	IBT5	IBT6
N	Valid	183	183	183	183	183	183
	Missing	0	0	0	0	0	0
Mean		3,26	5,54	5,15	5,37	5,86	6,03
Median		3,00	6,00	5,00	6,00	6,00	6,00
Mode		1	7	7	6	6	7
Std. Deviation		2,208	1,558	1,664	1,302	1,203	1,162
Skewness		,466	-1,258	-,702	-,767	-1,455	-1,721
Std. Error of Skewness		,180	,180	,180	,180	,180	,180
Kurtosis		-1,307	1,064	-,371	,413	2,570	3,961
Std. Error of Kurtosis		,357	,357	,357	,357	,357	,357

Table A-4. Statistical measures for OT items

		OT1	OT2	OT3	OT4
N	Valid	183	183	183	183
	Missing	0	0	0	0
Mean		5,79	5,80	5,99	6,03
Median		6,00	6,00	6,00	6,00
Mode		6	6	6	6
Std. Deviation		1,069	1,165	1,141	1,013
Skewness		-1,266	-1,381	-1,918	-1,817
Std. Error of Skewness		,180	,180	,180	,180
Kurtosis		2,484	2,674	4,940	5,587
Std. Error of Kurtosis		,357	,357	,357	,357

Table A-5. Statistical measures for PD items

		PD1	PD2	PD3	PD4R
N	Valid	183	183	183	183
	Missing	0	0	0	0
Mean		5,30	5,25	3,31	4,89
Median		6,00	6,00	3,00	5,00
Mode		6	6	4	6
Std. Deviation		1,460	1,562	1,737	1,647
Skewness		-1,017	-1,028	,274	-,688
Std. Error of Skewness		,180	,180	,180	,180
Kurtosis		,648	,457	-,958	-,160
Std. Error of Kurtosis		,357	,357	,357	,357

Table A-6. Statistical measures for CON items

		CON1	CON2	CON3R	CON4	CON5
N	Valid	183	183	183	183	183
	Missing	0	0	0	0	0
Mean		5,90	5,59	5,05	5,23	5,83
Median		6,00	6,00	5,00	5,00	6,00
Mode		6	6	6	6	6
Std. Deviation		1,151	1,472	1,470	1,408	1,130
Skewness		-1,610	-1,449	-,515	-,879	-1,313
Std. Error of Skewness		,180	,180	,180	,180	,180
Kurtosis		3,736	2,051	-,460	,685	2,482
Std. Error of Kurtosis		,357	,357	,357	,357	,357

## B. FREQUENCY TABLES OF THE MEASUREMENT ITEMS

Table B-1. Frequency table of CBT1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	15	8,2	8,2	8,2
2	17	9,3	9,3	17,5
3	26	14,2	14,2	31,7
4	23	12,6	12,6	44,3
5	51	27,9	27,9	72,1
6	40	21,9	21,9	94,0
7	11	6,0	6,0	100,0
Total	183	100,0	100,0	

Table B-2. Frequency table of CBT2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	48	26,2	26,2	26,2
2	35	19,1	19,1	45,4
3	31	16,9	16,9	62,3
4	25	13,7	13,7	76,0
5	22	12,0	12,0	88,0
6	15	8,2	8,2	96,2
7	7	3,8	3,8	100,0
Total	183	100,0	100,0	

Table B-3. Frequency table of CBT3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	35	19,1	19,1	19,1
2	19	10,4	10,4	29,5
3	24	13,1	13,1	42,6
4	53	29,0	29,0	71,6
5	27	14,8	14,8	86,3
6	21	11,5	11,5	97,8
7	4	2,2	2,2	100,0
Total	183	100,0	100,0	

Table B-4. Frequency table of CBT4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	14	7,7	7,7	7,7
2	11	6,0	6,0	13,7
3	19	10,4	10,4	24,0
4	27	14,8	14,8	38,8
5	38	20,8	20,8	59,6
6	49	26,8	26,8	86,3
7	25	13,7	13,7	100,0
Total	183	100,0	100,0	

Table B-5. Frequency table of CBT5

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	3	1,6	1,6	1,6
2	8	4,4	4,4	6,0
3	7	3,8	3,8	9,8
4	11	6,0	6,0	15,8
5	41	22,4	22,4	38,3
6	73	39,9	39,9	78,1
7	40	21,9	21,9	100,0
Total	183	100,0	100,0	

Table B-6. Frequency table of CBT6

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	4	2,2	2,2	2,2
2	8	4,4	4,4	6,6
3	9	4,9	4,9	11,5
4	19	10,4	10,4	21,9
5	45	24,6	24,6	46,4
6	74	40,4	40,4	86,9
7	24	13,1	13,1	100,0
Total	183	100,0	100,0	

Table B-7. Frequency table of CBT7

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	3	1,6	1,6	1,6
2	4	2,2	2,2	3,8
3	5	2,7	2,7	6,6
4	11	6,0	6,0	12,6
5	39	21,3	21,3	33,9
6	65	35,5	35,5	69,4
7	56	30,6	30,6	100,0
Total	183	100,0	100,0	

Table B-8. Frequency table of CBT8

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	5	2,7	2,7	2,7
2	5	2,7	2,7	5,5
3	8	4,4	4,4	9,8
4	30	16,4	16,4	26,2
5	40	21,9	21,9	48,1
6	51	27,9	27,9	76,0
7	44	24,0	24,0	100,0
Total	183	100,0	100,0	

Table B-9. Frequency table of PBT1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	7	3,8	3,8	3,8
2	4	2,2	2,2	6,0
3	5	2,7	2,7	8,7
4	4	2,2	2,2	10,9
5	17	9,3	9,3	20,2
6	44	24,0	24,0	44,3
7	102	55,7	55,7	100,0
Total	183	100,0	100,0	

Table B-10. Frequency table of PBT2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	1	,5	,5	,5
2	2	1,1	1,1	1,6
3	10	5,5	5,5	7,1
4	7	3,8	3,8	10,9
5	34	18,6	18,6	29,5
6	46	25,1	25,1	54,6
7	83	45,4	45,4	100,0
Total	183	100,0	100,0	

Table B-11. Frequency table of PBT3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 3	1	,5	,5	,5
4	2	1,1	1,1	1,6
5	17	9,3	9,3	10,9
6	60	32,8	32,8	43,7
7	103	56,3	56,3	100,0
Total	183	100,0	100,0	

Table B-12. Frequency table of PBT4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 2	2	1,1	1,1	1,1
3	2	1,1	1,1	2,2
4	13	7,1	7,1	9,3
5	33	18,0	18,0	27,3
6	67	36,6	36,6	63,9
7	66	36,1	36,1	100,0
Total	183	100,0	100,0	

Table B-13. Frequency table of PBT5

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	4	2,2	2,2	2,2
2	7	3,8	3,8	6,0
3	10	5,5	5,5	11,5
4	24	13,1	13,1	24,6
5	45	24,6	24,6	49,2
6	58	31,7	31,7	80,9
7	35	19,1	19,1	100,0
Total	183	100,0	100,0	

Table B-14. Frequency table of IBT1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	62	33,9	33,9	33,9
2	29	15,8	15,8	49,7
3	16	8,7	8,7	58,5
4	18	9,8	9,8	68,3
5	13	7,1	7,1	75,4
6	24	13,1	13,1	88,5
7	21	11,5	11,5	100,0
Total	183	100,0	100,0	

Table B-15. Frequency table of IBT2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	3,3	3,3	3,3
2	6	3,3	3,3	6,6
3	11	6,0	6,0	12,6
4	10	5,5	5,5	18,0
5	37	20,2	20,2	38,3
6	54	29,5	29,5	67,8
7	59	32,2	32,2	100,0
Total	183	100,0	100,0	

Table B-16. Frequency table of IBT3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	5	2,7	2,7	2,7
2	12	6,6	6,6	9,3
3	14	7,7	7,7	16,9
4	27	14,8	14,8	31,7
5	35	19,1	19,1	50,8
6	41	22,4	22,4	73,2
7	49	26,8	26,8	100,0
Total	183	100,0	100,0	

Table B-17. Frequency table of IBT4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	1,1	1,1	1,1
2	3	1,6	1,6	2,7
3	8	4,4	4,4	7,1
4	35	19,1	19,1	26,2
5	36	19,7	19,7	45,9
6	63	34,4	34,4	80,3
7	36	19,7	19,7	100,0
Total	183	100,0	100,0	

Table B-18. Frequency table of IBT5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	1,1	1,1	1,1
	2	1	,5	,5	1,6
	3	7	3,8	3,8	5,5
	4	12	6,6	6,6	12,0
	5	28	15,3	15,3	27,3
	6	71	38,8	38,8	66,1
	7	62	33,9	33,9	100,0
	Total	183	100,0	100,0	

Table B-19. Frequency table of IBT6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	1,1	1,1	1,1
	2	2	1,1	1,1	2,2
	3	2	1,1	1,1	3,3
	4	10	5,5	5,5	8,7
	5	28	15,3	15,3	24,0
	6	61	33,3	33,3	57,4
	7	78	42,6	42,6	100,0
	Total	183	100,0	100,0	

Table B-20. Frequency table of OT1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	,5	,5	,5
	2	1	,5	,5	1,1
	3	5	2,7	2,7	3,8
	4	12	6,6	6,6	10,4
	5	36	19,7	19,7	30,1
	6	82	44,8	44,8	74,9
	7	46	25,1	25,1	100,0
	Total	183	100,0	100,0	

Table B-21. Frequency table of OT2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	1,1	1,1	1,1
2	1	,5	,5	1,6
3	5	2,7	2,7	4,4
4	14	7,7	7,7	12,0
5	33	18,0	18,0	30,1
6	74	40,4	40,4	70,5
7	54	29,5	29,5	100,0
Total	183	100,0	100,0	

Table B-22. Frequency table of OT3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	1,1	1,1	1,1
2	3	1,6	1,6	2,7
3	2	1,1	1,1	3,8
4	8	4,4	4,4	8,2
5	23	12,6	12,6	20,8
6	79	43,2	43,2	63,9
7	66	36,1	36,1	100,0
Total	183	100,0	100,0	

Table B-23. Frequency table of OT4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	1	,5	,5	,5
2	3	1,6	1,6	2,2
4	5	2,7	2,7	4,9
5	31	16,9	16,9	21,9
6	80	43,7	43,7	65,6
7	63	34,4	34,4	100,0
Total	183	100,0	100,0	

Table B-24. Frequency table of PD1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	4	2,2	2,2	2,2
2	8	4,4	4,4	6,6
3	10	5,5	5,5	12,0
4	21	11,5	11,5	23,5
5	41	22,4	22,4	45,9
6	63	34,4	34,4	80,3
7	36	19,7	19,7	100,0
Total	183	100,0	100,0	

Table B-25. Frequency table of PD2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	6	3,3	3,3	3,3
2	9	4,9	4,9	8,2
3	12	6,6	6,6	14,8
4	17	9,3	9,3	24,0
5	40	21,9	21,9	45,9
6	61	33,3	33,3	79,2
7	38	20,8	20,8	100,0
Total	183	100,0	100,0	

Table B-26. Frequency table of PD3

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	35	19,1	19,1	19,1
2	37	20,2	20,2	39,3
3	24	13,1	13,1	52,5
4	40	21,9	21,9	74,3
5	23	12,6	12,6	86,9
6	18	9,8	9,8	96,7
7	6	3,3	3,3	100,0
Total	183	100,0	100,0	

Table B-27. Frequency table of PD4R

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	10	5,5	5,5	5,5
2	8	4,4	4,4	9,8
3	15	8,2	8,2	18,0
4	34	18,6	18,6	36,6
5	39	21,3	21,3	57,9
6	46	25,1	25,1	83,1
7	31	16,9	16,9	100,0
Total	183	100,0	100,0	

Table B-28. Frequency table of CON1

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	2	1,1	1,1	1,1
2	2	1,1	1,1	2,2
3	4	2,2	2,2	4,4
4	7	3,8	3,8	8,2
5	36	19,7	19,7	27,9
6	71	38,8	38,8	66,7
7	61	33,3	33,3	100,0
Total	183	100,0	100,0	

Table B-29. Frequency table of CON2

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	7	3,8	3,8	3,8
2	3	1,6	1,6	5,5
3	7	3,8	3,8	9,3
4	11	6,0	6,0	15,3
5	40	21,9	21,9	37,2
6	60	32,8	32,8	69,9
7	55	30,1	30,1	100,0
Total	183	100,0	100,0	

Table B-30. Frequency table of CON3R

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	3	1,6	1,6	1,6
2	5	2,7	2,7	4,4
3	20	10,9	10,9	15,3
4	42	23,0	23,0	38,3
5	24	13,1	13,1	51,4
6	59	32,2	32,2	83,6
7	30	16,4	16,4	100,0
Total	183	100,0	100,0	

Table B-31. Frequency table of CON4

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	4	2,2	2,2	2,2
2	7	3,8	3,8	6,0
3	4	2,2	2,2	8,2
4	36	19,7	19,7	27,9
5	42	23,0	23,0	50,8
6	56	30,6	30,6	81,4
7	34	18,6	18,6	100,0
Total	183	100,0	100,0	

Table B-32. Frequency table of CON5

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	1	,5	,5	,5
2	3	1,6	1,6	2,2
3	2	1,1	1,1	3,3
4	14	7,7	7,7	10,9
5	36	19,7	19,7	30,6
6	72	39,3	39,3	69,9
7	55	30,1	30,1	100,0
Total	183	100,0	100,0	

### C. PRETEST SAMPLE DEMOGRAPHICS

Table C-1. Pretest demographics of offline participants

Offline pretest data	Frequency	% of sample
Age		
18-24	3	27.27
25-34	5	45.45
35-44	2	18.18
45-54	0	0
55 or more	1	9.09
<b>Total</b>	<b>11</b>	<b>100</b>
Gender		
Female	4	36.36
Male	7	63.64
Do not want to specify	0	0
<b>Total</b>	<b>11</b>	<b>100</b>
Highest education level		
Mid-school or less	1	9.09
High school	2	18.18
Associate's degree	0	0
Bachelor's degree	3	27.27
Master's or PhD degree	5	45.45
<b>Total</b>	<b>11</b>	<b>100</b>
Marital status		
Single	8	72.73
Married	3	27.27
<b>Total</b>	<b>11</b>	<b>100</b>

Table C-1 (Cont'd). Pretest demographics of offline participants

<b>Offline pretest data</b>	<b>Frequency</b>	<b>% of sample</b>
Primary occupation status		
Not working	0	0
Student	3	27.27
Public sector	7	63.64
Private sector	1	9.09
<b>Total</b>	<b>11</b>	<b>100</b>
HH monthly income (in TRY)		
0-1,000	1	9.09
1,001-2,500	0	0
2,501-5,000	2	18.18
5,001-8,000	5	45.45
8,001-12,000	1	9.09
12,001-20,000	1	9.09
More than 20,000	1	9.09
<b>Total</b>	<b>11</b>	<b>100</b>
Weekly hours spent on the internet		
0-10	1	9.09
11-20	0	0
21-30	4	36.36
31-50	2	18.18
51-75	4	36.36
More than 75	0	0
<b>Total</b>	<b>11</b>	<b>100</b>

Table C-2. Pretest demographics of online participants

<b>Online pretest data</b>	<b>Frequency</b>	<b>% of sample</b>
Age		
18-24	1	9.09
25-34	5	45.45
35-44	4	36.36
45-54	0	0
55 or more	1	9.09
<b>Total</b>	<b>11</b>	<b>100</b>
Gender		
Female	6	54.55
Male	5	45.45
Do not want to specify	0	0
<b>Total</b>	<b>11</b>	<b>100</b>
Highest education level		
Mid-school or less	0	0
High school	1	9.09
Associate's degree	0	0
Bachelor's degree	3	27.27
Master's or PhD degree	7	63.64
<b>Total</b>	<b>11</b>	<b>100</b>
Marital status		
Single	6	54.55
Married	5	45.45
<b>Total</b>	<b>11</b>	<b>100</b>

Table C-2 (Cont'd). Pretest demographics of online participants

Primary occupation status		
Not working	1	9.09
Student	1	9.09
Public sector employee	5	45.45
Private sector employee	4	36.36
<b>Total</b>	<b>11</b>	<b>100</b>
HH monthly income (in TRY)		
0-1,000	0	0
1,001-2,500	0	0
2,501-5,000	1	9.09
5,001-8,000	2	18.18
8,001-12,000	2	18.18
12,001-20,000	4	36.36
More than 20,000	2	18.18
<b>Total</b>	<b>11</b>	<b>100</b>
Weekly hours spent on the internet		
0-10	2	18.18
11-20	2	18.18
21-30	2	18.18
31-50	1	9.09
51-75	3	27.27
More than 75	1	9.09
<b>Total</b>	<b>11</b>	<b>100</b>

**D. SAMPLE DEMOGRAPHICS (DIVIDED FOR OFFLINE AND ONLINE)**

Table D-1. Sample demographics for offline participants

<b>Offline data</b>	<b>Frequency</b>	<b>% of sample</b>
Age		
18-24	25	36.76
25-30	25	36.76
31-40	12	17.65
41-54	3	4.41
55 or more	3	4.41
<b>Total</b>	<b>68</b>	<b>100.00</b>
Gender		
Female	36	52.94
Male	31	45.59
Do not want to specify	1	1.47
<b>Total</b>	<b>68</b>	<b>100.00</b>
Highest education level		
Mid-school or less	0	0
High school	20	29.41
Associate's degree	2	2.94
Bachelor's degree	30	44.12
Master's or PhD degree	16	23.53
<b>Total</b>	<b>68</b>	<b>100.00</b>
Marital status		
Single	52	76.47
Married	16	23.53
<b>Total</b>	<b>68</b>	<b>100.00</b>

Table D-1 (Cont'd). Sample demographics for offline participants

Primary occupation status		
Not working	2	2.94
Student	29	42.65
Public sector	13	19.12
Private sector	24	35.29
<b>Total</b>	<b>68</b>	<b>100.00</b>
HH monthly income (in TRY)		
0-1,000	4	5.88
1,001-2,500	11	16.18
2,501-5,000	13	19.12
5,001-8,000	18	26.47
8,001-12,000	10	14.71
12,001-20,000	8	11.76
More than 20,000	4	5.88
<b>Total</b>	<b>68</b>	<b>100.00</b>
Weekly hours spent on the internet		
0-10	7	10.29
11-20	11	16.18
21-30	22	32.35
31-50	19	27.94
51-75	5	7.35
More than 75	4	5.88
<b>Total</b>	<b>68</b>	<b>100.00</b>

Table D-2. Sample demographics for online participants

<b>Online data</b>	<b>Frequency</b>	<b>% of sample</b>
Age		
18-24	25	21.74
25-30	60	52.17
31-40	18	15.65
41-54	8	6.96
55 or more	4	3.48
<b>Total</b>	<b>115</b>	<b>100.00</b>
Gender		
Female	49	42.61
Male	66	57.39
Do not want to specify	0	0
<b>Total</b>	<b>115</b>	<b>100.00</b>
Highest education level		
Mid-school or less	0	0
High school	21	18.26
Associate's degree	5	4.35
Bachelor's degree	62	53.91
Master's or PhD degree	27	23.48
<b>Total</b>	<b>115</b>	<b>100.00</b>
Marital status		
Single	87	75.65
Married	28	24.35
<b>Total</b>	<b>115</b>	<b>100.00</b>

Table D-2 (Cont'd). Sample demographics for online participants

Primary occupation status		
Not working	11	9.57
Student	33	28.70
Public sector employee	27	23.48
Private sector employee	44	38.26
<b>Total</b>	<b>115</b>	<b>100.00</b>
HH monthly income (in TRY)		
0-1,000	5	4.35
1,001-2,500	9	7.83
2,501-5,000	34	29.57
5,001-8,000	33	28.70
8,001-12,000	16	13.91
12,001-20,000	14	12.17
More than 20,000	4	3.48
<b>Total</b>	<b>115</b>	<b>100.00</b>
Weekly hours spent on the internet		
0-10	11	9.57
11-20	24	20.87
21-30	23	20.00
31-50	25	21.74
51-75	14	12.17
More than 75	18	15.65
<b>Total</b>	<b>115</b>	<b>100.00</b>

**E. MEASUREMENT MODEL ANALYSIS WHEN N=183, M=23  
VARIABLES**

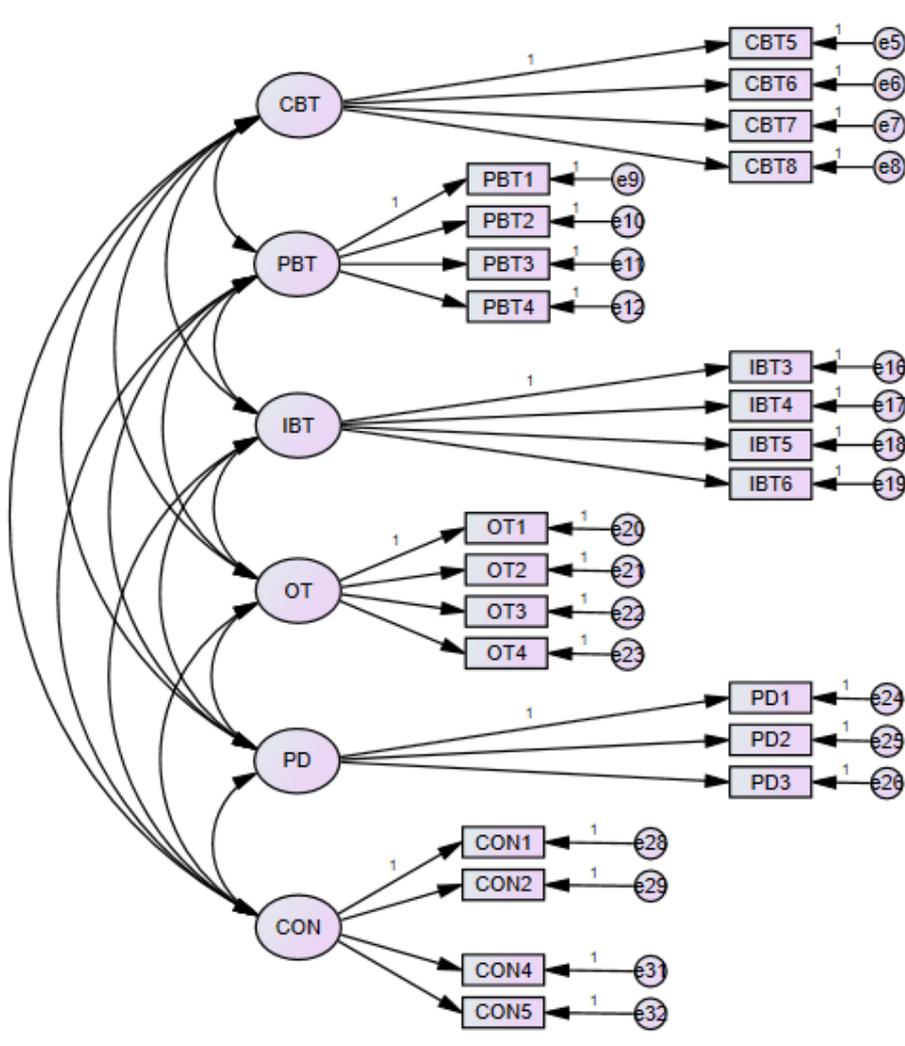


Figure E-1. Measurement model when sample size N=183, m=23 variables

Table E-1. Measurement model fit (chi-square degrees of freedom) when sample size N=183, m=23 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	61	486,144	215	,000	2,261
Saturated model	276	,000	0		
Independence model	23	2900,833	253	,000	11,466

Table E-2. Measurement model fit (root mean square residual) when sample size N=183, m=23 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,127	,816	,763	,635
Saturated model	,000	1,000		
Independence model	,694	,196	,123	,180

Table E-3. Measurement model fit (comparative fit index) when sample size N=183, m=23 variables

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,832	,803	,899	,879	,898
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table E-4. Measurement model fit (root mean square error of approximation) when sample size N=183, m=23 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,083	,073	,093	,000
Independence model	,240	,232	,248	,000

Table E-5. Mahalanobis distance table for outliers when N=183, m=23 variables

Observation number	Mahalanobis d-squared	p1	p2
95	92,220	,000	,000
154	72,910	,000	,000
49	70,486	,000	,000
67	64,503	,000	,000
60	59,443	,000	,000
128	58,569	,000	,000
91	56,083	,000	,000
98	56,071	,000	,000
68	55,214	,000	,000
70	53,270	,000	,000
40	52,388	,000	,000
90	47,653	,002	,000
168	45,795	,003	,000
14	45,015	,004	,000
75	44,519	,005	,000
99	43,591	,006	,000
101	41,622	,010	,000
74	41,615	,010	,000
41	41,353	,011	,000
172	40,678	,013	,000
103	40,216	,015	,000
73	39,917	,016	,000
13	38,440	,023	,000
35	37,202	,031	,000
159	36,784	,034	,000
78	36,349	,038	,000
56	36,348	,038	,000
31	36,045	,041	,000
42	35,708	,044	,000
170	35,586	,045	,000
52	35,365	,048	,000
107	34,938	,053	,000
32	34,743	,055	,000
76	34,684	,056	,000
141	34,459	,059	,000
66	34,422	,059	,000

Table E-5 (Cont'd). Mahalanobis distance table for outliers when N=183, m=23  
variables

Observation number	Mahalanobis d-squared	p1	p2
88	33,950	,066	,000
81	33,676	,070	,000
19	33,273	,076	,000
2	32,881	,083	,000
11	32,181	,096	,000
12	31,310	,115	,000
18	31,004	,123	,000
94	29,644	,160	,003
97	29,463	,165	,003
134	29,159	,175	,006
48	28,987	,181	,007
43	28,714	,190	,010
29	28,524	,197	,012
86	28,039	,214	,035
114	27,963	,217	,029
15	27,897	,220	,024
112	27,872	,221	,018
111	27,828	,222	,013
6	27,040	,254	,090
82	26,874	,261	,100
140	26,696	,269	,114
139	26,373	,284	,178
131	26,305	,287	,162
155	26,106	,296	,192
147	26,081	,297	,160
121	26,024	,300	,142
8	26,007	,301	,114
30	25,910	,305	,110
96	25,568	,322	,186
16	24,901	,355	,469
145	24,318	,386	,737
135	23,802	,415	,897
148	23,783	,416	,874
178	23,547	,429	,912
127	23,433	,436	,916
156	23,115	,454	,958
84	23,029	,459	,957

Table E-5 (Cont'd). Mahalanobis distance table for outliers when N=183, m=23  
variables

Observation number	Mahalanobis d-squared	p1	p2
108	22,867	,469	,966
161	22,824	,471	,959
175	22,806	,472	,947
169	22,790	,473	,932
153	22,126	,513	,992
62	21,902	,526	,996
5	21,846	,530	,995
136	21,671	,540	,997
126	21,433	,555	,998
45	21,371	,558	,998
23	20,854	,590	1,000
129	20,598	,606	1,000
167	20,356	,620	1,000
104	20,077	,637	1,000
144	19,923	,647	1,000
61	19,902	,648	1,000
1	19,707	,660	1,000
166	19,580	,667	1,000
80	19,476	,673	1,000
105	19,444	,675	1,000
173	19,411	,677	1,000
123	18,872	,709	1,000
93	18,852	,710	1,000
164	18,706	,718	1,000
146	18,637	,722	1,000
109	18,234	,745	1,000
180	18,225	,745	1,000

**F. MEASUREMENT MODEL ANALYSIS WHEN N=164, M=21  
VARIABLES**

Table F-1. Modification indices – covariances of constructs and error terms with  
sample size N=164 and m=21 variables

			<b>M.I.</b>	<b>Par Change</b>				<b>M.I.</b>	<b>Par Change</b>
<b>e19</b>	<-->	<b>OT</b>	9,903	,090	<b>e32</b>	<-->	<b>e19</b>	4,652	-,095
<b>e8</b>	<-->	<b>OT</b>	4,822	-,080	<b>e32</b>	<-->	<b>e8</b>	5,495	-,133
<b>e7</b>	<-->	<b>e19</b>	4,131	,120	<b>e32</b>	<-->	<b>e7</b>	4,913	-,103
<b>e7</b>	<-->	<b>e8</b>	6,005	,184	<b>e32</b>	<-->	<b>e18</b>	5,829	,086
<b>e12</b>	<-->	<b>e19</b>	9,577	,152	<b>e32</b>	<-->	<b>e22</b>	4,282	,053
<b>e16</b>	<-->	<b>PD</b>	5,847	,190	<b>e31</b>	<-->	<b>PBT</b>	5,824	-,099
<b>e16</b>	<-->	<b>OT</b>	6,630	-,100	<b>e31</b>	<-->	<b>e8</b>	4,186	,129
<b>e23</b>	<-->	<b>e7</b>	4,240	,074	<b>e29</b>	<-->	<b>OT</b>	6,292	,061
<b>e23</b>	<-->	<b>e6</b>	6,053	-,084	<b>e29</b>	<-->	<b>e32</b>	7,367	-,101
<b>e23</b>	<-->	<b>e10</b>	4,985	,092	<b>e28</b>	<-->	<b>OT</b>	5,552	-,049
<b>e22</b>	<-->	<b>CON</b>	11,906	,052	<b>e26</b>	<-->	<b>e7</b>	4,031	-,206
<b>e22</b>	<-->	<b>IBT</b>	8,882	-,087	<b>e26</b>	<-->	<b>e22</b>	4,158	-,116
<b>e22</b>	<-->	<b>e16</b>	7,756	-,124	<b>e25</b>	<-->	<b>CBT</b>	5,233	-,116
<b>e21</b>	<-->	<b>CON</b>	5,628	-,045	<b>e25</b>	<-->	<b>e18</b>	8,185	,136
<b>e21</b>	<-->	<b>e5</b>	4,819	,090	<b>e25</b>	<-->	<b>e29</b>	4,971	-,114
<b>e20</b>	<-->	<b>CBT</b>	4,007	,060	<b>e24</b>	<-->	<b>e18</b>	9,159	-,124
<b>e20</b>	<-->	<b>e19</b>	4,644	,076	<b>e24</b>	<-->	<b>e32</b>	4,210	-,084
<b>e20</b>	<-->	<b>e6</b>	15,783	,141					

Table F-2. Measurement model fit (chi-square degrees of freedom) when sample  
size N=164, m=21 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	58	279,098	173	,000	1,613
Saturated model	231	,000	0		
Independence model	21	2071,892	210	,000	9,866

Table F-3. Measurement model fit (root mean square residual) when sample size

N=164, m=21 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,077	,864	,818	,647
Saturated model	,000	1,000		
Independence model	,457	,236	,160	,215

Table F-4. Measurement model fit (comparative fit index) when sample size

N=164, m=21 variables

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,865	,836	,944	,931	,943
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table F-5. Measurement model fit (root mean square error of approximation)

when sample size N=164, m=21 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,061	,048	,074	,082
Independence model	,233	,224	,242	,000

Table F-6. Mahalanobis distance table for outliers when N=164, m=21 variables

Observation number	Mahalanobis d-squared	p1	p2
125	46,791	,001	,152
65	46,044	,001	,019
52	46,039	,001	,001
38	45,659	,001	,000
88	45,347	,002	,000
29	43,044	,003	,000
33	43,034	,003	,000
45	41,918	,004	,000
39	40,819	,006	,000
71	40,523	,006	,000
68	39,859	,008	,000
66	39,525	,008	,000
48	39,052	,010	,000
12	38,760	,010	,000
61	37,492	,015	,000
142	37,164	,016	,000
92	36,854	,017	,000
82	36,775	,018	,000
11	36,012	,022	,000
30	35,848	,023	,000
17	34,493	,032	,000
86	33,667	,039	,000
2	33,512	,041	,000
152	33,159	,044	,000
84	32,611	,051	,000
119	32,218	,056	,000
118	32,155	,056	,000
112	31,093	,072	,000
124	31,000	,074	,000
96	30,760	,078	,000
6	30,611	,080	,000
138	30,427	,084	,000
131	29,678	,099	,000
13	28,832	,118	,001
76	28,722	,121	,001
123	28,671	,122	,000

Table F-6 (Cont'd). Mahalanobis distance table for outliers when N=164, m=21  
variables

Observation number	Mahalanobis d-squared	p1	p2
139	28,521	,126	,000
144	28,164	,136	,001
106	28,113	,137	,000
115	27,864	,144	,000
78	27,364	,159	,002
14	27,210	,164	,002
113	27,109	,167	,001
81	27,092	,168	,001
129	26,823	,177	,001
151	26,601	,184	,002
15	26,592	,185	,001
72	26,384	,192	,001
132	26,365	,193	,001
93	26,301	,195	,001
97	25,803	,214	,002
99	25,310	,234	,009
42	25,278	,235	,006
83	25,155	,241	,006
40	24,836	,254	,013
74	24,502	,269	,025
111	24,028	,292	,070
130	23,996	,293	,055
28	23,967	,295	,042
159	23,590	,313	,087
149	23,572	,314	,067
27	23,474	,319	,064
137	23,203	,333	,098
156	23,197	,334	,074
154	22,821	,354	,144
89	22,731	,358	,138
1	22,613	,365	,141
128	22,568	,367	,121
120	21,993	,400	,320
10	21,978	,401	,273
56	21,890	,406	,265

Table F-6 (Cont'd). Mahalanobis distance table for outliers when N=164, m=21  
variables

Observation number	Mahalanobis d-squared	p1	p2
5	21,744	,414	,287
57	21,538	,427	,343
150	21,371	,437	,381
158	21,274	,442	,378
50	21,150	,450	,392
147	21,065	,455	,383
135	20,693	,478	,553
90	20,533	,488	,592
107	19,774	,536	,904
70	19,767	,536	,877
69	19,725	,539	,858
161	19,529	,551	,893
94	19,491	,554	,874
4	19,111	,578	,948
103	18,620	,610	,989
62	18,382	,625	,995
101	18,230	,634	,996
16	18,094	,643	,997
140	17,748	,665	,999
23	17,704	,668	,999
145	17,573	,676	,999
63	17,418	,685	,999
67	17,367	,689	,999
36	17,090	,706	1,000
59	17,016	,710	1,000
157	16,967	,713	1,000
35	16,141	,762	1,000
134	16,048	,767	1,000
21	15,975	,771	1,000

**G. MEASUREMENT MODEL ANALYSIS WHEN N=153, M=21  
VARIABLES**

Table G-1. Measurement model fit (chi-square degrees of freedom) when sample size N=153, m=21 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	58	263,491	173	,000	1,523
Saturated model	231	,000	0		
Independence model	21	1952,391	210	,000	9,297

Table G-2. Measurement model fit (root mean square residual) when sample size N=153, m=21 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,074	,864	,819	,647
Saturated model	,000	1,000		
Independence model	,405	,243	,168	,221

Table G-3. Measurement model fit (comparative fit index) when sample size N=153, m=21 variables

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,865	,836	,949	,937	,948
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table G-4. Measurement model fit (root mean square error of approximation) when sample size N=153, m=21 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,059	,044	,073	,158
Independence model	,234	,224	,243	,000

**H. STRUCTURAL MODEL ANALYSIS WHEN N=153, M=21  
VARIABLES**

Table H-1. Structural model fit (chi-square degrees of freedom) when sample size  
N=153, m=21 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	50	349,063	181	,000	1,929
Saturated model	231	,000	0		
Independence model	21	1952,391	210	,000	9,297

Table H-2. Structural model fit (root mean square residual) when sample size  
N=153, m=21 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,113	,818	,768	,641
Saturated model	,000	1,000		
Independence model	,405	,243	,168	,221

Table H-3. Structural model fit (comparative fit index) when sample size N=153,  
m=21 variables

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,821	,793	,905	,888	,904
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table H-4. Structural model fit (root mean square error of approximation) when  
sample size N=153, m=21 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,078	,066	,090	,000
Independence model	,234	,224	,243	,000

**I. POST-HOC STRUCTURAL MODEL ANALYSIS WHEN N=153, M=21  
VARIABLES**

Table I-1. Structural model fit (chi-square degrees of freedom) for post hoc analysis when sample size N=153, m=21 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	293,666	180	,000	1,631
Saturated model	231	,000	0		
Independence model	21	1952,391	210	,000	9,297

Table I-2. Structural model fit (root mean square residual) for post hoc analysis when sample size N=153, m=21 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,076	,850	,808	,662
Saturated model	,000	1,000		
Independence model	,405	,243	,168	,221

Table I-3. Structural model fit (comparative fit index) for post hoc analysis when sample size N=153, m=21 variables

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,850	,825	,936	,924	,935
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table I-4. Structural model fit (root mean square error of approximation) for post hoc analysis when sample size N=153, m=21 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,064	,051	,078	,041
Independence model	,234	,224	,243	,000

**J. MEASUREMENT MODEL ANALYSIS WITHOUT PD WHEN N=183,  
M=18 VARIABLES**

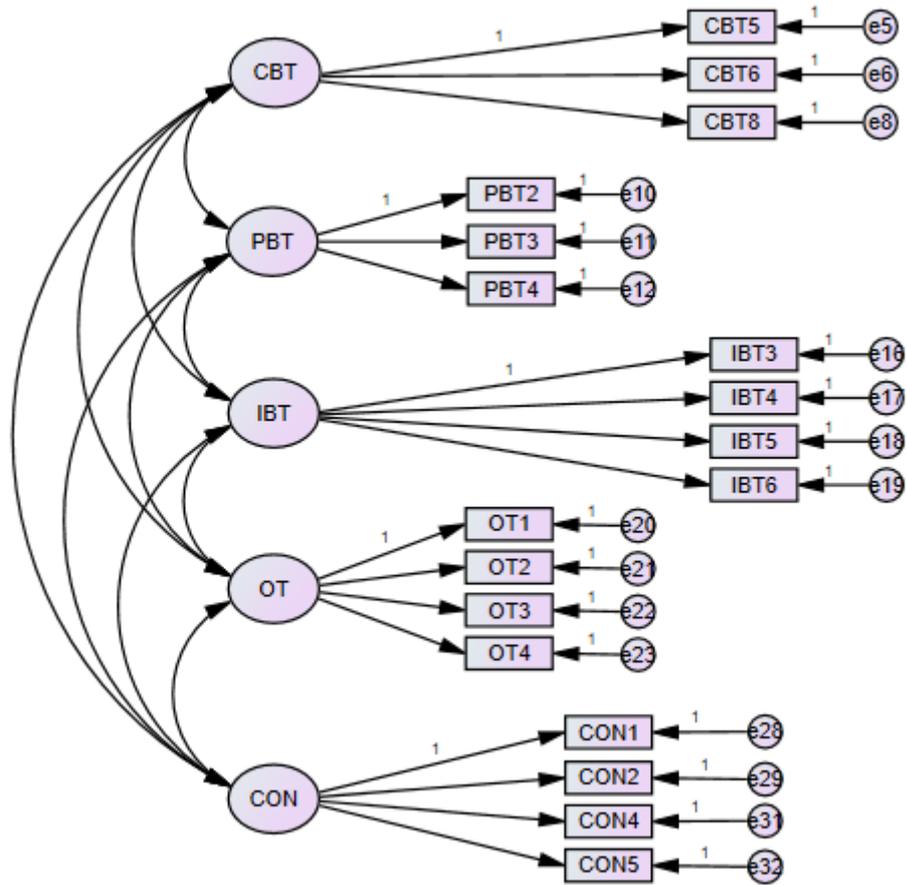


Figure J-1. Measurement model without PD when N=183, m=18 variables

Table J-1. Measurement model fit without PD (chi-square degrees of freedom)  
when sample size N=183, m=18 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	46	286,429	125	,000	2,291
Saturated model	171	,000	0		
Independence model	18	2215,292	153	,000	14,479

Table J-2. Measurement model fit without PD (root mean square residual) when sample size N=183, m=18 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,089	,855	,802	,625
Saturated model	,000	1,000		
Independence model	,667	,220	,128	,197

Table J-3. Measurement model fit without PD (comparative fit index) when sample size N=183, m=18 variables

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,871	,842	,923	,904	,922
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table J-4. Measurement model fit without PD (root mean square error of approximation) when sample size N=183, m=18 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,084	,071	,097	,000
Independence model	,272	,262	,282	,000

Table J-5. Mahalanobis distance table for outliers without PD when N=183,  
m=18 variables

Observation number	Mahalanobis d-squared	p1	p2
95	83,370	,000	,000
154	66,759	,000	,000
128	56,388	,000	,000
49	53,486	,000	,000
67	53,177	,000	,000
60	52,730	,000	,000
40	49,235	,000	,000
68	46,480	,000	,000
70	45,777	,000	,000
90	44,510	,000	,000
91	44,162	,001	,000
98	41,391	,001	,000
99	41,346	,001	,000
172	39,249	,003	,000
41	37,813	,004	,000
168	37,679	,004	,000
103	37,391	,005	,000
74	36,416	,006	,000
31	34,188	,012	,000
78	33,159	,016	,000
35	32,932	,017	,000
42	32,668	,018	,000
141	31,762	,023	,000
52	31,743	,024	,000
14	31,539	,025	,000
76	31,297	,027	,000
107	31,101	,028	,000
159	30,365	,034	,000
73	30,079	,037	,000
56	29,721	,040	,000
81	28,792	,051	,000
75	28,695	,052	,000
94	27,805	,065	,000
11	26,535	,088	,000
2	25,988	,100	,000

Table J-5 (Cont'd). Mahalanobis distance table for outliers without PD when

N=183, m=18 variables

Observation number	Mahalanobis d-squared	p1	p2
12	25,950	,101	,000
170	25,948	,101	,000
97	25,846	,103	,000
18	25,436	,113	,000
48	25,203	,119	,000
147	25,128	,121	,000
32	24,654	,135	,000
134	24,591	,137	,000
6	23,789	,162	,004
155	23,417	,175	,010
139	23,352	,177	,008
114	23,049	,189	,014
156	22,701	,202	,030
127	22,696	,203	,020
82	22,588	,207	,019
145	22,449	,213	,021
121	22,448	,213	,014
108	22,367	,216	,012
135	22,099	,228	,021
88	21,813	,240	,037
101	21,540	,253	,061
161	21,497	,255	,050
13	21,393	,260	,050
19	21,270	,266	,052
66	21,058	,276	,072
169	20,517	,305	,220
136	20,367	,313	,244
131	20,288	,317	,235
175	20,252	,319	,206
43	19,868	,340	,362
111	19,712	,349	,400
178	19,586	,357	,421
5	18,465	,425	,940
129	18,379	,431	,940
16	18,376	,431	,920

Table J-5 (Cont'd). Mahalanobis distance table for outliers without PD when

N=183, m=18 variables

Observation number	Mahalanobis d-squared	p1	p2
112	17,921	,461	,980
61	17,839	,466	,980
29	17,788	,470	,977
1	17,240	,507	,998
105	17,166	,512	,998
126	17,165	,512	,996
173	16,560	,554	1,000
93	16,441	,562	1,000
164	16,275	,573	1,000
54	16,243	,576	1,000
62	16,225	,577	1,000
10	16,135	,583	1,000
45	16,097	,586	1,000
80	16,093	,586	1,000
84	15,950	,596	1,000
146	15,682	,615	1,000
148	15,434	,632	1,000
167	15,390	,635	1,000
96	15,347	,638	1,000
30	15,312	,640	1,000
151	15,130	,653	1,000
153	14,938	,666	1,000
4	14,756	,679	1,000
17	14,623	,688	1,000
144	14,442	,700	1,000
104	14,332	,707	1,000
15	13,912	,735	1,000
25	13,583	,756	1,000
177	13,504	,761	1,000
180	13,469	,763	1,000

**K. MEASUREMENT MODEL ANALYSIS WITHOUT PD WHEN N=170,  
M=18 VARIABLES**

Table K-1. Measurement model fit without PD (chi-square degrees of freedom)  
when sample size N=170, m=18 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	46	238,837	125	,000	1,911
Saturated model	171	,000	0		
Independence model	18	1766,999	153	,000	11,549

Table K-2. Measurement model fit without PD (root mean square residual) when  
sample size N=170, m=18 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,069	,868	,819	,634
Saturated model	,000	1,000		
Independence model	,440	,256	,168	,229

Table K-3. Measurement model fit without PD (comparative fit index) when  
sample size N=170, m=18 variables

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	,865	,835	,931	,914	,929
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table K-4. Measurement model fit without PD (root mean square error of  
approximation) when sample size N=170, m=18 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,073	,059	,087	,004
Independence model	,250	,239	,260	,000

**L. STRUCTURAL MODEL ANALYSIS WITHOUT PD WHEN N=170,  
M=18 VARIABLES**

Table L-1. Structural model fit without PD (chi-square degrees of freedom) when sample size N=170, m=18 variables

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	43	250,816	128	,000	1,959
Saturated model	171	,000	0		
Independence model	18	1766,999	153	,000	11,549

Table L-2. Structural model fit without PD (root mean square residual) when sample size N=170, m=18 variables

Model	RMR	GFI	AGFI	PGFI
Default model	,074	,862	,815	,645
Saturated model	,000	1,000		
Independence model	,440	,256	,168	,229

Table L-3. Structural model fit without PD (comparative fit index) when sample size N=170, m=18 variables

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	,858	,830	,925	,909	,924
Saturated model	1,000		1,000		1,000
Independence model	,000	,000	,000	,000	,000

Table L-4. Structural model fit without PD (root mean square error of approximation) when sample size N=170, m=18 variables

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	,075	,061	,089	,002
Independence model	,250	,239	,260	,000

## M. SURVEY

### E-Ticarette Güven Üzerine Yüksek Lisans Tezi Anket Çalışması

Değerli katılımcı, Türkiye'deki tüketicilerin e-ticaret kurumlarına ve bunların internet sitelerine olan güvenin kaynaklarını belirlemek, bunun sonucunda tüketicilerin kişisel bilgilerini açığa vurma ve internet sitesi kullanımına devam etme isteğini ölçmek üzerine yürüttüğümüz yüksek lisans tezinin anketi için katılımınıza ihtiyaç duyuyoruz. Yaklaşık 8 dakika sürecek olan çalışmamıza katılımınız tamamen gönüllülük temelinde olmalıdır. Sizlerden elde edilecek bilgileri toplu halde değerlendirecek ve bilimsel yayımlarda kullanacağız. Ankette genel olarak kişisel rahatsızlık verecek sorular olmamakla birlikte, herhangi bir sebepten dolayı çalışmayı yarıda bırakma hakkınız bulunmaktadır. Katılımınızın keyifli geçmesini diler, şimdiden teşekkür ederiz.

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F. Uğur Emek (E-posta: [e181569@metu.edu.tr](mailto:e181569@metu.edu.tr))

**Yukarıdaki bilgileri okudum ve bu çalışmaya tamamen gönüllü olarak katılıyorum.**

#### Bölüm 1

Anketin ilk aşaması olan bu bölümde sizden demografik bilgilerle birlikte internet ve e-ticaret kullanımınız ile ilgili detaylar istenmektedir. Lütfen her bir soruda size uygun olan seçeneği işaretleyiniz.

- Yaşınız nedir?  
 18-24     25-30     31-40     41-54     55 ya da daha fazla
- Cinsiyetiniz nedir?  
 Kadın     Erkek     Belirtmek istemiyorum
- Şimdiye kadar tamamladığınız en yüksek eğitim seviyesi nedir?  
 Okuryazar     İlkokul     Ortaokul     Lise  
 Ön lisans     Lisans     Yüksek lisans     Doktora
- Medeni haliniz nedir?  
 Bekar     Evli
- Başlıca mesleki durumunuz nedir?  
 Çalışmıyor/İşsiz     Öğrenci  
 Kamu sektörü çalışanı     Özel sektör çalışanı

6. Hanehalkınızın aylık geliri TL cinsinden ne kadardır? (Eğer tek yaşıyorsanız yalnızca bir ayda elinize geçen para üzerinden hesaplayınız.)
- 0-1.000       1.001-2.500       2.501-5.000       5.001-8.000
- 8.001-12.000       12.001-20.000       20.000'den daha fazla
7. Haftada kaç saatinizi internette geçiriyorsunuz?
- 0-10       11-20       21-30       31-50       51-75       75'ten daha fazla

**Anketin gelecek soruları e-ticaret ile ilgilidir. Bilgi için aşağıdaki özet metni okuyabilirsiniz.**

*Elektronik ticaret ya da e-ticaret, genel olarak ticaret işlemlerinin bilgisayar veya mobil cihazlar yoluyla internet üzerinden yapılması ve bu işlemleri gerçekleştirmek için dijital ortamda para veya veri transfer edilmesi olarak tanımlanır. Anketimizin amacı doğrultusunda, firmadan tüketiciye e-ticaret üzerinde duracağız. Tüketicilerin gerçekleştirdiği e-ticaret işlemleri dijital alışveriş, çevrimiçi pazar araştırması, sipariş ve rezervasyon, elektronik banka işlemleri ve çevrimiçi satış sonrası ürün ve hizmet takibidir.*

8. E-ticaret internet sitelerini ve uygulamalarını genellikle hangi amaçla kullanıyorsunuz? (Birden fazla seçeneği işaretleyebilirsiniz)
- Alışveriş       Bankacılık       Pazar araştırması/bilgi edinme
- Sipariş/rezervasyon       Satış sonrası takibi       Diğer
9. E-ticarete hangi tür alışverişleri tercih ediyorsunuz? (Birden fazla seçeneği işaretleyebilirsiniz)
- Gıda       Elektronik ürünler       Kozmetik-cilt bakımı
- Giyecek       Ev-bahçe eşyaları       Kültür-sanat
- Turizm-seyahat       Eğitim       Sigorta hizmetleri
- Telekomünikasyon       Spor-oyun       Diğer
10. E-ticaret internet sitelerine ve uygulamalarına hangi yollardan erişiyorsunuz? (Birden fazla seçeneği işaretleyebilirsiniz)
- Masaüstü bilgisayar       Dizüstü bilgisayar       Cep telefonu
- Tablet       Diğer (Akıllı televizyon vb.)

11. Haftada kaç saatinizi e-ticaret internet sitelerinde ve uygulamalarında geçiriyorsunuz? (Lütfen hem çevrimiçi alışveriş yaptığınız saatleri hem de bu zamanlarla bağlantılı alışverişsiz aktivitelerinizi (fiyat bilgisi edinme vb.) hesaba katın.)

0-5     6-10     11-20     21-30     30'dan daha fazla

12. E-ticaret internet sitelerini ve uygulamalarını fiziksel mağaza/bankalara göre ne sıklıkla tercih ediyorsunuz? Lütfen 1-7 aralığında bir sayı ile belirtiniz. (1: hiçbir zaman, 7: her zaman)

Hiçbir zaman    

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

    Her zaman

13. Tahmini olarak e-ticaret internet sitelerinde ve uygulamalarında aylık ortalama kaç TL harcıyorsunuz?

0-100     101-500     501-1.000  
 1.001-2.500     2.500'den daha fazla

## Bölüm 2

Bu bölümde sizden istenen, daha önce tecrübe yaşadığınız bir e-ticaret alışveriş sitesini aklınızda belirlemektir. Sorular bu internet sitesi ve sitenin sahibi olan e-ticaret kurumu üzerinden hazırlanmıştır. Kolaylık olması için bazı e-ticaret şirketi örnekleri: Amazon, Yemeksepeti, Etstur, Trendyol, Migros Sanal Market, Gittigidiyor, Sahibinden, n11, Hepsiburada, Çiçeksepeti, Netflix, Steam.

**Belirlediğiniz e-ticaret sitesi:** \_\_\_\_\_

Lütfen aşağıdaki soruları belirlediğiniz bu e-ticaret şirketini ve onun internet sitesini düşünerek cevaplayınız. Sorular bu şirketin ve onun e-ticaret sitesinin özellikleri ile birlikte sizin deneyim ve düşünceleriniz ile ilgilidir. Her bir soruda 1'den 7'ye kadar olan seçenekler arasından size uygun olan seçeneği işaretleyiniz.

(1: kesinlikle katılmıyorum, 2: çoğunlukla katılmıyorum, 3: nispeten katılmıyorum, 4: kararsızım, 5: nispeten katılıyorum, 6: çoğunlukla katılıyorum, 7: kesinlikle katılıyorum)

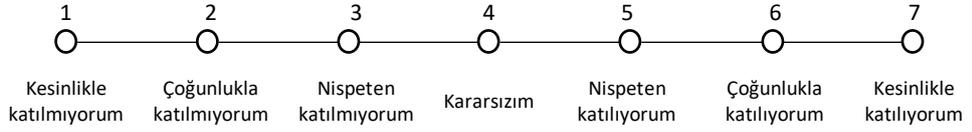
1. Genellikle bu internet sitesinde, siteyi kullanan diğer insanlar arasında popüler olan ürünleri/hizmetleri tercih ediyorum.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kesinlikle katılmıyorum	Çoğunlukla katılmıyorum	Nispeten katılmıyorum	Kararsızım	Nispeten katılıyorum	Çoğunlukla katılıyorum	Kesinlikle katılıyorum

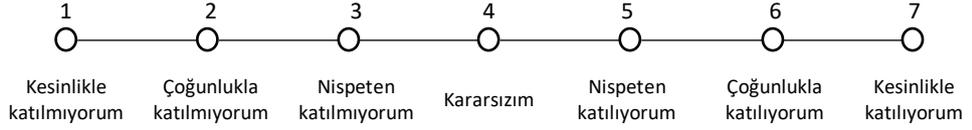
2. Kendimi bu e-ticaret kurumuna ait topluluğun bir üyesi gibi hissediyorum.

1	2	3	4	5	6	7
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kesinlikle katılmıyorum	Çoğunlukla katılmıyorum	Nispeten katılmıyorum	Kararsızım	Nispeten katılıyorum	Çoğunlukla katılıyorum	Kesinlikle katılıyorum

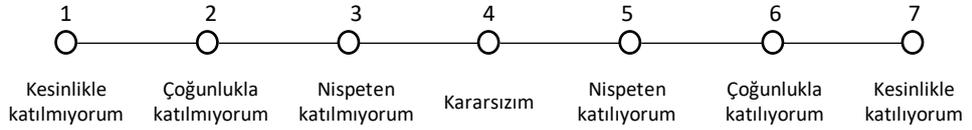
3. Bu e-ticaret şirketiyle benzer etik ve ahlaki değerlere sahip olduğumu hissediyorum.



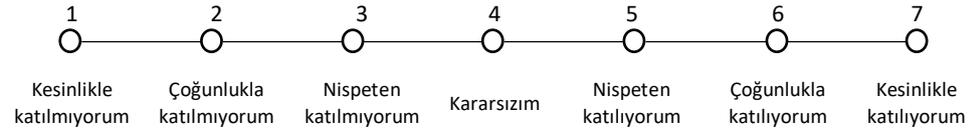
4. Bu internet sitesinden sohbet/sesli mesaj/e-posta yoluyla hızlı yardım alabiliyorum.



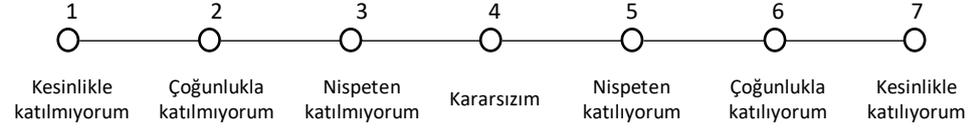
5. Bu şirketin itibarının iyi olduğunu hissediyorum.



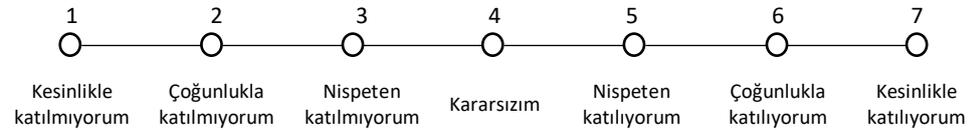
6. Bu e-ticaret kurumu hakkında çok sayıda olumlu görüş duyuyorum.



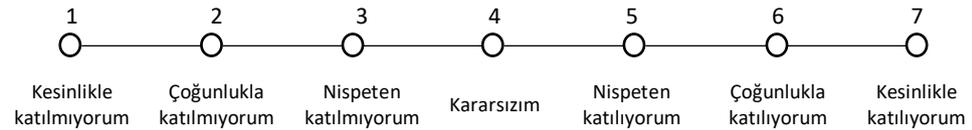
7. Bu internet sitesindeki son alışverişlerimi herhangi bir sıkıntı yaşamadan gerçekleştirdim.



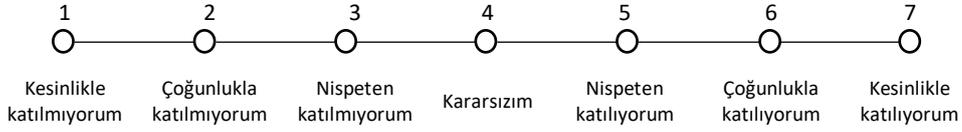
8. Bu internet sitesini uzun zamandır kullanıyorum.



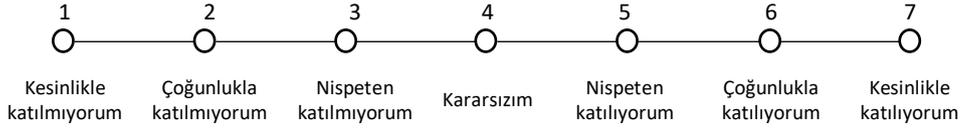
9. Bu internet sitesini kolaylıkla kullanabiliyorum.



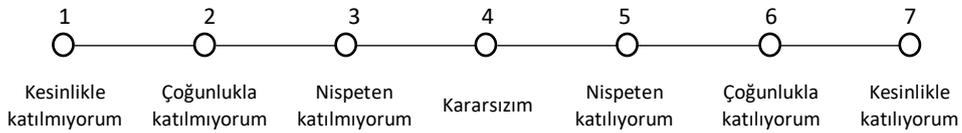
10. Bu internet sitesinin iyi tasarlandığını düşünüyorum.



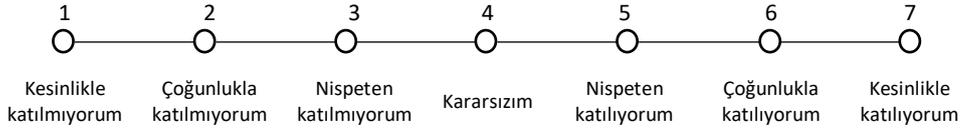
11. Bu internet sitesinin uygun fiyatlar belirlediğini hissediyorum.



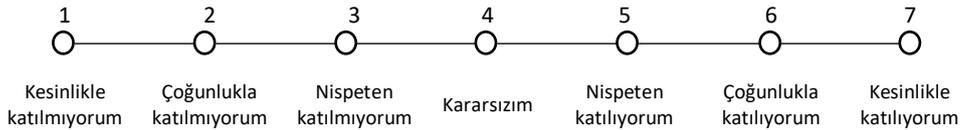
12. Bu şirketin teslimat sisteminden memnunum.



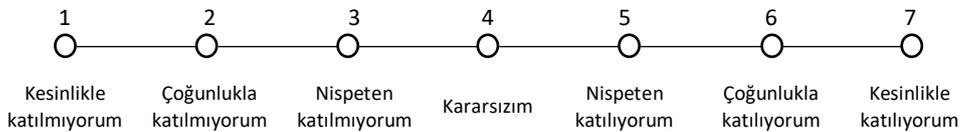
13. Bu şirketin satış sonrası işlemlerinde (ürün iadesi/değişimi vb.) iyi bir hizmet kalitesine sahip olduğunu düşünüyorum.



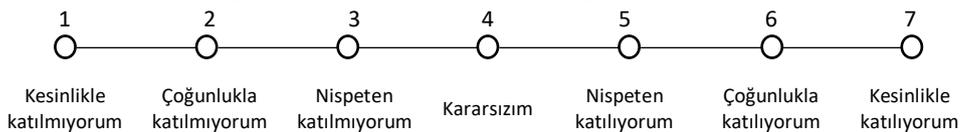
14. Bu internet sitesinin hangi güven damgası kullandığını (TRUSTe, McAfee, Norton, Visa vb.) kontrol ediyorum.



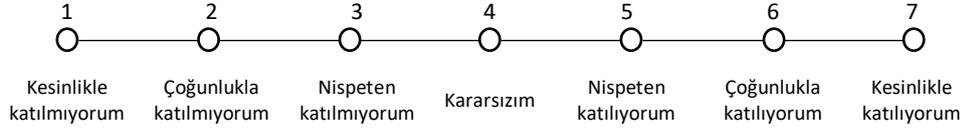
15. Bu internet sitesinin güvenlik ve gizlilik politikalarını okumaya gerek duymuyorum.



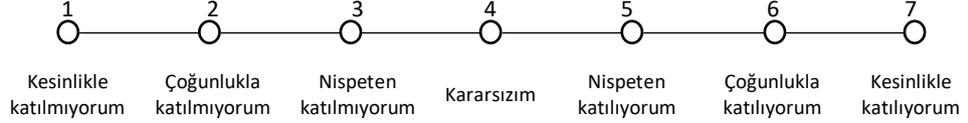
16. Bu internet sitesinin çerez kullanımı hakkında herhangi bir endişe duymuyorum.



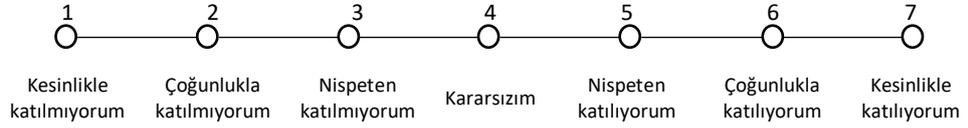
17. Bu internet sitesinin şifre koruma ile ilgili davranışlarından memnunuz.



18. Bu internet sitesinin ödeme sırasında güvenli bir ortam hazırladığını düşünüyorum.

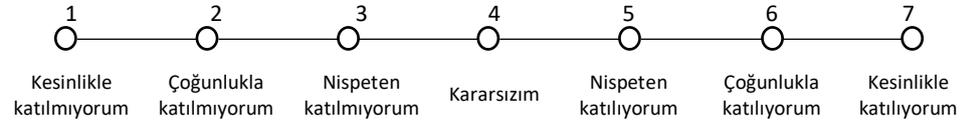


19. Bu şirketle ilgili herhangi bir veri ihlali/çalınması haberi duymadım.

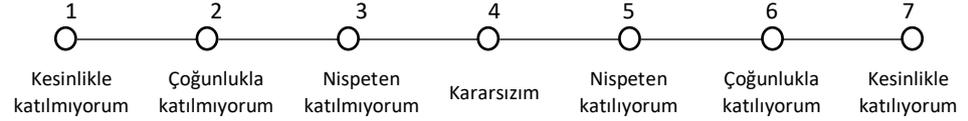


Aşağıdaki sorular, belirlemiş olduğunuz e-ticaret şirketine ve onun internet sitesine karşı duyduğunuz güven ile ilgilidir. Lütfen 1'den 7'ye kadar olan seçenekler arasından size uygun olan seçeneği işaretleyiniz.

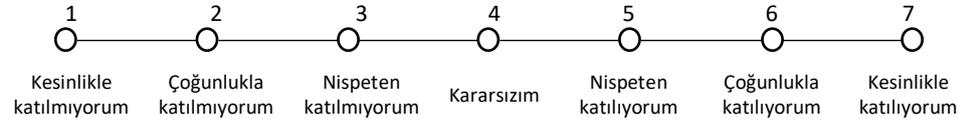
20. İnsanların genellikle bu e-ticaret kurumuna güvendiğini hissediyorum.



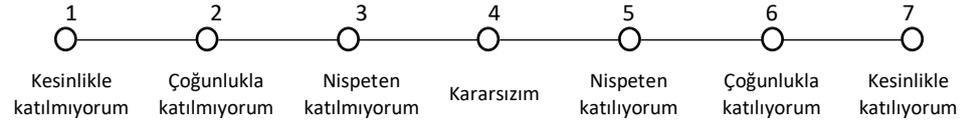
21. Bu internet sitesinin ailem veya yakınlarım için güvenilir olduğunu hissediyorum.



22. Genel itibarıyla bu internet sitesini kullanmaktan memnunuz.

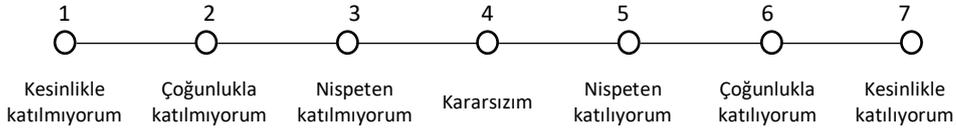


23. Genel itibarıyla bu e-ticaret şirketi benim için güvenilirdir.

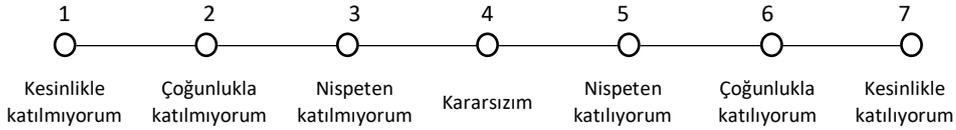


Aşağıdaki sorular, sizin e-ticaret şirketi ve onun internet sitesine olan güveninizi düşünerek kişisel bilgilerinizi paylaşma ve site kullanımına devam etme isteğiniz ile ilgilidir. Lütfen 1'den 7'ye kadar olan seçenekler arasından size uygun olan seçeneği işaretleyiniz.

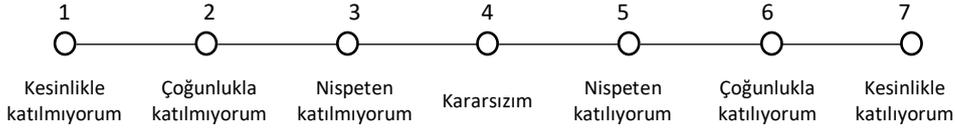
24. Bu internet sitesindeki kişisel bilgilerim hakkında endişe duymama gerek olmadığını hissediyorum.



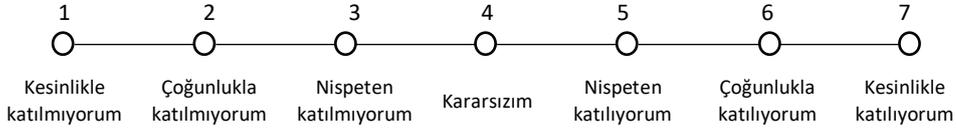
25. Bu internet sitesindeki kredi kartı bilgilerim hakkında endişe duymama gerek olmadığını hissediyorum.



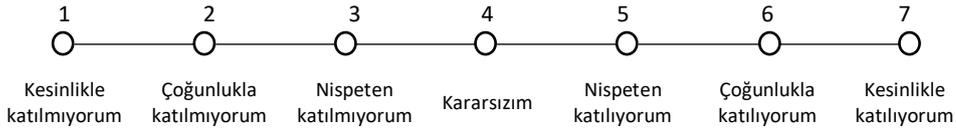
26. Gerektiğinde bu internet sitesi için daha fazla kişisel bilgi sağlamayı kabul edebilirim.



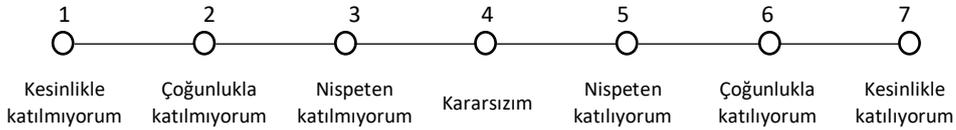
27. Bu internet sitesinin kişisel bilgilerimi diğer kuruluşlarla izinsiz olarak paylaştığını hissediyorum.



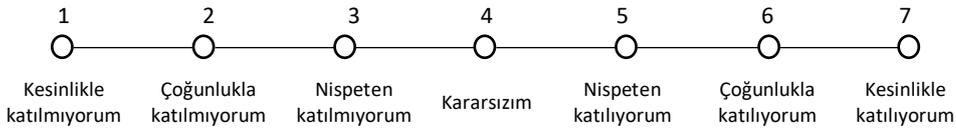
28. Bu e-ticaret sitesini kullanmaya devam edeceğim.



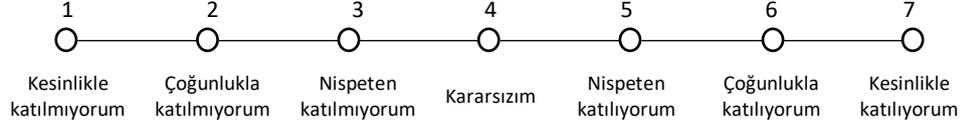
29. Bu şirket benim en beğendiğim e-ticaret kurumları arasındadır.



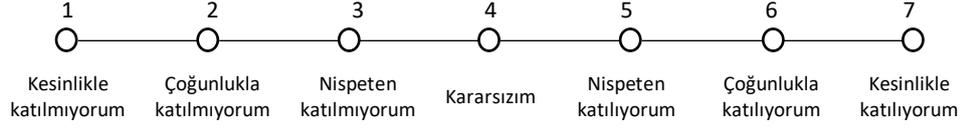
30. Yakın zaman içinde benzer bir e-ticaret kurumunun internet sitesine geçiş yapmaya niyetliyim.



31. Bu e-ticaret şirketini diğer insanlara tavsiye edeceğim.



32. Etrafımdaki insanların bu internet sitesini kullanmaya devam edeceğini hissediyorum.



Çalışmayla ilgili istek, görüş ve önerilerinizi aşağıya yazabilirsiniz (Bu bölümün doldurulması zorunlu değildir).

## N. HSEC SURVEY APPROVAL FORM / İAEK ANKET ONAY FORMU

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08 OCAK 2019

Konu: Değerlendirme Sonucu

Gönderen: ODTÜ İnsan Araştırmaları Etik Kurulu (İAEK)

İlgi: İnsan Araştırmaları Etik Kurulu Başvurusu

Sayın Forrest WATSON

Danışmanlığını yaptığınız Fikri Uğur EMEK'in "E-ticarette güven modellemesi ve toplam güvenin kişisel açığa vurma ve devamlılık üzerine etkilerinin test edilmesi" başlıklı araştırması İnsan Araştırmaları Etik Kurulu tarafından uygun görülerek gerekli onay 012-ODTÜ-2019 protokol numarası ile araştırma yapması onaylanmıştır.

Saygılarımla bilgilerinize sunarım.

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Başkan

Prof. Dr. Ayhan SOL

Üye

Prof. Dr. Ayhan Gürbüz DEMİR (4.)

Üye

Prof. Dr. Yaşar KONDAKÇI

Üye

Doç. Dr. Emre SELÇUK

Üye

Doç. Dr. Pınar KAYGAN

Üye

Dr. Öğr. Üyesi Ali Emre TURGUT

Üye

## O. TURKISH SUMMARY / TÜRKÇE ÖZET

Elektronik ticaret ya da e-ticaret kavramı ilk olarak 1960'lı yıllarda, firmalar arası veri aktarımının dijital ortamda yapılmaya başlamasıyla ortaya çıkmıştır. 1990'larda internetin yaygınlaşmasıyla birlikte e-ticaret, tüketicilerin alışveriş amacıyla kullandığı bir platform olarak da gelişmiştir. Bunun yanında, tıpkı geleneksel ticarete olduğu gibi, e-ticarete de en temel konulardan biri tüketici ile internet sitesi arasındaki güven ilişkisidir. Literatürde güven ile ilgili birçok teori üretilmiş, bu kuramlar e-ticaret kavramı için de uyarlanmış ve çeşitli modeller oluşturularak test edilmiştir. Bu modellerin önemli bir kısmında, güven kavramı web sitesi ile satın alma davranışı arasında bir köprü görevi görmektedir. Bu köprünün inşası için kayda değer bir zaman geçmesi gerekir. Fakat sonuçları da olumludur: Güvenin oluşması ile birlikte tüketici kendi kişisel bilgilerinin paylaşımı, gizliliği ve güvenliği konusunda daha az endişe duyacaktır. Öte yandan kişi, güvendiği internet sitesinden tekrar alışveriş yapmak isteyecek, siteye bir bağlılık hissedecektir. Bu kavramlar tez çalışmamızda kişisel açığa vurma ve devamlılık adı altında incelenmiştir.

Güvenin inşası boyunca, satıcı ile tüketici arasındaki ilişkiyi şekillendiren çeşitli güven öncülleri mevcuttur. Luo'ya (2002) göre, firmadan tüketiciye e-ticarete karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı olmak üzere üç ana güven öncülü mevcuttur. Bu üç terimin, tüketicilerin gizlilik endişeleri için bir çözüm oluşturacağı öne sürülmüştür. Buna karşın, güvenin bu üç ana öncülü şimdiye değin toplam güven için test edilmemiştir. Bu tez çalışmasında, tüketicilerin e-ticaretteki toplam güveninin karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı güven tarafından nasıl etkilendiğini ve e-ticaretteki toplam güvenin, kişisel bilgileri paylaşma ve web sitesi kullanımına devam etme isteğini nasıl etkilediğini ölçmek istedik. Bunun için Türk internet kullanıcılarının katılımı ile bir anket çalışması düzenledik. Anketin ve ölçümlerin sonucunda tüketicilerin e-ticaret sitelerindeki güvenini daha iyi anlamayı, güven üretim terimlerinin

öncüllerini analiz etmeyi ve Türkiye’de e-ticaret alanında yapılan akademik çalışma eksikliğini azaltmayı hedefledik.

### **E-Ticaretin Teorik Altyapısı**

Literatürde e-ticaretin ana fonksiyonuna bağlı olarak çeşitli tanımları mevcuttur. Kavramın çıkış amacı şirketler arası veri aktarımı olduğu için, eski çalışmalarda veri transferi ticari kullanımdan daha çok vurgulanmıştır. Bu tanımlar aynı zamanda e-ticaretin en büyük işlem hacmini oluşturan firmadan firmaya (B2B) e-ticaret ile daha çok ilgilidir. Öte yandan, bir diğer büyük işlem hacmi olan firmadan tüketiciye (B2C) e-ticaret için de birçok tanım mevcuttur. B2C e-ticaret genellikle tüketici ve pazarlama bakış açısına dayanmaktadır. Bu yüzden kavramın tanımları genellikle internet kullanımını ile ürün alışverişini ve devamındaki ilgili hizmetleri içerir.

Firmadan tüketiciye e-ticaretin internet kullanıcıları üzerinde birçok pratik etkisi olmuştur. Gün geçtikçe daha çok kullanıcı daha düşük maliyetler ve daha fazla zaman kazancı gibi sebeplerden dolayı geleneksel ticaretten e-ticarete geçiş yapmaktadır. Tüketiciler genel olarak istedikleri ürünü mağazalara gidip saatlerce aramak yerine bilgisayar üzerinden yapmayı çok daha pratik bulmaktadır. Bunun yanında asıl önemli olan, şirketlerin gelişen teknolojiyi kullanarak kendi müşterileri için nasıl değer yarattığıdır. Genellikle online alışveriş firmaları istenen ürünleri kolayca bulmayı sağlayan dijital kataloglar hazırlamakta, ürün veya hizmetlere tanım ve açıklamalar eklemekte, satın alım sonrası tüketicinin ilgilenebileceği benzer ürünleri tavsiye etmekte, bu sayede değer yaratmayı amaçlamaktadır. Fakat bütün bunlardan daha önemlisi, tüketici üzerinde güven oluşturabilmektir.

### **Güvenin Teorik Altyapısı**

Güven kelimesi genel olarak bir tarafın karşısındakine karşı savunmasız olmasını, diğer tarafın ise bu durumu kendi lehine kullanmaktan imtina etmesini ifade eder. Literatürde güven için üç anahtar unsur tanımlanmıştır: yetenek,

bütünlük ve yardımseverlik. Yetenek, bir kişinin ya da firmanın bir işi yapabilmek için gerekli bilgi ve yeterliğe sahip olmasıdır. Bütünlük, partnerler arası belirli standartlara uymayı, sadık kalmayı ifade eder. Yardımseverlik ise, mütevellinin karşı taraf için iyi şeyler yapma istekliliğine olan inancıdır. Bu üç ana unsuru ve baştaki tanımı düşünerek güveni e-ticaret kapsamında şu şekilde tanımlayabiliriz: Güven, tüketicinin çevrimiçi satıcının fırsatçı bir şekilde davranmayacağına ve e-ticaret ortamının risksiz işlemler sağlayacak kadar güvenli olduğuna inanmasıdır.

Genel olarak, perakendede ve internette güven birbirine benzer niteliklere sahiptir, bu yüzden ikisi için de benzer tanımlar girilmiştir. Örneğin, güven hem perakende sektöründe, hem de çevrimiçi ortamda birikimli ve etkileşimli bir özellik gösterir. Bunun yanında, ikisi arasındaki temel fark güvenilecek kişi veya kurumlardır. Çevrimdışı ortamda genellikle satıcıya güven yeterli iken, internet ortamında hem satıcıya, hem de web sitesine güvenmek gereklidir. Bu bağlamda her ne kadar benzer altyapıları kullansalar da, çevrimiçi güvenin kendine has dinamikleri mevcuttur.

### **Güven Üretim Öncülleri**

Tez çalışmamızın başında, güven üretim öncüllerinin karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı güvenden oluştuğunu belirtmiştik. Karakteristik-tabanlı güven için literatürde güvene olan eğilim kavramı vurgulanır. Tüketici, ailesine, tanıdıklarına veya web sitesinde hizmet aldığı kişilere güvenmeye eğilimlidir. Bunun için güveneceği kişide davranışsal veya etik benzerlikler arar, kişi ile arasında ortak nokta bulmaya çalışır. Süreç-tabanlı güven, daha çok tüketicilerin internet ve web sitesi kullanımı ile direkt olarak edindiği tecrübe olarak tanımlanır. Kişinin internete ve e-ticaret sitesine olan yatkınlığı ile yakından ilgilidir. Süreç-tabanlı güven ile ilgili en önemli iki terim, işlem ve deneyimdir. Bunun yanında web sitesi tasarımı ve kullanım kolaylığı gibi özellikler de bu terimin öncülleri arasındadır. Kurum-tabanlı güven ise, web sitesinin kendisi veya harici kaynak tarafından sağlanan yapısal güvenceler olarak tanımlanır. E-ticaret sitesinin kendi sağladığı güvenceler güvenlik ve gizlilik sözleşmesi, çerez

kullanımı ve şifre koruma gibi aktivitelerdir. Harici kurumlar ise internet damgaları ve ödeme güvenliği gibi güvenceler sunarak tüketicinin güvenini sağlamayı amaçlamaktadır.

Güven üretim öncüllerinin temelinde iki teori mevcuttur: sosyal alışveriş teorisi ve ilişkili pazarlama. Sosyal alışveriş teorisi, bir tarafın beklentilerinin diğer taraflarca karşılanması için gönüllü olarak yürütülen bireysel davranış olarak tanımlanabilir. En başta, bir taraf diğerine bir iyilikte bulunur, sonra ise karşı taraftan olumlu bir geri dönüş bekler. Bu muhtemel cevap planlı ya da anlaşmalı değildir. Öte yandan karşı tarafın da olumlu yönde bir yanıt vermesi iki taraf arasında bir güven ilişkisi başlatacaktır. İlişkili pazarlama ise, başarılı ilişkisel değiş tokuşların kurulmasına, geliştirilmesine ve sürdürülmesine yönelik tüm pazarlama faaliyetlerini kapsar. Tek zamanlı bir alışverişi değil, adı üstünde belli bir zaman gerektiren ilişkisel aktiviteleri içerir. İlişkisel değişim altında, işlemler geçmişlerine, bugünkü değerlerine ve bunlarla ilgili gelecek beklentilerine göre değerlendirilir.

### **Model ve Hipotezler**

Luo (2002), makalesinde güven üretim öncülleri olan karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı güveni birbirinden ayrı olarak değerlendirmişti. Biz ise bu terimlerin firmadan tüketiciye e-ticaret kapsamında beraber incelenmeye uygun olduğunu düşünüyoruz. Buna göre e-ticaretteki toplam güven, karakteristik-tabanlı, süreç-tabanlı ve kurum-tabanlı güvenin birleşimi ile elde edilebilir. Bu toplam güven ise tüketicilerin kişisel açığa vurma ve devamlılık isteğini olumlu yönde etkileyebilir.

Tez çalışmasında kullanacağımız modeli yukarıda belirtilen bu düşüncelerin ışığında oluşturduk. Modelde karakteristik-tabanlı güven (CBT), süreç-tabanlı güven (PBT), kurum-tabanlı güven (IBT), e-ticarette toplam güven (OT), kişisel açığa vurma (PD) ve devamlılık (CON) olmak üzere toplam 6 adet yapı bulunmaktadır. Bu yapılardan ilk üçü olan güven üretim öncüllerinden toplam güvene, toplam güvenden de diğer iki yapıya birer ok çizilmiştir. Toplamda 5 adet

bulunan okların her biri, iki yapı arasındaki potansiyel ilişkiyi, dolayısıyla bir hipotezi temsil etmektedir. Hipotezlerin tam hali aşağıda belirtilmiştir:

H1: Karakteristik-tabanlı güven, e-ticarete toplam güven ile olumlu bir ilişki göstermektedir.

H2: Süreç-tabanlı güven, e-ticarete toplam güven ile olumlu bir ilişki göstermektedir.

H3: Kurum-tabanlı güven, e-ticarete toplam güven ile olumlu bir ilişki göstermektedir.

H4: E-ticarete toplam güvenin, kişinin kendi bilgilerini açığa vurma isteği üzerinde olumlu bir etkisi vardır.

H5: E-ticarete toplam güvenin, kişinin web sitesini kullanmaya devam etme isteği üzerinde olumlu bir etkisi vardır.

### **Anket Çalışması**

Yukarıda tanımlanan hipotezleri test etmek için iki aşamalı bir anket çalışması düzenledik. Anketin ilk aşamasında, katılımcılardan demografik bilgileri ile birlikte internet ve e-ticaret kullanımı ile ilgili verileri topladık. İkinci aşamada ise, katılımcılardan bir e-ticaret sitesi belirlemesini, akabinde soruları yalnızca belirledikleri bu web sitesine göre cevaplamalarını istedik. Bu aşamanın soruları yedili Likert ölçeğine göre; 1 puan “kesinlikle katılmıyorum”, 7 puan ise “kesinlikle katılıyorum” olacak şekilde hazırlandı. Anket çalışmasına katılım süresi kişi başı ortalama 8 dakika olarak öngörüldü.

Ankete katılım, Türkiye’deki internet kullanıcıları tarafından gerçekleştirildi. Çalışmayı hem elden, hem de internet üzerinden yürüttük. Elden yapılan çalışma için Ankara’nın çeşitli bölgelerindeki (alışveriş merkezleri, kampüs etkinlikleri, şehir merkezi vb.) katılımcılardan veri topladık. İnternet üzerinden yürütülen çalışma için ise ülke sınırları içinde herhangi bir konum kısıtlaması yapılmadı. İnternet üzerinden yapılan çalışmada bazı sosyal medya siteleri (LinkedIn, Facebook, Instagram vb.) ve e-mail kullanarak katılımcılardan verileri edindik. 77 elden, 128 internetten olmak üzere toplam 205 katılımcıya

ulaştık. Bunların arasında eksik veya tutarsız olan 22 örnekleme eleterek toplam 183 katılımcıdan oluşan geçerli bir örneklem elde ettik.

Gerçek ankete başlamadan önce katılımcılara hem çevrimiçi hem de elden ön test gerçekleştirildi. Ön testin amacı, anketin gerçek aşamasından önce tespit edilen hataları ortadan kaldırmak ve katılımcıların anlamakta güçlük çekebileceği yerleri düzeltmek idi. Ön testimiz 11'i çevrimiçi, 11'i elden olmak üzere toplam 22 kişiyle yapıldı. Burada elde edilen bulgular gerçek ankette kullanılmadı. Ön testin katılımcılarından bir problem tespit etme şansını arttırmak maksadı ile soruları dikkatli okumalarını istedik. Sonuç olarak, bazı demografik ve internet kullanım sorularını gerçek anket için daha uygun bir formatta güncelledik.

### **Ölçüm kalemleri**

Modelde tanımlanan altı yapıya dayanarak ölçüm kalemleri geliştirilmiştir. Toplam 32 ölçüm kalemi bulunmaktadır. Bunlardan sekizi karakteristik-tabanlı güven, beşi süreç-tabanlı güven, altısı kurum-tabanlı güven, dördü e-ticarette toplam güven, dördü kişisel açığa vurma ve beşi devamlılık altındadır. Katılımcıların cevaplarındaki olası tutarsızlıkları tespit edebilmek için, bunlardan ikisi (PD4 ve CON3) tersine çevrildi.

### **Metotlar**

Ankete katılan insanlardan elde edilen verilerin, modeli ve modeldeki hipotezleri ve ölçüm kalemlerini temsil edip edemediğini görmek için ölçüm metotlarını tanımladık. Buna göre, IBM SPSS AMOS 22 kullanarak doğrulayıcı faktör analizi (CFA) ve iki aşamalı bir yapısal eşitlik modellemesi (SEM) uyguladık. SEM'in altı aşamasını Hair, Black, Babin ve Anderson (2014) tarafından yayınlanan kitaba dayanarak uyguladık. Kitaba göre, SEM'in ilk dört aşaması yöntemin ilk basamağını ve doğrulayıcı faktör analizini, kalan iki aşama ise ikinci basamağı temsil eder. Bu altı aşama aşağıdaki gibi listelenmiştir:

- I) Bireysel yapılar tanımlanır.
- II) Ölçüm modeli geliştirilir.

- III) Ampirik sonuçların alınması için çalışma tasarımı yapılır.
- IV) Ölçüm modeli geçerliliği test edilir.
- V) Eğer ölçüm modeli geçerli ise, yapısal modele dönüştürülür.
- VI) Yapısal modelin geçerliliği test edilir.

İlk iki aşama, ölçüm modelini oluşturmak için yapıları ve bunlara karşılık gelen ölçüm kalemlerini tanımlama ile ilgilidir. Bu çalışmaya özel olarak, tüm yapıların tek boyutlu olduğu varsayıldığı 6 adet yapı altında toplam 32 ölçüm öğemiz bulunmaktadır. Üçüncü aşamada, modelin örneklem büyüklüğü, yeterliliği ve buna uygun tahmin yöntemlerini inceledik. Bunun için belirlediğimiz dört adet uyum endeksi aşağıdaki gibidir:

**Ki-kare istatistiği:** Temel olarak, ki-kare ( $\chi^2$ ) istatistiği, gözlemlenen ve tahmini kovaryans matrisleri arasındaki farkı ölçer.

**RMR:** Kök ortalama karesi artıklarının kısaltmasına atıfta bulunarak, RMR artıkların ortalamasının karekökü anlamına gelen mutlak bir uyum indeksidir.

**CFI:** Karşılaştırmalı uygunluk endeksi (CFI), normal uygunluk endeksinden (NFI) geliştirilen artımlı uygunluk endekslerinden biridir, ancak karmaşık modellere NFI'dan daha duyarlıdır.

**RMSEA:** RMR gibi bir mutlak uyum indeksidir ve yaklaşık ortalama kök kare hatasını gösterir. RMSEA, bir ölçüm modelinin ilgili örnek tarafından temsil edilen bir popülasyona ne kadar iyi uyduğunu gösterir.

Bunların dışında, yapı geçerliliğini sağlamanın birkaç yolu vardır. Aşağıda kullandığımız iki adet yapı geçerliliği terimi verilmiştir:

**CR:** Yapı geçerliliğini sağlamanın ilk ve en önemli yolu, yapıdaki ölçüm değişkenlerinin iç tutarlılığını ölçen yapı güvenilirliğidir (CR).

**AVE:** Çıkarılan ortalama varyans (AVE), yapı maddeleri arasında açıklanan ortalama varyasyon yüzdesini temsil eden bir yakınsama ölçüsüdür.

## **Demografik analiz**

Bu bölümde katılımcılardan, alternatif olarak eşleştikleri aralığa göre yaşlarını, cinsiyetlerini, eğitim durumlarını, medeni durumlarını, birincil meslek durumlarını, aylık hane gelirlerini ve internette geçirdikleri haftalık saatleri belirtmeleri istenmiştir. Ayrıca, e-ticaret kullanım amaçlarını, hangi online alışveriş türlerini tercih ettiklerini ve e-ticaret web sitelerine ve uygulamalarına erişmek için kullandıkları kanalları seçmeleri istendi. Bu sorular için birden fazla alternatif seçebildiler. Son olarak, e-ticaret amacıyla harcanan haftalık internet saatlerini, 1 ila 7 arasında bir ölçekte fiziksel bir mağazaya göre e-ticaret tercihini ve e-ticarete harcanan ortalama parayı yanıtlamaları istendi.

Demografik bilgilere göre, her 10 katılımcının yaklaşık 9'u alışveriş amacıyla e-ticaret kullanıyor. Ayrıca bankacılık, sipariş verme ve pazar araştırması için e-ticareti kullanan çok sayıda insan vardır. Çeşitli alışveriş türleri arasında, örneklemin yarısından fazlası genellikle çevrimiçi platformlardan elektronik eşya, giyim, kültürel ürünler ve seyahatle ilgili şeyler almayı tercih ediyor. İnsanların çoğu e-ticaret web sitelerine ve akıllı telefonlar ve dizüstü bilgisayarlar gibi taşınabilir cihazlardan uygulamalara erişmektedir.

Katılımcıların geleneksel mağazalara gitmek için 1 ila 7 arasında e-ticaret kullanma tercihlerini gösteren tabloya göre, ortalama 4.84 olup, ortalamanın üzerinde bir negatif (solda) çarpıklık olduğunu gösterir. Ankete katılan kişilerin yaklaşık üçte ikisi bu seçenekler arasından 5, 6 veya 7 seçti. Bu, katılımcıların genellikle ticari sorunlarının çoğunu çevrimiçi olarak ele alma lehine oldukları, ancak bazı durumlarda tamamen fiziksel mağazalardan vazgeçemedikleri anlamına geliyor.

## **Veri Analizi**

Ölçüm modelimizde mevcut sorunları çözmek için farklı süreçler yürüttük. Ölçüm modeli analizinin başlangıcında, ölçüm değişkenlerinin bir kısmı çok düşük faktör yükleriyle yüklenmiştir, bu da modelden çıkarılmalarına neden olmuştur. Ancak, kalan faktörler ölçüm modelinin uygunluğunu doğrulamamıştır; bu yüzden

normal örnekle uyuşmayan herhangi bir aykırı değer bulmak için verileri kontrol etmeye geri döndük. Birkaç yinelemenin ardından, altı yapı, 21 ölçülen değişken ve N=153 örneklem büyüklüğü ile uygun sonuca ulaştık. Her ne kadar IBT ve PD arasındaki yüksek korelasyon hala mevcut olsa da, CBT ve CON arasındaki fark dramatik olarak 0,67'ye düşmüştür. Ayrıca, kalan faktör yüklerinin tümü, belirtilen gizli yapıları altında 0,50'den büyüktür. Model uyum göstergeleri de tatmin edici çıktılar vermiştir.

Yapısal modelimizde ise, model uyum endekslerinden dördte üçü kabul edilebilir aralık içindedir. Bununla birlikte, RMR'nin tatmin edici olması muhtemel değildir. Bu, yapısal model için yüksek kalıntı (hata) araçlarının değerini gösterir. Yine de, Hair ve ark. (2014), ki-kareye ek olarak serbestlik derecelerine ilaveten en az bir mutlak uygunluk endeksi ve bir artan uygunluk endeksi önermektedir. RMSEA mutlak bir uyum endeksi ve CFI artan bir uyum endeksi olduğundan, yapısal model minimum uyum standartlarını geçmektedir. Sonuç olarak, yüzde 95 anlamlılık düzeyinde, PBT ve OT arasındakiler dışındaki tüm bağımlılık ilişkilerinin daha düşük değerleri vardır. 0.05'ten PBT'nin OT ilişkisine olan p-değeri 0.062'dir, bu yüzde 95 eşliğinin hemen üzerindedir ve kısmi bir önemi gösterir.

Yapısal model ile ilgili sorunlar burada bitmiyor. Örnekten büyük bir miktarın azaltılması, faktör yüklerinden birinin 0.5'den az olmasına neden olmuştur. Ek olarak, örneklem büyüklüğünün azaltılması, PBT-OT ilişkisinin kısmen belirgin hale gelmesine neden olmuş olabilir. Bu gibi durumlarda, Hair ve ark. (2014), hipotezi teorik olmayan ilişkilerin gerçekliği sonrası testleri olarak tanımlanan geçici analizlerin yapılmasını önermektedir. Başka bir deyişle, deneysel test için yapılar arasında yeni oklar çizilebilirken, bu oklar orijinal modelde varsayılmamıştır.

Veri analizi sırasında, aralarında doğrudan bir bağlantı bulunmamasına rağmen, IBT ve PD arasındaki korelasyon 0.80'in üzerindedir. Ampirik bir test yapmak için, model çıkışı Şekil 8'de gösterildiği gibi, herhangi bir başka veri veya değişkeni kaldırmadan IBT'den PD'ye bir ok çizdik. Sonuçlar ilginç. IBT'den

PD'ye ok ile, iki yapı arasındaki ilişki 0,84 olmuştur. Öte yandan, OT ile PD arasındaki ilişki sıfırdı. PD, IBT ile bağlandığında OT ile PD arasında anlamlı bir ilişki olmadığı sonucuna varabiliriz. Başka bir deyişle, OT'nin PD üzerindeki etkisinin sadece IBT tarafından yönetildiğini öne sürüyor.

Sonuç olarak, PD'yi tutmanın model için uygun olmadığını düşünüyoruz, bu yüzden PD'siz yeni bir ölçüm ve yapısal model tasarladık. Analizin son bölümü, yapı PD'siz yeni ölçüm ve yapısal modelin geliştirilmesi ve test edilmesi ile ilgili olacaktır.

Yeni ölçüm modelimizde, tam örneklem büyüklüğü ile dört model uyum endeksinden üçü tatmin edicidir. Bununla birlikte, CBT ile CON arasında beklenmeyen bir korelasyon vardır. Bunun sebebi örneklemin aykırı olabilir, bu nedenle aykırı değerlerin böyle bir korelasyona yol açıp açmadığını kontrol etmek için başka bir Mahalanobis d-kare uzaklık tablosu inceledik.  $N = 183$  iken PD olmayan ölçüm modeli için Mahalanobis uzaklık tablosunda, toplam örneklemden 13'ünün yüksek d-kare değerine sahip olduğu bulundu, bu nedenle toplam örneklemden elimine edildiler. Yeni örnek boyutu 170 oldu.

$N = 170$  olduğunda ölçüm modeli uyumu sağlandığı için yapısal model analizine devam ediyoruz. Yapısal model çıktısı, güven üretim yapıları arasındaki korelasyonların makul olduğunu ve tüm faktör yüklerinin 0.50'den büyük olduğunu göstermektedir. Yapısal model için uygunluk indeksleri, ölçüm modelindeki değerlere yakındır. yapılar arasındaki doğrudan oklar, 0,1'in üzerindedir ve bu da yapı ilişkileri için anlam ifade eder.

## **Bulgular ve Tartışma**

Analizlerin sonucunda, tanımladığımız beş hipotezden dördü doğrulanırken, e-ticaretteki toplam güven (OT) ile kişisel açığa vurma (PD) arasında bir bağlantı tespit edilememiştir. Araştırma ile ilgili bulgularımız aşağıdaki gibidir:

Tüketicilerin, doğrudan bir şirketten veya diğer insanlardan algıladıklarına dayanarak harekete geçmeleri muhtemeldir. Ancak, tüketiciler etiği öncelikle bir güven faktörü olarak görmemektedir.

Web sitesi özellikleri, işlem ve deneyim yoluyla güven üretimini hızlandırır. Fiyat ise süreç-tabanlı güvenin önemli bir belirleyicisi değildir.

Tüketiciler, üçüncü taraf satın alma araçlarını orijinal web sitesinin bir parçası olarak görmektedir.

Bir web sitesinin şifre koruması ve güvenli ödeme gibi yapısal güvenceleri genel bir güven oluşmasına yardımcı olur. Bunun için web sitesinin daha önce bir veri ihlali yaşamamış olması da önemlidir.

Bununla birlikte, internet mühürleri, Türk tüketicilere yapısal güvence sağlamamaktadır.

Luo'nun (2002) makalesinin yayınlanmasından bu yana, güven üretim terimleri yeni öncüller kazanmıştır. Luo (2002), güven üretim terimlerinin, kurum-tabanlı güven (IBT) en muhtemel çözüm olacak şekilde, e-ticaretteki gizlilik kaygılarına bir çözüm olabileceğini öne sürmüştü. IBT'nin gizlilik konusunda diğerlerine göre daha benzer bir geçmişe sahip olduğu konusuna katılıyoruz. Fakat Luo (2002) güven üretim terimlerini ayrı ayrı analiz ederken, biz ise bunları birlikte ölçmenin önemini gösterdik.

### **Kısıtlamalar**

Bu tezde de birtakım kısıtlamalar vardır. Bir büyük sınırlama anket katılımcılarının yaş ve eğitim durumu ile ilgilidir. 25 ila 30 yaşları arasında olan ve en az bir üniversite diplomasına sahip olan insanlar anket katılım isteğimize karşı daha olumluydu. Öte yandan, anketi tamamlamak için daha yaşlı veya daha az eğitilmiş insanlar bulamadık.

Çalışmanın bir diğer kısıtı da, web satıcı hesaplarını bir e-ticaret web sitesinden ayırmadığımızdır. Bunun yerine satıcıları web sitesi ile birlikte değerlendirdik. Örneğin, bir Yemeksepeti.com kullanıcısı web sitesinde kayıtlı bir restoranla sorun yaşıyorsa, bunun tüketici ve Yemeksepeti.com arasında bir sorun olduğunu varsaydık. Bu dikkate değer bir sınırlama olmasına rağmen, çalışmayı daha kolay ve net hale getirdi. Ancak, Türkiye sınırları içerisinde güven ve web satıcıları ile ilgili daha fazla çalışmanın önemine dikkat çekiyoruz.

Son sınırlama, anketin web sitesi seçimi kısmı ile ilgilidir. Katılımcılardan sadece bir web sitesi seçmeleri ve daha sonra seçtikleri şeye göre anket sorularını cevaplamaları istenmiştir. Sadece bir web sitesinin seçilmesinin istenmesinin amacı, katılımcının, ilgili web sitesinin sahip olduğu güven üretimi öncüllerinden dolayı genel güven duygularını algılayabilip algılamayacağını görmektir.

## **Sonuç**

Bu yüksek lisans tezi, Luo'nun (2002) e-ticarette güven üretimi olarak tanımladığı güven öncüllerini kullanarak e-ticarette toplam güvenin temelini oluşturdu, bunu da kişisel açığa vurma (PD) ve devamlılık (CON) ile birleştirdi. E-ticarette genel bir tüketici güveni oluşturmanın, karakteristik-tabanlı güven (CBT), süreç-tabanlı güven (PBT) ve kurum-tabanlı güven (IBT) olan üç ana öncülü olduğunu öne sürdük. Ayrıca, bu terimlerden yaratılan toplam güvenin, bir e-ticaret web sitesinde özel bilgilerin kişisel olarak ifşa edilmesine ve web sitesini kullanma niyetinin sürmesine yol açtığını da savunduk. Modeli ve hipotezleri oluşturduktan sonra, hem çevrimiçi hem de elden yapılan bir anket gerçekleştirdik. Katılımcılardan bir e-ticaret web sitesi seçmeleri ve ardından ölçek sorularına seçtikleri web sitesine göre cevap vermeleri istendi. Toplanan verilere iki aşamalı bir yapısal eşitlik modellemesi (SEM) uygulandı, burada SEM'in ilk aşaması doğrulayıcı faktör analizine (CFA) karşılık geldi. Veriler çoğunlukla önerilen modeli destekledi, e-ticarete toplam güven ile kişisel bilgilerin açıklanması arasındaki ilişki dışında tüm hipotezlerimizin desteklendiğini gösterdi.

En sonunda, e-ticaretin hala pratik anlamda parlak bir geleceği olduğunu düşünüyoruz. Her ne kadar e-ticaret pazarı hızla büyüyor olsa da, e-ticaret şirketleri dünyadaki en büyük şirketler haline gelmesine rağmen, bu sektörde halen birçok potansiyel değişiklik ve yenilik vardır. Bununla birlikte, “güven” kelimesi, e-ticaretin geleceği için hala merkezi kalacaktır. Bu tezin, web siteleri ve tüketiciler arasında sağlam ve kalıcı ilişkiler geliştirmesi muhtemel olan e-ticarete duyulan güven araştırmalarına katkıda bulunduğunu umuyoruz.

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