INVESTIGATING ONLINE TRUST OF MULTI-CHANNEL RETAILERS: THE SOCIAL RELATIONS AND NETWORKS PERSPECTIVE

KUAN HUEI HUANG, MELVYN

B.Comp (Hons), NUS, Singapore

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SUMMARY

Although there is an increasing trend of retailers having both offline and online channels for customers to purchase from, certain multi-channel retailers have not achieved the online success they have coveted. E-commerce researchers have cited trust as the key reason why online retailers are performing dismally online. However, trust in multi-channel retailers have been generally regarded as a simple extension of trust research conducted on pure online retailers even though multi-channel retailers have characteristics which make them distinct from pure online retailers (such as customers having offline purchasing experiences with the retailer, increased availability of word-of-mouth due to the presence of physical stores). Given these distinctive characteristics, we would adopt the social relations and networks perspective and investigate online trust development in three phases: before-interaction, initial-interaction and post-initial purchase phases. This study also differentiates online trust development towards a multi-channel retailer across product types as the poor performance of certain products in online sales such as jeans and shoes has been documented by researchers without providing specific solutions.

Survey of relevant literature was performed to identify potential factors that may promote or inhibit online trust development. Based on social capital theory and previous literature, we identified factors in the social relations and networks perspective and associated these factors to the three interaction phases. Once the research models for each phase were formulated, a small scale pilot study was performed for the purpose of preliminary instrument validation. We also conducted a pre-test to classify common product categories of department store retailers into low touch and high touch product types in the customer's perspective.

Subsequently, a large scale survey on customers of department store retailers in Korea was conducted. We collected data through an online survey company in Korea. We obtained a total of 1260 responses for the two product types in the three-interaction phases. The survey data was analyzed to assess instrument validity and to test the hypotheses of each phase. Using Partial Least Squares and other statistical techniques, the relative importance of each factor across product types within each phase was determined.

The findings show that online trust development is different for all phases and across product types. During the before-interaction phase, word-of-mouth from social networks, perceived non-structural assurance and trust in the retailer's offline operations are important to form trust in the retailer's online operations, with customers placing more emphasis on perceived non-structural assurance and trust in the offline operations for high touch products. During the initial-interaction phase, word-of-mouth from social networks, trust in the retailer's offline operations, perceived non-structural assurance (only for high touch products) and website quality are significant to form trust in the retailer's online operations, with customers placing more emphasis on word-of-mouth from social networks, trust in the retailer's offline operations and perceived non-structural assurance for high touch products. During the post-initial purchase phase, satisfaction with past online purchasing outcomes was significant to build trust in the retailer's online operations. Disparity with word-of-mouth from social contacts and disparity with offline purchasing experiences have no significant moderating and main effects on trust in the retailer's online operations. Based on the findings, this study proposes significant implications for academics as well as practitioners.

Chapter 1

Introduction

Trust has been widely regarded as a critical success factor for e-commerce (Torkzadeh and Dhillon 2002). It continues to be important as customers have greater access to more information and options on the Internet, making it crucial for online retailers to earn and retain the trust of their current and prospective customers. According to Schlosser et al (2006), retailers, particularly those striving to convert visitors to customers, still face the challenge of establishing consumers' trust online. In a study on online shopping, Teo (2006) reported that respondents who do not purchase online tend to believe online retailers make more promises than keep them, make false claims and are untrustworthy. Businessweek (2001) cited that U.S. consumers bought mostly from the most trusted retailers during the 2001 holiday season. A plethora of studies on trust iterates that without trust, customers would not be comfortable transacting with retailers online (i.e. Cheung and Lee 2005, Gefen and Straub 2004, Lim et al 2006, McKnight et al. 2002a, 2002b, Walczuch and Lundgren 2004). Thus, it is imperative for retailers to build customers' trust in their online operations to enhance the probability of (re)purchase and boost the economic potential of their online channels.

According to the results of a Gartner Consulting survey, more retailers are embracing the concept of multi-channel retailing (retailing with both offline and online operations) (Direct Marketing 2002). The survey found that 33 percent of respondents have a multi-channel retailing strategy in place, 27 percent are in the internal-discussion phase and 14 percent initiated discussions with technology vendors. Retailers embrace the multi-channel retailing concept to enjoy potential synergies that can arise from the offline and online channels (Saeed et al. 2003),

save on transaction costs (Dutta et al. 1995) and to increase market coverage (Friedman and Furey 2003).

Despite these benefits and the various multi-channel strategies retailers adopted such as channel integration (i.e. Gulati and Garino 2000) and pricing (Tang and Xing 2001, Ancarani 2002), online retailing of a multi-channel retailer is not always successful (MarketingVOX 2005). E-commerce Times (2005) reported that significant opportunity gaps still remain for multi-channel retailers. According to the EMarketer (2007), multi-channel retailers still trail the likes of Amazon, Netflix and LL Bean in customer satisfaction surveys. Gulati and Garino (2000) cited that Barnes and Nobles struggled with their online sales when competing with Amazon. Other well-known multi-channel retailers such as Sears are not experiencing levels of online sales they originally expected (E-Commerce Times 2002). It is puzzling why customers feel more comfortable transacting with certain pure online retailers (such as Amazon.com) compared to multi-channel retailers (such as Barnes and Noble) although such multi-channel retailers have a longer history and a strong brand image. While there might be other factors that contribute to the lack of online success for multi-channel retailers, this study approaches this phenomenon from the trust development perspective which has long been cited as central for customers to continually make online purchases from retailers (McKnight et al. 2002a, 200b, Walczuch and Lundgren 2004, Gefen et al. 2003a, 2003b).

Motivated by such concerns, the purpose of this thesis is to shed light on the trust development process of multi-channel retailers' online operations. To understand trust development, we begin with a discussion on the definition of trust, which eventually leads to us to formally define trust.

1.1 Definition of Trust

Trust has been defined in numerous ways throughout research literature and as a result, there has been no universally accepted approach of trust (Rousseau et al. 1998). Researchers have conceptualized trust as a belief, feeling or emotion, intention and behavior (Bhattacherjee 2002, Swan and Nolan 1985). In this study, definition of trust comprises of the truster's beliefs about the trustee's attributes of integrity, benevolence and competence (McKnight et al. 2002a, 2002b) as well as the extent to which trusters feel secure and comfortable relying on the trustee (Swan et al. 1988) to embrace both cognitive and emotional dimensions of trust (Lewis and Weigert 1985; Mollering 2002), which will be expounded subsequently in this section. As evident, trust in this study is not defined as an intention or a behavior as researchers argue that these are the functional consequences of trust and should not be confounded with trust (Mollering 2002).

1.1.1 Cognitive Trust

Firstly, the cognitive component of trust is based on a process which discriminates among people and institutions that are trustworthy, distrusted and unknown. Individuals cognitively choose whom to trust and base the choice on rational reasons, constituting evidence of trustworthiness. There exists many attributes of trustworthiness in trust literature such as dependability, reliability, honesty and competence (Swan and Nolan 1985). Even though a large number of attributes have been proposed, three characteristics appear often in literature: competence, benevolence and integrity (Mayer et al. 1995). As a set of beliefs, these three perceived attributes of trustees appear to explain a major portion of trustworthiness (Bhattacherjee 2002, McKnight et al 2002b). Integrity refers to the belief that the trustee will adhere to a set of principles or rules of exchange acceptable to the truster. According to McKnight et al (2002b), reliability and dependability can

be classified under the attribute of integrity because integrity encompasses the trustee's honesty and promise keeping. Benevolence is the extent to which a trustee is believed to intend doing good to the truster. Competence refers to the truster's perception of the trustee's ability and knowledge salient to the expected behavior.

1.1.2 Emotional Trust

Trust also consists of an emotional component that is complementary to the cognitive component. The emotional content of trust contributes to the cognitive platform (Lewis and Weigert 1985), enabling the truster to take a leap from what the truster has obtained through his cognitions to form the expectations regarding the trustee's actions (Luhmann 1979). Emotional trust is an emotional security which enables a customer to go beyond the available evidence and feel assured and comfortable about relying on a trustee (Holmes 1991). This aspect of trust normally exists in close interpersonal relations which are characterized by multiple interactions (Lewis and Weigert 1985). Researchers have reasoned that emotional trust is a form of faith in closer interpersonal relations that enables a truster to go beyond the available evidence and feel assured that the trustee will display benign behavior (Holmes 1991, Rempel et al. 1985, Mollering 2002).

The feeling of emotional security and comfort develops with repeated interactions as the truster gains more experience with the trustee. Social psychological literature stressed the importance of previous experiences with the trustee in closer interpersonal relations (Holmes 1991, Lewis and Weigert 1985, Rempel et al. 1985). In closer interpersonal relations, there would be a greater degree of interactions between the truster and trustee, giving rise to the formation of emotional trust. As such, we can infer that *trust consists of both cognitive and emotional aspects only when*

the truster has previous interactions with the trustee. If the truster has no prior interaction or is interacting with the trustee for the first time, only the cognitive aspect of trust is involved.

Recent research has extended the emotional aspect of trust to examine distrust, which is essentially the lack of emotional trust. Distrust is the term coined to represent negative beliefs of the trustee that pertains to the trustee's behaviour. Some researchers recently argue that trust and distrust are conceptually different (i.e. Lewicki & McAllister & Bies 1998, McKnight & Chervany 2001, McKnight & Kacmar & Choudhury 2004), and have conceptualized distrust as fearfulness, scepticism, caution or lack of optimism in trustees (Omodei and McLennan 2000). As evident, distrust is the flip side of emotional trust (emotional security and comfort), which is consistent with previous literature. Rotter (1980) and Worchel (1979) advocate that trust and distrust are the same concept, but at two different ends of a continuum. Similarly, Omodei and McLennan (2000) reasoned that trust and distrust are two ends of the scale and measure them in that manner. Kong and Hung (2006) define disposition to trust as the general predisposition to trust or distrust other people. Thus, it is the view of this thesis that emotional trust and distrust are not conceptually different and are at two ends of a continuum.

1.1.3 Trust in the Online Context

As cognitive trust has been previously defined as the truster's perception that the trustee possesses characteristics that would benefit the truster (Mayer et al. 1995), online cognitive trust is defined as the customer's belief of the competence, benevolence and integrity of the multi-channel retailer's online operations (McKnight et al. 2002a, 2002b). Online emotional trust is

defined as the extent to which customers feel secure and comfortable when they purchase from the multi-channel retailer's online operations (adapted from Holmes 1991, Rempel et al. 1985).

In this study, we assume that trust in a technological artifact (i.e. online operations of a retailer) is not fundamentally different from interpersonal trust. This position is based on the Theory of Social Responses to Computers (Reeves and Nass 1996). Although the technological artifacts do not have intrinsic human properties, the human properties of the technological artifacts are perceived to exist by their users (Dryer 1999, Reeves and Nass 1996, Wang and Benbasat 2005). The key statement of the Theory of Social Responses to Computers (Reeves and Nass 1996) argues that people unconsciously treat computers as social actors and apply social rules to them. Reeves and Nass (1996) in their empirical studies found that people regard technological artifacts as if they were other human beings and not just tools. Individuals are polite to computers, respond to praise they receive from computers and view them as partners. Inevitably, they easily assign personalities (i.e. extraversion, helpfulness) and this phenomenon applies to computer systems with simple text interfaces (Nass et al 1997, Reeves and Nass 1996). Consistent with this theory, Sztompka (1999) reasoned that in the case of trust in a technological artifact individuals trust those who design the technology, those who operate them and those who supervise the operations.

1.2 Summary of Previous Related Work on Online Trust

Although online trust has been extensively studied by researchers, prior studies mostly focus on exploring the antecedents of trust towards pure online retailers (i.e. Gefen 2000, Jarvenpaa et al. 2000, McKnight et al. 2002a, 2002b), despite the increasing proliferation of multi-channel

retailers (Steinfield et al. 2002). Even when some studies have been conducted in the context of multi-channel retailers, they are just a simple extension of trust research done on pure online retailers, such as examining the impact of displaying the offline address on the website on trust in the retailer's online operations (Stewart 2003). However, since multi-channel retailers have multiple channels of contact with customers, trust in multi-channel retailers involves several fundamentally different characteristics compared to pure online retailers. Even before they access the retailer's website, customers are very likely to have previous purchasing experiences with the retailer's physical stores (Kuan and Bock 2007). It can also be easier for them to acquire word-of-mouth in their social networks because there may be social contacts that have purchased from both offline and online channels of the retailer. During the interaction with the retailer's website, their trust in the retailer's offline operations may influence their perceptions of the online operations of the retailer (Shankar et al. 2002). After their online purchases from the retailer, they can compare their online purchasing experience with previous offline purchasing experiences (Shankar et al. 2002). This would subsequently affect their future transactions with the retailer.

Komiak and Benbasat (2004) have suggested examining online trust development according to three phases: before-interaction, initial-interaction and repeated-interaction. The before-interaction stage is defined in this study as the period when the customers have not visited the website of the multi-channel retailer before (Komiak and Benbasat 2004) while initial-interaction stage is defined as the period of time after the customer's first visit to the retailer's website and before/until the customer makes the first online purchase (Koufaris and Hampton-Sosa 2004, McKnight et al. 2002a). We adapt the definition of repeated-interaction stage from Komiak and

Benbasat's (2004) definition to that of post-initial purchase which is defined as the period of time after the customer receives the delivered products of the first purchase from the retailer's website and makes subsequent visits to the website (Gefen et al. 2003a, Koufaris and Hampton-Sosa 2004). However, extant trust research has mainly focused on trust during the initial interaction and post-initial purchase (Gefen et al. 2003a, Kim et al. 2004, Koufaris and Hampton-Sosa 2004, McKnight et al. 2002a, 2002b, Stewart 2003). These studies implicitly assume that trust development do not take place before the customer visits the retailer's website. Kuan and Bock's (2007) study on multi-channel retailers showed that trust development do occurs even before the customer visits the website (before-interaction phase), with word-of-mouth exerting the strongest influence on trust in the retailer's online operations. Furthermore, there is no online trust study that depicts trust development according to the three phases. Gefen et al. (2003a) and Kim et al. (2004) have only compared online trust development across initial-interaction and post-initial purchase phases.

Findings from studies on online purchasing suggest that trust development also needs to be differentiated across product type. Zeng and Reinartz (2003) reported that software, music and books have a high level of online transactions in the U.S while beauty products, groceries and furniture are performing dismally online. Likewise, other studies report that customers tend to avoid purchasing jeans, shoes and perfumes online (Ang et al. 2001, Chiang and Dholakia 2003). This implies that in an online shopping context, the ways how customers interact with online retailers and form trust in the retailer's online operations can be different according to product type (Hassanein and Head 2004, Hsieh et al. 2005). Although trust is known to be context-dependent and dependent on the type of products purchased online (Fenech and O'Cass 2001),

researchers have neglected to explain why and how online trust development differs for certain product types, which is critical for online retailers. This study uses Zeng and Reinarz's (2003) typology of low touch and high touch products to differentiate online trust development. High touch products are products that require multiple senses for evaluation (sight, sound, taste, smell and touch) whereas low touch products are products that require only the sense of sight and sound.

1.3 Research Questions

With the motivations of the research in mind, we proceed to study the development of trust in multi-channel retailers' online operations. Two general research questions derived from the limitations of previous research are: How can multi-channel retailers build customers' trust in their online operations? How does the trust development process differ by product type? These questions would be useful for multi-channel retailers who are striving to acquire new customers and retain existing ones as well as offer a wide variety of products online. Since the trust development process can be broken down into three phases (before-interaction, initial-interaction and post-initial purchase), we specifically seek to examine the following questions:

1. What factors are important to determine customers' trust in the multi-channel retailers' online operations during the before-interaction, initial-interaction and post-initial purchase phases?
2. Do the factors of each phase differ in importance for low touch and high touch products?

1.4 Potential Contributions

This research seeks to benefit and contribute to both academics and practitioner arenas. The expected contributions for academics are three-fold.

- While there has been a plethora of research on pure online retailers, there are limited trust studies done on multi-channel retailers. This study contributes to the knowledge of online trust towards multi-channel retailers, which has often been viewed as a simple extension of trust in pure online retailers.
- Theoretically, it adopts a social relations and networks perspective to examine trust development towards multi-channel retailers' online operations, providing a sound basis for gaining insights into the antecedents for trust in the online operations for multi-channel retailers.
- Furthermore, this is the pioneer study to examine online trust development in all three interaction phases. This adds on to current trust literature which has only compared trust development across initial-interaction and post-initial purchase phases.
- This study goes even further to differentiate how trust development can differ during each phase across product types. The findings can help to determine the relative importance of various antecedent factors for online trust development in each phase and each product type.

To practitioners, this study may be useful in providing insights into developing online trust for before-interaction customers, initial-interaction customers and post-initial purchase customers.

- It can highlight the critical factors that influence customers' trust in the retailer's online operations for every phase. Introducing multi-channel retailing can be costly to retailers. Therefore, multi-channel retailers must thoroughly understand what matters to customers at each phase of online interaction with the retailer. In this way, they can utilize

resources to better position their online operations to attract new customers and retain existing ones.

- It can also unveil the factors that alleviate customers' concerns of purchasing certain products online. Multi-channel retailers will be able to understand what customers look for when they purchase products of a certain type.
- It can provide implications for pure online retailers attempting to implement an offline channel in the future.

1.5 Organization of the Thesis

In the opening chapter, we have highlighted the significance of trust in e-commerce. Given the growing trend of multi-channel retailers, the importance of trust in multi-channel retailers was discussed. This was followed by the definition of trust. We have also justified (based on gaps in literature and practical importance) the need to examine online trust development in three different phases of online interaction with the retailer and to distinguish online trust development across product types. Therefore, we propose studies to be carried out to develop models, operationalize the models, and empirically validate them to explain online trust development in each phase of online interaction and each product type.

The remainder of the thesis is organized as follows. The next chapter reviews the relevant literature in multi-channel retailing and trust. Chapter 3 discusses the theoretical framework of this study and presents the research models for the three interaction phases and the associated hypotheses. In Chapter 4, the research methodology is described such as the survey instrument validation and field study description. Chapter 5 shows the data analysis and results of the study.

Chapter 6 presents the interpretation of results and implications of the study for practice and research. Finally in the last chapter, we summarize the contributions and limitations of the study and discuss directions for future research.

Chapter 2

Literature Review

This chapter reviews a selection of literature relevant to our study. The first section covers the research on multi-channel retailers, which encompasses two research perspectives: retailer and customer. The next section reviews trust literature to introduce previous trust frameworks in trust development and the concept of risk in e-commerce generally as well as through different product types. The objectives of the analysis are to: (1) gain an understanding of the existing state of theory and research pertaining to multi-channel retailing and online trust development; (2) identify the various forms of trust in each phase of trust development; and (3) identify the limitations of trust literature with respect to risk and introduce various product types that portray different levels of risk in the online environment.

2.1 Research on Multi-Channel Retailing

Due to the difficulties in managing the more complicated interface between retailers and customers, multi-channel retailers have not reported tremendous success. E-Marketer (2007) reports that multi-channel retailers are trying to overcome technical and marketing issues and have enforced measures which ate into their online profits. According to E-Commerce Times (2005), significant opportunity gaps remain for the online presence of multi-channel retailers. This is evident when E-Marketer (2007) cited that almost 40% of respondents browsed online and ended up purchasing at physical stores instead. According to the director of Harris Interactive e-business intelligence, even well-known multi-channel retailers such as Walmart.com and Sears.com are not taking the Internet by storm in online sales as expected (E-Commerce Times, 2002). When Barnes and Noble moved onto the Web, it reportedly struggled

in its online sales in the competition with Amazon.com (Gulati and Garino 2000). To explain the reasons why multi-channel retailers have not been as successful as they expected in addition to pure online players' first mover advantages, low start up cost and wider product selection (Turban et al. 2002), a plethora of research has been done to examine multi-channel retailing strategies in the retailer's perspective and they can be classified into two aspects: channel integration and online channel pricing.

Researchers have recognized that the integration of offline and online capabilities is one of the reasons why multi-channel retailers are not successful (Gulati and Garino 2000, Prasarnphanich and Gillenson 2003). Retailers have made mistakes in promising multi-channel capabilities before having integrated offline and online capabilities to guarantee a seamless and satisfying experience (MarketingVOX 2005) To establish an integrated multi-channel retailing environment, assets and resources need to be shared between the offline and online channels such that there is a synergistic combination of channel functions (Prasarnphanich and Gillenson 2003, Wallace et al. 2004). Several frameworks for channel integration strategies have been cited. Gulati and Garino (2000) argued the importance of integration in four aspects: brand, management, operations and equity. Otto and Chung (2000) proposed integration techniques in eight phases of the online transaction: product service search, comparison shopping, product selection, negotiation of terms, placement of order, payment negotiation, receipt of product and customer service support. Raganathan et al. (2003) proposed an e-business transformation matrix for conventional retailers to transform to a multi-channel retailer based on innovation in application of web technology and integration of processes, resources and capabilities.

Prasarnphanich and Gillenson (2003) suggested two strategies of multi-channel integration: handling problems with goods and fulfilling customers' immediate needs.

Besides channel integration, research reveals that online pricing can be another reason for the dismal success of multi-channel retailers. Multi-channel retailers can face stiff price competition from pure online retailers as Brynjolfsson and Smith (2000) notes prices on the Internet are generally lower than conventional stores. Although the competitive pricing pressure is existent, multi-channel retailers should take into consideration the impact of their online pricing on business in their physical stores (Tang and Xing 2001). As such, Tang and Xing (2001) found out that multi-channel retailers charge prices higher than pure online retailers and the prices offered by multi-channel retailers have larger price dispersion due to their offline operations. Ancarani (2002) has suggested options for multi-channel retailers to price their products on multiple channels. They can either choose to offer different products on different channels, offer their products on all available channels at the same price or differentiate prices on products offered on all available channels. Generally, researchers recommend that pricing strategies of multi-channel retailers should be ancillary and incremental to their traditional business format.

To complement research in the retailer's perspective, studies in the customers' perspective focus on the factors that motivate customers to start purchasing from the online channel and to continue purchasing from the online channel. Noble et al. (2005) examined the impact of customers' utilitarian value on channel utilization. In the study, customers are viewed as value maximizers evaluating a purchasing situation in terms of its underlying benefits and costs and selecting a channel based on their expectations regarding how it will satisfy their needs at the

lowest costs relative to benefits (i.e. greatest overall value). When comparing Internet, catalogue and physical channels, the findings show that the online channel provided the greatest information attainment value across retail channels. Similarly, Kaufman-Scarborough and Lindquist (2002) argued that the frequency of online shopping from a multi-channel retailer will increase with the perceptions of convenience it offers for customers who have been browsing and purchasing from the online channel. Their findings show that if customers believe that online shopping brings about energy convenience (less work than going to the physical store), time convenience (less time needed to purchase products) and comparison convenience (less effort needed to compare product attributes), they will purchase regularly online from the multi-channel retailer. Wallace et al. (2004) argued that multi-channel retail customers encounter a higher level of available service outputs from both offline and online channels of the retailer. This would eventually lead to greater customer satisfaction and customer loyalty to the multi-channel retailer.

Despite studies on both perspectives, multi-channel retailers are still not performing as well as they expected. With better multi-channel retailing strategies in place, it is puzzling why customers do not feel comfortable transacting online with these retailers. This may be attributed to the focus on purchasing outcomes and the neglect of trust in the retailer's online operations. Studies investigating the motivation factors to purchase online from the multi-channel retailer focus on the customers' expected outcomes of the purchase and implicitly assume that customers already possess a certain level of trust of the retailer's online operations (which may not be true). Even if customers are aware that the benefits of purchasing online from the multi-channel retailer outweigh the costs, they would not purchase online from the retailer if they do not have trust

towards the retailer's online operations (Stewart 2003, Walczuch and Lundgren 2004). Thus, it is necessary to examine how customers form trust towards multi-channel retailers' online operations.

2.2 Research on Trust

Although trust is paramount for multi-channel retailers' online success, most research on trust in online retailers has often been limited to the context of pure online retailers (Xu et al. 2004) even though many retailers have both channels these days. The reasons why customers trust pure online retailers may not apply to multi-channel retailers. This may be attributed to the fact that most multi-channel retailers have started their physical presence first and ventured to the online channel much later. Moreover, word-of-mouth from social networks may be more readily available since they have more channels of contact with customers. The presence of multiple channels complicates retailing strategies as retailers need to contend with issues concerning with consumer behaviors on both channels (Noble et al. 2005), which may make it even more difficult for these retailers to obtain customers' trust of their online presence. Even if there are some studies on multi-channel retailers, they are a simple extension of trust research on pure online retailers (i.e. Stewart 2003, Xu et al. 2004).

2.2.1 Trust Frameworks

To understand trust development, we need to delve into previous trust frameworks (Doney and Cannon 1997, Lewicki and Bunker 1995, Zucker 1986) which can provide us insight on processes of trust formation and the types of trust that can exist. Doney and Cannon (1997) identified five cognitive processes of how trust is built. In the *calculative process*, an individual

calculates the costs and/or rewards for the trustee to engage in malfeasance. The *prediction process* relies on the individual's ability to forecast the trustee's behavior. The *capability process* involves gauging the trustee's ability to meet its obligations while *intentionality process* assesses the motivation of the trustee. Trust can also develop in the *transference process* when the truster relies on a third party's definition of another as a basis for defining trust.

Zucker (1986) has suggested that trust can be built through three central modes: process-based, characteristic-based and institution-based. In *process-based trust*, a record of prior exchanges obtained secondhand through social contacts or through direct interactions with the trustee can influence trust. In *characteristic-based trust*, entities with similar characteristics such as ethnicity are sought after under the premise that many background understandings will make the outcomes of exchange more satisfactory. In *institutional-based trust*, formal mechanisms are used to provide trust that does not rest on personal characteristics or on past history of exchange, similar to Luhmann's (1979) system trust.

Lewicki and Bunker (1995) have proposed three types of trust which are linked and sequential: calculus-based, knowledge-based and identification-based. *Calculus-based* trust brings the truster assurance grounded in the trustee's fear of punishment for violating the trust and in the rewards to be derived from preserving it. As evident, it is an ongoing economic calculation whose value is derived by comparing the outcomes resulting from creating and sustaining the relationship to the costs of maintaining or severing it. In this stage, trust is made effective by the adequacy and costs of deterrence. The next stage, *knowledge-based trust*, is founded in the other's predictability and the anticipation of behavior. The better the truster gets to know the trustee, the more accurately the truster can predict what the trustee will do. As such knowledge-

based trust relies on information in the interaction rather than benefits and deterrence. *Identification-based* trust is grounded on the full internalization of the other's desires and intentions. At the third level, trust exists because the parties effectively understand each other's wants and is developed to the point that each can effectively act for the other.

2.2.2 Forms of Trust in Online Trust Development

Using the three frameworks of trust development, how trust is formed and evolved with subsequent interactions can be investigated (see Table 2.1). Although trust-building processes of previous frameworks may exist in all three interaction phases, we argue that certain trust building processes are more influential at a particular phase. This is evident in Lewicki and Bunker (1995) when they described dominant forms of trust at various phases of experience with the trustee.

For *before-interaction* customers, the dominant modes through which trust is developed are through transference and calculative processes (Doney and Cannon 1997). Online trust can be developed through a process of transference which emphasizes trusted sources indicating to the truster that the unknown target can be trusted. Transference of trust can take place both within customers' social networks as well as their interactions with the offline presence of the retailer. This also refers to process-based trust (Zucker 1986) since second-hand information from social contacts influences trust. Moreover, customers engage in the calculative process before performing transactions with an unknown source as they are rational and want to protect their interests (Williamson 1991, 1993). During this process, customers would also base their trust on their perceptions of the deterrence measures through their relations with the retailer should things

go wrong with their online purchases. The calculative process of forming trust is also reflected in institutional-based (Zucker 1986) and calculus-based trust (Lewicki and Bunker 1995) which emphasizes on deterrence to constrain retailers' untrustworthy behavior as well as the trustworthiness of the Internet environment for consumers to trust online retailers generally.

During the *initial-interaction* stage, the main processes through which trust is formed are transference, capability, intentionality and calculative. Firstly, similar to the before-interaction stage, trust can be formed through the process of transference occurring through the offline channel (Stewart 2003) and social contacts (Granovetter 1985). Secondly, trust can be developed through the processes of capability and intentionality when customers are trying to assess whether the retailer can be trusted online during the first online interaction. This assessment is based on the characteristics of the customer's direct interaction with the website which is also consistent with Zucker's (1986) process-based trust. Thirdly, customers would also engage in the calculative process to assess the available deterrence measures and the trustworthiness of the technological structures on the website (Doney and Cannon 1997). As customers are rational and self-interested economic actors (Williamson 1991, 1993), when they perceive the costs incurred by the retailer to be high if it displays untrustworthy behavior, they would tend to place their trust in the online presence. This process is important during this stage as customers do not have prior online purchases with the website.

During the *post-initial purchase* stage, trust is formed through the prediction process in two ways. Firstly, customers are influenced by their previous purchasing experiences (both offline and online) to form perceptions about the retailer's online presence and to forecast the retailer's

ability of effectively providing products online (Doney and Cannon 1997). Customers in this phase possess Zucker's (1986) process-based trust (since trust is imputed from outcomes of previous interactions) and Lewicki and Bunker's (1995)'s knowledge-based trust (since customers are able to predict the performance of retailer in meeting their needs online). Secondly, customers can also engage in the prediction process through the outcomes encountered by their social contacts (Granovetter 1985), which may be different from their own purchasing experiences.

	Before-Interaction	Initial-Interaction	Post-Initial Purchase Interaction
Doney and Cannon (1997)	Transference Process - From social contacts - From offline channel Calculative Process - Deterrence	Transference Process -From social contacts - From offline channel Capability Process - From the interaction with the website Intentionality Process - From the interaction with the website Calculative Process - Deterrence	Prediction Process - From previous offline and online purchasing experiences - From social contacts
Zucker (1986)	Process-based - From social contacts Institutional-based - Deterrence - Trustworthiness of Internet environment	Process-based - From the interaction with website Institutional-based - Deterrence - Trustworthiness of Internet environment	Process-based - From the previous interactions with website - From social contacts
Lewicki and Bunker (1995)	Calculus-based - Deterrence	Calculus-based - Deterrence	Knowledge-based - From previous online purchasing experiences - From social contacts

Table 2.1. Forms of Trust in Each Phase of Interaction

2.2.3 Risk in E-Commerce

Risk is inevitable when a social actor who decides to trust another actor extrapolates on limited available information about the future behavior of this actor (Luhmann 1979). That is, the truster's expected outcomes are contingent upon the behaviors of the trustee (Sheppard and

Sherman 1998). Bauer (1960) has defined perceived risk as the subjective belief of loss in pursuit of a desired outcome and as such, it is recognized to be a key determinant to consumer behavior. Cunningham (1967) recognized the risk resulting from poor performance, danger, health hazards and costs. Jacoby and Kaplan (1972) classified consumers' perceived risk into the following five types of risk: physical (the risk to consumer's or other's safety), psychological (the risk that consumer's self image is lowered), social (the risk of embarrassment), financial (the risk that the product is not worth the price) and functional (the risk that the product will not perform as expected). Thus, in order for trust to operate, decision outcomes should be important but yet uncertain to the truster, manifesting an element of risk (Deutsch 1958, 1960; Moorman et al. 1992). Trust would be unnecessary if the truster can control an exchange partner's actions or has complete knowledge about those actions (Coleman 1990; Deutsch 1958, 1960).

Although risk is cited to be critical for trust to operate, online trust studies so far do not adequately reflect risk in the research design. Many studies on online vendors have analyzed trust by using fictitious websites, hypothetical scenarios and no actual purchases (e.g. Belanger et al. 2002; Gefen 2000; Gefen et al. 2003a, 2003b; Heijden et al. 2003; Jarvenpaa et al. 2000; Koufaris and Hampton-Sosa 2004; Lee and Turban 2001; Stewart 2003; Walczuch and Lungren 2004). For example, Stewart (2003) examined trust in a fictitious vendor site using respondents to engage in a hypothetical scenario of shopping for laptop computers. Heijden et al. (2003) examined trust in online retailers using a student sample *with no actual purchase*. To bridge this limitation, risk is subsequently reflected in research design of this study by using actual customers of multi-channel retailers.

Secondly, in current trust literature, the distinction between trust in the specific retailer and trust in the online shopping medium is not apparent. In the context of e-commerce, risk manifests in two forms of uncertainties for the consumer, behavioral and environmental uncertainties, due to the inherent risk of online transactions (Bensaou and Venkataman 1996). *Behavioral uncertainty* arises because online retailers can behave in an opportunistic manner by taking advantage of the spatial and temporal separation on the Internet. For example, this uncertainty can be reflected in *the specific retailer providing products* that 1) may do harm to consumers (physical risk), 2) lower consumers' self-image due to the negative effects of consumption (psychological risk), 3) bring embarrassment among social contacts due to the negative effects of consumption (social risk), 4) are not worth the cost (financial risk), 5) do not perform as expected (functional risk) and 6) the retailers providing customers' information to third parties (privacy risk - the risk that confidential information is leaked to third parties (Park et al. 2004)). With respect to behavioral uncertainty, empirical studies show that trust of the online retailer is negatively related with perceived risk of transacting with the retailer (Heijden et al. 2003, Jarvenpaa et al. 2000, Pavlou 2003).

Environmental uncertainty exists mainly because of the unpredictable nature of the Internet environment, which is beyond the full control of the online retailer or the consumer. Customers experience this type of uncertainty when 1) online retailers in general have unintentional transactional errors when processing online purchases and 2) hackers that manage to obtain their private information. Studies have also demonstrated that there is a negative relationship with trust in the Internet and perceived risk of transacting on the Internet (e.g. Corbitt et al. 2003).

With online transactions characterized by behavioral and environmental uncertainties (Bensaou and Venkataman 1996), there is a need to separate trust in a specific retailer and trust in the online shopping medium. Trust in a specific retailer can reduce the perceived behavioral uncertainty of transacting with the retailer (Luhmann 1979) while trust in the online shopping medium can reduce the perceived environmental uncertainties of performing online transactions (Luhmann 1979). For example, one may possess favorable behavioral perceptions of the retailer's online operations while he may not trust the online shopping medium, which pertains to the safety and the technical processing aspects of transactions. However, definitions of online trust involve trust in the retailer and implicitly include trust in the online shopping medium (Gefen et al. 2003a, 2003b, Pavlou 2003). Research efforts to separate trust in retailer and trust in online shopping medium have been scarce even though they refer to different forms of uncertainty. Hence, this study would separate trust of the retailer's online operations and trust of the online shopping medium in the conceptualization of trust in multi-channel retailers.

Finally, perceived risk has been merely examined with respect *to* transacting with the online retailer without the consideration of product type (i.e. Jarvenpaa et al. 2000, Pavlou 2003, McKnight et al. 2002a, 2002b). This is imperative as different product types online entail different levels of behavioral and environmental uncertainties to customers (Vijaysarathy 2002). For example, customers are likely to face greater levels of uncertainties (i.e. physical risk, financial risk, functional risk) when they buy sports shoes than when they buy a digital camera online. Previous researchers provided several typologies to classify products. Nelson (1974) classified products into experience and search products. Experience products are dominated by attributes that require the use of the product (e.g. taste, fit and smell) and cannot be fully

determined until the purchase. Search products are those with attributes that potential buyers can determine prior to purchase through second hand sources (such as size, technical specifications and colour). This classification scheme has been adopted by several other authors (i.e. Wright and Lynch 1995) and a similar classification has also been developed based on the sensory dimensions used to evaluate products (Klatzky et al. 1991, Li et al. 2002), i.e., geometric, material or mechanical products. Geometric products can be evaluated visually (such as stationery and utensils), material products evaluated with a sense of touch (such as fruits and clothing) and mechanical products are typically evaluated via interaction (such as cell phones and toys). Consistent with these classifications, Zeng and Reinartz (2003) provided a more parsimonious typology: high touch and low touch. High touch products require multiple senses for evaluation (sight, sound, taste, smell and touch). On the other hand, low touch products require only the sense of sight and sound.

High touch and *low touch* products bring different levels of behavioral and environmental uncertainties to online customers. Since the touch component cannot be conveyed in an online environment, customers are likely to face greater levels of behavioral uncertainties when purchasing *high touch* products (i.e. physical risk, financial risk, functional risk) as they do not have the opportunity to evaluate the products for themselves through touch and feel but would need to trust the retailer that the products delivered would meet their expectations. On the other hand, *low touch* products do not require direct contact for evaluation. When purchasing *low touch products* online, customers evaluating products based on search attributes such as technical specifications, colour and weight encounter lower levels of behavioral uncertainties due to the fact that such products leave little room for judgment from the retailers and the products

delivered are more likely to meet the expectations of customers. The evaluation of varying levels of uncertainties present in purchasing high touch and low touch products online leads to differences in risk perceptions of purchasing these product types.

2.2.4 Existing Theoretical Perspectives in Online Trust Research

Researchers have adopted several approaches to examine online trust. Chen and Dhillon (2003) classified existing antecedents of online trust into three categories, namely *retailers characteristics* such as size of company and reputation (Koufaris and Hampton-Sosa 2004), *user characteristics* such as the disposition to trust (Gefen 2000) and *website and Internet environment characteristics* such as security infrastructure effectiveness (Lee and Turban 2001). The most popular theories which have been used are Technology Acceptance Model (TAM) (Davis 1989) or Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975) to justify the relationship between attitude and intention. As a matter of fact, most studies mainly paid little attention to the role of social relations and networks (see Table 2.2).

Categories	Antecedents of Trust	Theories/ Frameworks
User	Disposition to trust (McKnight et al. 2002b) Familiarity (Gefen 2000) Internet savvy (Shankar et al. 2002) Satisfaction with past outcomes (Walczuch and Lundgren 2004)	Social Exchange Theory (Blau 1964), Theory of Reasoned Action (Fishbein and Ajzen 1975)
Website and Internet Environment	Ease of use (Koufaris and Hampton-Sosa 2004) Information quality (Kim et al. 2004) Privacy statements (Belanger et al. 2002) Links to trusted websites (Stewart 2003) Security control (Suh and Han 2003) Trust seals (Pennington et al. 2004) Structural assurance (McKnight et al. 2002a, 2002b) Situational anomaly (McKnight et al. 2002b)	Technology Acceptance Model (Davis 1989), Theory of Reasoned Action (Fishbein and Ajzen 1975) Zucker's Institutional Sources of Trust (1986), McKnight's (2002b) Typology of Trust
Vendor characteristics	Reputation of company (Koufaris and Hampton-Sosa 2004) Perceived size (Koufaris and Hampton-Sosa 2004) Willingness to customize (Koufaris and Hampton-Sosa 2004) Service quality (Gefen 2002, Kim et al. 2004)	Doney and Cannon's (1997) Trust Building Processes

Table 2.2. Antecedents of Trust in IS Research and Theoretical Perspectives

Although the social relations and networks perspective has been cited as vital for individuals to perform economic transactions, online trust research, thus far, has demonstrated the "undersocialized" and "oversocialized" perspectives mentioned by sociologists (Granovetter 1985). The "undersocialized" view of trust (which iterates the importance of institutional structures for trust to exist with minimal effects coming from one's social relations) has been illustrated in research on online vendors using the construct of structural assurance. It refers to belief that the needed structural conditions are present (legal and formal structures) in the Internet environment for a successful transaction (McKnight et al. 2002a, 2002b). The "oversocialized" view of trust (which argues that actors mechanically adhere to social norms, customs and individual dispositions without the effect of social relations) is reflected in the construct disposition to trust (McKnight et al. 2002b). This construct is defined as the extent to which the actor displays a tendency to be willing to depend on others across a broad spectrum of

situations and persons (McKnight et al. 2002b). As evident, how the relations in social structures affect online trust lacks theoretical and empirical analysis, which can actually harmonize undersocialized and oversocialized views.

Online trust researchers also do not provide a strong theoretical perspective of how trust evolves during the post-initial purchase phase. Kim et al. (2004)'s study showed that the antecedents of trust in the retailer's online operations are reputation, information quality, service quality and satisfaction. Gefen (2002) reported certain aspects of service quality as significantly affecting trust in the retailer's online operations. Although such studies reveal the significant influences of information sources and online purchasing experiences on online trust during the post-purchase phase, these studies do not consider the effects of inconsistent information sources (sources which contradict each other after the point of purchase). Online customers of multi-channel retailers can be exposed to or even search for information sources after their initial online purchases, which may turn out to be conflicting with their own online purchasing experiences. Furthermore, online purchasing experiences and information sources are portrayed to be exerting separate main effects on trust in the retailer's online operations. The reevaluation of trust would involve the comparison of a customer's own online purchasing experience as well as information sources. As evident, post-initial purchase trust research do not explain theoretically how customers compare their own online purchasing experiences with information sources to reevaluate their trust.

In this chapter, we have reviewed literature on multi-channel retailers and identified that researchers have focused on the online purchasing outcomes and neglected online trust development. We then proceeded to delve into trust frameworks and linked the forms of trust in

the three phases. Following that, the discourse of risk in e-commerce leads us to the need for the differentiation of trust across product types. In addition, the review of online trust research has shown that little attention has been paid on social relations and networks and how it influences trust development.

Chapter 3

Theoretical Framework

To examine online trust development, chapter 3 describes the theoretical framework as well as the research models and hypotheses within each phase of a customer's online interaction with the multi-channel retailer. The first section describes the theoretical framework, which consists of two theories. Social capital theory (Coleman 1988) provides the theoretical background in the social relations and networks perspective on the three phases of online trust development. Cognitive dissonance theory (Festinger 1957) reinforces how customers evaluate various information sources during the post-initial purchase phase. In the next section, research models and hypotheses for each phase of online interaction with the multi-channel retailer are presented.

3.1 Theoretical Background

Lewis and Weigert (1985) argue that each individual is able to trust not only because of his or her psychological make-up (cognitions and emotions) but also on the assumption that others in the social network trust as well. This leads us to the concept of the social relations and networks perspective to approach trust (Granovetter 1985). Social capital theory (Coleman 1988) suggests influences within the social relations and networks that can build trust. Cognitive dissonance theory (Festinger 1957) explains how customers use information from their social relations and networks together with their own online purchasing experience to form online trust.

3.1.1 Social Capital Theory

Social capital theory has been examined in communities (Putnam 1993), individual networks (Burt 1992), firms in their interactions with other firms (Baker 1990) and individual actors

(Belliveau et al. 1996). Generally, these studies show that social relations and networks can enhance economic outcomes, such as credit financing (Uzzi 1999) and consumer transactions (Dimaggio and Louch 1998), by increasing ***trust***. Granovetter (1985, 1992) and Coleman (1988, 1990, 1994) have argued that economic action is embedded in structures of social relations and is affected by actors' relations and the structure of the overall network of relations. As such, the concept of social capital has been advocated by sociologists to explain social action as it exists in the relations among people (Coleman 1988).

Social capital inheres in the structure of relations between actors and among actors and has been defined by Coleman (1988; 1990; 1994) as the value of any aspect of informal social organization that constitutes a productive resource for one or more actors. Likewise, Bourdieu (1986) defines social capital as the aggregate of the actual or potential resources of members of a group. Social capital theory has been applied in many contexts, ranging from rural community in shopping behavior (Miller 2001) to electronic knowledge repositories contribution behavior (Kankanhalli et al. 2005). It has been a useful theory for explaining social connections or relationships that can generate collective actions advantageous to the group (Putnam 1995). In the context of economic transactions, social capital theory views social relationships merging with commerce: consumers and retailers are linked to each other through social relationships as well as economic transactions (Granovetter 1985). Coleman (1988) has argued that trust is an outcome of social capital and there are various forms of social capital within social networks, namely: information channels, reciprocity and trustworthiness of structures, and effective sanctions. In this study, we define the relevant social groups to include *customers and their social contacts, the multi-channel retailer* and *the users of the multi-channel retailer's website*

(only during the post-initial purchase phase). According to Coleman (1988), social capital can operate at the individual level when individuals use forms of social capital within their social groups to achieve their individual goals..

A vital form of social capital to build trust is the potential for *information channels* that inheres in social relations. Sociologists understand that information is important in providing a basis for action (Coleman 1988). However, the conscious effort to obtain such information can be costly. People normally acquire information from social relations that are maintained for other purposes (Granovetter 1985; Coleman 1988). Informal channels of communication are the primary means of disseminating market information especially when such information is difficult to obtain. In the retailing context, social relations that are of relevance to customers' purchasing decisions would be customer-customer relations as well as customer-retailer relations. According to Granovetter (1985), people ordnarily seek for specific information (e.g. information of experiences from trusted informants in one's social network). Hence, individuals feel that social relations would provide information that can facilitate their course of action in the future.

Social capital theory also posits that aspects of *reciprocity* and *trustworthiness of structures* can affect the collective outcomes of social structures (Coleman 1988). Within social networks, social actors "are always doing things for each other". If A does something for B and trusts B to reciprocate in the future, B is obligated to do something for A. Reciprocal actions are said to occur at the interpersonal level (among social contacts), institutional level (among organizations) and a mix of interpersonal and institutional levels (among consumers and retailers) (Burns 1973, Riecken and Yavas 1988). At the interpersonal level, reciprocal actions can exist between

partners who are linked in some form of social relationship. At the institutional level, parties are linked by business relations and reciprocity comes in the form of quantifying the costs and benefits of maintaining the relations (Burns 1973). The relations between consumers and retailers are a mix between interpersonal and institutional levels. Consumers can reciprocate through their relations with the retailer by purchasing online from the retailer because it was trustworthy with them and others before (Bolton et al 2004). Besides reciprocity, the trustworthiness of structures within the social environment is another key for the conducting of economic transactions (Coleman 1988). It can be reflected in the existence of third party associations and technological structures. As such, reciprocity and trustworthiness of structures reflect the importance of interactions within social relations as well as the structures in the environment to determine the trustworthiness of economic actors in one's social network.

The other powerful form of social capital to influence trusting behaviors is *effective sanctions*. This is normally enforced through the social actor's relations and networks. It can facilitate economic actions (purchasing products or services) and constrains others (fraud or dishonesty of economic actors) (Coleman 1988). Effective sanctions involve actors (such as buyers) in a social network punishing other actors (such as retailers and financial institutions) who violate norms, values or goals and range from gossip and rumors in social networks to ostracism (exclusion from the network for short periods). Effective sanctions can safeguard economic transactions, for they define and reinforce the parameters of acceptable behavior by demonstrating consequences of violating norms and values. Researchers have argued that between customers and retailers, customers can enforce sanctions on retailers through direct and indirect means (private means)

(Singh 1988). Effective sanctions can reduce deviant actions that harm social actors and can facilitate economic transactions within the social network.

Based on the review of social capital theory, we derive a conceptual diagram synthesizing social capital theory (Coleman 1988) and the frameworks of trust to examine the temporal development of trust in the multi-channel retailers' context from the social relations and network perspective (see Figure 3.1).

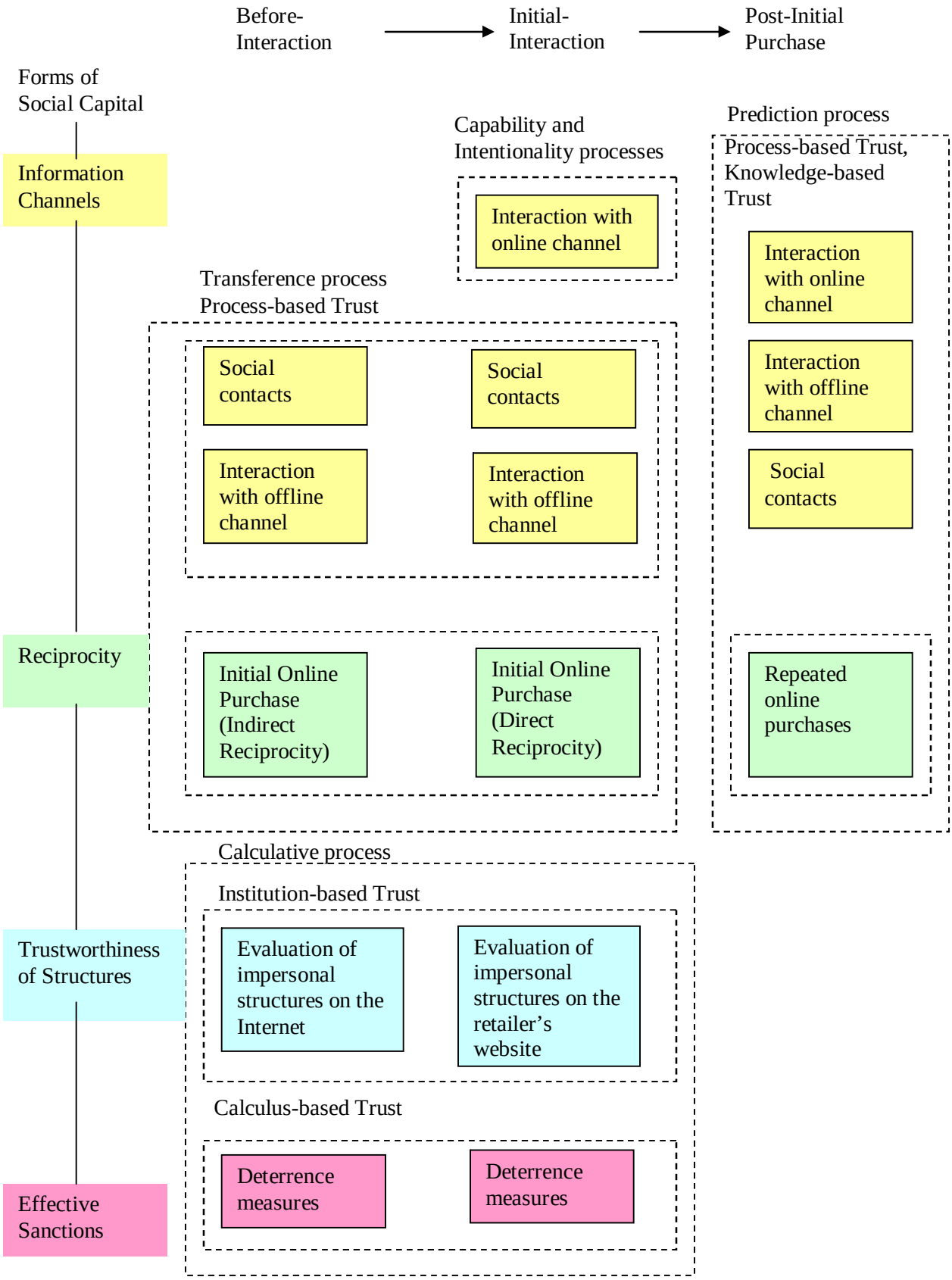

Figure 3.1. Conceptual Diagram of the Interaction Stages

During the before-interaction stage, customers do not have any interaction with the retailer's website. Transference can be a means by which trust in an entity can be established via a trusted source before one has any interaction with the entity (Doney and Cannon 1997). Therefore, they have to rely on indirect information. There are two types of indirect information channels available within the customers' social relations and networks. Firstly, specific information can be obtained from customers' trusted social contacts (Granovetter 1985) in the form of online purchasing experiences. Secondly, their offline interactions with the multi-channel retailer provides another mode of transference and through their social relations with the offline presence of the retailer, the retailer's online traits and intentions can be inferred (Yamagishi and Yamagishi 1994). Through these two information channels, the trust formed is process-based (Zucker 1986). Indirect reciprocity takes place in the form of intention of initial online purchase from the retailer since the retailer has been proven to be trustworthy in their own offline purchasing experiences and their social contacts' online purchasing experiences. Trust is also formed using the calculative process (Doney and Cannon 1997) with customers' perceptions of the impersonal structures on the Internet and the deterrence measures on the retailers (Lewicki and Bunker 1995) if there are problems with their online purchases.

Once customers enter into the initial-interaction stage, they interact with the retailer's website for the first time. In addition to the antecedents derived in the before-interaction, this interaction results in an additional information channel: interaction with the website. Customers engage in the capability and intentionality processes through the direct assessment of the retailer's website's quality (Doney and Cannon 1997) during the first online interaction. In this way, customers are able to infer information related to the ability of the retailer to effectively provide

products online and the online motivations of the retailer (Yamagishi and Yamagishi 1994). As the assessment of website quality is rooted in the customer's direct interaction of the website, this antecedent is also process-based (Zucker 1986). Customers can reciprocate directly by making an initial online purchase from the retailer since the retailer has demonstrated its trustworthiness during the website navigation. In continuing with the calculative process initiated during the before-interaction stage, customers would evaluate the impersonal structures on the website to ensure a successful transaction. Being a form of institution-based trust (Zucker 1986), the impersonal structures on the retailer's website can also enhance the customers' trustworthiness perceptions of the retailer's online operations (Pennington et al. 2004). They would also look for the specific details of the deterrence measures they can impose on the retailers (Lewicki and Bunker 1995) if there are problems with their online purchases.

In the post-initial purchase phase, the dominant process which customers' engage in to influence their trust is the prediction process (Doney and Cannon 1997) and the form of trust customers have is knowledge-based and identification-based (Lewicki and Bunker 1995). That is, they rely on their previous interactions with the online channel (online purchasing experiences), which is a form of direct information channel and knowledge-based trust (Granovetter 1985, Lewicki and Bunker 1995) that provides specific information to forecast the online behavior of the retailer and thus affecting their trust of the multi-channel retailer's online operations. Besides their own online purchasing experiences, customers would also rely on their social contacts' experiences and their interactions with the offline channel (offline purchasing experiences) to further enhance their prediction of the retailer's online behavior and form knowledge-based trust (Granovetter 1985, Lewicki and Bunker 1995) These two information channels are also process-based

(Zucker 1986) as they require interactions within the customers' social relations and networks. Reciprocity operates when customers continue to purchase from the retailer's website as the retailer has proven to be trustworthy with their previous online purchases.

3.1.2 Cognitive Dissonance Theory

Cognitive dissonance theory (Festinger 1957) has been used in consumer behaviour literature to explain customers' cognitive reevaluations after their purchases (Cohen and Goldberg 1970). The theory advocates that a person has various cognitive elements: the knowledge of himself, the knowledge of his environment, his attitudes, his opinions and past behaviour. If one cognitive element follows logically from another, they are said to be consonant with one another. They are dissonant to each other if one does not follow logically from the other. In consumer behaviour literature, dissonance is more pronounced when the purchase decision is important and the consumer is exposed to new information not available at the time of decision making which is contradictory to his experience and/or the information he already has (Oshikawa 1969, Soutar and Sweeney 2003). Dissonance reduction occurs to assist the individual to purchase in a more effective and consistent manner. Since cognitive dissonance requires customers to have prior online purchases from the multi-channel retailer, the cognitive dissonance theory is only applicable during the post-initial purchase phase.

Although cognitive dissonance theory does not specify the mode of dissonance reduction, it suggests that there are several possible ways to reduce dissonance (Oshikawa 1969). Attitude change, opinion change, seeking and recall of consonant information, avoidance of dissonant information, perception distortion and behavioural changes are some of the common ways to

lessen dissonance (Brehm and Cohen 1962). However, many researchers argue that individuals would seek cognitive reevaluations after their purchase, reevaluating positively when they encountered positive discrepant evidence and negatively when they encountered negative discrepant evidence (Cohen and Goldberg 1970, Santos and Boote 2003). Sweeney et al. (2000) and Kassarjian and Cohen (1965) argued that customers would want to determine whether they have made a wise purchasing decision after the purchase since they often face uncertainty pertaining to the wisdom of the purchase. For example, if a customer purchased a particular product, he or she may face dissonance on why he/she did not purchase alternative products instead which are also similar (or even better) in attractiveness.

After online purchases from a particular multi-channel retailer, it is very possible that customers experience dissonance on why they did not purchase from other online retailers or why they did not continue purchasing from a particular online retailer when they encounter discrepant post-purchase information sources. Cognitive reevaluations of trust by online customers are likely to occur for two reasons. Firstly, online purchases are perceived to carry greater risk compared to offline purchases (Bensaou and Venkataman 1996). Customers are interested to know if the multi-channel retailer is trustworthy to handle their subsequent online purchases. Secondly, there may be many other alternative online retailers of similar trustworthiness (or even better) to purchase their products from. Customers may subsequently regret their decisions to trust an online retailer when there are many other online retailers which are more trustworthy to handle their online purchases.

Despite the fact that cognitive dissonance requires certain conditions to arise, cognitive dissonance research has neglected to uphold the integrity of a realistic setting to invoke dissonance (Soutar and Sweeney 2003). Previous literature has demonstrated cognitive dissonance in artificial and trivial situations (i.e. Cohen and Goldberg 1970, Korgaonkar and Moschis 1982). Such situations reflect decision conflict rather than decision dissonance, since the conditions were not important due to the artificiality of the experiments. The participants were also not exposed to contradictory evidence after the decision was made (Korgaonkar and Moschis 1982). Extant studies on cognitive dissonance largely focused on students, who do not necessarily represent a population experiencing dissonance. Thus, we argue that it is imperative for this study to investigate whether cognitive dissonance occurs during the post-initial phase using actual online customers of a multi-channel retailer.

3.2 Models and Hypotheses

Based on our conceptual diagram, research models (see Figures 3.2, 3.3 and 3.4) are developed to examine customers' trust in the online channel of multi-channel retailers in the **before-interaction, initial-interaction** and **post-initial purchase** phases. The antecedents of trust in the online operations for the three stages of interaction lie in four categories: information channels, reciprocity, trustworthiness of structures and effective sanctions according to the social capital theory which emphasizes the social relations and networks perspective and supplemented by other prior studies. Although all the social capital categories may exist in the three interaction phases, we argue that certain trust building processes are more influential at a particular phase. As Lewicki and Bunker (1995) described dominant forms of trust at various phases of experience with the trustee, we examined the influence of dominant social capital categories on trust.

3.2.1 Before-Interaction Phase

The before-interaction phase is defined to be the period when the customers have not visited the website of the multi-channel retailer before (Komiak and Benbasat 2004). The research model of this stage is presented in Figure 3.2. The dependent variable of interest to multi-channel retailers is the intention of online purchase which is defined as the likelihood that a customer will purchase from the retailer's website (Fishbein and Ajzen 1975).

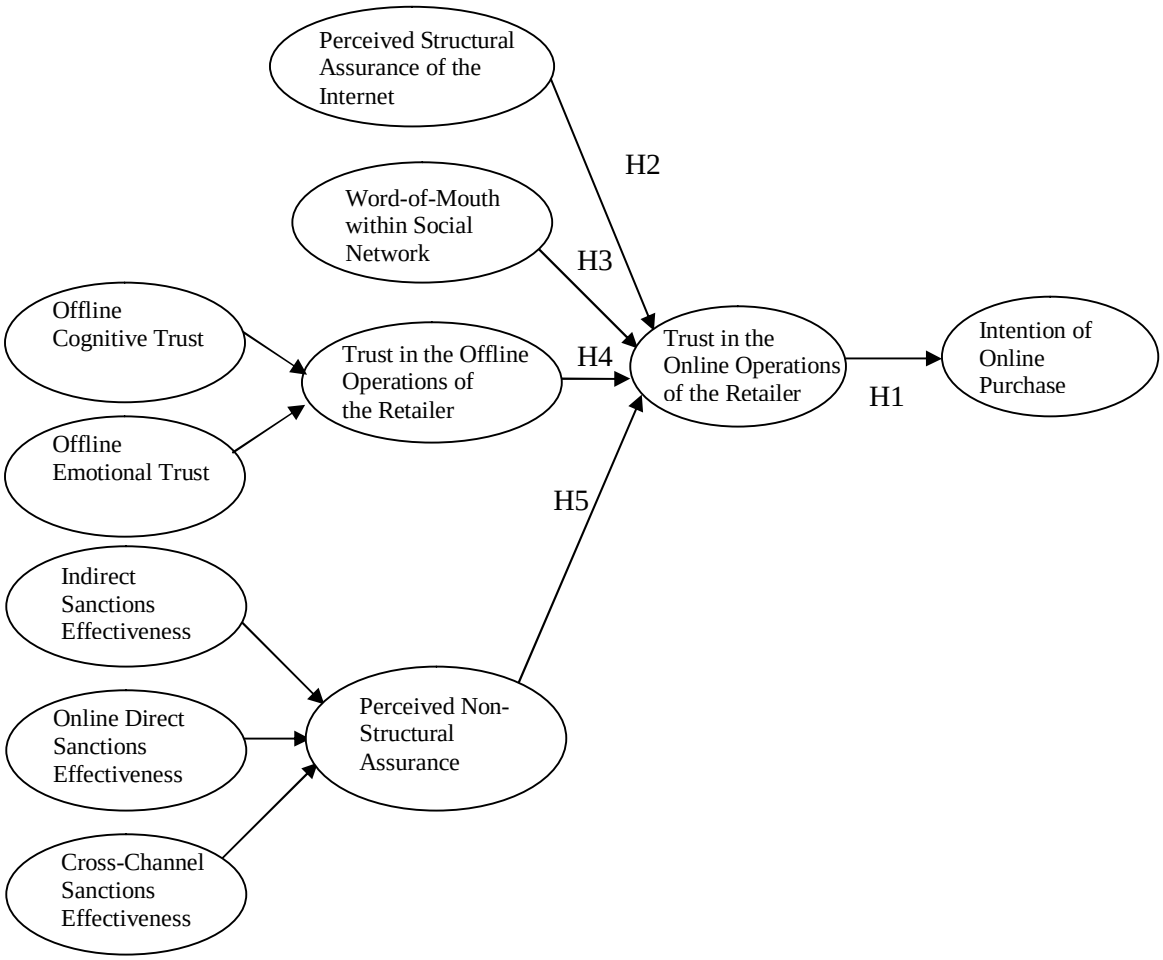

Figure 3.2. Research Model for the Before-Interaction Phase

As trust has been previously defined as the truster's perception that the trustee possesses characteristics that would benefit the truster (Mayer et al. 1995), trust in the online operations of the retailer reflects the customer's belief of the competence, benevolence and integrity of the

multi-channel retailer's online operations (McKnight et al. 2002a, 2002b). Since customers do not have any prior interactions with the retailer online, trust in the online operations of the retailer does not have the emotional component (Lewis and Weigert 1985, Rempel et al. 1985). Trust in the online operations of the retailer positively affects intention of online purchase because the customer believes that the retailer is able (because of competence) and willing (due to benevolence and integrity) to deliver the products purchased online. As such, if customers place their trust on the retailer's online operations, they rule out possible but unfavorable online actions of the retailer (Luhmann 1979), leading to higher online purchase intention. Hence, we hypothesize:

H1*: Trust in the online operations of the retailer positively affects intention of online purchase.*

In this study, *trust in the online shopping medium* is operationalized as perceived structural assurance of the Internet (McKnight et al. 2002b). This construct corresponds to social capital theory's (Coleman 1988) trustworthiness of structures. *Trust in the online shopping medium* is different from trust in the online operations of the retailer since *trust in the online shopping medium* reduces the environmental uncertainty when transacting on the Internet environment (McKnight et al. 2002a, 2002b) while trust in the online operations of the retailer reduces the behavioral uncertainty when transacting with a specific retailer (Mayer et al. 1995). Perceived structural assurance of the Internet is defined as the belief that structures on the Internet are in place to promote success of the e-commerce transaction (McKnight et al. 2002b). If customers feel the structures on the Internet are adequate for a safe transaction, they would be more likely to trust the multi-channel retailer's online operations as well as purchase from the multi-channel retailer online (McKnight et al. 2002b).

H2*: Perceived structural assurance of the Internet positively affects trust in the online operations of the retailer.*

Word-of-mouth is a form of imperfect and indirect information about a potential partner's traits (Yamagishi and Yamagishi 1994). This corresponds to Coleman's (1988) information channels as customers who have not interacted with a multi-channel retailer through its website would largely rely on the indirect information from their social contacts. Although it is not as reliable as the concrete knowledge accumulated from a history of direct interactions with a partner, having access to word-of-mouth is better than having no information at all (Granovetter 1985). This information can form a basis for customers to infer the traits and intentions of a multi-channel retailer's online presence.

Word-of-mouth within a customer's social network is defined in this study as the favorability of the indirect information regarding online purchasing from the retailer obtained through the customer's social relations and network (adapted from Yamagishi and Yamagishi 1994). Social networks can be important communication channels for which trust occurs (Granovetter 1973, 1983) and refer to friends, relatives and acquaintances. This corresponds to Doney and Cannon's (1997) transference process of forming trust. Customers would normally *seek more specific information if it is available*, and would prefer to obtain such indirect information from their social relations and networks rather than rely on general information (Granovetter 1985). Besides, Walczuch and Lundgren (2004) reported that the influence of friends and relatives to be stronger than neutral sources (customer reviews) and marketer-dominated (public advertisements) to form online trust. Word-of-mouth within the social network encapsulates the influence of positive

referrals and is defined as the extent to which people in the customer's social network provide positive information about purchasing online from the retailer (Richins 1984). According to Coleman (1988), one's trust may be affected by what someone else has mentioned about the online presence of the multi-channel retailer. Since such information is a basis for trust and future action, we hypothesize:

H3*: Word-of-mouth within a customer's social network positively affects trust in the online operations of the retailer.*

The information channels within customers' social networks can also include the customers' offline relations with the retailer to transfer trust towards the online operations of the retailer. In making offline interactions and purchases from a retailer's physical stores, a direct relationship with the retailer is likely to have been developed, resulting in the formation of trust in the offline operations of the retailer. Through customers' offline interactions with the retailer, they can infer the traits of the retailer's online operations since they are dealing with the same retailer through another channel. Stewart (2003) reported that the retailer's picture of the physical store presence with the address induced trust transference towards the retailer's online operations. However, it was not clear whether customers regarded this as just another online artifact that assured safe transactions (similar to a third party's seal) or whether it actually represented their trust in the offline stores of a retailer which ultimately translated into trust of the online operations of the retailer. Since customers of multi-channel retailers have interactions with the offline physical stores, trust in the offline operations comprises both cognitive trust (the belief of the competence, benevolence and the integrity of the multi-channel retailer's physical stores) (McKnight et al. 2002a, 2002b) and emotional trust (the extent to which customers feel secure and comfortable

when they consider purchasing from the retailer's physical stores) (Swan et al. 1999). Kuan and Bock (2007) investigated the effect of trust in the offline operations on trust in the online operations for consumers in the before-interaction phase and found the relationship to be significant. Thus, if a customer has high trust in the physical stores of the retailer, he or she is likely to have high trust in the retailer's online operations.

H4*: Trust in the offline operations of the retailer positively affects trust in the online operations of the retailer.*

Besides the effect of information channels in customers' social relations and networks, social capital theory (Coleman 1988) also argues effective sanctions available to a customer may also serve to form trust towards the retailer's online operations. Yamagishi and Yamagishi's (1994) theory on trust also elucidates the importance of deterrence or sanctioning measures. They defined assurance as the expectation of benign behavior for reasons other than the goodwill of the trustee (Yamagishi and Yamagishi 1994). This is based on the knowledge of the incentive and deterrence structure surrounding the relationship. Their concept of assurance is very similar to Doney and Cannon's (1997) calculative process of forming trust, Lewicki and Bunker's (1995) calculus-based trust, and Shapiro et al.'s (1992) deterrence-based trust. Similar to social capital theory and previous studies, Yamagishi and Yamagishi (1994) argue that trust exists because the truster knows that the trustee fears the consequences of untrustworthy behavior.

Using Coleman's (1988) concept of effective sanctions, we define perceived non-structural assurance as expectation of benign behavior from the multi-channel retailer based on the effectiveness of sanctions available to customers to impose on the retailer (Shapiro et al. 1992). Empirical studies have shown how customers impose sanctions on companies that violate their

goals and values (i.e., Singh 1988). When customers know they can impose sanctions on the retailer, they believe that the retailer fears the consequences of being untrustworthy and would be constrained to behave in a trustworthy way.

We derive from Singh's (1988) study to propose three kinds of sanctions applicable for multi-channel retailers: indirect, online direct and cross-channel. These sanctions can occur through *customers' direct relations with the retailer or through their social relations and networks*. Indirect sanctions refer to private measures against the retailer (when individuals speak to social contacts about bad experiences or decide personally not to purchase online again from the specific retailer) (Singh 1988). Online direct sanctions are online measures that individuals may use to contact the retailer directly to seek redress for disappointing purchases (i.e., emailing the retailer's website or posting bad feedback at the website) (Singh 1988). Cross-channel sanctions, which are unique to multi-channel retailers, refer to measures that enable individuals to use other channels (such as physical stores and retail offices) to seek resolution of problems in their online purchases (Singh 1988). The concept of customer sanctions is related to Doney and Cannon's (1997) calculative process and Lewicki and Bunker's (1995) calculus-based trust. As such, perceived non-structural assurance is based on the effectiveness of indirect sanctions, online direct sanctions and cross-channel sanctions. This is *distinct from structural assurance which depends on impersonal and technological structures* to facilitate transactions with the multi-channel retailer. Kuan and Bock (2007) found that expected sanctioning power has a peripheral but yet significant influence on online trust during the before-interaction phase. If the level of perceived non-structural assurance is high, individuals would have greater trust in the online operations of the retailer (Lewicki and Bunker 1995). We hypothesize:

H5*: Perceived non-structural assurance positively affects trust in the online operations of the retailer.*

The extent to which customers encounter risk in their online purchases can be varied by product type. This study adopts Zeng and Reinartz's (2003) categorization of products (high touch versus low touch products) as it exemplifies the spatial and temporal separation for online purchases. High touch products, which require multiple senses for evaluation (touch, smell, sight, feel, taste) entail higher economic risk, personal risk and seller performance risk to individuals when purchased online (as compared to low touch products). Under perceptions of higher risk brought about by high touch products, individuals would tend to have greater involvement to determine the trustworthiness of the online retailer in providing these products (Chaudhuri 2000). An individual's greater involvement in the assessment of the trustworthiness of the online retailer will spur him or her to rely more strongly on the available resources to build trust when he or she is deciding to purchase from the online retailer (Chaudhuri 2000). It is thus conceivable that the relationships of the antecedents of trust in the online operations of the retailer are moderated by the risk of product types. Hence, we hypothesize:

H6: *The relationships between trust in the online operations of the retailer and its antecedents are stronger for high touch products compared to low touch products during the before-interaction phase.*

3.2.2 Initial-Interaction Phase

The initial-interaction phase is defined to be the period of time after the customer's first visit to the retailer's website and before/until the customer makes the first online purchase (Koufaris and Hampton-Sosa 2004, McKnight et al 2002a). Similar to the beforeinteraction phase, the

dependent variable in the initial-interaction is the intention of online purchase (see Figure 3.3.). In this stage, the research model is identical to the before-interaction stage with the exception of three differences. Instead of basing their evaluation of the impersonal structures on the Internet, customers in this phase would have the chance to evaluate the impersonal structures on the retailer's website. Secondly, since customers in this phase have accessed the website of the multi-channel retailer, trust in the retailer's online operations has one more antecedent: perceived website quality. Thirdly, having navigated on the retailer's website, customers are aware of the prices on the retailer's website. Thus, intention of online purchase has a control variable: online price satisfaction.

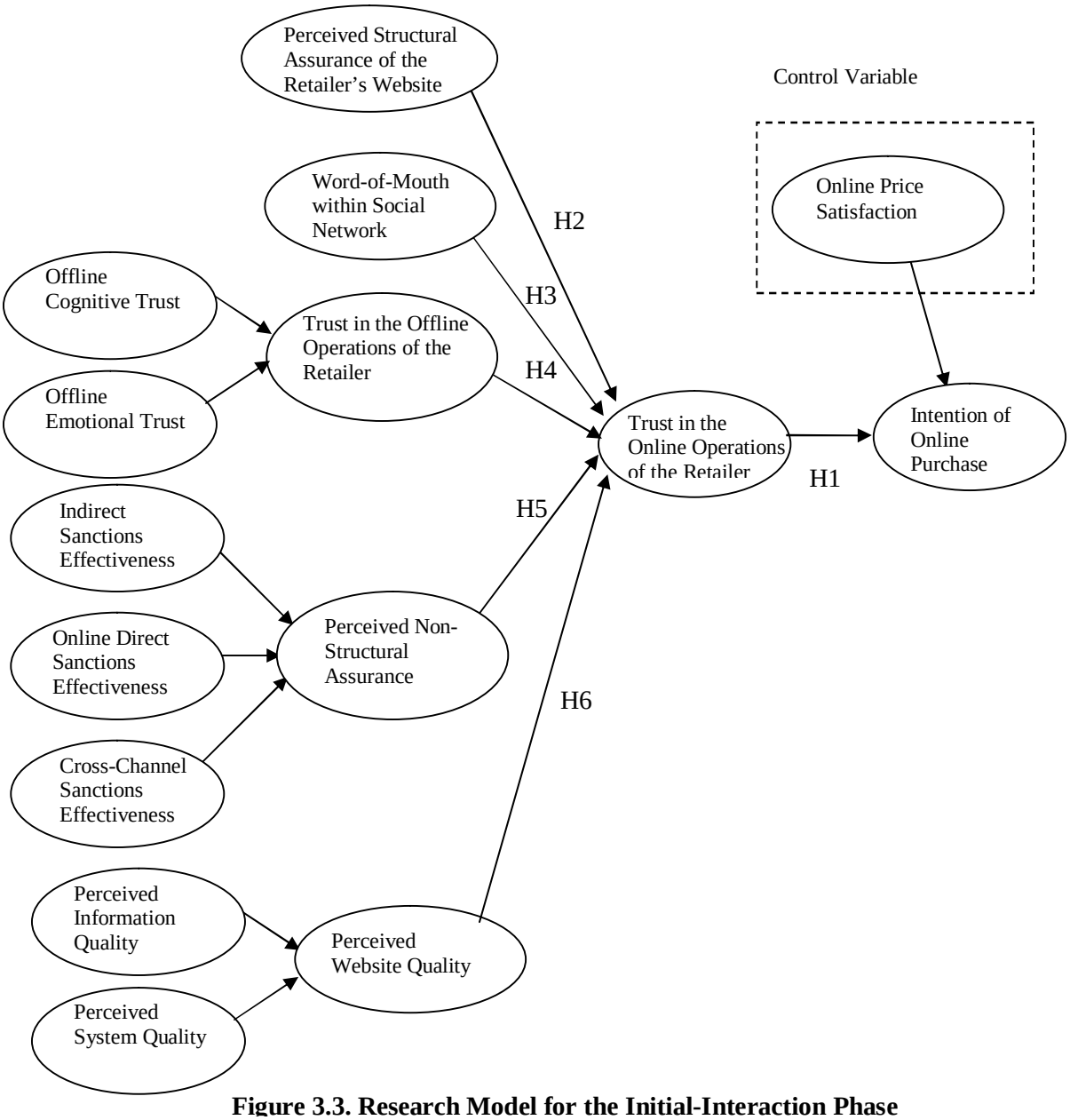

Figure 3.3. Research Model for the Initial-Interaction Phase

In continuing with the calculative process initiated during the before-interaction stage, customers would evaluate impersonal structures on the website (which corresponds to trustworthiness of structures) to ensure a successful transaction. The prior general belief of impersonal structures on the Internet can help to shape the specific belief of the structures on the retailer's website when customers are evaluating these structures on the website. Since Granovetter (1985) argued that

individuals prefer to rely on their own experience to form specific beliefs rather than general information, customers would base their trust on their specific beliefs of impersonal structures on the retailer's website (formed by their own evaluation of impersonal structures). Impersonal structures on the retailer's website can be in the form of seals of approval, rating systems and guarantees and this is also a form of institution-based trust (Pennington et al. 2004). During the initial interaction, customers have the opportunity to view the existence of such impersonal structures on the retailer's website. Perceived structural assurance is defined as the belief that proper impersonal structures have been put into place on the retailer's website enabling one party to anticipate successful transactions with the retailer (McKnight et al. 2002b, Pennington et al. 2004). Prior research suggests that such requisite institutional controls on the website are essential for trust formation during the initial interaction (i.e. McKnight et al. 1998). If customers' perceptions of these structures are favorable, their trust in the retailer's online operations will be high because they anticipate safe and successful transactions.

H2*: Perceived structural assurance of the retailer's website positively affects trust in the online operations of the retailer.*

The customer's online interaction and experience with the website can also serve as an information channel in social capital theory to build customer's trust. Trust literature also argues that the direct interaction with the trustee is the building block of cognitive trust formation (Komiak and Benbasat 2004, Luhmann 1979). At the start of the initial-interaction, the customer can also engage in the capability and intentionality processes by assessing the cues of the retailer's online trustworthiness. The customer would assess the retailer's online trustworthiness through the navigation of the website to determine if the transaction would be fair to him/her should he/she purchase from the website online. As such, the assessment of the retailer's website

quality is essential, which is defined as the customer's beliefs regarding the electronic interface on the retailer's website (McKnight et al. 2002). In the context of online shopping from the multi-channel retailer, website quality can consist of system quality and information quality (DeLone and McLean 2002, 2003). System quality is defined as the extent of the beliefs to which the system on the website has attributes of access and usability (McKinney et al. 2002, Rai et al. 2002) while information quality is defined as the extent of the beliefs to which the information on the website has attributes of content, accuracy, timeliness and usefulness (Doll and Torkzadeh 1988, Rai et al. 2002, McKinney et al. 2002). These two dimensions of the customer website experience have been known to affect the intentions of initial purchase (Kuan et al. 2005). Therefore this study argues that these two dimensions will affect the customer's trust in the retailer's online operations via the capability and intentionality processes.

H6*: Perceived website quality of the retailer positively affects trust in the online operations of the retailer.*

To examine the research model in the initial-interaction phase, we add one control variable, online price satisfaction. A control variable is necessary when there are alternative explanations outside the scope of this study that can significantly affect the dependent variable which is the case in this study. Online price satisfaction is defined as a positive affect arising from the prices of products offered online by the retailer (adapted from Ganesan 1994). Marn (2000) found that many online retailers use low prices to attract a large customer base. Grewal et al. (2004) reported that price differences have significant effects on willingness to buy. Studies have also shown that when customers are satisfied with the price offered by the retailer, they are more likely to purchase the product from the retailer (i.e. Bolton and Lemon 1999, Keen et al. 2004). Despite the significant influence of online price satisfaction on purchase intentions, previous

studies on online trust during the initial-interaction did not control for online price satisfaction on the intention of online purchase (i.e. McKnight et al. 2002a, 2002b, Stewart 2003).

Similar to the before-interaction phase, we also hypothesize that the relationships of the antecedents of trust in the retailer's online operations are moderated by the risk of product types.

H7: *The relationships between trust in the retailer's online operations and its antecedents are stronger for high touch products compared to low touch products during the initial-interaction phase.*

3.2.3 Post-Initial Purchase Phase

The post-initial purchase stage is defined in this study as the period of time after the customer receives the delivered products after the first purchase from the retailer's website and makes subsequent visits to the website to purchase (Gefen et al. 2003a, Koufaris and Hampton-Sosa 2004). It is of interest to researchers and practitioners how customers' trust in the retailer's online operations evolves during this phase. Online customers of multi-channel retailers in this phase have been exposed to information sources before and after their initial online purchases, which may be conflicting with their own online purchasing experiences. Customers during the post-initial purchase phase can use such information sources together with their own online purchasing experiences with the retailer to reevaluate their trust in the retailer's online operations.

The research model for this phase is shown in Figure 3.4. Multi-channel retailers are keen to find out what drives customers to make repeated online purchases on their websites. Hence, the dependent variable for this phase is the *intention of repeated online purchase* (referred to as the subjective probability that the customer would return and engage in online purchases with the

retailer). As customers engage in the prediction process to forecast the retailer's online behavior (Doney and Cannon 1997), the form of trust customers have in this stage is *knowledge-based* (Lewicki and Bunker 1995).

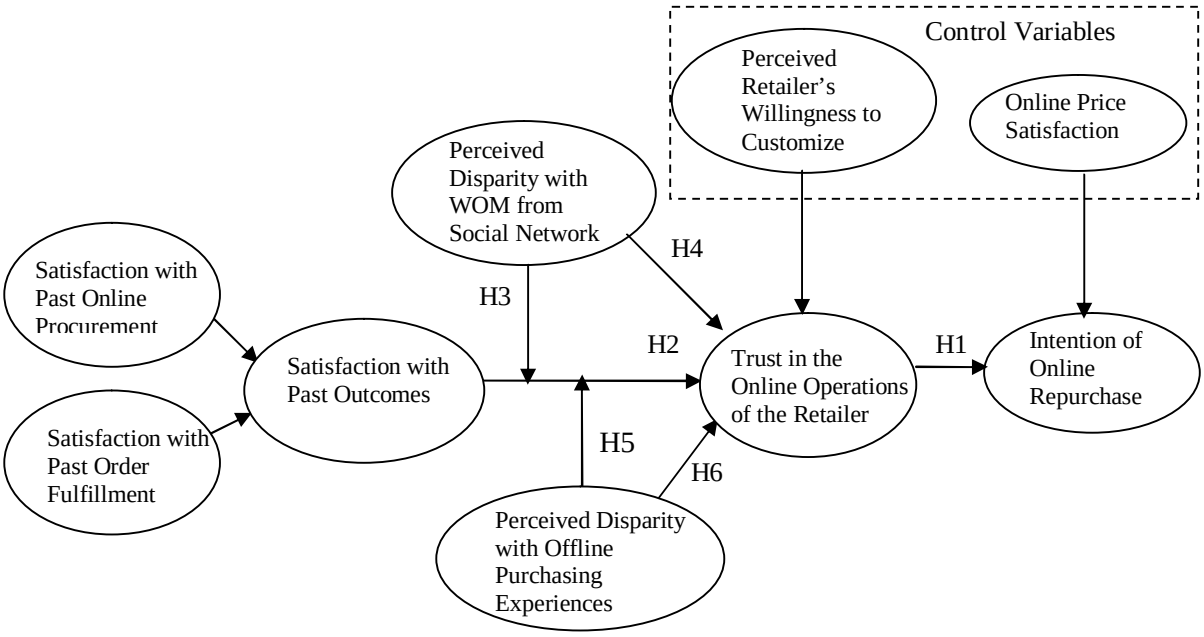

Figure 3.4. Research Model for the Post-Initial Purchase Phase

When the multi-channel retailer behaves in a way that builds customers' trust in the retailer's online operations, the perceived risk of transacting online with the multi-channel retailer is reduced, enabling customers to make confident predictions about the multi-channel retailer's future online behaviors (Mayer et al. 1995, Morgan and Hunt 1994). Unlike the before-interaction and initial-interaction phases, trust in the online operations of the retailer in this phase has both cognitive and emotional components (Lewis and Weigert 1985) since they have prior online purchase(s) with the retailer online. Since there is greater degree of online interaction between the customer and the multi-channel retailer, emotional trust can be formed. Social psychology literature argues that emotional security and comfort develops as the customer gains

more online experience with the trustee (Holmes 1991, Lewis and Weigert 1985, Rempel et al. 1985). With high cognitive and emotional trust in the online operations of the retailer, the intention to make repeated online purchases is greater (Komiak and Benbasat 2004, Walczuch and Lundgren 2004).

H1*: Trust in the online operations of the retailer positively affects intention of online repurchase.*

Trust studies in marketing literature have cited that the customers would be relying on their own experiences to form their trust (Ganesan 1994, Garbarino and Johnson 1999). This is regarded as an important information channel for the prediction process of trust and is utilized by customers to forecast the multi-channel retailer's online behavior (Doney and Cannon 1997) and form knowledge-based trust (Lewicki and Bunker 1995). Satisfaction with past online purchasing outcomes is defined in this paper as a positive affective state based on the outcomes of the online purchasing experience with the multi-channel retailer (adapted from Ganesan 1994). In the online retailing context, the online purchasing experience covers two aspects: online navigation experience (McKnight et al. 2002, Kim et al. 2004) and order fulfillment (Thirumalai and Singha 2005). The *online navigation experience* involve aspects of the website navigation such as product information and ease of online ordering and *order fulfillment process* has to do with the characteristics of product delivery such as the punctuality and correctness of delivery. Satisfaction with these aspects of the online purchasing experience provides customers with the confidence that they are not taken advantaged of when purchasing online and that the multi-channel retailer is truly concerned about their welfare. If customers are not satisfied with previous online purchasing experiences from the retailer, they would view the multi-channel retailer as untrustworthy and would feel uncomfortable purchasing from the retailer's online

operations (Walczuch and Lundgren 2004). Hence, based on marketing and MIS literature, in the absence of cognitive dissonance from information sources, we derive a main effect of satisfaction with previous online purchasing outcomes on the trust in the multi-channel retailer's online operations.

H2: *Satisfaction with past online purchasing outcomes from the retailer positively affects trust in the retailer's online operations.*

Customers may have encountered or even intentionally searched for indirect information channels regarding the retailer's online operations before and after their online purchases from the retailer. Since online customers are concerned about the wisdom of their online purchases, they would jointly evaluate their online purchasing experiences together with post-purchase information sources to assess their trust in the online operations of the multi-channel retailer. According to cognitive dissonance theory (Festinger 1957), when customers realize that their online purchasing experiences are discrepant from their information sources, they are very likely to experience cognitive dissonance. Since purchasing on the web entails more risk to customers and they are concerned about the wisdom of their online purchases, they are likely to reevaluate their trust in the online operations of the multi-channel retailer to reduce cognitive dissonance.

One form of information channel comes from customers' relations with their social contacts. This can facilitate the comparison of customers' own online purchasing experiences and word-of-mouth to influence their trust perceptions in the post-initial purchase phase. We hypothesize that the relationship between satisfaction with past outcomes and online trust becomes weaker in the midst of discrepant word-of-mouth from social networks and customers would change their perceptions of trust towards the direction of the discrepant source (despite having formed trust

previously through their own online purchases with the retailer). According to Tan (1975), individuals who initially opposed a particular message changed their attitudes towards the direction of a credible discrepant information source. Kitayama et al (2004) argued that individuals worry about their own competence in the particular decision and are motivated to adjust to and fit in with the expectations of socially meaningful others. Soutar and Sweeney (2003) reported that highly dissonant customers are less likely to be loyal to retailers and more likely to switch to another retailer. Using this argument, if one's satisfaction with his online purchasing outcomes is high but his social contacts' online purchasing outcomes are much less favourable (high negative disparity with own experiences), the customer may reason that one's favourable experiences are exceptional and his trust in the online operations becomes low, instead of remaining high. Similarly, if one's satisfaction with past purchasing outcomes is low but his social contacts' experiences are much more favourable (high positive disparity with own experiences), he may think that his bad experiences are isolated cases and his trust in the online operations becomes high, instead of remaining low. The disparity with word-of-mouth from social networks may have a main effect on trust in the retailer's online operations. If one's online purchasing experiences are more favourable compared to one's social contacts, trust in the retailer's online operations increases as well. Therefore, we derive moderating and main effects for disparity with word-of-mouth from social networks:

H3: *Perceived disparity of online purchasing experiences with WOM from social networks is a negative moderator of the relationship between satisfaction of past online purchasing outcomes and trust in the online operations of the retailer.*

H4: *Perceived disparity of online purchasing experiences with WOM from social networks is positively associated with trust in the online operations of the retailer.*

Another indirect information channel is the information from their offline interactions with the multi-channel retailers. Customers can compare their online purchasing experiences with their offline purchasing experiences. E-commerce research postulates that customers prefer seamless and consistent purchasing experiences across both channels (Shankar et al. 2002). Shankar went further to add that inconsistency among different channels could have an adverse effect on trust. In the light of this, we hypothesize that the relationship between satisfaction of past outcomes and online trust becomes weaker in the midst of discrepant purchasing experiences between online and offline channels. Since both channels belong to the same retailer, if their online purchasing experiences have high discrepancies compared to their offline purchasing experiences, customers can reevaluate their trust in the online operations of the retailer. For example, if one's satisfaction with online purchasing outcomes is high but his online purchasing outcomes are much less favorable than offline purchasing outcomes (high negative disparity with own offline experience), the customer believes that the multi-channel retailer is less proficient to handle online purchases and his trust in the online operations decreases, instead of remaining high. Similarly, if one's satisfaction with online purchasing outcomes is low but his online purchasing outcomes are more favorable than offline purchasing outcomes (high positive disparity with own offline experience), the customer believes that the multi-channel retailer is better in handling online purchases and his trust in the online operations increases, instead of remaining low. The disparity with offline purchasing experiences also has a main effect on trust in the retailer's online operations. If one's online purchasing experiences are more favorable compared to offline purchasing experiences, trust in the retailer's online operations increases as well. Therefore, we derive moderating and main effects for disparity with offline purchasing experiences:

H5: *Perceived disparity of online purchasing experiences with offline purchasing experiences is a negative moderator of the relationship between satisfaction of past online purchasing outcomes and trust in the retailer's online operations.*

H6: *Perceived disparity of online purchasing experiences with offline purchasing experiences is positively associated with trust in the retailer's online operations.*

From previous literature, we identify perceived retailer's willingness to customize as a control variable of trust in the retailer's online operations. According to Koufaris and Hampton-Sosa (2004), customers interpret the willingness of a retailer to customize its products and services online as a cue for trust in the retailer's online operations. If customers through repeated purchases realize that the retailer is willing to customize its products and services to them, they may perceive this as an opportunity to communicate its specific needs to the company and form identification-based trust (Lewicki and Bunker 1995). The retailer that provides customized products and services signals to its customers that it cares about them and is willing to make an extra effort to provide them with the best service possible. In this study, perceived willingness to customize is the customer's perception regarding the effort of the retailer to provide customized products and services online (Koufaris and Hampton-Sosa 2004). A retailer's willingness to customize its services has been shown to be a positive antecedent to customer trust in offline and online commerce (Doney and Cannon 1997, Koufaris and Hampton-Sosa 2004).

Similar to the initial-interaction phase, customers' online price satisfaction may be important to determine their intention to repurchase online from the multi-channel retailer. As such, online price satisfaction is also is added as a control variable that influences online intention to repurchase.

This chapter has elaborated on research models in the before-interaction, initial-interaction and post-initial purchase phases. In each of these models, trust in the retailer's online operations is hypothesized to affect intention of online purchase and in turn is affected by several independent variables.

Chapter 4

Research Methodology

To test the research models elaborated in the previous chapter, the aim of chapter 4 is to describe the survey methodology employed in this study, instrument validation and the descriptive statistics of the field study samples. Since several constructs in the research models of the three interaction phases have been adapted to the multi-channel retailers' context, going through a systematic procedure for instrument validation was very much necessary. To elaborate on this procedure, operationalization of the independent and dependent variables of the three interaction phases, steps and results of the sorting procedures and pretest results are discussed. Through this process, we want to obtain a set of valid and reliable measures that will enable us to collect data and empirically test our models to explain trust development in the three interaction phases and across product types. We also describe a clustering procedure to classify common product types into high touch and low touch products. Lastly, the survey response and the descriptive statistics of the field study samples are presented.

4.1 Survey Methodology

IS researchers use the survey approach to determine the relationship between constructs and make sense of behavior surrounding IS. Survey research can be jointly used with a number of methods analyzing data ranging from the reporting of simple means to the use of second generation structural equation modeling techniques such as LISREL and PLS. As part of a panel discussion on surveys (Newsted et al. 1998), Lee found that in positivist research, surveys are particularly useful in determining the actual values of variables under study and the strengths of the relationships between them. Other advantages of survey research include: 1) Responses can be generalized to other members of the studied population and to similar populations. 2) Surveys

can be reused easily and provide an objective way to compare responses over different groups of respondents. However, we need to be cognizant of the fact that surveys are just a snapshot of perceptions at a certain place and time (Fowler 1993) and do not provide as rich or "thick" description of the phenomenon.

4.2 Survey Instrument Validation

Moore and Benbasat (1991) described a three stage process to develop and validate a survey instrument. The first phase is item generation, whose purpose is to identify items from existing scales and by adapting them to suit the context of the study. The next phase is scale development where a panel of judges sorts the items from the first phase into separate categories, based on similarities and differences among items. Based on their placement, the items could be refined or ambiguous items could be eliminated. The various scales are then subjected to an instrument testing phase where we conduct a preliminary test on the scales' reliability and validity. Following the third step, a field test of the instrument was carried out.

4.2.1 Item Generation

As suggested by Moore and Benbasat (1991), existing literature were searched for scales that are already developed to measure the variables of this study. The purpose of performing this phase is to enhance the content validity of items and facilitate the comparison of results across studies (Stone 1978). The typical item in previous instruments tended to be a statement to which the respondent was asked to indicate a degree of agreement. This study adopts the same approach, using a seven-point Likert scale, ranging from "strongly disagree" to "strongly agree" (see Appendix A for all items). The measurement sources are listed in Tables 4.1, 4.2 and 4.3.

Constructs	Reflective/ Formative	Sub-constructs	Reflective/ Formative	Measurement Sources (Adapted)	Items
Intention of Online Purchase	Reflective	-	-	Davis (1989), Putrevu and Lord (1994)	3
Trust in the Online Operations of the Retailer	Reflective	-	-	Bhattacherjee (2002), McKnight et al. (2002a, 2002b)	9
Trust in the Offline Operations of the Retailer	Formative	Offline Cognitive Trust	Reflective	Bhattacherjee (2002), McKnight et al. (2002a, 2002b)	9
		Offline Emotional Trust	Reflective	Rempel et al. (1985)	3
Perceived Risk of Product Type	Reflective	-	-	Pavlou (2003), Dholakia (2001), Jacoby and Kaplan (1972)	4
Word-of-Mouth within Social Network	Reflective	-	-	Gremler and Gwinner (2000)	3
Perceived Non-Structural Assurance	Formative	Indirect Sanctions Effectiveness	Reflective	Singh (1990)	3
		Online Direct Sanctions Effectiveness	Reflective	Singh (1990)	3
		Cross-Channel Sanctions Effectiveness	Reflective	Singh (1990)	3
Perceived Structural Assurance of the Internet	Reflective	-	-	McKnight et al. (2002a, 2002b), Pennington et al. (2004)	3

Table 4.1. Measurement of Variables in the Before-Interaction Phase

Constructs	Reflective/ Formative	Sub-constructs	Reflective/ Formative	Measurement Sources (Adapted)	Items
Intention of Online Purchase	Reflective	-	-	Davis (1989), Putrevu and Lord (1994)	3
Trust in the Online Operations of the Retailer	Reflective	-	-	Bhattacherjee (2002), McKnight et al. (2002a, 2002b)	9
Trust in the Offline Operations of the Retailer	Formative	Offline Cognitive Trust	Reflective	Bhattacherjee (2002), McKnight et al. (2002a, 2002b)	9
		Offline Emotional Trust	Reflective	Rempel et al. (1985)	3
Perceived Risk of Product Type	Reflective	-	-	Pavlou (2003), Dholakia (2001), Jacoby and Kaplan (1972)	4
Word-of-Mouth in Social Network	Reflective	-	-	Gremler and Gwinner (2000)	3
Perceived Non-Structural Assurance	Formative	Indirect Sanctions Effectiveness	Reflective	Singh (1990)	3
		Online Direct Sanctions Effectiveness	Reflective	Singh (1990)	3
		Cross-Channel Sanctions Effectiveness	Reflective	Singh (1990)	3
Perceived Structural Assurance of the Retailer's Website	Reflective	-	-	McKnight et al. (2002a, 2002b), Pennington et al. (2004)	3
Perceived Website Quality	Formative	Perceived System Quality	Reflective	Rai et al. (2002), McKinney et al. (2002)	4
		Perceived Information Quality	Reflective	Rai et al. (2002), McKinney et al. (2002), Corbitt et al. (2003), Doll and Torkzadeh (1988)	4
Online Price Satisfaction	Reflective	-	-	Thirumalai and Singha (2005), Bizrate.com	2

Table 4.2. Measurement of Variables in the Initial-Interaction Phase

Constructs	Reflective/ Formative	Sub-constructs	Reflective/ Formative	Measurement Sources (Adapted)	Items
Intention of Online Repurchase	Reflective	-	-	Davis (1989), Putrevu and Lord (1994)	3
Trust in the Online Operations of the Retailer	Formative	Online Cognitive Trust	Reflective	Bhattacherjee (2002) , McKnight et al. (2002a, 2002b)	9
		Online Emotional Trust	Reflective	Rempel et al. (1985)	3
Perceived Risk of Product Type	Reflective	-	-	Pavlou (2003), Dholakia (2001), Jacoby and Kaplan (1972)	4
Satisfaction with Past Outcomes	Formative	Satisfaction with Order Procurement	Reflective	Thirumalai and Singha (2005), Bizrate.com	5
		Satisfaction with Order Fulfillment	Reflective	Thirumalai and Singha (2005), Bizrate.com	5
Perceived Disparity within Social Network	Reflective	-	-	Bhattacherjee and Premkumar (2004)	3
Perceived Disparity with Offline Experience	Reflective	-	-	Bhattacherjee and Premkumar (2004)	3
Perceived Retailer's Willingness to Customize	Reflective	-	-	Koufaris and Hampton-Sosa (2004)	3
Online Price Satisfaction	Reflective	-	-	Thirumalai and Singha (2005), Bizrate.com	2

Table 4.3. Measurement of Variables in the Post-Initial Interaction Phase

4.2.2 Scale Development

This step aims to assess the conceptual validity of the constructs (i.e. how well the constructs and relationships at the operational level reflect the constructs and relationships at the conceptual level) and to identify any items that may be ambiguous in their wording or framing (Moore and Benbasat 1991). The method employed is to present all measures to a panel of judges to see if they can understand the items and assign the same meaning to them as intended. Cohen's Kappa (Cohen 1960) and hit rates are used to assess the reliability and conceptual validity of constructs in the sorting procedure. In this study, IS graduate students performed the role of judges to sort the items into the various constructs, based on the definition of constructs. Since all constructs have existing scales already, we believe that a labeled sorting round is sufficient for conceptual validation. This labeled sorting round is conducted for items of initial-interaction phase and post-

initial purchase only since the items of the before-interaction phase are a sub-set of the initial-interaction phase. Both phases had different judges to sort the constructs.

	Initial-Interaction Phase Cohen's Kappa	**Post-Initial Purchase Phase Cohen's Kappa**
Judges 1 and 2	1	0.94
Judges 1 and 3	0.93	0.97
Judges 1 and 4	0.98	1
Judges 2 and 3	0.93	0.90
Judges 2 and 4	0.98	0.94
Judges 3 and 4	0.93	0.97
Average	0.96	0.95

Table 4.4. Inter Judge Agreement for Initial-Interaction and Post-Initial Purchase Phases

Target Category	Actual Category												Total Qs	Hit Rate (%)
	PI	OnCT	OfCT	OfET	WOM	SA	IS	ODS	CCS	SQ	IQ	PS		
PI	12												12	100
OnCT		36											36	100
OfCT			36										36	100
OfET			1	11									12	91.7
WOM					12								12	100
SA						12							12	100
IS							12						12	100
ODS								12					12	100
CCS									12				12	100
SQ								1		12	3		16	75
IQ													16	100
PS												8	8	100
Average														97.23

Table 4.5. Initial-Interaction Constructs Hit Rate

Target Category	Actual Category									Total Qs	Hit Rate (%)
	PI	OnCT	OnET	PSat	FSat	DWom	DOff	CUS	PS		
PI	12									12	100
OnCT		36								36	100
OnET		1	11							12	91.7
PSat				20						20	100
FSat				2	18					20	90
DWom						12				12	100
DOff							12			12	100
CUS								12		12	100
PS									8	8	100
Average											97.97%

Table 4.6. Post-Initial Purchase Constructs Hit Rate

The sorting results of both phases were positive. Cohen's Kappa of the initial interaction phase averaged 0.96 and the overall placement ratio is 0.97 (see Tables 4.4. and 4.5.). Judges of the

initial-interaction phase indicated that an item of system quality is ambiguous and can fall under online direct sanctions effectiveness or information quality. The item "The website is responsive to my request when I am retrieving information about the products and services which it offers online" has been reworded to "The website is responsive to my request when I am navigating on the website". For post-initial purchase phase, Cohen's Kappa averaged 0.95 and the overall placement ratio is 0.98 (see Tables 4.4. and 4.6.). The judges did not indicate that there was any ambiguous item that needed rewording. The hit rates for each construct were at least 75% for the initial-interaction and post-initial purchase phases (see Tables 4.5 and 4.6).

4.2.3 Instrument Testing Phase

We then proceeded to conduct an initial pre-test of the survey instrument of the initial-interaction and post-initial purchase phases (see Appendix A.1). As this is an initial pre-test, the sample size was kept small. Questionnaires were distributed to a convenience sample of 41 undergraduate students for the initial-interaction phase and 32 undergraduate students for the post-initial purchase phase. The objectives were to ensure the mechanics of compiling the questionnaire had been adequate and to make an initial reliability assessment of the scales (Moore and Benbasat 1991). The first objective will be accomplished by having respondents to complete the questionnaire and then comment on its length, wording and instructions. For the second objective, items with low item-total correlations would be candidates for deletion. For all the constructs in the initial-interaction and post-initial purchase phases, the Cronbach's alphas were more than 0.7 and item-total correlations were more than 0.50. These figures are presented in Appendix B.1 and Appendix B.2. From the results of the pre-test on initial interaction and post-initial purchase phases, there were no problems with the reliabilities of the constructs.

4.3 Classification of Product Types

To compare online trust development across product types, it is necessary to classify retailers' products into high touch and low touch categories. The industry targeted in this study is the department store industry. This industry is chosen for two reasons. Firstly, there is a large number of department store retailers that are multi-channel, namely: Sears, Walmart, Target, JC Penney and Lands' End and they are reported to be not performing as well as they expected online (E-Commerce Times 2002). Secondly, the products offered by department stores also fall into Zeng and Reinartz's (2003) categories of products: high touch products (e.g. shoes, clothes) and low touch products (e.g. electronic toothbrush, printer).

This study also proceeded to conduct a pre-test to classify available product categories of department stores into Zeng and Reinartz's (2003) classification of high touch and low touch products. Upon the examination of the several multi-channel department stores' websites (i.e. Sears, Walmart, Target), we obtained approximately 20 popular product categories in common, such as clothes, shoes and digital cameras (see Table 4.7.). A questionnaire on the 20 product types was administered to 124 undergraduates who were frequent shoppers. They were asked to rate on a scale of 1 (strongly disagree) to 7 (strongly agree) whether they needed direct physical contact to evaluate if the product would meet their needs. Table 4.7. shows the ratings of each product category according to gender. The table suggests that products may be classified into high touch and low touch. For example, shoes obtained a rating of 6.11 and 6.72 by males and females respectively while skincare products scored 3.33 and 4.53.

Product Category	Gender	N	Mean	Std. Deviation	Std. Error Mean
Shoes	Male	64	6.11	1.286	.161
	Female	60	6.72	.666	.086
Clothes	Male	64	6.06	1.283	.160
	Female	60	6.18	1.142	.147
Furniture	Male	64	5.56	1.424	.178
	Female	60	5.53	1.268	.164
Makeup	Male	64	4.64	1.785	.223
	Female	60	5.30	1.816	.234
Perfume	Male	64	5.34	1.635	.204
	Female	60	5.92	1.253	.162
Jewelry	Male	64	5.25	1.480	.185
	Female	60	4.75	1.674	.216
Sunglasses	Male	64	5.17	1.507	.188
	Female	60	5.55	1.294	.167
Watches	Male	64	4.83	1.528	.191
	Female	60	4.78	1.658	.214
Digital Cameras	Male	64	3.70	1.925	.241
	Female	60	4.72	2.051	.265
MP3 players	Male	64	3.48	1.817	.227
	Female	60	4.35	2.082	.269
Handphones	Male	64	3.81	1.975	.247
	Female	60	4.72	2.018	.260
Laptops	Male	64	4.25	1.984	.248
	Female	60	4.50	2.029	.262
Printers	Male	64	3.25	1.623	.203
	Female	60	3.58	1.778	.230
Storage Devices	Male	64	2.31	1.511	.189
	Female	60	2.98	1.642	.212
Cutlery	Male	64	2.98	1.732	.216
	Female	60	3.25	1.601	.207
Household Appliances	Male	64	3.41	1.706	.213
	Female	60	3.82	1.712	.221
Personal Care Equipment	Male	64	3.53	1.910	.239
	Female	60	4.02	1.662	.215
Healthcare Products	Male	64	2.44	1.402	.175
	Female	60	3.12	1.757	.227
Haircare Products	Male	64	2.66	1.664	.208
	Female	60	3.37	1.746	.225
Skincare Products	Male	64	3.33	1.755	.219
	Female	60	4.53	1.987	.257

Table 4.7. Ratings of Product Categories According to Gender

While a variety of multivariate methods (factor analysis, multidimensional scaling, discriminant and cluster analyses) have been used to uncover underlying product structures, a hierarchical clustering is the most appropriate to group products based on how they are being evaluated by

customers (Srivastava et al. 1981). This clustering technique focuses on explained or accounted for variance in the pooling of objects, thereby reducing groupings due to the optimization of chance variation. Ward's method is used to form hierarchical agglomeration because it produces tight minimum variance clusters and is regarded as one of the best hierarchical clustering techniques (Wishart 1987). Using SPSS, all the 20 product categories are considered as separate clusters. It subsequently chooses the two clusters at each step whose union leads to the least increase in the squared distances from each case to the centre of the cluster to which it belongs. There are 19 clustering steps and the final step produces one cluster encompassing all the cases (Srivastava et al. 1981, Patterson et al. 1996). For each gender, an agglomeration schedule as well as dendrogram was obtained (see Tables 4.8. and 4.9. as well as Figures 4.1. and 4.2.). Each agglomeration schedule shows the largest jump in coefficients occurs between stage 18 and 19, indicating 2 clusters of products (high touch and low touch). Thus, the agglomeration schedule and dendrogram recommend that the 20 product categories can be classified into 2 product types.

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	9	10	41.000	0	0	5
2	1	2	86.000	0	0	7
3	18	19	134.500	0	0	14
4	13	16	186.500	0	0	9
5	9	11	242.167	1	0	10
6	6	8	311.167	0	0	15
7	1	5	387.500	2	0	17
8	3	7	467.000	0	0	11
9	13	14	555.000	4	0	13
10	9	12	648.083	5	0	18
11	3	4	749.250	8	0	15
12	15	17	851.250	0	0	13
13	13	15	983.250	9	12	16
14	18	20	1130.750	3	0	16
15	3	6	1282.283	11	6	17
16	13	18	1511.283	13	14	18
17	1	3	1756.000	7	15	19
18	9	13	2244.167	10	16	19
19	1	9	3432.450	17	18	0

Table 4.8. Agglomeration Schedule for Females' Perceptions of Products

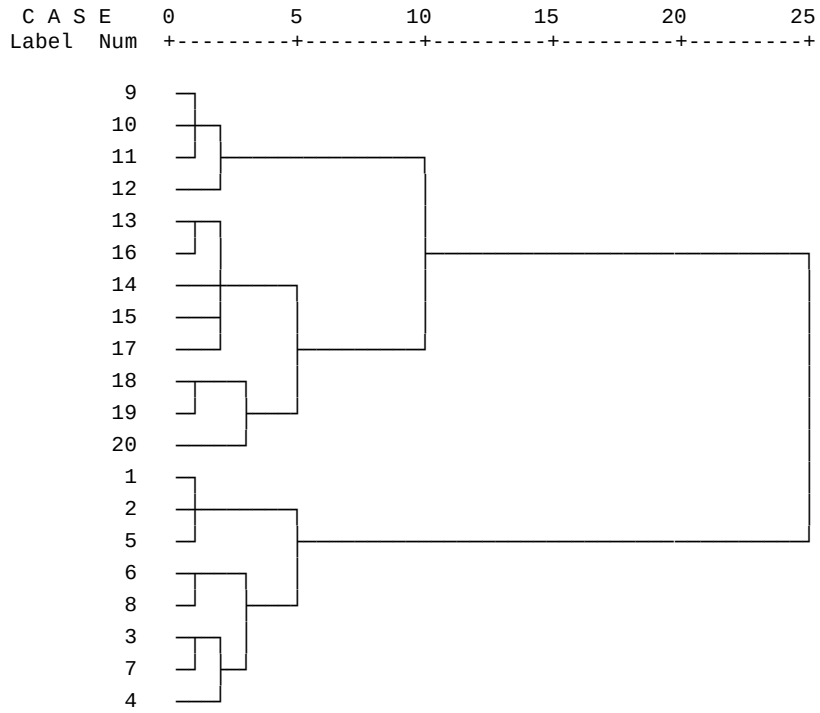

Figure 4.1. Dendrogram for Females' Perceptions of Products

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	9	10	32.000	0	0	3
2	1	2	66.500	0	0	9
3	9	11	105.167	1	0	12
4	14	18	163.167	0	0	11
5	19	20	222.667	0	0	15
6	7	8	285.667	0	0	8
7	12	13	357.667	0	0	12
8	6	7	435.333	0	6	13
9	1	3	526.167	2	0	17
10	16	17	617.167	0	0	16
11	14	15	751.167	4	0	15
12	9	12	886.100	3	7	16
13	5	6	1025.933	0	8	14
14	4	5	1206.233	0	13	17
15	14	19	1402.333	11	5	18
16	9	16	1620.876	12	10	18
17	1	4	1887.743	9	14	19
18	9	14	2373.500	16	15	19
19	1	9	4221.200	17	18	0

Table 4.9. Agglomeration Schedule for Males' Perceptions of Products

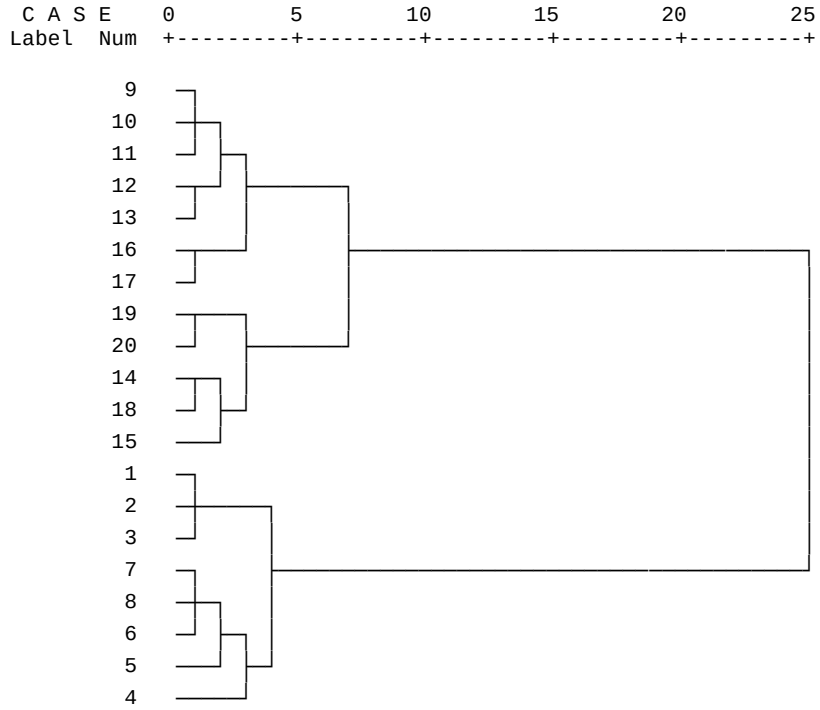

Figure 4.2. Dendrogram for Males' Perceptions of Products

To have a clearer demarcation of high touch and low touch products, we defined high touch products to only include product categories (from the high touch cluster) with ratings more than 5.0 for both males and females and low touch product type to only include product categories (from the low touch cluster) with ratings less than 5.0 for both males and females. Thus, the product categories of make-up, jewelry and watches are eventually not taken into consideration for high touch product types as Table 4.7 shows that either one gender or both genders rated these categories less than 5.0. Table 4.10. reveals the resulting classification of each product category in Zeng and Reinartz's (2003) categorization of high and low touch products.

Product Category	Product Type Classification
Shoes	High Touch
Clothes	High Touch
Furniture	High Touch
Perfume	High Touch
Sunglasses	High Touch
Digital Cameras	Low Touch
MP3 players	Low Touch
Handphones	Low Touch
Laptops	Low Touch
Printers	Low Touch
Storage Devices	Low Touch
Cutlery	Low Touch
Household Appliances	Low Touch
Personal Care Equipment	Low Touch
Healthcare products	Low Touch
Haircare products	Low Touch
Skincare Products	Low Touch

Table 4.10. Classification of Product Categories for Both Males and Females

4.4 Field Study Description

In this section, we first describe the surveys' context, sample selection and survey administration procedures. This is followed by the assessment of the surveys' representativeness and presentation of the descriptive statistics for the respondents within the phases of before-interaction, initial-interaction and post-initial purchase phases.

4.4.1 Survey Context

The context of the field study is conducted in South Korea for two reasons. Firstly, changes in consumer life-style and development of information technology have fueled the rapid growth of on-line shopping (USDA Foreign Agricultural Service GAIN report 2004). Large portions of the population now have access to high-speed Internet either at home or at work. Almost all kinds of food products that are found in regular retail stores are sold on-line and even conventional retailers now also operate on-line stores coupled with home delivery service. Secondly, multi-channel retailing is getting more popular in South Korea, where retailers are jumping onto the bandwagon to implement the online retailing channel. According to USDA Foreign Agricultural Service GAIN report (2004), the department store industry garnered W17.1 trillion of sales in 2002, which is up 8.2 percent from the previous year. The growth of the department store industry is mainly led by the top three national chains - Lotte, Shinsegae and Hyundai - as evidenced by the fact that these three chains accounted for 75 percent of the total sales of the segment in 2002, which is a big increase from 41 percent in 1998. Therefore, this study focuses on the online stores of Lotte, Shinsegae and Hyundai, which are the top three national chains in South Korea. To prepare the survey instrument to be administered in the Korean language, backward translation (with the material translated from English to Korean, and back to English; versions compared; discrepancies resolved) was used to ensure consistency between the Korean and the original English version of the instrument (Mullen 1995; Singh 1995).

4.4.2 Survey Administration Procedures

The survey administration was carried out between 8 November 2006 to 27 December 2006. An online survey was performed for obtaining data. The Korean subjects consisted of a panel from

an online survey company in Korea. Over the data collection period, emails were sent out to members of the company's panel inviting them to take part in the survey. To classify respondents into the appropriate interaction phases with a particular online retailer, online filtering questions were used. To check if respondents qualify for the post-initial purchase phase, they were asked whether they have purchased from any one of the multi-channel retailers' online stores before and whether they have experienced word-of-mouth regarding the retailer's online store for any product type (high touch or low touch). If they are eligible, they are asked to specify which online store they have purchased from most frequently and they would be assigned to complete the post-initial purchase questionnaire on a retailer for a particular product type. If they are not eligible for post-initial purchase phase, we proceed to check if they have visited any one of the multi-channel retailers' online stores recently and whether they have experienced word-of-mouth regarding the retailer's online store for any product type (high touch or low touch). If they are eligible for initial-interaction phase, they are asked which online store they have visited most often and they would be assigned to complete the initial-interaction questionnaire on a retailer for a particular product type. If they are not eligible for initial-interaction phase, they are asked to select which multi-channel retailer's online store they have not visited yet and whether they have experienced word-of-mouth regarding the retailer's online store for any product type (high touch or low touch). If they are eligible for the before-interaction phase, they would be assigned to complete the before-interaction questionnaire on a retailer for a particular product type. Instructions on how to complete each questionnaire were provided and examples of high touch and low touch products were explained carefully to respondents before they completed the relevant portions of the online questionnaire. A monetary incentive of 6000 won (equivalent to

USD 5.84 at 1 March 2007) was reimbursed to respondents for completing the online questionnaire.

4.4.3 Survey Response and Descriptive Statistics of Samples

The online survey company emailed 50000 members of its panel to participate in the online questionnaire over the data collection period. For the initial-interaction phase, there were 209 responses 200 responses for low touch and high touch products respectively. For the post-initial purchase, there were 207 responses and 200 responses for low touch and high touch products respectively. We experienced difficulties in collecting data for the before-interaction phase due to two reasons. Firstly, respondents in the before-interaction phase for the three well-known retailers are not as common in South Korea compared to the other phases. Secondly, there are not many respondents in the before-interaction phase that have encountered word-of-mouth information regarding the retailer's online store for high touch products or low touch products (only 40 respondents were obtained for each product type). Thus, we removed the condition of word-of-mouth from social contacts and obtained 222 respondents for both low touch and high touch products. Missing values for the construct of word-of-mouth were compensated by using mean substitution. A dummy variable was used to check for any effect the substitution had on the dependent variable. This variable was coded 0 if there was data for word-of-mouth and 1 if the substitution was made.

The total number of responses for the three phases is 1260, leading to a response rate of 2.52%. Since we do not know the eligibility of respondents of the survey company's panel, we believe that the response rate is reasonable for this study. Tables 4.11., 4.12. and 4.13. present

descriptive statistics of respondents in the three interaction phases. For before-interaction respondents, the majority of the respondents were in their forties (63.5% for both low touch and high touch products) and the majority were males (63.1% for both low touch and high touch products). The majority of the before-interaction respondents had a bachelor's degree (49.5% for both low touch and high touch products) and had Internet purchasing experience earlier than 2002 (31.1% for both low touch and high touch products). For initial-interaction respondents, the majority of the respondents were in their forties (26.3% for low touch products and 26% for high touch products) and the majority were females (55% for low touch products and 57% for high touch products). The majority of the initial-interaction respondents had a bachelor's degree (62.2% for low touch products and 62.5% for high touch products) and had Internet purchasing experience earlier than 2002 (35.9% for low touch products and 38% for high touch products). For post-initial purchase respondents, the majority of the respondents were in their forties (46.4% for low touch products and 43% for high touch products) and the majority were females (50.2% for low touch products and 51.5% for high touch products). The majority of the post-initial purchase respondents had a bachelor's degree (63.3% for low touch products and 61% for high touch products) and had previous online purchasing experience from the retailer since 2005 (27.5% for low touch products and 25.5% for high touch products). For each phase, the respondents of the two product types do not differ significantly in demographics (see the t-statistics and p values in Tables 4.11., 4.12. and 4.13.). Given that the magnitude of t-statistics and p values for each demographic in these tables are less than 1.96 and 0.05 respectively, the differences between the respondents of the two product types are not significantly different at $p < 0.05$.

Low Touch Products				High Touch Products				t-stat
Demographics		Frequency	Percent	Demographics		Frequency	Percent	(P-value)
Age	<20	4	1.8	Age	<20	4	1.8	0 (0)
	21-25	15	6.8		21-25	15	6.8	0 (0)
	26-30	20	9.0		26-30	20	9.0	0 (0)
	31-35	27	12.2		31-35	27	12.2	0 (0)
	36-40	15	6.8		36-40	15	6.8	0 (0)
	>40	141	63.5		>40	141	63.5	0 (0)
Gender	Male	140	63.1	Gender	Male	140	63.1	0 (0)
	Female	82	36.9		Female	82	36.9	0 (0)
Academic Background	High School	61	27.5	Academic Background	High School	61	27.5	0 (0)
	Bachelors	110	49.5		Bachelors	110	49.5	0 (0)
	Masters	14	6.3		Masters	14	6.3	0 (0)
	Doctorate	37	16.7		Doctorate	37	16.7	0 (0)
Internet Purchasing Experience	None	9	4.1	Internet Purchasing Experience	None	9	4.1	0 (0)
	Since 2006	12	5.4		Since 2006	12	5.4	0 (0)
	Since 2005	24	10.8		Since 2005	24	10.8	0 (0)
	Since 2004	31	14.0		Since 2004	31	14.0	0 (0)
	Since 2003	36	16.2		Since 2003	36	16.2	0 (0)
	Since 2002	41	18.5		Since 2002	41	18.5	0 (0)
	Before 2002	69	31.1		Before 2002	69	31.1	0 (0)
Offline Purchasing Experience from Retailer	Since 2006	20	9.0	Offline Purchasing Experience from Retailer	Since 2006	20	9.0	0 (0)
	Since 2005	20	9.0		Since 2005	20	9.0	0 (0)
	Since 2004	23	10.4		Since 2004	23	10.4	0 (0)
	Since 2003	12	5.4		Since 2003	12	5.4	0 (0)
	Since 2002	22	9.9		Since 2002	22	9.9	0 (0)
	Before 2002	125	56.3		Before 2002	125	56.3	0 (0)

Table 4.11. Demographics of Respondents in the Before-Interaction Phase

Low Touch Products				High Touch Products				t-stat
Demographics		Frequency	Percent	Demographics		Frequency	Percent	(P-value)
Age	<20	2	1.0	Age	<20	2	1.0	0 (1)
	21-25	45	21.5		21-25	45	22.5	-0.24 (0.81)
	26-30	41	19.6		26-30	38	19.0	0.15 (0.88)
	31-35	36	17.2		31-35	34	17.0	0.05 (0.96)
	36-40	30	14.4		36-40	29	14.5	-0.03 (0.98)
	>40	55	26.3		>40	52	26.0	0.07 (0.95)
Gender	Male	94	45.0	Gender	Male	86	43.0	0.41 (0.68)
	Female	115	55.0		Female	114	57.0	-0.41 (0.68)
Academic Background	High School	61	29.2	Academic Background	High School	57	28.5	0.16 (0.88)
	Bachelors	130	62.2		Bachelors	125	62.5	-0.06 (0.95)
	Masters	4	1.9		Masters	5	2.5	-0.41 (0.68)
	Doctorate	14	6.7		Doctorate	13	6.5	0.08 (0.94)
Internet Purchasing Experience	None	6	2.9	Internet Purchasing Experience	None	6	3.0	-0.06 (0.95)
	Since 2006	5	2.4		Since 2006	5	2.5	-0.07 (0.95)
	Since 2005	11	5.3		Since 2005	14	7.0	-0.71 (0.48)
	Since 2004	37	17.7		Since 2004	29	14.5	0.88 (0.38)
	Since 2003	33	15.8		Since 2003	33	16.5	-0.19 (0.85)
	Since 2002	42	20.1		Since 2002	37	18.5	0.41 (0.68)
	Before 2002	75	35.9		Before 2002	76	38.0	-0.44 (0.66)
Offline Purchasing Experience from retailer	Since 2006	22	10.5	Offline Purchasing Experience from Retailer	Since 2006	20	10.0	0.17 (0.88)
	Since 2005	30	14.4		Since 2005	31	15.5	-0.31 (0.76)
	Since 2004	28	13.4		Since 2004	25	12.5	0.27 (0.79)
	Since 2003	15	7.2		Since 2003	13	6.5	0.28 (0.78)
	Since 2002	15	7.2		Since 2002	13	6.5	0.28 (0.78)
	Before 2002	99	47.4		Before 2002	98	49.0	-0.32 (0.75)

Table 4.12. Demographics of Respondents in the Initial-Interaction Phase

Low Touch Products				High Touch Products				t-stat
Demographics		Frequency	Percent	Demographics		Frequency	Percent	(P-value)
Age	<20	2	1.0	Age	<20	1	.5	0.59 (0.72)
	21-25	22	10.6		21-25	24	12.0	-0.45 (0.66)
	26-30	26	12.6		26-30	30	15.0	-0.70 (0.48)
	31-35	40	19.3		31-35	40	20.0	-0.18 (0.86)
	36-40	21	10.1		36-40	19	9.5	0.36 (0.72)
	>40	96	46.4		>40	86	43.0	0.69 (0.49)
Gender	Male	103	49.8	Gender	Male	97	48.5	0.26 (0.79)
	Female	104	50.2		Female	103	51.5	-0.26 (0.79)
Academic Background	High School	47	22.5	Academic Background	High School	45	22.5	0 (0)
	Bachelors	131	63.3		Bachelors	122	61.0	0.48 (0.68)
	Masters	6	2.9		Masters	10	5.0	-1.09 (0.28)
	Doctorate	23	11.1		Doctorate	23	11.5	-0.13 (0.45)
Internet Purchasing Experience	Since 2006	2	1.0	Internet Purchasing Experience	Since 2006	3	1.5	-0.45 (0.65)
	Since 2005	12	5.8		Since 2005	13	6.5	-0.29 (0.77)
	Since 2004	18	8.7		Since 2004	16	8.0	0.26 (0.60)
	Since 2003	34	16.4		Since 2003	32	16.0	0.11 (0.54)
	Since 2002	38	18.4		Since 2002	33	16.5	0.51 (0.61)
	Before 2002	103	49.8		Before 2002	103	51.5	-0.34 (0.73)
Online Purchasing Experience from Retailer	Since 2006	25	12.1	Online Purchasing Experience from Retailer	Since 2006	25	12.5	-0.12 (0.68)
	Since 2005	57	27.5		Since 2005	51	25.5	-0.46 (0.68)
	Since 2004	44	21.3		Since 2004	44	22.0	-0.17 (0.86)
	Since 2003	26	12.6		Since 2003	26	13.0	-0.12 (0.90)
	Since 2002	24	11.6		Since 2002	24	12.0	-0.13 (0.91)
	Before 2002	31	15.0		Before 2002	30	15.0	0 (0)

Table 4.13. Demographics of Respondents in the Post-Initial Purchase Phase

The samples of each phase and product type were assessed by checking for non-response bias, the objective being to demonstrate through descriptive statistics of the demographics and

construct scores that the respondents are not a biased sample of the population of consumers. For each phase, non-response bias was checked for respondents of each product type by classifying respondents into early and late respondents and t-tests were performed to check if differences in demographics and construct mean scores exist (Etter and Perneger 1997, Ullman and Newcomb 1998). The analyses shows in all phases that early and late respondents differ marginally in certain demographic segments (i.e. age and gender) (see bold demographic segments in Tables C.1.1, C.2.1 and C.3.1 in Appendix C). However, when comparing construct scores, there were no significant differences between early and late respondents (see Tables C.1.2, C.2.2 and C.3.2 in Appendix C). Thus, although there may be bias in terms of certain demographic segments, the bias is not evident in the respondents' scores of constructs. Based on these tests, we thus conclude that non-response bias is not serious in this study.

In this chapter, we have described the methodology of the study, specifically elaborating on the survey methodology and the survey instrument validation process. Following the favorable results of instrument testing, we proceeded to classify department store product categories into low touch and high touch products. We then went on to elaborate how the field study was conducted and assessed the representativeness of respondents in the three phases.

Chapter 5

Data Analysis

To analyze data from the field study, chapter 5 describe the empirical validation of the research models of the before-interaction, initial-interaction and post-initial purchase phases. First, the validation process of the measures for all phases is described. Next, we present the results of hypotheses testing of each phase using Partial Least Squares (PLS).

5.1 Instrument Validation

Before examining the relationships between constructs, it is crucial to establish that the measurement of constructs is valid and reliable for further study. After field survey data collection, we determined the reliability of constructs and explored the nature of the components of each phase using factor analysis. The convergent and discriminant validity of constructs were then examined after the dropping of certain items during the factor analysis.

5.1.1. Reliability Assessment

The method used to statistically assess the reliability of the scale questions was the Cronbach's Alpha reliability coefficient (Cronbach 1951). Nunnally (1978) recommended that values of 0.70 or higher indicates adequate internal consistency. For this study, the constructs for the three phases exhibited scores of Cronbach's Alphas well above the acceptable threshold of 0.70 (See Tables 5.1., 5.2. and 5.3.), showing that the constructs for the three phases possessed adequate internal consistency.

Low Touch Products	Cronbach's Alpha	High Touch Products	Cronbach's Alpha
Perceived Structural Assurance of the Internet	0.882	Perceived Structural Assurance of the Internet	0.882
Offline Cognitive Trust	0.930	Offline Cognitive Trust	0.930
Offline Emotional Trust	0.920	Offline Emotional Trust	0.920
Indirect Sanctions Effectiveness	0.874	Indirect Sanctions Effectiveness	0.874
Online Direct Sanctions Effectiveness	0.890	Online Direct Sanctions Effectiveness	0.890
Cross-Channel Sanctions Effectiveness	0.922	Cross-Channel Sanctions Effectiveness	0.922
Intention of Online Purchase	0.947	Intention of Online Purchase	0.945
Online Cognitive Trust	0.951	Online Cognitive Trust	0.946
Word-of-Mouth from Social Network	0.995	Word-of-Mouth from Social Network	0.994

Table 5.1. Reliability of Constructs in the Before-Interaction Phase

Low Touch Products	Cronbach's Alpha	High Touch Products	Cronbach's Alpha
Perceived Structural Assurance of the Retailer's Website	0.938	Perceived Structural Assurance of the Retailer's Website	0.917
Offline Cognitive Trust	0.895	Offline Cognitive Trust	0.888
Offline Emotional Trust	0.918	Offline Emotional Trust	0.890
Perceived Information Quality	0.913	Perceived Information Quality	0.909
Perceived System Quality	0.902	Perceived System Quality	0.894
Indirect Sanctions Effectiveness	0.849	Indirect Sanctions Effectiveness	0.835
Online Direct Sanctions Effectiveness	0.871	Online Direct Sanctions Effectiveness	0.898
Cross-Channel Sanctions Effectiveness	0.897	Cross-Channel Sanctions Effectiveness	0.894
Intention of Online Purchase	0.944	Intention of Online Purchase	0.954
Online Cognitive Trust	0.927	Online Cognitive Trust	0.926
Word-of-Mouth from Social Network	0.909	Word-of-Mouth from Social Network	0.926

Table 5.2. Reliability of Constructs in the Initial-Interaction Phase

Low Touch Products	Cronbach's Alpha	High Touch Products	Cronbach's Alpha
Perceived Retailer's Willingness to Customize	0.873	Perceived Retailer's Willingness to Customize	0.873
Intention of Online Repurchase	0.947	Intention of Online Repurchase	0.954
Online Cognitive Trust	0.928	Online Cognitive Trust	0.954
Online Emotional Trust	0.919	Online Emotional Trust	0.945
Disparity with WOM from Social Network	0.925	Disparity with WOM from Social Network	0.927
Disparity with Offline Purchasing Experiences	0.937	Disparity with Offline Purchasing Experiences	0.953
Satisfaction with Order Procurement	0.910	Satisfaction with Order Procurement	0.907
Satisfaction with Order Fulfillment	0.938	Satisfaction with Order Fulfillment	0.903

Table 5.3. Reliability of Constructs in the Post-Initial Purchase Phase

5.1.2. Exploratory Factor Analysis

After obtaining the Cronbach's alpha of the constructs, we proceeded to prune the items through exploratory factor analysis (EFA). An EFA was chosen mainly because the present study was in an exploratory stage where no prior analyses have been conducted (Gorsuch 1983). Factor analysis is a method for determining the nature of the underlying variables among various measures. The factor loadings indicate the extent to which a questionnaire item is associated with an underlying factor. Hair et al. (1998) recommends an EFA to be carried out first before validating the scales for the measurement of specific constructs. For all interaction phases of this study, a Principal Component Factor Analysis (PCA analysis) with VARIMAX rotation was performed for each product type (low touch and high touch products).

For the before-interaction phase, all items belonging to the 9 constructs were entered into factor analysis and we specified a 9 factor solution. When performing the factor analysis for low touch products, 9 components with eigenvalues above 1 accounted for approximately 80% of the variance. All items load higher on their intended constructs than on other constructs, with a

minimum loading of 0.63 (with the exception of OfCT1 which has a loading of 0.39). When performing the factor analysis for high touch products, 9 components with Eigen values above 1 accounted for approximately 80% of the variance. All items load higher on their intended constructs than on other constructs, with a minimum loading of 0.53 (with the exception of OfCT1 which has a loading of 0.32). Since 0.50 is the commonly accepted threshold for item loadings, OfCT1 was omitted for both product types. The resulting factor analyses of the low touch and high touch products after omitting OfCT1 are shown in Tables 5.4. and 5.5. Since the resulting factor analysis also showed clean loadings for each construct item, this suggests that the items of each construct are appropriately associated with their underlying constructs and do not tap on the measurement of other constructs.

Question	Factor								
	1	2	3	4	5	6	7	8	9
SA1	.173	-.090	-.018	.043	**.847**	-.063	.052	.020	.102
SA2	-.164	.075	.029	.038	**.896**	.041	-.090	-.037	.038
SA3	.005	.025	-.003	.012	**.898**	-.017	-.006	-.038	-.052
OfCT2	-.060	**.661**	-.085	-.013	.012	-.027	-.089	-.023	.251
OfCT3	-.021	**.737**	.022	.029	-.026	.035	.044	-.056	.141
OfCT4	-.003	**.773**	.031	.038	.034	.141	-.019	-.150	-.147
OfCT5	.061	**.748**	-.016	.004	-.092	-.049	-.057	.022	.133
OfCT 6	.068	**.836**	.015	.153	-.068	-.054	.054	.012	.058
OfCT 7	.095	**.778**	.013	-.117	.140	.099	.021	.020	-.115
OfCT 8	.036	**.686**	.045	-.149	.054	.060	-.066	-.011	.134
OfCT 9	.107	**.731**	-.022	.094	.043	-.081	.036	-.053	.071
OfET 1	.089	.078	.027	.045	.000	.042	-.052	-.039	**.798**
OfET 2	-.010	.125	.007	-.005	.127	.052	-.038	-.024	**.792**
OfET 3	.060	.125	.033	-.031	.041	.156	-.021	-.050	**.655**
IS1	.061	-.053	-.059	**.779**	-.006	-.097	.068	-.224	.132
IS 2	.001	.000	.017	**.931**	0	.065	-.056	.057	.026
IS3	-.026	.072	.068	**.894**	.095	.053	-.016	.080	-.118
ODS1	.010	.088	.046	.034	.019	.000	-.101	**.855**	.007
ODS2	-.015	.106	-.067	.063	.040	.032	-.149	**.798**	-.006
ODS3	.170	-.041	.009	-.096	.069	.224	.162	**.697**	.132
CCS1	-.004	-.008	-.007	.049	-.018	**.940**	-.022	-.009	.032
CCS2	-.020	.003	.001	.022	-.042	**.961**	-.024	-.013	.037
CCS3	.131	.031	-.074	-.020	.029	**.750**	.051	-.088	.058
OPI1	.053	-.018	-.016	.028	-.029	-.028	**.906**	-.065	.036
OPI2	.091	.012	.018	.003	.079	-.001	**.876**	.013	-.007
OPI3	.035	-.032	.018	-.014	-.006	.035	**.924**	-.022	.019
OnCT1	**.711**	-.019	.061	-.021	-.006	.020	-.181	-.102	.011
OnCT2	**.754**	.026	-.017	.099	-.068	-.010	-.142	-.097	-.008
OnCT3	**.816**	-.012	-.002	.112	-.016	.021	-.023	-.061	.015
OnCT4	**.764**	.098	-.027	.000	.044	.137	-.079	.058	-.070
OnCT5	**.733**	.031	-.094	-.104	.075	-.022	-.085	-.010	.074
OnCT6	**.801**	.052	.021	.032	-.040	-.100	.056	-.168	.043
OnCT7	**.760**	-.002	.048	-.151	.114	.115	-.004	.000	-.043
OnCT8	**.740**	.068	.005	-.036	.072	.027	-.110	.110	.070
OnCT9	**.846**	.059	-.010	.065	-.036	.040	.040	.075	.073
WOM1	.007	-.018	**.996**	.014	-.010	.008	-.003	.003	.025
WOM2	.003	-.002	**.992**	.012	-.008	-.016	-.010	.012	.020
WOM3	-.002	.017	**.992**	-.008	.011	-.035	.008	-.025	.002
Eigen Value	6.97	6.48	3.03	2.77	2.57	2.52	2.51	2.22	1.52
Variance	18/35	17.06	7.97	7.30	6.77	6.64	6.63	5.84	4.01
Cumulative Variance	18.35	35.41	43.38	50.68	57.45	64.09	70.72	76.56	80.56

Table 5.4. Factor Analysis for Low Touch Products in the Before-Interaction Phase

Question	Factor								
	1	2	3	4	5	6	7	8	9
SA1	.087	-.019	-.024	.029	**.866**	-.044	-.061	.005	.072
SA2	-.087	.021	.031	.035	**.909**	.006	.056	-.019	.019
SA3	-.017	-.015	.013	.008	**.907**	-.021	.002	-.021	-.052
OfCT2	-.036	-.060	.040	-.008	.030	-.014	**.703**	-.054	.190
OfCT3	-.080	-.039	.106	.039	-.036	.045	**.770**	-.030	.122
OfCT4	.055	-.008	-.025	.031	.040	.135	**.733**	-.111	-.144
OfCT5	.118	.019	-.028	-.008	-.072	-.048	**.767**	-.003	.080
OfCT6	-.013	-.005	.023	.140	-.066	-.044	**.872**	.008	.050
OfCT7	.071	.071	-.054	-.129	.142	.118	**.771**	.029	-.119
OfCT8	.089	.045	-.028	-.148	.074	.061	**.687**	-.021	.123
OfCT9	.056	-.002	.045	.087	.037	-.069	**.756**	-.057	.028
OfET1	.159	.020	.073	.082	.023	.045	.184	-.081	**.671**
OfET2	.079	.004	.062	.023	.145	.047	.228	-.067	**.662**
OfET3	.090	.053	.045	-.014	.058	.164	.232	-.089	**.534**
IS1	.057	-.040	-.074	**.762**	-.014	-.082	-.036	-.265	.097
IS2	.051	.021	-.043	**.936**	.005	.068	-.010	.049	.046
IS3	-.054	.041	.058	**.906**	.084	.056	.058	.112	-.082
ODS1	-.003	.007	.075	.028	.011	-.032	.051	**.888**	-.007
ODS2	.031	.007	.006	.038	.039	.005	.057	**.857**	-.028
ODS3	.056	.037	.013	-.113	.034	.231	-.053	**.727**	.113
CCS1	-.016	-.003	.042	.062	-.018	**.945**	.010	.001	-.013
CCS2	.002	.032	.009	.031	-.044	**.967**	-.001	-.003	.015
CCS3	.057	-.080	-.005	-.020	.022	**.776**	.025	-.115	.059
OPI1	-.009	.004	**.950**	.020	-.040	.015	-.030	-.041	.001
OPI2	.027	.005	**.942**	-.012	.043	.009	-.027	.038	.014
OPI3	.034	.007	**.910**	-.049	.013	-.002	.012	-.028	-.001
OnCT1	**.574**	.020	.264	.046	.040	.008	.116	-.051	-.053
OnCT2	**.793**	.072	-.026	.086	.046	.064	-.039	-.108	-.021
OnCT3	**.728**	.042	.102	.087	.032	-.025	.051	-.164	-.102
OnCT4	**.684**	-.078	.038	-.035	.063	.173	.151	-.052	-.243
OnCT5	**.718**	.007	.122	-.042	.112	-.007	.029	-.001	.072
OnCT6	**.837**	-.047	-.003	.110	-.095	-.114	.054	-.010	.034
OnCT7	**.708**	-.001	.055	-.113	.071	.160	-.032	.039	.133
OnCT8	**.817**	.002	-.036	-.095	.035	.075	-.034	.050	.196
OnCT9	**.695**	-.028	.087	-.019	-.088	-.011	.152	-.074	.061
WOM1	.009	**.995**	.003	.001	-.013	.001	-.034	-.010	.012
WOM2	-.012	**.994**	-.006	-.004	-.008	-.007	.019	.003	.012
WOM3	-.005	**.989**	.011	.024	-.006	-.025	.016	-.014	-.009
Eigen Values	6.50	6.38	3.01	2.90	2.82	2.61	2.53	2.18	1.52
Variance	17.10	16.80	7.92	7.65	7.42	6.87	6.65	5.75	4.00
Cumulative Variance	17.10	33.90	41.82	49.45	56.87	63.73	70.39	76.13	80.13

Table 5.5. Factor Analysis for High Touch Products in the Before-Interaction Phase

For the initial-interaction phase, all items belonging to the 12 constructs were entered into factor analysis and we specified a 12 factor solution. When performing the factor analysis for low touch products, 12 components with Eigen values above 1 accounted for approximately 79% of the variance and revealed two problems: OfCT1 loads on offline cognitive trust with a loading of 0.48 and OfCT7 loads on offline emotional trust with a loading of 0.51. This suggests that these two items are possible candidates for deletion. When performing the factor analysis of the high touch products, 12 components with Eigen values above 1 accounted for approximately 79% of the variance and revealed two problems: OfCT1 loads on offline cognitive trust with a loading of 0.45 and OfCT7 loads on offline emotional trust with a loading of 0.65. Thus, OfCT1 and OfCT7 were omitted for subsequent analysis of the two product types. The resulting factor analysis of the low touch and high touch products after omitting OfCT1 and OfCT7 are shown in Tables 5.6. and 5.7. For both product types, all items load higher on their intended constructs than on other constructs, with loadings more than 0.52. Since the resulting factor analysis also showed clean loadings for each construct item, it is evident that all items of each construct in the initial-interaction phase items of each construct are appropriately associated with their underlying construct and do not tap on the measurement of other constructs.

Question	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
SA1	.083	.145	.047	.004	.097	**.851**	.148	-.012	.116	-.003	.117	.062
SA2	.151	.071	.105	.072	.087	**.901**	.036	.062	.131	.040	.072	-.001
SA3	.161	.144	.105	.072	.088	**.858**	.063	.108	.056	.026	.070	.040
OfCT2	.158	**.706**	.019	.226	.225	.068	.062	.094	.132	.113	.134	-.044
OfCT3	.232	**.686**	.060	.190	.262	.106	.084	.140	.197	.011	.079	-.065
OfCT 4	.200	**.673**	.194	.167	.001	.087	.003	.090	.062	.026	.249	.141
OfCT 5	.173	**.771**	.113	-.098	.168	.095	.025	.055	.170	-.087	.035	.244
OfCT 6	.389	**.621**	.167	.030	.183	.050	.107	-.024	.115	.157	.067	-.152
OfCT 8	.377	**.619**	.219	.081	.142	.156	-.042	.153	.064	-.037	.207	.115
OfCT 9	.233	**.552**	.230	.061	.259	.184	.052	.127	-.060	.074	.152	-.034
OfET 1	.196	.308	.109	.206	.244	.210	.080	.112	.174	.047	**.725**	.009
OfET 2	.234	.362	.173	.101	.212	.206	.045	.101	.198	.041	**.698**	.061
OfET3	.284	.452	.098	.064	.268	.059	.153	.109	.199	.036	**.557**	.050
IQ1	.237	.234	.288	.049	**.600**	.204	.179	.208	.139	.071	.235	.182
IQ2	.285	.318	.215	.068	**.730**	.126	.079	.126	.070	.025	.164	.072
IQ3	.225	.291	.118	.016	**.765**	.076	.119	.092	.151	.025	.115	.042
IQ4	.314	.246	.214	.064	**.685**	.118	.114	.086	.191	.031	.145	.118
SQ1	.125	.174	**.773**	.016	.172	.094	.081	.217	.224	.055	.003	.270
SQ2	.181	.228	**.750**	.089	.120	.054	.082	.147	.241	-.014	.000	.248
SQ3	.305	.156	**.715**	.190	.173	.125	.061	.163	.106	.102	.194	-.058
SQ4	.274	.148	**.690**	.222	.225	.130	.055	.183	.130	.050	.177	-.096
IS1	.135	.191	.071	.086	.027	.002	.063	.034	.092	**.849**	.064	.010
IS2	-.096	-.040	.120	.000	.062	.048	.184	-.052	-.134	**.834**	.030	.101
IS3	-.046	-.029	-.064	-.026	-.010	.012	.024	-.024	.103	**.899**	-.030	.080
ODS1	.182	.197	.269	.104	.124	.173	.078	.054	**.783**	.113	.126	.028
ODS2	.252	.209	.304	.054	.126	.136	.064	.151	**.723**	.111	.138	.026
ODS3	.239	.156	.091	.071	.167	.108	.016	.215	**.737**	-.086	.130	.000
CCS1	.101	.105	.202	.098	.060	.078	.031	**.895**	.089	.006	.102	.108
CCS2	.121	.087	.256	.067	.059	.051	.039	**.900**	.070	-.002	.114	.087
CCS3	.189	.228	.027	.052	.307	.049	.169	**.693**	.291	-.087	-.046	-.023
OPI1	.145	.080	.092	**.883**	.096	.075	.215	.051	.106	-.002	.102	.061
OPI2	.251	.099	.136	**.874**	-.008	.065	.162	.049	.033	.056	.078	.070
OPI3	.273	.158	.077	**.848**	.016	-.005	.117	.098	.032	.006	.042	.076
OnCT1	**.564**	.133	.208	.405	.099	.193	.211	.089	.110	.016	.123	.184
OnCT2	**.650**	.195	.154	.226	.165	.167	.090	.011	.214	.043	.026	.099
OnCT3	**.620**	.256	.251	.293	.180	.206	.048	.009	.178	.038	.009	.031
OnCT4	**.622**	.099	.217	.175	.138	.118	.163	.115	.213	-.097	.246	.143
OnCT5	**.661**	.212	.155	.121	.201	.083	.129	.125	.046	.087	.168	.238
OnCT6	**.663**	.360	.112	.114	.111	.108	.098	.067	.129	.076	.043	-.138
OnCT7	**.710**	.172	.097	.051	.061	.025	.086	.183	.060	-.091	.222	.257
OnCT8	**.664**	.318	.063	.002	.113	.093	.185	.071	.194	-.055	.111	.239
OnCT9	**.749**	.188	.056	.257	.228	.012	.076	.079	.080	-.026	-.037	.009
WOM1	.092	.045	.069	.178	.140	.080	**.850**	-.004	.089	.099	.088	.121
WOM2	.154	.048	.028	.171	.080	.136	**.874**	.132	.031	.085	.014	.074
WOM3	.228	.069	.088	.135	.063	.040	**.863**	.046	.010	.103	.038	.051
PS1	.321	.089	.112	.203	.168	.037	.171	.012	.028	.130	.091	**.715**
PS2	.155	.025	.114	.052	.046	.053	.093	.130	.001	.110	-.009	**.843**
Eigen Value	5.87	4.73	3.20	3.17	2.99	2.84	2.76	2.64	2.51	2.45	1.98	1.90
Variance	12.49	10.08	6.81	6.74	6.35	6.04	5.88	5.62	5.34	5.21	4.21	4.04
Cumulative Variance	12.49	22.57	29.38	36.12	42.47	48.51	54.39	60.00	65.35	70.55	74.77	78.81

Table 5.6. Factor Analysis for Low Touch Products in the Initial-Interaction Phase

Question	Factor											
	1	2	3	4	5	6	7	8	9	10	11	12
SA1	.112	.211	.047	.019	.116	.066	**.848**	.033	.039	.124	.189	.045
SA2	.160	.169	.124	.044	.135	.060	**.878**	.023	-.037	.162	.095	.014
SA3	.077	.148	.204	.173	.085	.114	**.846**	-.007	-.117	.107	-.012	.089
OfCT2	.197	**.724**	.085	-.087	.139	.063	.070	.088	.153	.069	.274	.080
OfCT3	.160	**.740**	.164	.023	.116	.062	.115	.115	.045	.140	.238	-.134
OfCT 4	.251	**.674**	.057	.257	.121	.138	.139	-.022	.023	.101	.065	.035
OfCT 5	.205	**.661**	.366	.010	-.033	.141	.155	.103	-.044	.148	-.072	.086
OfCT 6	.296	**.608**	.218	-.100	.133	.160	.130	.012	.240	.097	.125	-.021
OfCT 8	.269	**.639**	.235	.173	.129	.222	.181	.082	-.096	.131	.059	.153
OfCT 9	.275	**.576**	.361	.076	.084	.189	.191	.089	.069	-.055	.124	.146
OfET 1	.242	.314	.219	.115	.161	.089	.260	.121	.053	.131	**.682**	.137
OfET 2	.243	.363	.222	.045	.146	.108	.262	.103	.042	.166	**.645**	.129
OfET3	.230	.415	.283	.146	.140	.046	-.007	.047	.057	.220	**.592**	.103
IQ1	.182	.233	**.669**	.137	.127	.253	.257	.171	.093	.110	.156	.134
IQ2	.264	.310	**.739**	.094	.160	.206	.118	.086	.031	.033	.080	.114
IQ3	.215	.275	**.724**	.088	.076	.127	.077	.102	.132	.106	.135	.041
IQ4	.191	.223	**.737**	.066	.115	.182	.109	.065	.060	.227	.175	.126
SQ1	.097	.210	.189	.179	.081	**.773**	.057	.159	.086	.183	-.118	.159
SQ2	.156	.244	.146	.141	.032	**.772**	.082	.122	.015	.224	-.057	.165
SQ3	.268	.149	.192	.203	.124	**.717**	.100	.118	.115	.042	.296	-.027
SQ4	.269	.103	.266	.184	.174	**.665**	.126	.186	.076	.054	.269	-.064
IS1	.164	.244	-.003	.026	.078	.148	-.002	.036	**.797**	.074	.141	-.034
IS2	-.020	.000	.130	.144	-.115	.115	.047	-.036	**.846**	-.133	-.051	.105
IS3	-.041	-.005	.057	.003	-.021	-.069	-.134	-.012	**.881**	.127	.010	.099
ODS1	.367	.161	.073	-.104	.088	.216	.210	.092	.170	**.706**	.147	.037
ODS2	.297	.184	.207	.041	.076	.205	.178	.150	.167	**.722**	.049	.028
ODS3	.167	.153	.132	.116	.035	.101	.158	.191	-.138	**.780**	.139	.029
CCS1	.130	.084	.003	.093	.137	.129	.040	**.900**	.031	.065	.075	.067
CCS2	.171	.060	.096	.149	.090	.196	-.031	**.889**	.019	.061	.040	.102
CCS3	.201	.126	.249	.104	.037	.063	.051	**.726**	-.087	.269	.050	.044
OPI1	.206	.121	.119	.191	**.867**	.094	.145	.112	-.003	-.025	.138	.013
OPI2	.191	.165	.116	.281	**.840**	.091	.122	.083	-.072	.080	.043	.122
OPI3	.259	.149	.118	.151	**.859**	.084	.112	.089	-.015	.102	.084	.041
OnCT1	**.639**	.217	.029	.180	.347	.125	.009	.108	.021	.120	.082	.277
OnCT2	**.612**	.295	.071	-.066	.327	.202	.076	.211	.036	.146	.176	.127
OnCT3	**.712**	.317	.079	.086	.242	.106	.126	.126	.127	.069	.068	-.069
OnCT4	**.651**	.189	.201	.304	.113	.069	.095	.051	-.034	.336	.145	.019
OnCT5	**.643**	.116	.246	.117	.046	.221	.182	.042	-.052	.130	.109	.361
OnCT6	**.714**	.313	.191	.063	.160	.141	.156	.122	.119	.100	.060	.026
OnCT7	**.508**	.232	.188	.401	.156	.047	.097	.105	-.117	.158	.055	.210
OnCT8	**.633**	.150	.248	.160	-.032	.125	.055	.174	-.059	.164	.156	.242
OnCT9	**.625**	.270	.217	.139	.161	.121	.029	.173	.067	.165	.094	-.174
WOM1	.174	.054	.092	**.835**	.178	.184	.043	.075	.111	.048	.034	.147
WOM2	.126	.014	.094	**.871**	.191	.120	.020	.154	.055	.042	-.006	.103
WOM3	.139	.054	.046	**.842**	.143	.158	.144	.094	.041	-.026	.125	.028
PS1	.156	.103	.118	.068	.054	.036	.134	.092	.159	-.010	.219	**.753**
PS2	.091	-.001	.110	.171	.081	.109	-.005	.085	.043	.050	-.033	**.832**
Eigen Value	5.28	4.77	3.40	3.14	3.04	2.99	2.94	2.66	2.50	2.43	1.99	1.95
Variance	11.23	10.14	7.24	6.68	6.47	6.36	6.26	5.65	5.32	5.17	4.24	4.16
Cumulative Variance	11.23	21.37	28.61	35.29	41.89	48.12	54.38	60.03	65.35	70.52	74.76	78.92

Table 5.7. Factor Analysis for High Touch Products in the Initial-Interaction Phase

For the post-initial purchase phase, all items belonging to the 10 constructs were entered into factor analysis and we specified a 10 factor solution. When performing the factor analysis for low touch products, 10 components with Eigen values above 1 accounted for approximately 85% of the variance and revealed the following problems: OnCT6 and OnCT9 loaded on a separate component while PSat4 and PSat5 loaded on satisfaction with order fulfillment and intention of online purchase. This suggests that OnCT6, OnCT9, PSat4 and PSat5 are possible candidates for deletion. When performing the factor analysis for high touch products, 10 components with Eigen values above 1 accounted for approximately 84% of the variance and the items showed no problems. However, since the factor analysis of low touch products suggested that OnCT6, OnCT9, PSat4 and PSat5 should be omitted, we omitted these items for both low touch and high touch products to facilitate a consistent comparison between the research models of the two product types. The resulting factor analysis of the low touch and high touch products after omitting the 4 items are shown in Tables 5.8. and 5.9. For both product types, all items load higher on their intended constructs than on other constructs, with loadings more than 0.51. Since the resulting factor analysis also showed clean loadings for each construct item, it is evident that all items of each construct in the post-initial purchase phase are appropriately associated with their underlying construct and do not tap on the measurement of other constructs.

Question	Factor								
	1	2	3	4	5	6	7	8	9
CUS1	.294	.237	.175	.120	**.770**	.079	.245	-.024	.008
CUS2	.093	.277	.175	.211	**.689**	.163	.147	.155	.238
CUS3	.156	.318	.161	.129	**.812**	.100	.000	.170	.120
OPI1	.308	.231	.102	**.776**	.161	.133	.256	.115	.127
OPI2	.248	.273	.148	**.749**	.176	.168	.162	.202	.238
OPI3	.237	.311	.174	**.774**	.138	.181	.070	.166	.180
OnCT1	.305	**.572**	.335	.390	.351	.091	.026	.054	.002
OnCT2	.383	**.617**	.163	.345	.255	.122	.112	.026	.012
OnCT3	.443	**.600**	.134	.294	.218	.055	.027	.061	.199
OnCT4	.181	**.690**	.241	.134	.341	.142	.066	.111	.206
OnCT5	.268	**.777**	.160	.205	.125	.076	.171	-.015	.153
OnCT7	.202	**.664**	.208	.091	.246	.241	.046	.350	.065
OnCT8	.123	**.785**	.160	.170	.169	.132	.225	.209	.079
OnET1	.322	.233	.308	.357	.227	-.028	.219	**.554**	.128
OnET2	.440	.271	.320	.337	.201	.076	.249	**.593**	.182
OnET3	.372	.179	.310	.324	.124	.105	.161	**.566**	.059
DWOM1	.395	.209	.335	.339	.274	.126	**.610**	.026	.109
DWOM2	.294	.223	.371	.328	.212	.151	**.605**	.218	.161
DWOM3	.194	.312	.328	.182	.171	.247	**.587**	.358	.192
DOFF1	.188	.177	**.808**	.197	.184	.237	.180	.042	.120
DOFF2	.215	.245	**.811**	.146	.156	.149	.162	.157	.154
DOFF3	.062	.227	**.834**	.053	.153	.202	.110	.202	.106
PSAT1	.401	.156	.143	.307	.179	.066	.282	.024	**.575**
PSAT2	.359	.219	.286	.279	.195	.242	.101	.151	**.640**
PSAT3	.334	.331	.314	.318	.205	.157	.099	.107	**.561**
FSAT1	**.787**	.171	.164	.233	.170	.174	.115	.110	.185
FSAT2	**.731**	.249	.053	.273	.171	.167	.269	.135	.199
FSAT3	**.650**	.345	.189	.206	.195	.180	.097	.292	.151
FSAT4	**.788**	.335	.124	.153	.162	.106	.132	.091	.166
FSAT5	**.563**	.256	.253	.133	.062	.399	.000	.367	.002
PS1	.313	.082	.211	.215	.164	**.755**	.198	-.001	.136
PS2	.134	.282	.325	.132	.120	**.780**	.051	.088	.101
Eigen Value	4.94	4.81	3.61	3.51	2.88	2.01	1.82	1.74	1.68
Variance	15.42	15.03	11.29	10.96	9.00	6.29	5.69	5.42	5.25
Cumulative Variance	15.42	30.46	41.75	52.71	61.70	68.00	73.68	79.10	84.35

Table 5.8. Factor Analysis for Low Touch Products in the Post-Initial Purchase Phase

Question	Factor								
	1	2	3	4	5	6	7	8	9
CUS1	.233	.129	.287	.130	.115	**.762**	.170	.131	.023
CUS2	.250	.265	.130	.281	.095	**.663**	.221	.216	.035
CUS3	.269	.093	.159	.169	.105	**.806**	.120	.191	.108
OPI1	.223	.059	.209	**.832**	.093	.179	.233	.132	.114
OPI2	.220	.185	.155	**.850**	.109	.178	.159	.171	.088
OPI3	.279	.168	.146	**.811**	.188	.146	.142	.196	.068
OnCT1	**.681**	.206	.174	.241	.142	.223	.159	.125	.174
OnCT2	**.813**	.057	.189	.164	.157	.079	.215	.221	.032
OnCT3	**.756**	.104	.288	.119	.112	.158	.184	.107	.028
OnCT4	**.689**	.277	.126	.141	.236	.267	.138	.119	.191
OnCT5	**.703**	.203	.182	.178	.252	.140	.075	.055	.159
OnCT7	**.630**	.266	.241	.144	.204	.281	.109	.038	.329
OnCT8	**.706**	.231	.169	.253	.237	.162	.198	.071	.204
OnET1	.326	.299	.193	.210	**.743**	.142	.179	.079	.078
OnET2	.349	.216	.206	.116	**.778**	.111	.199	.172	.069
OnET3	.320	.296	.243	.148	**.733**	.115	.177	.179	.106
DWOM1	.279	.120	.243	.240	.255	.194	**.735**	.109	.073
DWOM2	.276	.255	.205	.272	.171	.231	**.747**	.138	.043
DWOM3	.302	.324	.147	.168	.148	.159	**.705**	.254	.018
DOFF1	.200	**.816**	.160	.183	.220	.146	.164	.066	.154
DOFF2	.225	**.854**	.141	.145	.164	.107	.177	.125	.151
DOFF3	.230	**.852**	.080	.067	.211	.142	.142	.172	.110
PSAT1	.106	.064	.259	.239	.126	.174	.334	**.711**	.066
PSAT2	.181	.164	.226	.122	.139	.178	.039	**.765**	.263
PSAT3	.177	.219	.258	.228	.132	.217	.122	**.659**	.230
FSAT1	.261	.055	**.766**	.106	.199	.137	.190	.177	.126
FSAT2	.246	.098	**.777**	.104	.102	.179	.206	.265	.123
FSAT3	.260	.316	**.519**	.258	.251	.248	.238	.093	.223
FSAT4	.415	.065	**.615**	.157	.108	.183	.216	.286	.049
FSAT5	.175	.257	**.652**	.278	.187	.159	-.035	.130	.167
PS1	.172	.099	.179	.172	-.012	.046	.059	.338	**.802**
PS2	.285	.269	.161	.043	.178	.073	.020	.101	**.799**
Eigen Value	5.23	3.33	3.32	3.08	2.55	2.54	2.47	2.36	1.89
Variance	16.34	10.42	10.37	9.62	7.93	7.92	7.70	7.37	5.90
Cumulative Variance	16.34	26.76	37.13	46.75	54.68	62.60	70.30	77.67	83.57

Table 5.9. Factor Analysis for High Touch Products in the Post-Initial Purchase Phase

5.1.3 Convergent and Discriminant Validity

After we refined the measurement instrument by omitting certain questionnaire items, we proceeded to ascertain whether the remaining items have convergent and discriminant validity. Convergent validity is the degree to which the items of a given construct are measuring the same underlying latent variable and is assessed using standardized path loadings, composite reliabilities and average variance extracted (AVE). Firstly, standardized path loadings, which are indicators of the degree of association between the underlying latent factor and each item, should be greater than 0.7 and statistically significant (Gefen et al. 2000). Secondly, composite reliabilities should be greater than 0.7 (Nunnally 1978). Thirdly, the AVE for each factor should be more than 0.50 (Fornell and Larcker 1981). Discriminant validity measures the degree to which the measures of two constructs are empirically distinct. To establish discriminant validity, the square root of AVE must be larger than the correlations between constructs. These criteria were applied to the samples of each phase and each product type. We also checked for multi-collinearity which is known as the phenomenon that there is an unacceptable level of intercorrelation among the independent variables such that the effects of the independents cannot be separated (Hair et al. 1998). Hair et al. (1998) recommended that the Variance Inflation Factors (VIFs) of each independent variable should not exceed 5. The intercorrelations between constructs should not exceed 0.80 as well (Berry 1993). As noted by Podsakoff and Organ (1986), a problem that may arise in studies using questionnaires is common method variance (Campbell and Fiske 1959). This is typically examined using Harmon's single factor test (Podsakoff and Organ 1986). In this procedure, all of the variables of interest are entered into a factor analysis. If a significant amount of common method variance is present, a single factor

will emerge and it will account for most of the covariance in the independent and criterion variables.

For the before-interaction phase, standardized path loadings, composite reliabilities and average variance extracted were all greater than the acceptable levels for both product types and displayed convergent validity. The standardized path loadings for both low touch products and high touch products were all greater than 0.7 and statistically significant (see Table 5.10.). Composite reliabilities ranged from 0.90 to 0.99 and AVE ranged from 0.70 to 0.99 for both product types. The constructs for low touch and high touch products also shows discriminant validity when the square root of AVE is greater than the correlations between constructs (see Tables 5.11. and 5.12.). Multi-collinearity was not apparent when the VIFs were less than 3 and the intercorrelations between constructs were not more than 0.70. When we performed Harmon's single factor test, it is evident that no single factor emerged. Since a general factor did not emerge for either product type, common method variance problems do not exist. Thus, we can infer that the constructs possessed adequate convergent and discriminant validity for each product type during the before-interaction phase.

Item	Low Touch	T-value	High Touch	T-value
SA1	0.90	35.8	0.89	30.9
SA2	0.91	28.9	0.92	41.7
SA3	0.88	25.3	0.88	26.6
OfCT2	0.82	21.4	0.82	21.1
OfCT3	0.83	25.2	0.84	25.0
OfCT4	0.80	19.5	0.80	19.1
OfCT5	0.82	23.3	0.82	23.1
OfCT 6	0.86	31.1	0.86	30.4
OfCT 7	0.79	16.8	0.79	16.7
OfCT 8	0.83	21.7	0.83	21.9
OfCT 9	0.84	23.0	0.84	23.0
OfET 1	0.93	25.0	0.93	64.4
OfET 2	0.94	26.4	0.94	65.6
OfET 3	0.87	23.9	0.87	23.8
IS1	0.94	4.18	0.94	4.74
IS 2	0.88	3.70	0.88	4.34
IS3	0.79	2.54	0.79	2.81
ODS1	0.92	28.6	0.92	30.6
ODS2	0.91	29.4	0.91	30.7
ODS3	0.88	24.5	0.88	24.1
CCS1	0.94	35.0	0.94	34.2
CCS2	0.96	39.7	0.96	36.5
CCS3	0.89	25.2	0.89	36.9
OPI1	0.94	53.8	0.95	58.4
OPI2	0.95	59.1	0.95	55.8
OPI3	0.95	51.6	0.95	58.6
OnCT1	0.86	27.7	0.82	22.3
OnCT2	0.87	32.4	0.85	27.4
OnCT3	0.86	26.9	0.87	32.9
OnCT4	0.87	33.1	0.82	23.3
OnCT5	0.84	22.3	0.85	27.5
OnCT6	0.83	23.9	0.79	16.4
OnCT7	0.81	19.8	0.83	20.5
OnCT8	0.85	21.1	0.84	23.9
OnCT9	0.85	24.8	0.85	27.6
WOM1	0.99	42.6	0.99	43.0
WOM2	0.99	44.1	0.99	45.5
WOM3	0.99	40.1	0.99	45.7

Table 5.10. Standardized Path Loadings and Significance in the Before-Interaction Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9
1.	Perceived Structural Assurance of the Internet	3	3.90 (1.13)	0.93	0.81	1.18	0.90								
2.	Offline Cognitive Trust	8	4.61 (0.92)	0.94	0.68	2.48	0.29	0.82							
3.	Offline Emotional Trust	3	4.88 (0.99)	0.94	0.83	2.53	0.32	0.64	0.91						
4.	Indirect Sanctions Effectiveness	3	4.29 (1.18)	0.90	0.76	1.12	0.13	0.17	0.15	0.87					
5.	Online Direct Sanctions Effectiveness	3	4.78 (1.09)	0.93	0.82	1.94	0.30	0.53	0.56	0.23	0.91				
6.	Cross Channel Sanctions Effectiveness	3	4.41 (1.30)	0.95	0.87	1.53	0.20	0.42	0.42	-.03	0.51	0.93			
7.	Word-of-Mouth From Social Network	3	1.53 (2.20)	0.99	0.99	1.04	0.08	0.04	0.01	0.11	-.05	-.11	0.99		
8.	Online Cognitive Trust	9	4.63 (0.89)	0.96	0.72	1.18	0.32	0.56	0.56	0.09	0.55	.46	-.02	0.85	
9.	Intention of Online Purchase	3	4.40 (1.05)	0.97	0.90	-	0.27	0.27	0.32	0.10	0.34	.20	.09	.62	0.95

Table 5.11. Descriptives and Correlations for Low Touch Products in the Before-Interaction Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9
1.	Structural Assurance of the Internet	3	3.90 (1.13)	0.93	0.81	1.16	0.90								
2.	Offline Cognitive Trust	8	4.61 (0.92)	0.94	0.68	2.51	0.29	0.82							
3.	Offline Emotional Trust	3	4.88 (0.99)	0.94	0.83	2.60	0.32	0.64	0.91						
4.	Indirect Sanctions Effectiveness	3	4.29 (1.18)	0.90	0.76	1.11	0.13	0.17	0.15	0.87					
5.	Online Direct Sanctions Effectiveness	3	4.78 (1.09)	0.93	0.82	2.02	0.30	0.53	.56	0.23	0.91				
6.	Cross Channel Sanctions Effectiveness	3	4.41 (1.30)	0.95	0.87	1.51	0.203	0.42	.42	-.03	0.51	0.93			
7.	Word-of-Mouth From Social Network	3	1.57 (2.12)	0.99	0.99	1.02	0.07	0.04	.07	0.08	0.08	-.01	0.99		
8.	Online Cognitive Trust	9	4.57 (0.87)	0.96	0.70	2.21	0.30	0.63	0.64	0.11	0.61	.48	0.01	0.84	
9.	Intention of Online Purchase	3	4.40 (1.05)	0.97	0.90		0.27	0.27	0.32	0.10	0.34	0.20	-.01	0.49	0.95

Table 5.12. Descriptives and Correlations for High Touch Products in the Before-Interaction Phase

Similarly for the initial-interaction phase, standardized path loadings, composite reliabilities and average variance extracted were all greater than the acceptable levels for both product types and displayed convergent validity. The standardized path loadings for both low touch products and high touch products were all greater than 0.7 and statistically significant (see Table 5.13.). Composite reliabilities ranged from 0.87 to 0.96 and AVE ranged from 0.63 to 0.90 for bw touch products while for high touch products, composite reliabilities ranged from 0.88 to 0.96 and AVE ranged from 0.63 to 0.90. The constructs for low touch and high touch products also shows discriminant validity when the square root of AVE is greater than the correlations between constructs (see Table 5.14. and 5.15.). Multi-collinearity was not apparent when the VIFs were

less than 3 and the intercorrelations between constructs were not more than 0.70. When we performed Harmon's single factor test, it is evident that no single factor emerged. Since a general factor did not emerge for either product type, common method variance problems do not exist. Thus, we can infer that the constructs possessed adequate convergent and discriminant validity for each product type in the initial-interaction phase.

Item	Low Touch	T-value	High Touch	T-value
SA1	0.93	32.4	0.91	23.9
SA2	0.96	41.9	0.95	32.3
SA3	0.94	34.3	0.92	28.8
OfCT2	0.78	15.3	0.80	16.4
OfCT3	0.81	20.7	0.81	19.8
OfCT 4	0.76	14.2	0.74	11.9
OfCT 5	0.80	17.5	0.78	16.3
OfCT 6	0.78	16.8	0.78	17.1
OfCT 8	0.83	21.9	0.83	21.5
OfCT 9	0.82	18.1	0.81	16.9
OfET 1	0.93	35.9	0.92	38.5
OfET 2	0.93	36.7	0.93	39.6
OfET3	0.88	31.1	0.87	27.1
IQ1	0.89	35.8	0.89	37.4
IQ2	0.92	41.9	0.92	40.4
IQ3	0.87	26.5	0.85	23.7
IQ4	0.89	32.2	0.88	31.0
SQ1	0.88	38.0	0.86	24.6
SQ2	0.87	35.1	0.86	27.9
SQ3	0.89	38.4	0.89	28.2
SQ4	0.88	38.2	0.87	33.8
IS1	0.98	7.33	0.96	6.33
IS2	0.76	2.77	0.72	2.44
IS3	0.79	3.43	0.82	3.76
ODS1	0.92	28.1	0.91	21.2
ODS2	0.92	29.1	0.92	40.9
ODS3	0.84	22.5	0.84	20.3
CCS1	0.93	31.8	0.91	27.7
CCS2	0.94	32.3	0.94	30.0
CCS3	0.86	28.1	0.87	27.5
OPI1	0.94	29.4	0.96	45.2
OPI2	0.96	39.2	0.96	43.5
OPI3	0.94	29.9	0.96	41.5
OnCT1	0.81	16.2	0.81	21.0
OnCT2	0.81	20.4	0.80	17.7
OnCT3	0.82	18.0	0.81	17.9
OnCT4	0.80	17.5	0.82	20.3
OnCT5	0.80	19.1	0.77	15.6
OnCT6	0.76	13.3	0.85	21.5
OnCT7	0.77	15.9	0.74	14.2
OnCT8	0.79	16.2	0.76	14.0
OnCT9	0.80	18.3	0.77	12.9
WOM1	0.90	30.3	0.95	39.9
WOM2	0.93	44.0	0.94	39.8
WOM3	0.93	46.4	0.91	31.4
PS1	0.96	35.7	0.90	19.0
PS2	0.83	9.75	0.88	16.1

Table 5.13. Standardized Path Loadings and Significance in the Initial-Interaction Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1.	Perceived Structural Assurance of Retailer's Website	3	4.40 (1.14)	0.96	0.89	1.52	0.94											
2.	Offline Cognitive Trust	7	4.57 (0.85)	0.92	0.63	2.90	0.48	0.79										
3.	Offline Emotional Trust	3	4.91 (0.97)	0.94	0.83	2.51	0.49	0.61	0.91									
4.	Indirect Sanctions Effectiveness	3	4.31 (1.11)	0.87	0.70	1.12	0.04	0.11	0.11	0.84								
5.	Online Direct Sanctions Effectiveness	3	4.69 (0.99)	0.92	0.80	1.99	0.48	0.53	0.56	0.10	0.89							
6.	Cross-Channel Sanctions Effectiveness	3	4.27 (1.24)	0.94	0.83	1.49	0.21	0.40	0.39	-.01	0.44	0.91						
7.	Word-of-Mouth from Social Network	3	4.58 (0.97)	0.94	0.85	1.34	0.27	0.26	0.30	0.22	0.24	0.23	0.92					
8.	Information Quality	4	4.57 (0.99)	0.94	0.79	2.57	0.47	0.68	0.67	0.12	0.54	0.44	0.36	0.89				
9.	System Quality	4	4.47 (0.96)	0.93	0.77	2.13	0.39	0.55	0.52	0.13	0.58	0.50	0.28	0.60	0.88			
10.	Online Cognitive Trust	9	4.59 (0.79)	0.94	0.63	2.89	0.45	0.60	0.62	0.06	0.56	0.41	0.41	0.65	0.59	0.79		
11.	Online Price Satisfaction	2	4.32 (0.96)	-	-	-	0.18	0.28	0.29	0.20	0.21	0.25	0.34	0.35	0.37	0.46	0.90	
12.	Intention of Online Purchase	3	4.62 (1.04)	0.96	0.90	-	0.26	0.36	0.36	0.08	0.29	0.25	0.40	0.29	0.38	0.53	0.29	0.95

Table 5.14. Descriptives and Correlations for Low Touch Products in the Initial-Interaction Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9	10	11	12
1.	Perceived Structural Assurance of Retailer's Website	3	4.37 (1.10)	0.95	0.86	1.52	0.93											
2.	Offline Cognitive Trust	7	4.53 (0.84)	0.92	0.63	2.90	0.46	0.79										
3.	Offline Emotional Trust	3	4.85 (0.95)	0.93	0.82	2.51	0.45	0.60	0.91									
4.	Indirect Sanctions Effectiveness	3	4.32 (1.07)	0.88	0.71	1.12	-.03	0.19	0.16	0.84								
5.	Online Direct Sanctions Effectiveness	3	4.67 (0.99)	0.92	0.80	1.99	0.43	0.51	0.52	0.12	0.89							
6.	Cross-Channel Sanctions Effectiveness	3	4.20 (1.23)	0.93	0.83	1.49	0.16	0.32	0.34	0.04	0.41	0.91						
7.	Word-of-Mouth from Social Network	3	3.93 (1.21)	0.95	0.87	1.34	0.23	0.26	0.30	0.13	0.22	0.32	0.93					
8.	Perceived Information Quality	4	4.53 (0.97)	0.94	0.79	2.57	0.43	0.68	0.64	0.20	0.50	0.38	0.34	0.89				
9.	Perceived System Quality	4	4.44 (0.95)	0.93	0.76	2.13	0.34	0.55	0.47	0.20	0.50	0.44	0.45	0.60	0.87			
10.	Online Cognitive Trust	9	4.54 (0.78)	0.94	0.63	2.89	0.40	0.69	0.65	0.12	0.61	0.46	0.44	0.63	0.59	0.79		
11.	Online Price Satisfaction	2	4.16 (0.92)	-	-	-	0.21	0.26	0.33	0.18	0.20	0.25	0.31	0.35	0.30	0.38	0.89	
12.	Intention of Online Purchase	3	4.59 (1.14)	0.96	0.90	-	0.35	0.42	0.46	0.01	0.30	0.32	0.45	0.41	0.39	0.56	0.24	0.95

Table 5.15. Descriptives and Correlations for High Touch Products in the Initial-Interaction Phase

For the post-initial purchase phase, standardized path loadings, composite reliabilities and average variance extracted were all greater than the acceptable levels for both product types and displayed convergent validity. The standardized path loadings for both low touch products and high touch products were all greater than 0.7 and statistically significant (see Table 5.16.). Composite reliabilities ranged from 0.92 to 0.96 and AVE ranged from 0.73 to 0.89 for low touch products while for high touch products, composite reliabilities ranged from 0.92 to 0.97

and AVE ranged from 0.78 to 0.92. The constructs for low touch and high touch products also shows discriminant validity when the square root of AVE is greater than the correlations between constructs (see Table 5.17. and 5.18.). Multi-collinearity was not apparent when the VIFs were less than 4 and the intercorrelations between constructs were not more than 0.80. When we performed Harmon's single factor test, it is evident that no single factor emerged. Since a general factor did not emerge for either product type, common method variance problems do not exist. Thus, we can infer that the constructs possessed adequate convergent and discriminant validity for each product type in the post-initial purchase phase.

Item	Low Touch Standardized Loading	T-value	High Touch Standardized Loading	T-value
CUS1	0.88	34.8	0.88	34.6
CUS2	0.88	18.2	0.89	19.2
CUS3	0.92	34.7	0.91	33.3
OPI1	0.94	45.6	0.95	46.7
OPI2	0.96	44.8	0.97	45.8
OPI3	0.95	46.0	0.96	47.1
OnCT1	0.87	29.7	0.86	22.2
OnCT2	0.86	27.4	0.87	28.2
OnCT3	0.85	24.3	0.84	22.5
OnCT4	0.86	30.0	0.88	31.6
OnCT5	0.86	28.6	0.84	21.1
OnCT7	0.83	21.5	0.87	31.0
OnCT8	0.86	27.8	0.90	37.6
OnET1	0.92	41.2	0.95	50.7
OnET2	0.95	46.2	0.96	53.7
OnET3	0.91	36.1	0.94	52.0
DWOM1	0.93	43.5	0.93	45.9
DWOM2	0.95	47.3	0.96	49.7
DWOM3	0.92	39.0	0.92	39.1
DOFF1	0.94	47.5	0.95	48.0
DOFF2	0.96	51.4	0.97	54.4
DOFF3	0.93	41.8	0.95	42.4
PSAT1	0.89	30.4	0.87	27.0
PSAT2	0.93	41.3	0.89	32.4
PSAT3	0.92	41.9	0.89	36.5
FSAT1	0.90	37.4	0.87	27.3
FSAT2	0.92	45.2	0.90	38.9
FSAT3	0.90	36.1	0.83	19.5
FSAT4	0.91	44.9	0.85	16.2
FSAT5	0.81	18.3	0.79	17.4
PS1	0.93	49.4	0.94	40.9
PS2	0.92	40.5	0.91	21.9

Table 5.16. Standardized Path Loadings and Significance in the Post-Initial Purchase Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9
1.	Perceived Retailer's Willingness to Customize	3	4.92 (1.03)	0.92	0.80	2.17	0.89								
2.	Satisfaction with Order Procurement	3	5.03 (1.02)	0.94	0.83	3.19	0.60	0.91							
3.	Satisfaction with Order Fulfillment	5	5.07 (1.04)	0.95	0.79	3.83	0.58	0.77	0.89						
4.	Disparity with WOM from Social Network	3	4.72 (0.97)	0.95	0.87	3.69	0.63	0.64	0.72	0.93					
5.	Disparity with Offline Purchasing Experiences	3	4.48 (1.13)	0.96	0.89	2.45	0.53	0.61	0.55	0.71	0.94				
6.	Online Cognitive Trust	7	4.88 (0.90)	0.95	0.73	3.19	0.60	0.60	0.63	0.69	0.60	0.85			
7.	Online Emotional Trust	3	4.96 (1.00)	0.95	0.86	3.62	0.58	0.71	0.67	0.68	0.65	0.70	0.93		
8.	Online Price Satisfaction	2	4.57 (1.08)	-	-	-	0.47	0.58	0.59	0.59	0.60	0.56	0.51	0.93	
9.	Intention of Online Repurchase	3	4.97 (1.05)	0.93	0.91	-	0.55	0.73	0.69	0.71	0.51	0.70	0.72	0.52	0.88

Table 5.17. Descriptives and Correlations for Low Touch Products in the Post-Initial Purchase Phase

No	Construct	No. of Items	Mean (S.D)	Composite Reliability	AVE	VIF	1	2	3	4	5	6	7	8	9
1.	Perceived Retailer's Willingness to Customize	3	4.87 (1.05)	0.92	0.80	2.16	0.89	.							
2.	Satisfaction with Order Procurement	3	5.01 (1.02)	0.92	0.78	2.37	0.59	0.88							
3.	Satisfaction with Order Fulfillment	5	5.07 (0.97)	0.92	0.79	2.94	0.63	0.68	0.89						
4.	Disparity with WOM from Social Network	3	4.62 (1.01)	0.95	0.87	2.52	0.61	0.59	0.65	0.93					
5.	Disparity with Offline Purchasing Experiences	3	4.27 (1.21)	0.97	0.91	2.01	0.49	0.48	0.52	0.58	0.95				
6.	Online Cognitive Trust	7	4.82 (0.93)	0.95	0.75	3.23	0.64	0.55	0.71	0.67	0.59	0.87			
7.	Online Emotional Trust	3	4.78 (1.09)	0.97	0.90	2.58	0.51	0.53	0.65	0.64	0.63	0.71	0.95		
8.	Online Price Satisfaction	2	4.60 (1.13)	-	-	1.81	0.36	0.55	0.52	0.34	0.47	0.54	0.42	0.92	
9.	Intention of Online Repurchase	3	5.00 (1.06)	0.97	0.92	-	0.56	0.56	0.59	0.60	0.45	0.59	0.52	0.38	0.96

Table 5.18. Descriptives and Correlations for High Touch Products in the Post-Initial Purchase Phase

5.2 Hypotheses Testing

PLS Graph version 3.00 was adopted to analyze the hypotheses of the before-interaction, initial-interaction and post-initial purchase phases across low touch and high touch products. PLS is an appropriate statistical technique in this study as some of the constructs in the model are formative and cannot be adequately modeled using covariance structure analysis. PLS, being components based, can incorporate both formative and reflective indicators (Chin 1998). Furthermore, the research models have strong theoretical grounding, based on social capital theory and interweaved with trust formation frameworks. Marcoulides and Saunders (2006) remarked that PLS is suitable to test research models that are based on theories and relevant facts.

5.2.1 Before-Interaction Phase

Figures 5.1. and 5.2. show the results of low touch products and high touch products respectively in the before-interaction phase. For low touch products, hypotheses 1, 3, 4 and 5 are supported. Word-of-mouth within social network, perceived non-structural assurance and trust in the offline operations are positively related to trust in the online operations of the retailer (H3, H4 and H5) while the effect of structural assurance of the Internet was insignificant (H2). The dummy variable for word-of-mouth was not found to be significant on trust in the retailer's online operations, indicating the substitution for missing values was a valid one. All the sub-constructs of the formative constructs were significant and contribute to trust in the online operations except indirect sanctions effectiveness. Approximately 50% of the variance in trust in the online operations is accounted for by the independent constructs. Furthermore, the positive effect of trust in the online operations on the intention of online purchase is significant (H1), and accounts for 38.6% of the variance in the intention of online purchase. For high touch products, hypotheses 1, 3, 4 and 5 are also supported. Word-of-mouth within social network, perceived non-structural assurance and trust in the offline operations are positively related to trust in the online operations of the retailer (H2, H4 and H5) while the effect of structural assurance was not significant (H3). The dummy variable for word-of-mouth was found to be significant on trust in the retailer's online operations, indicating the substitution for missing values was not a valid one and suggests that the path coefficient for word-of-mouth is biased (Spell and Blum 2000). Approximately 56% of the variance in trust in the online operations is accounted for by the independent constructs. Furthermore, the positive effect of trust in the online operations on the intention of online purchase is significant (H1), and it accounts for 31.4% of the variance in the intention of online purchase.

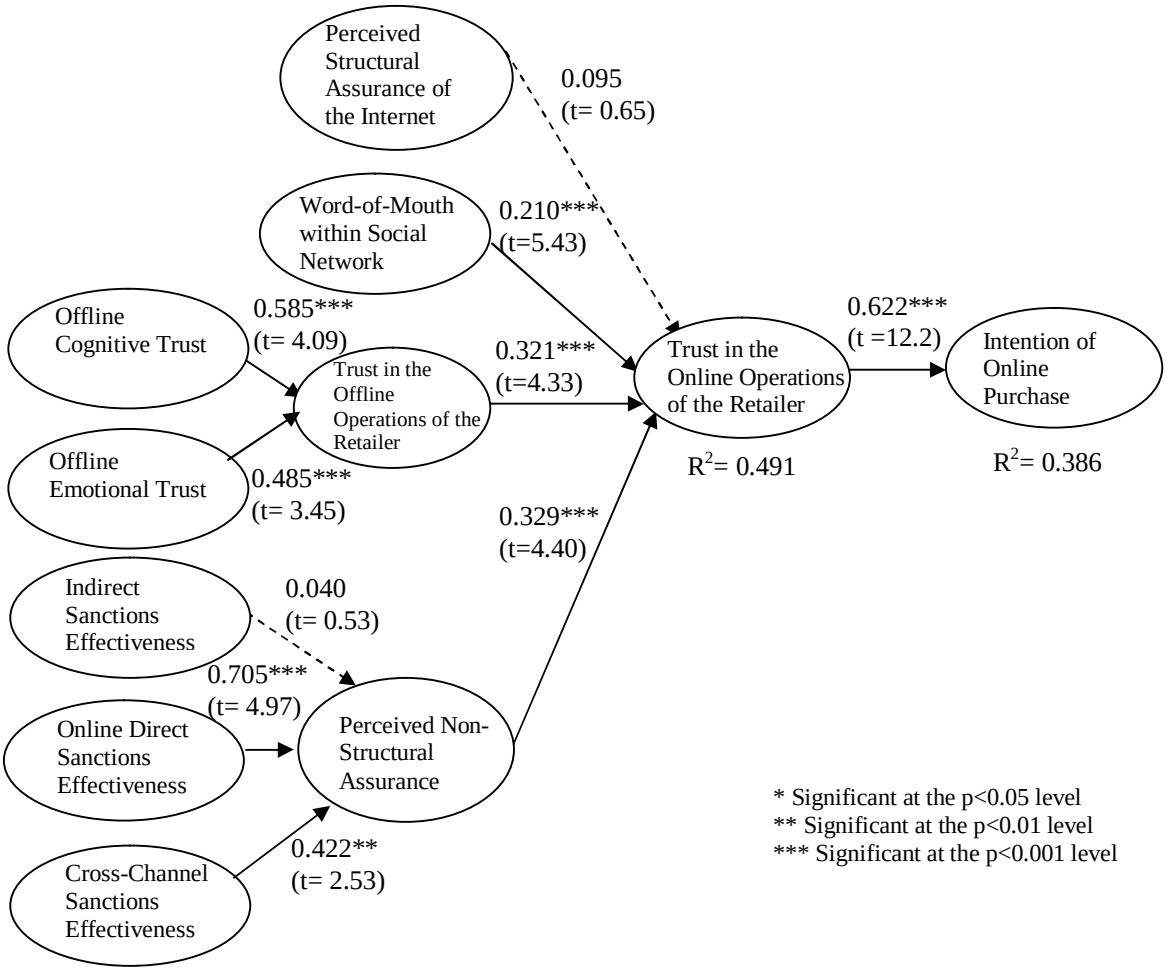

Figure 5.1. Results for Low Touch Products in the Before-Interaction Phase

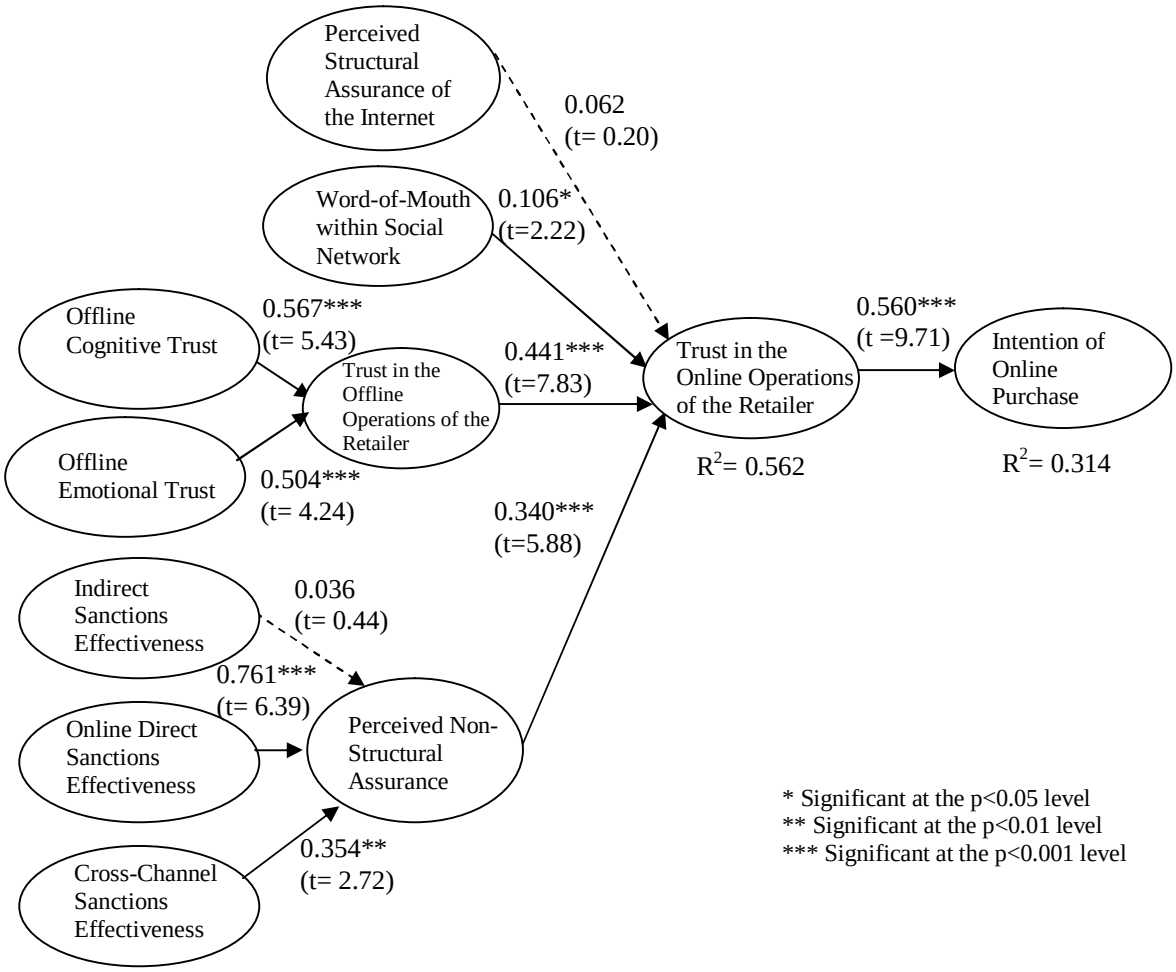

Figure 5.2. Results for High Touch Products in the Before-Interaction Phase

To test hypothesis 6, the statistical comparison between the path coefficients of different product types was done using the procedure described in Chin (2000) (see Appendix D). Hypothesis 6 is found to be partially supported since some relationships between trust in the online operations and its antecedents are significantly stronger for high touch products. Perceived non-structural assurance and trust in the offline operations have significantly stronger effects on trust in the online operations for high touch products compared to low touch products with t-statistics at 2.17 ($p<0.05$)and 17.41 ($p<0.001$) respectively. To verify that the differences in the relationships are not due to the differences in interpretation of the construct items, we conduct the Box's M test to compare the covariance matrices of low touch and high touch product respondents (Carte

and Russell 2003). The results of Box's M test indicated no significant difference (Box's M = 585.0, F=0.72, p=1). This shows that the scale scores reflected similar latent constructs for low touch and high touch products (Carte and Russell 2003). Furthermore, we compared the levels of perceived risk of purchasing each product type online to verify that respondents view high touch products differently from low touch products. Findings show that the levels of perceived risk of each product type online were significantly different. Respondents' perceived risk of purchasing high touch products online (mean = 4.83) was significantly higher than their perceived risk of purchasing low touch products online (mean = 4.21) with t = 6.06 ($p < 0.001$). This suggests that the perceived risk of product types is a likely candidate that has exerted moderating effects during trust development.

5.2.2 Initial-Interaction Phase

Figures 5.3 and 5.4. show the results of low touch products and high touch products in the initial-interaction phase. For low touch products, hypotheses 1, 3, 4 and 6 are supported. Word-of-mouth within social network, trust in the retailer's offline operations and perceived website quality are positively related to trust in the retailer's online operations (H3, H4 and H6) while the effects of perceived structural assurance of the retailer's website and perceived non-structural assurance were not significant (H2 and H5). All the sub-constructs of the formative constructs were significant and contribute to trust in the online operations except indirect sanctions effectiveness. Approximately 61% of the variance in trust in the online operations is accounted for by the independent constructs. Furthermore, the positive effect of trust in the online operations on the intention of online purchase is significant (H1), and together with online price satisfaction, it accounts for 29.1% of the variance in the intention of online purchase. For high touch products, hypotheses 1, 3, 4, 5 and 6 are supported. Word-of-mouth within social network,

trust in the retailer's offline operations, perceived non-structural assurance and perceived website quality are positively related to trust in the retailer's online operations (H3, H4, H5 and H6) while the effect of perceived structural assurance of the retailer's website is not significant (H2). Approximately 65% of the variance in trust in the online operations is accounted for by the independent constructs. Furthermore, the positive effect of trust in the online operations on the intention of online purchase is significant (H1), and together with online price satisfaction, it accounts for 32.2% of the variance in the intention of online purchase.

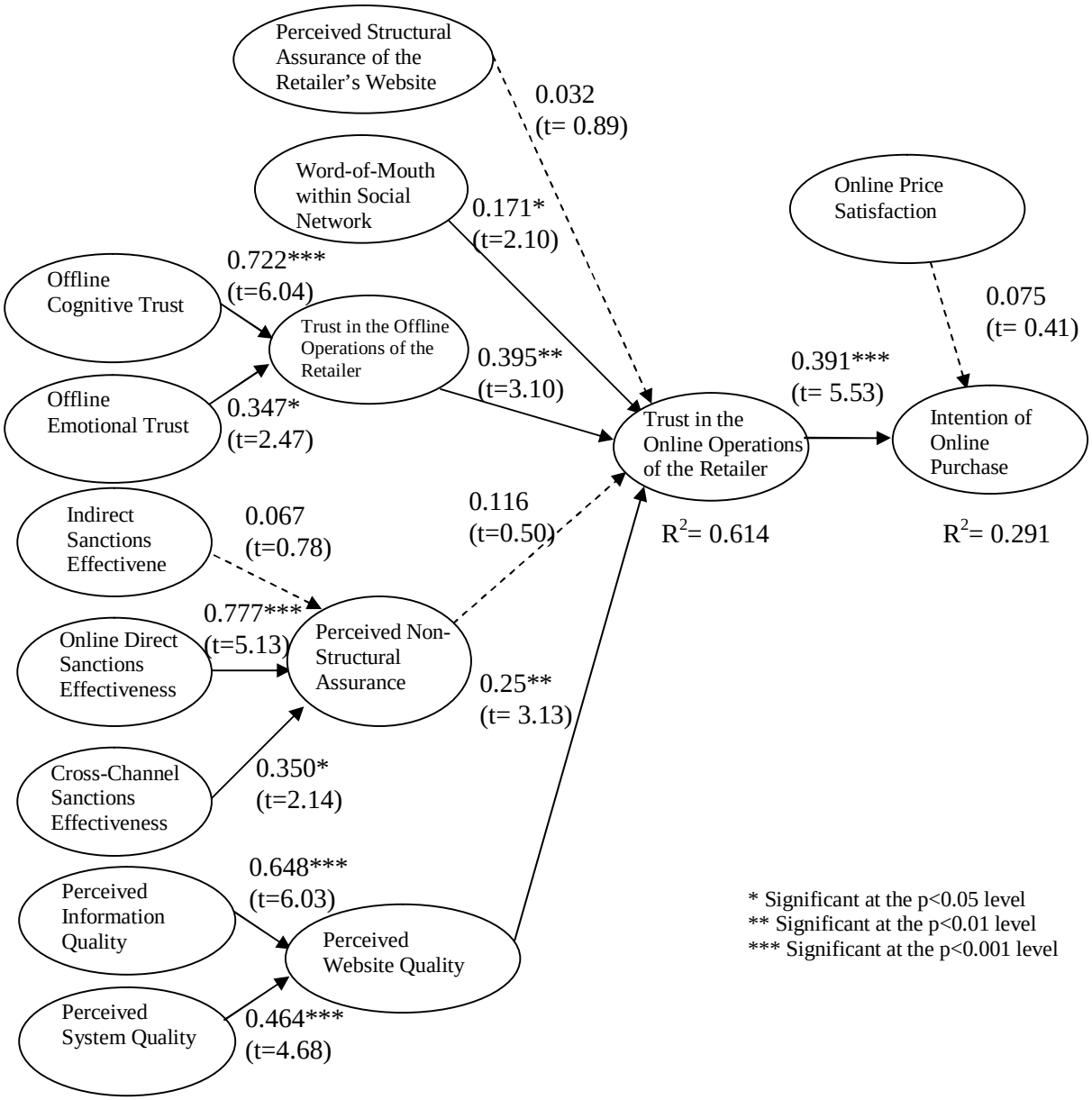

Figure 5.3. Results for Low Touch Products in the Initial-Interaction Phase

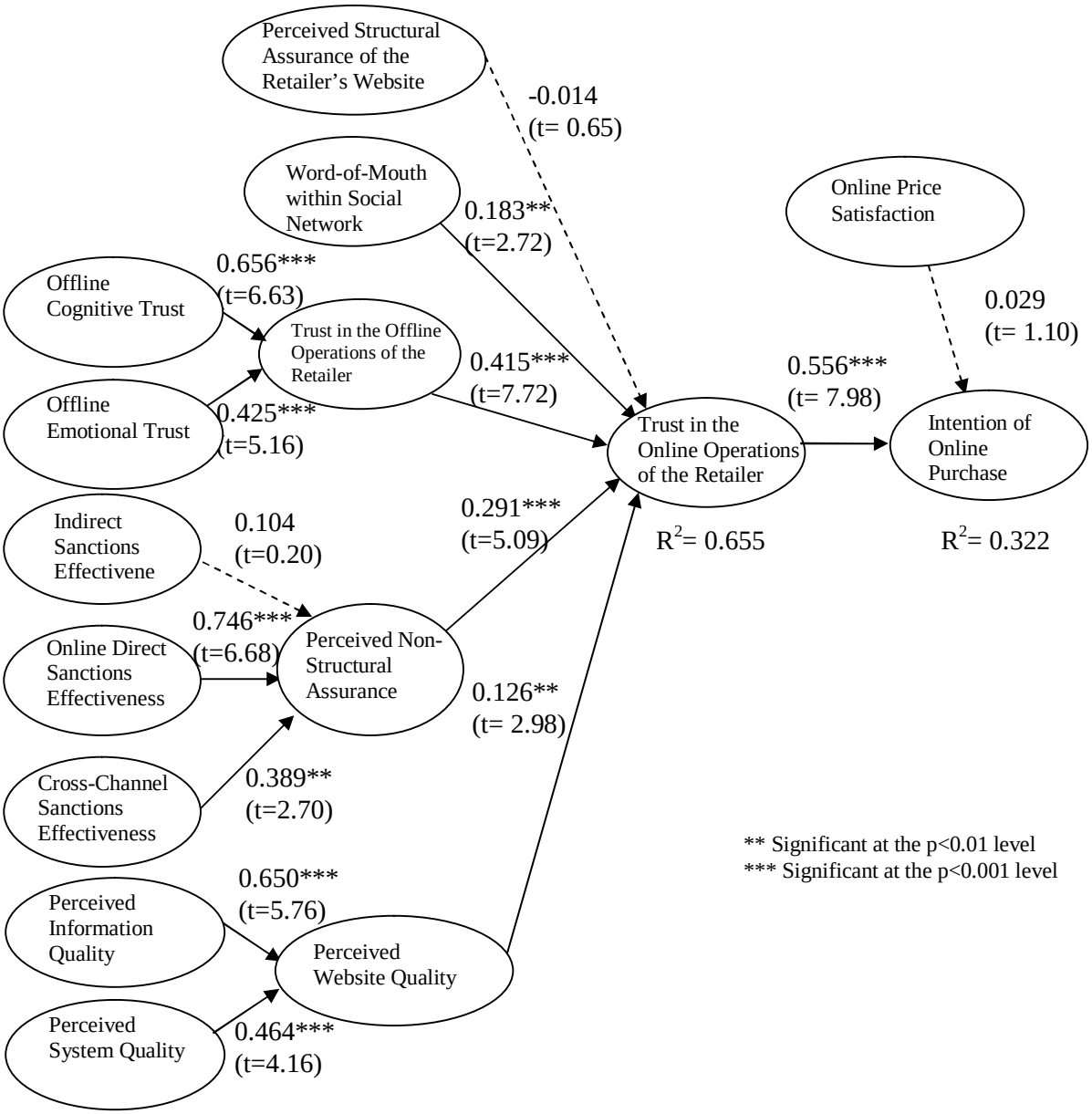

Figure 5.4. Results for High Touch Products in the Initial-Interaction Phase

To test hypothesis 7, the statistical comparison between the path coefficients of different product types was done using the procedure described in Chin (2000) (see Appendix D). Hypothesis 7 is found to be partially supported since some relationships between trust in the online operations and its antecedents are significantly stronger for high touch products. Word-of-mouth from social network, perceived non-structural assurance and trust in the offline operations have

significantly stronger effects on trust in the online operations for high touch products compared to low touch products with t-statistics at 2.01 ($p < 0.05$), 22.92 ($p < 0.001$) and 2.11 ($p<0.05$) respectively. However, the effects of perceived website quality was found to be weaker for high touch products with t statistics at -16.91 ($p<0.001$). To verify that the differences in the relationships are not due to the differences in interpretation of the construct items, we conduct the Box's M test to compare the covariance matrices of low touch and high touch product respondents (Carte and Russell 2003). The results of Box's M test indicated no significant difference (Box's M = 1140.1, F= 0.89, p=0.996). This shows that the scale scores reflected similar latent constructs for low touch and high touch products (Carte and Russell 2003). Furthermore, we compared the levels of perceived risk of purchasing each product type online to verify that respondents view high touch products differently from low touch products. Findings show that the levels of perceived risk of each product type online were significantly different. Respondents' perceived risk of purchasing high touch products online (mean = 5.15) was significantly higher than their perceived risk of purchasing low touch products online (mean = 4.46) with t = 6.38 ($p< 0.001$). This suggests that the perceived risk of product types is a likely candidate that has exerted moderating effects during trust development.

5.2.3 Post-Initial Purchase Phase

As there are interaction terms in the research model, we performed additional statistical steps recommended by Chin (2000) for these terms to be included in the model. Satisfaction of past outcomes was a weighted average of the two sub-constructs and the weights were obtained from the factor scores of the two sub-constructs. To determine the direction of disparity constructs, we subtracted 4 from each item of the disparity constructs and obtained summed averages for the

disparity constructs. The main and moderating constructs (satisfaction with past purchasing outcomes, disparity within social network and disparity with offline experience) were then standardized. We then multiplied the score from the main construct and the score from the moderating construct to obtain a score for the interaction term. To examine interaction effects, we include the main construct, moderating construct and the interaction construct to affect trust in the retailer's online operations. The factor scores of online cognitive trust and online emotional trust were used as indicators of trust in the retailer's online operations. We used Carte and Russell's (2003) method of finding the ΔR^2 and the corresponding F statistic. If the F statistic is significant, we can conclude that the moderating relationship is significant.

Figures 5.5. and 5.6. show the results of low touch products and high touch products in the post-initial purchase phase. For low touch products, the main effects hypotheses 1 and 2 are supported. Satisfaction with past outcomes is positively related to trust in the online operations of the retailer (H2). All the sub-constructs of satisfaction with past outcomes are significant and contribute to trust in the online operations. The interaction effects hypotheses 3 and 5 were not supported. For hypothesis 3, $\Delta R^2 = 0$ and the corresponding F statistic is 0.042 ($p = 0.837$). For hypothesis 5, $\Delta R^2 = 0.002$ and the corresponding F statistic is 1.225 ($p = 0.270$). The main effects of the disparity constructs (hypotheses 4 and 6) were not supported as well. Approximately 80% of the variance in trust in the online operations is accounted for by the independent and interaction constructs. Furthermore, the positive effect of trust in the online operations on the intention of online repurchase is significant (H1) and together with online price satisfaction, accounts for 60% of the variance in the intention of online repurchase. For high touch products, the main effects hypotheses 1 and 2 are supported. Satisfaction with past

outcomes is positively related to trust in the online operations (H2). Only one sub-construct of satisfaction with past outcomes, satisfaction with past order fulfillment, is significant and contributes to trust in the retailer's online operations. The interaction hypotheses 3 and 5 were also not supported. For hypothesis 3, $\Delta R^2 = 0.004$ and the corresponding F statistic is 2.109 ($p = 0.148$). For hypothesis 5, $\Delta R^2 = 0$ and the corresponding F statistic is 0.075 ($p = 0.785$). The main effects of the disparity constructs (hypotheses 4 and 6) were also not supported. Approximately 69.3% of the variance in trust of the online operations is accounted for by the independent and interaction constructs. Furthermore, the positive effect of trust in the online operations on the intention of online repurchase is significant (H1) and together with online price satisfaction, accounts for 37.8 % of the variance in the intention of online repurchase.

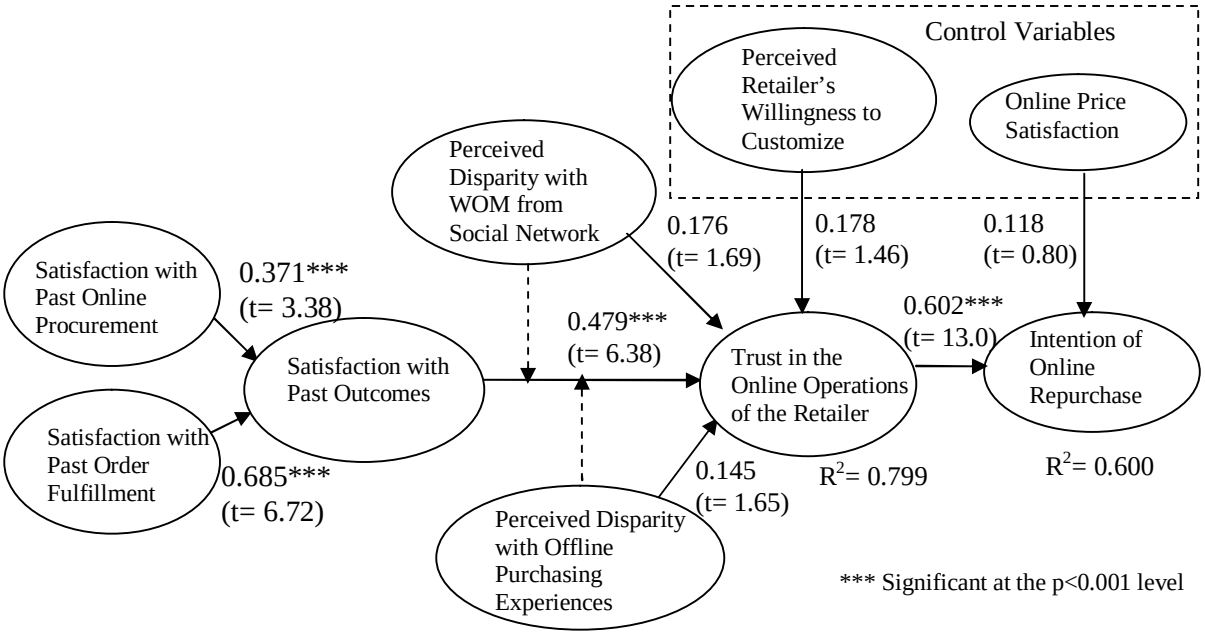

Figure 5.5. Results for Low Touch Products in the Post-Initial Purchase Phase

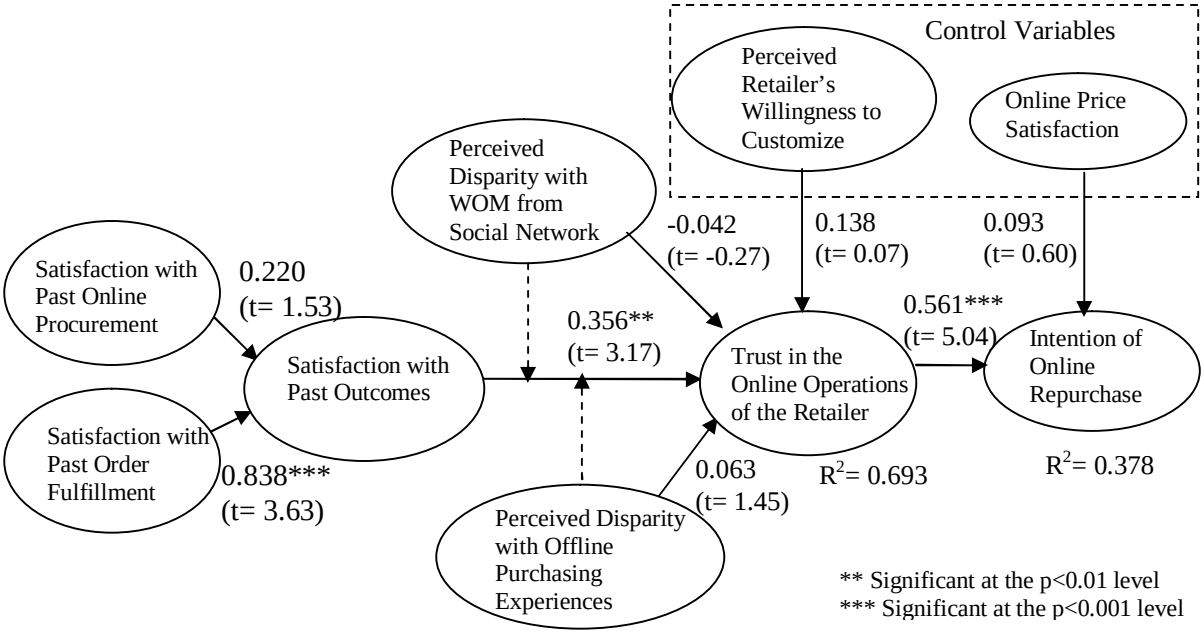

Figure 5.6. Results for High Touch Products in the Post-Initial Purchase Phase

Finally, we compared the levels of perceived risk of purchasing each product type online to verify that respondents view high touch products differently from low touch products. Findings show that the levels of perceived risk of each product type online were significantly different. Respondents' perceived risk of purchasing high touch products online (mean = 5.00) was significantly higher than their perceived risk of purchasing low touch products online (mean = 4.68) with $t = 2.523$ ($p < 0.05$).

5.2.4. Summary of Hypotheses Testing

The results of hypotheses testing for each phase and product type are summarized in Tables 5.19., 5.20. and 5.21.

Hypothesis	Relationship	Supported?
H1	Trust in the Online Operations of the Retailer → Intention of Online Purchase	Yes, for low touch and high touch products
H2	Perceived Structural Assurance → Trust in the Online Operations of the Retailer	No
H3	Word-Of-Mouth within Social Network → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H4	Trust in the Offline Operations of the Retailer → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H5	Perceived Non-Structural Assurance → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H6	Moderating Role of Product Type	Supported for 1) Trust in the Offline Operations of the Retailer → Trust in the Online Operations of the Retailer 2) Perceived Non-Structural Assurance → Trust in the Online Operations of the Retailer

Table 5.19. Summary of Hypotheses Testing for the Before-Interaction Phase

Hypothesis	Relationship	Supported?
H1	Trust in the Online Operations of the Retailer → Intention of Online Purchase	Yes, for low touch and high touch products
H2	Perceived Structural Assurance → Trust in the Online Operations of the Retailer	No
H3	Word-Of-Mouth within Social Network → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H4	Trust in the Offline Operations of the Retailer→ Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H5	Perceived Non-Structural Assurance → Trust in the Online Operations of the Retailer	Yes, only for high touch products
H6	Perceived Website Quality → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H7	Moderating Role of Product Type	Supported for 1) Word-Of-Mouth within Social Network → Trust in the Online Operations of the Retailer 2) Trust in the Offline Operations of the Retailer → Trust in the Online Operations of the Retailer 3) Perceived Non-Structural Assurance → Trust in the Online Operations of the Retailer
Control Variable	Online Price Satisfaction → Intention of Online Purchase	No

Table 5.20. Summary of Hypotheses Testing for the Initial-Interaction Phase

Hypothesis	Relationship	Supported?
H1	Trust in the Online Operations of the Retailer → Intention of Online Repurchase	Yes, for low touch and high touch products
H2	Satisfaction with Past Outcomes → Trust in the Online Operations of the Retailer	Yes, for low touch and high touch products
H3	Moderating Role of Disparity With WOM from Social Network	No
H4	Disparity With WOM from Social Network → Trust in the Online Operations of the Retailer	No
H5	Moderating Role of Disparity with Offline Purchasing Experiences	No
H6	Disparity with Offline Purchasing Experiences → Trust in the Online Operations of the Retailer	No
Control Variable	Perceived Retailer's Willingness to Customize → Trust in the Online Operations of the Retailer	No
Control Variable	Online Price Satisfaction → Intention of Online Repurchase	No

Table 5.21. Summary of Hypotheses Testing for the Post-Initial Purchase Phase

Chapter 6

Discussion and Implications

Drawing from the results of the study, this study sought to unravel the significant factors that shape trust development towards multi-channel retailers' online operations in three phases: before-interaction, initial-interaction and post-initial purchase and went further to differentiate online trust development between low touch and high touch products. To achieve the objectives, the social relations and networks perspective has been adopted and the social capital theory (Coleman 1988) was used to justify the constructs and relationships in each phase of trust development. Chapter 6 discusses the results of the three interaction phases across the two product types based on the theoretical perspective. It also attempts to interpret these findings and draw implications for theory and practice.

6.1 Discussion of Findings

In the examination of trust in the online operations of the retailer during the three phases across product types, findings show that trust in the online operations plays a critical role in determining intention of online purchase and online repurchase (H1), even when online price satisfaction is controlled for. Results also lend some empirical support that trust development towards retailers' online operations is indeed different across two product types (H6 in the before-interaction phase and H7 in the initial-interaction phase). The differences in the influence of trust antecedents across the two product types is consistent with previous literature that customers rely differently on resources within their social relations and networks under higher risk and involvement (Cox 1967, Sheth and Venkatesan 1968, Lutz and Reilly 1974, Chaudhuri 2000).

6.1.1 Discussion of Before-Interaction Phase

Perceived structural assurance of the Internet is found to be insignificant for both low touch and high touch products (H2). This can be attributed to the Internet purchasing experience of respondents in this phase. For both product types, almost 80% of the respondents have at least 3 years of online purchasing experience. As a result, perceived structural assurance of the Internet is not a significant barrier for customers to actually access the retailer's website for the first time.

Word-of-mouth within social networks is found to be significant on trust in the retailer's online operations for both low touch and high touch products (H3). The findings suggest that customers actively seek for and rely on word-of-mouth within their social networks during the before-interaction phase. This finding is consistent with Kuan and Bock's (2007) study that word-of-mouth within social networks is a significant basis for trust in the retailer's online operations. The comparison of the impact of word-of-mouth across low and high touch products is not meaningful in this phase as the dummy variable, which denotes if there are missing values for word-of-mouth, was found to be significant for high touch products. This suggests that the substitution for the missing values may not be valid for the respondents of high touch products (Spell and Blum 2000).

Regarding *trust in the offline operations of the retailer*, we find that it exerts a major influence on trust in the retailer's online operations for both low touch and high touch products (H4). This shows that the trust in the offline operations that customers have ultimately translates to higher trust in the online operations and strongly suggests that the transference of trust takes place during the before-interaction phase. If the multi-channel retailer has consistently shown

competence, benevolence and integrity in providing products to customers at its physical stores, customers are more likely to believe that these attributes would apply to its online operations as well since they are dealing with the same retailer. This finding concurs with Kuan and Bock's (2007) paper on customers in the before-interaction phase that trust transference occurs during the before-interaction phase. However, this study goes beyond Kuan and Bock's (2007) paper to compare trust development between low touch and high touch products. When we compared these two product types, trust in the offline operations is found to exert a stronger impact on trust in the online operations for high touch products compared to low touch products. This demonstrates that customers rely more heavily on their offline purchasing experiences at the retailer's physical stores to determine if the multi-channel retailer is trustworthy to handle online purchases of high touch products. Since such products require physical contact from customers, such purchases require more judgment on the part of the multi-channel retailer and carry more risk for customers. Hence, it is appropriate that this relationship is weaker for low touch products since low touch products involve more standardized product characteristics and do not require much retailer's judgment.

Furthermore, we also find that *perceived non-structural assurance* is significant to develop trust in the online operations of the retailer and it is a common concern for online purchases regardless of product types (H5). Since low touch products have standardized characteristics and do not require physical contact for assessment, customers are less likely to expect there would be problems related to such purchases since these products do not require much judgment on the part of the multi-channel retailer and hence the need to contact the online retailer directly to exercise sanctions is weaker. As such, perceived non-structural assurance is not as influential on trust in the retailer's online operations for low touch products compared to high touch products.

On the other hand, for high touch products, customers place more emphasis on perceived non-structural assurance since these products are likely to be more dependent on the online retailer's judgment and hence incur more risk. Under conditions of higher perceived risk, customers are more concerned whether they are able to contact the multi-channel retailers directly (by writing emails or going to retailer's physical stores) to rectify problems related to their online purchases and whether these retailers are willing to solve these problems (i.e. replace products that are faulty). Indirect sanctions effectiveness is not a significant sub-construct of perceived non-structural assurance, contrary to Day and Landon (1977) and Singh (1988, 1990). This may be due to the customers' perceptions that they have limited influence on their social contacts' online purchasing decisions to punish the online retailer and they rather rely more heavily on the direct relations with the online retailer to rectify the problems instead.

6.1.2 Discussion of Initial-Interaction Phase

Similar to the before-interaction phase, *perceived structural assurance of the retailer's website* is insignificant to determine trust in the retailer's online operations during the initial-interaction phase for both product types (H2). This implies that this form of institution-based trust is not effective to build customers' trust in the retailer's online operations when they are navigating the multi-channel retailer's website for the first time. Previous research in the initial-interaction phase has also shown insignificant results on the relationship between structural assurance and online trust (Kim et al. 2004, McKnight et al. 2002b). McKnight et al. (2002b) inferred that reputation and website quality perceptions are more important to determine online trust than structural assurance during the initial interaction. As long as customers see that there are impersonal structures to safeguard their transactions during the first visit, they perceive that the

website is safe for online transactions. Kim et al. (2004) argued that although structural assurance is a basic condition for online shopping, it is not adequate for online trust development. Moreover, for both product types, almost 80% of the respondents have at least 3 years of online purchasing experience. As a result, perceived structural assurance of the Internet is not a significant concern for customers to actually start purchasing from the retailer's website for the first time. Thus, perceived structural assurance of the retailer's website is insignificant to influence trust in the retailer's online operations for both product types.

Regarding *word-of-mouth within social networks*, we find that it is significant to form trust in the retailer's online operations for both product types (H3). As customers are interacting with the retailer's website for the first time, they have moved to the next phases of the customer decision making process, which is information search and evaluation. Since customers do not have prior purchasing experiences from the retailer, other social contacts' experiences would be a reliable information source to determine the retailer's trustworthiness to provide such products online. Our findings show that the reliance on word-of-mouth from social networks is even stronger for high touch products (which incur greater risk to customers compared to low touch products) in the online context. This is consistent with marketing literature which elaborates that the extent of external information search is dependent on perceived risk (Cox 1967, Sheth and Venkatesan 1968, Lutz and Reilly 1974, Chaudhuri 2000). For example, a customer who is interested in buying a particular model of sport shoes from an online retailer may want to find out more from his social contacts (who have purchased this model from the online retailer) on whether the online retailer is reliable in the online transaction and whether the shoes are comfortable to be worn. However, this customer is not likely to do the same for electronic products such as

electronic toothbrush and shaver since most product attributes can be communicated clearly through information on the website, without the need for direct physical contact. Thus, to overcome the greater risk associated with products that need physical contact, customers would rely more strongly on word-of-mouth on determining if the retailer is trustworthy to meet their needs.

Another indirect form of information that significantly contributes to trust in the retailer's online operations is *trust in the offline operations* of the multi-channel retailer (H4). This gives empirical support that the transference of trust also takes place during the initial-interaction phase. When customers navigate the website for the first time, they are very likely to be influenced by their trust in the offline operations formed through their offline purchasing experiences with the multi-channel retailer. If customers believe that the retailer's offline operations have characteristics of competence, benevolence and integrity in providing products to customers, they are more likely to believe that these attributes would apply to its online operations as well. Similar to the before-interaction phase, trust in the offline operations is found to exert a stronger impact on trust in the online operations for high touch products compared to low touch products. Customers rely more heavily on their offline purchasing experiences at the retailer's physical stores to determine if the multi-channel retailer is trustworthy to handle online purchases of high touch products. Since such products require physical contact from customers, such purchases require more judgment on the part of the multi-channel retailer and carry more risk for customers. Trust in the offline operations would then be more effective in reducing risk perceptions of customers and thus exert a stronger influence on trust in the online operations.

Contrary to what we hypothesized, *perceived non-structural assurance* is found to have a significant influence on trust in the retailer's online operations only for high touch products, not low touch products (H5). During the initial interaction, customers have the opportunity to navigate on the website and obtain the characteristics of the products offered on the website. As the information provided on the retailer's website is sufficient to communicate the characteristics of the products, customers find it easier to understand the characteristics of low touch products and how these products would meet their needs. They also would have lesser problems with such purchases since low touch products have standardized characteristics, do not require physical contact for assessment and do not require much judgment on the part of the retailers. With lower risk associated with low touch products, customers do not believe there is a need to contact the multi-channel retailer directly to exercise sanctions. On the other hand, for high touch products, customers place more emphasis on perceived non-structural assurance since these products are likely to be more dependent on the online retailer's judgment and hence incur more risk. Customers would search for cues through their own online navigation experience (i.e. feedback form, real-time chat with customer representatives) to form expectations on how effectively the online retailer can handle dissatisfactory purchases. The findings suggest that customers are more concerned whether they are able to contact the online retailers directly to rectify problems related to their online purchases and whether online retailers are willing to solve these problems (i.e. replace products that do not meet their needs). Similar to the before-interaction phase, indirect sanctions effectiveness is not a significant sub-construct of perceived non-structural assurance, which is likely due to customers' limited influence on their social contacts' online purchasing decisions to punish the online retailer and they rather rely more heavily on the direct relations with the online retailer to rectify the problems instead.

Perceived website quality is found to significantly build trust in the retailer's online operations for both low touch and high touch products (H6). However, the relationship turns out to be weaker for high touch products, which is contrary to what we have hypothesized. For low touch products, it is more likely that customers are able to know the dominant product attributes through the information provided on the retailer's website. With these product attributes, they are able to gauge if the products are able to meet their needs. Thus, more emphasis is placed on their navigation experience on the website in terms of system quality (access and usability) and information quality (content, accuracy, timeliness and usefulness) to form trust in the retailer's online operations. High touch products, on the other hand, would need some form of limited use or physical contact for evaluation. No matter how excellent the website quality is in terms of system quality and information quality, customers may still be uncertain about the dominant attributes of the product, leading them to still possess doubts whether the product can meet their needs.

The control variable, *online price satisfaction*, is found to be an insignificant predictor of customers' online purchasing intention for both product types. It goes to show that customers do not go only for low prices but place more emphasis on whether they believe the retailer is trustworthy in its online operations. Brynjolfsson and Smith (2000) found that although some retailers offer consistently lower prices than others, they do not always enjoy the highest online sales. Instead customers are more willing to pay a higher price for retailers that they believe are trustworthy. Thus, the trust in the retailer's online operations formed during the initial-interaction phase is very likely to command a price premium from customers.

6.1.3 Discussion of Post-Initial Purchase Phase

Consistent with our hypothesis, *satisfaction with past outcomes* is a significant predictor of trust in the retailer's online operations for both product types (H2). This suggests that customers rely strongly on their own purchasing experiences with the retailer to form trust in the retailer's online operations, which is consistent with other trust studies in the marketing literature (Ganesan 1994, Garbarino and Johnson 1999). Customers use their own online purchasing experiences to predict the multi-channel retailer's future online behavior. When comparing low touch and high touch products, the significance of the sub-constructs of satisfaction with past outcomes differ. Satisfaction with online procurement was found to be significant to form trust in the retailer's online operations for only low touch products. As low touch products involve standardized characteristics that should be clearly communicated to the customer through the website, the online procurement process (which consists of the various aspects of the online navigation experience) is important for customers to evaluate their purchasing decisions on the retailer's website (i.e. clarity of product information, variety of product selection and ease of placing order). However, for high touch products, the online navigation experience is not as effective in determining the dominant product characteristics (which incorporates the touch and feel aspects) and hence the effect of satisfaction with online procurement is insignificant. Customers purchasing high touch products mainly rely on satisfaction with past order fulfillment as they are only likely to know during the order fulfillment whether if the quality of products can meet their expectations. Other aspects of order fulfillment such as on-time delivery, order status information and accuracy of delivery reduce customers' risk perceptions for future online purchases and contribute to trust in the retailer's online operations for both product types.

Disparity with word-of-mouth from social networks do not exert moderating effects on the relationship between satisfaction with past outcomes and trust in the retailer's online operations (H3) and main effects on trust in the retailer's online operations (H4). This shows that in the midst of disparate word-of-mouth information coming from customers' social networks, customers only depend on their own online purchasing experiences and they are not likely to change their trust of the retailer's online operations. Using Granovetter's (1985) reasoning, we argue that customers view their own experiences as more superior compared with information from a trusted informant within one's social network to form trust in the retailer's online operations. Firstly, it is cheap. Customers are less likely to expend external search efforts within their social networks to find out more about the online operations of the retailer since they can use their own online purchasing experiences instead. Secondly, customers trust their own information best and their own online purchasing experiences are "richer, more detailed and known to be accurate (Granovetter 1985)". Thirdly, customers have a continuing relationship with the multi-channel retailer. They would believe that the multi-channel retailer has an economic motivation to be trustworthy so as not to discourage future transactions.

Disparity with offline purchasing experiences do not exert moderating effects on the relationship between satisfaction with past outcomes and trust in the retailer's online operations (H5) and main effects on trust in the retailer's online operations (H6). This suggests that customers do not seek to have consistent purchasing experiences across the offline and online channels and having consistent purchasing experiences may not necessarily mean that the relationship between satisfaction with past outcomes and online trust is stronger. Although there are several favorable outcomes purchasing at physical stores, customers could also experience several frustrations when purchasing at the retailers' physical stores. These frustrations can be in the form of

crowded store conditions, out of stock merchandise and poorly trained salespersons (Kauffman-Scarborough and Lindquist 2002). As such, customers of multi-channel retailers may resort to purchasing products from the online channel to achieve other outcomes apart from those of offline shopping, such as visual appeal of the website, relaxation at home, time convenience (quick shopping) and energy convenience (saves effort to travel and queue) at the expense of possession convenience (obtaining the products a few days after purchase). Since they are looking to achieve other outcomes through the online channel, there is likely to be no significant interaction and main effects of disparity with offline purchasing experiences. Another plausible reason for the lack of support for hypotheses 5 and 6 may be due to how this disparity construct is measured. Respondents were asked how much more (or less) favorable, satisfying and pleasant their online purchasing experiences were compared to their offline purchasing experiences. As the measurement of disparity with offline purchasing experiences is generic in nature, the results may have been different if we have targeted specific facets of the purchasing experiences to be compared by the respondents.

Similar to the initial-interaction phase, the control variable *online price satisfaction* is not a significant predictor of online re-purchase intention during the post-initial purchase for both product types. This implies that low prices are not critical to determine repeat purchases for existing online customers. Existing customers who trust the multi-channel retailer's online operations are also more inclined to pay a price premium for their products (compared to other retailers with which they have no prior relationship), since the retailer has proven to be trustworthy from their past online purchasing experiences (Brynjolfsson and Smith 2000).

6.2 Implications of Results

This study has important implications for theory and practice. Implications for theory are discussed in terms of the context of study, the theoretical perspectives, the overall conceptual framework and the development of trust with respect to product types. Implications for practice are proposed for multi-channel retailers as well as pure online retailers who may be considering implementing an offline channel.

6.2.1 Implications for Theory

This research examined the context of multi-channel retailers when analyzing the online trust development process. Currently, the bulk of trust research has been conducted on pure online retailers and trust research on multi-channel retailers have been a simple extension of studies conducted on pure online retailers. Concurring with previous researchers that argued that trust is contextual (Bigley and Pearce 1998, Doney and Cannon 1997), we argue that the online trust development process for multi-channel retailers is indeed different from pure online retailers. Given the unique characteristics of multi-channel retailers (i.e. offline purchasing experiences at the offline physical stores, greater availability of word-of-mouth), our findings suggest that customers value offline trust and non-structural assurance in their social relations and networks (which are not well-covered in current online trust research) to form trust of the retailer's online operations.

This study also contributes to online trust literature by using actual customers in all three interaction phases. Many studies examining trust in the context of e-commerce have not examined it under the conditions of risk and uncertainty and do not accurately reflect the

conditions under which trust operates. In McKnight et al's (2002a, 2002b) study, student subjects used a fictitious website designed to provide visitors with advice on legal matters using a hypothetical scenario. Other studies in the context of e-commerce have used student samples and no actual purchases. Furthermore, the choice of the department stores industry makes the results of the study easily generalizable to a wide range of retailers and products.

With regards to the social relations and networks perspective, this study has two contributions. Firstly, this perspective has not been well-investigated in current online trust literature although it is crucial for customers who have no prior interactions with the retailer before (Kuan and Bock 2007). The findings found support for the various categories of social capital mentioned in Coleman's (1988) theory: information channels, reciprocity, trustworthiness of structures and effective sanctions. Secondly, this study also links the social capital antecedents of trust to Komiak and Benbasat's (2004) three phases of online trust development: before-interaction, initial-interaction and post-initial purchase phases. Currently, this is the pioneer study to examine online trust in all these studies. Existing studies have generally examined trust during the initial-interaction phase (Koufaris and Hampton-Sosa 2004, McKnight et al 2002a, 2002b) or compared online trust development between the initial-interaction and post-initial purchase phases (Kim et al. 2004).

Our research brings contributions to existing trust research based on the social capital category of *information channels*. Information channels cover the relations between customers and the multi-channel retailers and customers and their social contacts. In examining the offline social relations with the retailer, customers' trust in the offline operations of the retailer (which represents the

influence of the offline channel) is significant in the before-interaction and initial-interaction phases. However, the influence of the offline channel is not apparent when the comparison of purchasing experiences consistency across both channels is found to be insignificant during the post-initial purchase phases. Next, the marketing and IS literature has often emphasized that word-of-mouth is key to form perceptions of retailers without elucidating clearly at which stage of interaction with the retailer it has a significant influence (i.e. Doney and Cannon 1997, Walczuch and Lundgren 2004) However, our findings show that word-of-mouth within customers' social relations and networks was found significant during the before-interaction and initial-interaction phases. Even if customers experience dissonant word-of-mouth from their social contacts, they are unlikely to change their perceptions of the multi-channel retailer.

In addition, this research also contributes to the social capital category of *effective sanctions* through the construct of perceived non-structural assurance. Perceived non-structural assurance provides the modes through which customers can deal with the multi-channel retailer in the midst of dissatisfactory purchases. The findings show that online direct sanctions and cross-channel sanctions are effective to achieve their respective purposes but indirect sanctions do not. Furthermore, perceived non-structural assurance extends Day and Landon's (1977) and Singh's (1988, 1990) framework of complaining behavior by including cross-channel sanctions which is a unique characteristic of multi-channel retailers. Previous studies on complaining behavior included measures relevant to retailers having an offline presence only or having an online presence only. The significant relationships pertaining to perceived non-structural assurance contributes to trust literature by being the pioneer study to show that customers' perceptions of sanctioning effectiveness do affect their trust in the retailer's online operations. This study

provides the precedent to future research of sanctions on online retailers since previous trust literature has underemphasized the role of sanctions on trust in the retailer's online operations.

This research also contributes to trust literature by differentiating online trust development across *product types*. We have empirically determined that customers indeed perceive high touch products to have greater risk when purchased online compared to low touch products. The findings also show that customers place different emphasis on various factors to determine trust in the retailer's online operations for the two product types. In summary, we can form a trust theory with the findings. Before the first online purchase, customers are more reliant on trust in the retailer's offline operations, word-of-mouth from social contacts and perceived non-structural assurance for high touch products. Additionally, customers place less emphasis on website quality for high touch products and are not bothered about structural assurance for both product types. After they have made the first purchase from the multi-channel retailer, customers rely only on their satisfaction with order fulfillment process for high touch products.

6.2.2 Implications for Practice

In order to build trust in the retailer's online operations for customers during the before-interaction and initial phases, multi-channel retailers should leverage on customers' *trust in the retailer's offline operations* for online trust development. When these retailers promote their websites, they should capitalize on and emphasize the competence, benevolence and integrity of their physical stores. They can do so within their physical stores and cross-promote their websites to customers who already trust their physical stores. It has been noted that Barnes and Noble has forfeited tremendous marketing opportunities by not promoting its online store

through the offline channel (Gulati and Garino 2000). To stimulate online purchases, a dual-channel membership program can be launched allowing customers to enjoy discounts and earn loyalty points from their online purchases as well as offline purchases. With the extension of membership programs online, existing multi-channel retailers can lock in customers by understanding their purchasing behavior offline and online, and can further strengthen the transference of trust from the offline channel to the online channel. To mitigate the higher risk of the online purchase of high touch products, multi-channel retailers ought to emphasize their offline reputation in handling such purchases and the physical stores can be used to allay customers' fears of not choosing the most appropriate products for their needs. Customers can be given the option of reserving the product online, going to the physical stores to try out the product and then decide whether to complete the online transaction at the physical stores. This can give customers more confidence in purchasing such products online, especially if they have not purchased such products before.

Multi-channel retailers should also strengthen customers' perceptions of *non-structural assurance*. To achieve this, multi-channel retailers ought to communicate clearly on their websites the sanctioning power their customers can expect to have (what customers can expect to achieve when they complain regarding valid online purchasing problems such as faulty products, missing items) and convince customers that it has much to lose if problems occur with their online purchases (i.e. favorable sales and return policies, compensation when glitches occur). With customers' greater reliance on perceived non-structural assurance for high touch products, retailers may want to refine their sales and return policies with discretion to tilt slightly more in the favor of customers, specifically related to the characteristics of high touch products. For

example, if a customer finds that a shirt he has ordered online does not actually fit his physical stature or the texture of the t-shirt is different from what he expected, even though it may not be the fault of the online retailer. The customer can be given the option to exchange the shirt for a more suitable size at the physical stores or mailing the shirt back to the retailer and exchange for a shirt of a more appropriate size. This also gives more confidence to customers to purchase high touch products that they have not purchased before. For low touch products, retailers should limit the sanctioning power generally to problems of the online purchase itself (missing products, faulty products and wrong product deliveries) and not the characteristics of low touch products, since such products have more standardized features that are known to customers and do not require much retailer's judgment. Besides, the effect of perceived non-structural assurance is weaker to build trust in the retailer's online operations for low touch products, even to the extent of being insignificant during the initial-interaction phase.

Given the reliance on *word-of-mouth within their social networks* during the before-interaction and initial-interaction phases, multi-channel retailers should engage in stimulating more referral activities. Retailers are encouraged to form communities of interest on their websites so that customers who are interested in similar product types can share their experiences through product reviews on the website itself. The implementation of communities of interest needs to be more aggressive since such word-of-mouth communicates more information related to the physical contact with the product itself. For customers' offline social networks, online retailers can also implement referral programs where customers who have purchased online can refer their contacts in their offline social networks to create online accounts and purchase from the retailer's website. For example, emails can be sent by existing customers through their accounts

on the retailer's website to share their online purchasing experiences to their offline social contacts. Referred visitors who are purchasing online from the retailer for the first time can quote the referral's account number for both the referral and referee to enjoy special privileges and discounts. The stronger influence of word-of-mouth from social networks for high touch products suggests to retailers that referral programs may be more effective to boost online sales for high touch products compared to low touch products.

There are also implications pertaining to *perceived website quality and perceived structural assurance* for multi-channel retailers. Since low touch products have more standardized characteristics and do not require customers' direct physical contact, customers rely more on the retailer's website quality to form beliefs whether the retailer is trustworthy to handle such purchases. Thus, retailers should not neglect system and information quality of the website but instead make it more effective to evaluate low touch products on the website by providing a wider range of product examination and comparison tools. This would enhance customers' decision making capabilities and signal to customers that the retailer is capable, honest and cares for their interests. The weaker influence of perceived website quality in the initial-interaction phase and the insignificant influence of *satisfaction with online procurement* in the post-initial purchase for high touch products also suggest to retailers that the online navigation experience may not support the decision-making process of purchasing high touch products compared to low touch products. This also indicates that existing interactive tools used by online retailers are insufficient to reduce uncertainties involving the touch and feel aspects of high touch products. The insignificant effect of perceived structural assurance of the retailer's website suggests that customers who have not purchased online from the retailer view the general safety of the website

as a basic condition for online shopping and implies that they value website quality more than the impersonal structures on the website.

The insignificant moderating and main effects of *disparity with offline purchasing experiences* suggests to multi-channel retailers and pure online retailers which intend to implement an offline channel that customers do not seek for consistent purchasing experiences across both offline and online channels and they may look for outcomes apart from the offline channel on the online channel. To address this, multi-channel retailers should instead find out what outcomes customers look out for when they purchase on the online channel and strive to meet their expectations. Likewise, pure online retailers should find out what their online customers will look out for at the physical stores before they set up their offline channel.

The insignificant effect of *online price satisfaction* during the initial-interaction and the post-initial purchase reveal to multi-channel retailers and pure online retailers alike that online prices may no longer be the key determining factor to influence online purchases. It shows that trust in the retailer's online operations plays a more critical role for online sales nowadays. Customers rely heavily on trust in the retailer's online operations to determine their intentions of online (re)purchase and are more willing to pay a premium for retailers' trustworthy operations. Thus, online retailers should focus on establishing online trust for greater online sales instead of engaging in online price wars among competitors which can hurt the overall profitability of the online retailing industry.

Chapter 7

Conclusion

With the implications of this study in mind, chapter 7 summarizes the contributions of this study. This chapter also elaborates on some potential limitations of the research. Lastly, several suggestions for future research are presented.

7.1 Contributions

This thesis makes the following contributions to theory and practice.

- Answers the first research question about the factors that can help multi-channel retailers build customers' trust in their online operations. Most trust research has generally focused on pure online retailers or regard trust development of multi-channel retailers' online operations as a simple extension of pure online retailers. Furthermore, the study also answers the second research question by showing that online trust development is different for low touch products and high touch products.
- Provides a review of multi-channel retailing and online trust research. It shows why this research is important and how key gaps in the literature are addressed in this research. As such, we suggest that the social relations and networks perspective be adopted to investigate online trust development.
- Adopts Coleman's (1988) theory to identify antecedents of trust in the multi-channel retailer's online operations and manages to link these antecedents to Komiak and Benbasat's (2004) three phases of online trust development and other trust frameworks. The findings reveal which antecedents are significant for trust in the retailer's online operations for each

phase. The influences of these antecedents are also compared across product types for each phase of online trust development.

- Adopts cognitive dissonance theory (Festinger 1957) to examine how customers jointly deal with disparate information sources (their social relations and offline purchasing experiences) and their online purchasing experiences. Previous research has typically examined the effects of information sources and experiences separately on trust in the retailer's online operations.
- The field data also draws from actual customers for every phase of online trust development. Using actual customers instead of student samples more accurately reflect the conditions under which trust operates.
- The study focuses on the department store industry which offers a wide range of product types to customers. As such, we believe that the findings pertaining to low touch and high touch product types can be easily generalizable to many product categories.
- Provides important implications for theory and practice. Practical implications are discussed for multi-channel retailers as well as pure online retailers which may be considering implementing an offline channel.

7.2 Potential Limitations

Despite the significant contributions of this study, there may be possible limitations.

- The use of *cross-sectional data to test for causality* within each online development phase is a limitation of the study. When data is collected at one point in time, assumption of causality is always suspect. Only a longitudinally designed study within each phase would allow one to assess the directions of causality within each phase with confidence. However, given that

the research models within each phase are new, cross-sectional studies can be used as exploratory vehicles to determine relationships of interest.

- Our tests for non-response bias reveal that early respondents and late respondents do differ in certain demographic segments. However, we believe that these differences are not serious since early and late respondents do not differ based on construct scores.
- We did not examine the influence of cognitive trust on emotional trust despite the theoretical association between cognitive trust and emotional trust in previous studies.
- This study does not include or control for the influence of customers' *disposition to trust* on customers' trust in the multi-channel retailer's online operations in the three interaction phases. It is a generalized disposition and is considered to be predictive of trust when trustees are unknown to the trusters and there is a lack of available social cues for the truster to base on (Kiffin-Petersen and Cordery 2003, Koufaris and Hampton-Sosa 2004).
- While the study checked for classified product types into low and high touch products using a student sample, this classification was not verified with the respondents of the main data collection.
- Lastly, it is important to note that this study was conducted on customers in Korea. The results may not be easily generalized to customers of other cultures and nationalities.

7.3 Directions for Future Research

The results of this research suggest several avenues for future work. The directions are discussed in terms of studying additional constructs and relationships and replication of the study across other settings.

- Regarding the social relations and networks perspective, more social network related measures can be included to bring insight on how customers are influenced by word-of-mouth originating from their social networks. Constructs such as the effects of perceived customers' ties strength in offline social networks and the perceived centrality of individuals who provide referrals can be examined for the before-interaction and initial-interaction phases. Such constructs can also be measured objectively through the analysis of customers' social networks. Other types of word-of-mouth such as online reviews and independent third party reviews can also be examined in future research.

- Additional constructs can also be included for the application of cognitive dissonance theory. Cognitive dissonance literature suggests other ways of dealing with cognitive dissonance, such as seeking and recall of consonant information and avoidance of dissonant information (Brehm and Cohen 1962). The insignificant moderating effect of the disparity with offline purchasing experiences shows that customers do not seek for consistent purchasing outcomes, contrary to what Shankar et al. (2002) suggested. We argue that customers may be seeking other goals apart from those pertaining to their offline purchasing experiences when they are purchasing from the online channel of the multi-channel retailer. As the insignificance of the moderating and main effects of disparity with offline purchasing experiences may be due to measurement issues, we propose future research to validate this by targeting the specific aspects of purchasing experiences to be compared.

- Some individuals are comfortable with the disparity of their own experiences with information sources in the midst of decisions of high importance and may not seek to reduce their cognitive dissonance (Bell 1967). Future research can extend this model by incorporating this aspect of individual threshold for dissonance. There may be other ways for

customers to reduce their cognitive dissonance such as seeking consonant information and avoiding dissonant information. Future research can examine whether these behaviors do change their trust of the online operations of multi-channel retailers. Specific aspects of purchasing experiences can also be compared in future research to validate the insignificant moderating and main effects of disparity with offline purchasing experiences.

- Next, this study can be replicated using longitudinal designs. Such studies would allow us to ascertain with greater confidence the directions of causality and allow a richer interpretation of the theoretical model.
- Lastly, this study can be replicated in other national and cultural settings. The replications can enable researchers to understand how different cultures rely on the resources within social relations and networks.

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APPENDIX A: FINAL QUESTIONNAIRE CONSTRUCTS, DEFINITIONS AND MEASURES FOR THE INTERACTION STAGES

Appendix A.1 Before-Interaction Stage

Intention of Online Purchase:

It is the likelihood that a customer will purchase from the retailer's website (Fishbein and Ajzen 1975).

PI1. I am willing to start purchasing (such products) online from theretailer.com in the future.

PI2. I will probably start purchasing (such products) online from theretailer.com in the future.

PI3. I will like to try purchasing (such products) online from theretailer.com in the future.

Trust in the Online Operations of the Retailer:

Online cognitive trust: It is the customer's belief of the competence, benevolence and integrity of the multi-channel retailer's website operations (McKnight et al. 2002a, 2002b).

OnCT1. **theretailer.com** would operate in my best interest (i.e., go the extra mile to ensure that I receive products of high quality, care that my purchases are in proper order etc) when I purchase (such products) from it.

OnCT2. **theretailer.com** would keep its commitments to me (i.e., fulfil money-back guarantees and other sales policies, etc.) when I purchase (such products) from it.

OnCT3. **theretailer.com** would have the ability to meet most of my needs as a customer (i.e., no missing items in the products delivered, the quality of products delivered meets my expectations etc) when I purchase (such products) from it.

OnCT4**. theretailer.com** would make good-faith efforts to address most of my concerns (i.e. tries its best to clarify my purchase-related concerns).

OnCT5. **theretailer.com** would be truthful in its dealings with me (i.e. do not make false claims about the products offered).

OnCT6. **theretailer.com** would be capable and proficient to provide products and services I need (i.e. rarely makes errors on my online purchases, able to deliver my products on time).

OnCT7. **theretailer.com** would be interested in my well-being, not just its own (i.e. have policies that favour my interest such as free delivery, product return policy).

OnCT8. **theretailer.com** would be honest in its dealings with me (i.e. provide honest advice to me when I make queries online).

OnCT9. **theretailer.com** would have the skills and expertise to handle my expectations (i.e. able to recommend appropriate products for my needs).

Perceived Structural Assurance of the Internet

It is the belief that structures on the Internet are in place to promote success of the e-commerce transaction (McKnight et al. 2002a, 2002b).

SA1. **The Internet** has appropriate legal safeguards put into place to ensure me of a successful online transaction with the retailer.

SA2. I am assured that security technologies (such as encryption) **on the Internet** adequately protect me from online purchasing problems with the retailer.

SA3. I am confident that privacy protection measures **on the Internet** make it safe for me to purchase products online from the retailer.

Word of Mouth within Social Network:

It is the extent to which people in the customer's social network provide positive information about purchasing online from the retailer (Richins 1984, Gremler and Gwinner 2000)

WOM1. Overall speaking, my social contacts **encourage me** to purchase (such products) online from **theretailer.com**.

WOM2. Overall speaking, my social contacts **recommend** that I purchase (such products) online from **theretailer.com**.

WOM3. Overall speaking, my social contacts **share with me their positive opinions** of purchasing (such products) online from **theretailer.com**.

Perceived Non-Structural Assurance:

The expectation of benign behavior based on the sanctions available to customers to impose on the retailer (adapted from Shapiro et al. 1992). It is based on he effectiveness of indirect sanctions, online direct sanctions and cross-channel sanctions.

Examples of private measures (Singh 1988):
1) Decide not to purchase online from the retailer again.
2) Speak to your friends and relatives about your bad experience with the retailer.
3) Persuade friends and relatives not to purchase from the retailer, etc.

Indirect Sanctions: They refer to private measures taken by customers within their social network to complain to the retailer (when customers speak to social contacts about bad experiences or decide not to purchase online again from the retailer) (Singh 1988).

IS1. Assuming I have online purchasing problems with **theretailer.com** and I mention these problems to my friends and relatives, they are likely to be more careful when using **theretailer.com**.

IS2. Assuming I have online purchasing problems with **theretailer.com** and I mention these problems to my friends and relatives, they are likely not to shop from **theretailer.com**.

IS3. Assuming I have online purchasing problems with **theretailer.com** and I mention these problems to my friends and relatives, they can spread bad word-of-mouth.

Online Direct Sanctions: They are online measures that customers may use to contact the retailer directly to seek redress for disappointing purchases (adapted from Singh 1988).

Examples of online direct sanctions:
1) Emailing the retailer to dispute your purchase.
2) Giving feedback in the feedback form at the retailer's website.

ODS1. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to take appropriate action to take care of my problems.

ODS2. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to solve these problems.

ODS3. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to be more careful in the future.

Cross-Channel Sanctions: They refer to measures that enable customers to use other channels (such as physical stores, retail offices) to seek resolution of problems in their online purchases (adapted from Singh 1988).

Examples of cross-channel sanctions:
1) Going in person to the retailer's physical stores to dispute your online purchase.
3) Making a telephone call to the retailer's physical stores to dispute your online purchase.

CCS1. Assuming that I report the problems of my online purchases to the retailer's department stores, the retailer is likely to take appropriate action to take care of my problems from **theretailer.com**.

CCS2. Assuming that I report the problems of my online purchases to the retailer's department stores, the retailer is likely to solve these problems.

CCS3. Assuming that I report the problems of my online purchases to the retailer's department stores, **theretailer.com** is likely to be more careful in the future.

Trust in the Offline Operations of the Retailer:

Offline cognitive trust: It is the belief of the competence, benevolence and the integrity of the multi-channel retailer's physical stores (McKnight et al. 2002a, 2002b).

OfCT1. **The retailer's department stores** would act in my best interest (i.e. suggest more appropriate items other than the items that I picked, voluntarily help me to locate items should I have difficulties to locate them in the store, etc).

OfCT2. **The retailer's department stores** would fulfill its commitments to me (i.e., fulfill money-back guarantees and other sales policies, etc.).

OfCT3. **The retailer's department stores** would have the ability to meet most of my needs as a customer (i.e., possess good knowledge about its products and services, etc).

OfCT4. **The retailer's department stores** would make good-faith efforts to address most of my concerns (i.e. goes out of the way to assist me when I need help in the department stores).

OfCT5. **The retailer's department stores** would be truthful in its dealings with me (i.e. do not make false claims about the products offered).

OfCT6. **The retailer's department stores** would be capable and proficient to provide products and services I need (i.e. possess good understanding about products and services that I need).

OfCT7. **The retailer's department stores** would be interested in my well-being, not just its own (i.e. have policies that favour my interest such as product return policy).

OfCT8. **The retailer's department stores** would be honest in its dealings with me (i.e. provide honest advice to me when I need assistance in my purchase).

OfCT9. **The retailer's department stores** would have the skills and expertise to handle my expectations (i.e. able to recommend appropriate products for my needs).

Offline emotional trust: It is the extent to which users feel secure and comfortable when they consider purchasing from the retailer's physical stores (Swan et al. 1999).

OfET1. I feel at ease purchasing from **the retailer's department stores**.

OfET2. I feel secure purchasing from **the retailer's department stores.**

OfET3. I feel comfortable purchasing from **the retailer's department stores.**

Appendix A.2 Initial-Interaction Stage

Intention of Online Purchase:

It is the likelihood that a customer will purchase from the retailer's website (Fishbein and Ajzen 1975).

PI1. I am willing to start purchasing (such products) online from theretailer.com in the future.

PI2. I will probably start purchasing (such products) online from theretailer.com in the future.

PI3. I will like to try purchasing (such products) online from theretailer.com in the future.

Trust in the Online Operations of the Retailer:

Online cognitive trust: It is the customer's belief of the competence, benevolence and integrity of the multi-channel retailer's website operations (McKnight et al. 2002a, 2002b).

OnCT1. **theretailer.com** would operate in my best interest (i.e., go the extra mile to ensure that I receive products of high quality, care that my purchases are in proper order etc) when I purchase (such products) from it.

OnCT2. **theretailer.com** would keep its commitments to me (i.e., fulfil money-back guarantees and other sales policies, etc.) when I purchase (such products) from it.

OnCT3. **theretailer.com** would have the ability to meet most of my needs as a customer (i.e., no missing items in the products delivered, the quality of products delivered meets my expectations etc) when I purchase (such products) from it.

OnCT4**. theretailer.com** would make good-faith efforts to address most of my concerns (i.e. tries its best to clarify my purchase-related concerns).

OnCT5. **theretailer.com** would be truthful in its dealings with me (i.e. do not make false claims about the products offered).

OnCT6. **theretailer.com** would be capable and proficient to provide products and services I need (i.e. rarely makes errors on my online purchases, able to deliver my products on time).

OnCT7. **theretailer.com** would be interested in my well-being, not just its own (i.e. have policies that favour my interest such as free delivery, product return policy).

OnCT8. **theretailer.com** would be honest in its dealings with me (i.e. provide honest advice to me when I make queries online).

OnCT9. **theretailer.com** would have the skills and expertise to handle my expectations (i.e. able to recommend appropriate products for my needs).

Perceived Structural Assurance of Retailer's Website

It is the belief that proper impersonal structures have been put into place on the retailer's website enabling one party to anticipate successful transactions with another party (McKnight et al. 2002a, 2002b, Pennington et al. 2004).

SA1. **The website of theretailer.com** has appropriate legal safeguards put into place to ensure me of a successful online transaction with the retailer.

SA2. I am assured that security technologies (such as encryption) **on the website of theretailer.com** adequately protect me from online purchasing problems with the retailer.

SA3. I am confident that privacy protection measures **on the website of theretailer.com** make it safe for me to purchase products online from the retailer.

Perceived Website Quality:

Perceived information quality: It is defined as the extent of the beliefs to which the information on the website has attributes of content, accuracy, timeliness and usefulness (Doll and Torkzadeh 1988, Rai et al. 2002, McKinney et al. 2002).

IQ1. The website of **theretailer.com** provides **sufficient information** regarding its products and services for my purchasing decision.

IQ2. The website of **theretailer.com** provides **accurate information** regarding its products and services for my purchasing decision.

IQ3. The website of **theretailer.com** provides **timely information** regarding its products and services for my purchasing decision.

IQ4. The website of **theretailer.com** provides **helpful information** regarding its products and services for my purchasing decision.

Perceived system quality: It is defined as the extent of the beliefs to which the system on the website has attributes of access and usability (McKinney et al. 2002, Rai et al. 2002).

SQ1. The website of **theretailer.com quickly loads all the text and graphics**.

SQ2. The website of **theretailer.com** is **responsive to my request when I am navigating on the website**.

SQ3. The website of **theretailer.com** is **easy to use**.

SQ4. The website of **theretailer.com** is **well-organized**.

Word of Mouth within Social Network:

It is the extent to which people in the customer's social network provide positive information about purchasing online from the retailer (Richins 1984, Gremler and Gwinner 2000)

WOM1. Overall speaking, my social contacts **encourage me** to purchase (such products) online from **theretailer.com**.

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The expectation of benign behavior based on the sanctions available to customers to impose on the retailer (adapted from Shapiro et al. 1992). It is based on the effectiveness of indirect sanctions, online direct sanctions and cross-channel sanctions.

Examples of private measures (Singh 1988): 1) Decide not to purchase online from the retailer again. 2) Speak to your friends and relatives about your bad experience with the retailer. 3) Persuade friends and relatives not to purchase from the retailer, etc.

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ODS1. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to take appropriate action to take care of my problems.

ODS2. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to solve these problems.

ODS3. Assuming that I report the problems of my online purchases to **theretailer.com** through online means, **theretailer.com** is likely to be more careful in the future.

Cross-Channel Sanctions: They refer to measures that enable customers to use other channels (such as physical stores, retail offices) to seek resolution of problems in their online purchases (adapted from Singh 1988).

Examples of cross-channel sanctions: 1) Going in person to the retailer's physical stores to dispute your online purchase. 3) Making a telephone call to the retailer's physical stores to dispute your online purchase.

CCS1. Assuming that I report the problems of my online purchases to the retailer's department stores, the retailer is likely to take appropriate action to take care of my problems from **theretailer.com**.

CCS2. Assuming that I report the problems of my online purchases to the retailer's department stores, the retailer is likely to solve these problems.

CCS3. Assuming that I report the problems of my online purchases to the retailer's department stores, **theretailer.com** is likely to be more careful in the future.

Trust in the Retailer's Offline Operations:

Offline cognitive trust: It is the belief of the competence, benevolence and the integrity of the multi-channel retailer's physical stores (McKnight et al. 2002a, 2002b).

OfCT1. **The retailer's department stores** would act in my best interest (i.e. suggest more appropriate items other than the items that I picked, voluntarily help me to locate items should I have difficulties to locate them in the store, etc).

OfCT2. **The retailer's department stores** would fulfill its commitments to me (i.e., fulfill money-back guarantees and other sales policies, etc.).

OfCT3. **The retailer's department stores** would have the ability to meet most of my needs as a customer (i.e., possess good knowledge about its products and services, etc).

OfCT4. **The retailer's department stores** would make good-faith efforts to address most of my concerns (i.e. goes out of the way to assist me when I need help in the department stores).

OfCT5. **The retailer's department stores** would be truthful in its dealings with me (i.e. do not make false claims about the products offered).

OfCT6. **The retailer's department stores** would be capable and proficient to provide products and services I need (i.e. possess good understanding about products and services that I need).

OfCT7. **The retailer's department stores** would be interested in my well-being, not just its own (i.e. have policies that favour my interest such as product return policy).

OfCT8. **The retailer's department stores** would be honest in its dealings with me (i.e. provide honest advice to me when I need assistance in my purchase).

OfCT9. **The retailer's department stores** would have the skills and expertise to handle my expectations (i.e. able to recommend appropriate products for my needs).

Offline emotional trust: It is the extent to which users feel secure and comfortable when they consider purchasing from the retailer's physical stores (Swan et al. 1999).

OfET1. I feel at ease purchasing from **the retailer's department stores**.

OfET2. I feel secure purchasing from **the retailer's department stores.**

OfET3. I feel comfortable purchasing from **the retailer's department stores.**

<u>Online Price Satisfaction:</u>

It is a positive affect arising from the online prices of products offered by the multi-channel retailer (adapted from Ganesan 1994).

PS1. Online price relative to **other retailers' department stores** (1- Highly dissatisfied, 7- Highly satisfied)

PS2. Online price relative to **other online retailers** (1- Highly dissatisfied, 7- Highly satisfied)

Appendix A.3 Post-Initial Purchase Stage

Trust in the Online Operations of the Retailer:

Online cognitive trust: It is the customer's belief of the competence, benevolence and integrity of the multi-channel retailer's website operations (McKnight et al. 2002a, 2002b).

OnCT1. **theretailer.com** would operate in my best interest (i.e., go the extra mile to ensure that I receive products of high quality, care that my purchases are in proper order etc) when I purchase (such products) from it.

OnCT2. **theretailer.com** would keep its commitments to me (i.e., fulfil money-back guarantees and other sales policies, etc.) when I purchase (such products) from it.

OnCT3. **theretailer.com** would have the ability to meet most of my needs as a customer (i.e., no missing items in the products delivered, the quality of products delivered meets my expectations etc) when I purchase (such products) from it.

OnCT4**. theretailer.com** would make good-faith efforts to address most of my concerns (i.e. tries its best to clarify my purchase-related concerns).

OnCT5. **theretailer.com** would be truthful in its dealings with me (i.e. do not make false claims about the products offered).

OnCT6. **theretailer.com** would be capable and proficient to provide products and services I need (i.e. rarely makes errors on my online purchases, able to deliver my products on time).

OnCT7. **theretailer.com** would be interested in my well-being, not just its own (i.e. have policies that favour my interest such as free delivery, product return policy).

OnCT8. **theretailer.com** would be honest in its dealings with me (i.e. provide honest advice to me when I make queries online).

OnCT9. **theretailer.com** would have the skills and expertise to handle my expectations (i.e. able to recommend appropriate products for my needs).

Online emotional trust: It is the extent to which users feel secure and comfortable when they consider purchasing from the retailer's website (Swan et al. 1999).

OfET1. I feel at ease purchasing from **the retailer's website**.

OfET2. I feel secure purchasing from **the retailer's website.**

OfET3. I feel comfortable purchasing from **the retailer's website.**

Satisfaction with Past Outcomes:

Satisfaction with past order procurement: It is the extent of the positive affect towards the online procurement process on the website (i.e. whether it facilitates an easy, informative, relevant and personalized ordering process) (Thirumalai and Singha 2005).

PSat1. Ease of placing order (1- Highly dissatisfied, 7- Highly satisfied)

PSat2. Variety of product selection (1- Highly dissatisfied, 7- Highly satisfied)

PSat3. Clarity of product information (1- Highly dissatisfied, 7- Highly satisfied)

PSat4. Web site performance in processing your order (1- Highly dissatisfied, 7- Highly satisfied)

PSat5. Overall look and design of the website (1- Highly dissatisfied, 7- Highly satisfied)

Satisfaction with past order fulfillment: It is the extent of the positive affect towards the fulfillment process of the retailer (i.e. whether the retailer is able to fulfill the promised order) (Thirumalai and Singha 2005).

FSat1. On-time delivery (1- Highly dissatisfied, 7- Highly satisfied)

FSat2. Order tracking/status information (1- Highly dissatisfied, 7- Highly satisfied)

FSat3. Quality of delivered products met expectations (1- Highly dissatisfied, 7- Highly satisfied)

FSat4. Accuracy of actual order delivery (1- Highly dissatisfied, 7- Highly satisfied)

FSat5. Shipping and handling charges (1- Highly dissatisfied, 7- Highly satisfied)

Perceived Disparity with WOM from Social Network:

It is the evaluation of the discrepancy between the customer's online purchasing experiences coming from one's social network and his/her actual online purchasing experiences (adapted from Oliver 1980).

DWom1. Compared to what **my social contacts** encountered during their online purchasing experiences from **theretailer.com**, my online purchasing experiences (of such products) from **theretailer.com** were.....than what they encountered. (1-Much less favorable, 7- Much more favorable)

DWom2. Compared to what **my social contacts** encountered during their online purchasing experiences from **theretailer.com**, my online purchasing experiences (of such products) from **theretailer.com** were.....than what they encountered. (1-Much less satisfying, 7- Much more satisfying)

DWom3. Compared to what **my social contacts** encountered during their online purchasing experiences from **theretailer.com**, my online purchasing experiences (of such products) from **theretailer.com** were.....than what they encountered. (1-Much less pleasant, 7- Much more pleasant)

Perceived Disparity with Offline Purchasing Experiences

It is the evaluation of the discrepancy between the customer's online purchasing experiences and his/her offline purchasing experiences (adapted from Oliver 1980).

DOff1. Compared to **my purchasing experiences from the retailer's department stores**, my online purchasing experiences (of such products) from **theretailer.com** were.....than what I experienced at **the retailer's department stores**. (1-Much less favorable, 7- Much more favorable)

DOff2. Compared to **my purchasing experiences from the retailer's department stores**, my online purchasing experiences (of such products) from **theretailer.com** were..... than what I experienced at **the retailer's department stores**. (1-Much less satisfying, 7- Much more satisfying)

DOff3. Compared to **my purchasing experiences from the retailer's department stores**, my online purchasing experiences (of such products) from **theretailer.com** were..... than what I experienced at **the retailer's department stores**. (1-Much less pleasant, 7- Much more pleasant)

Perceived Retailer's Willingness to Customize

It is the customer's perception regarding the effort of the retailer to provide customized products and services online (Koufaris and Hampton-Sosa 2004).
Cus1. **theretailer.com** is willing to **customize its services** for me (i.e. understands my preferred timing of products delivery, follows my specified product handling instructions).

Cus2. **theretailer.com** is willing to **customize the features of the website** for me (i.e. adjusts the layout of the website to my preference, stores my purchasing history).

Cus3. **theretailer.com** is willing to **respond to my individual needs and desires** as a customer (i.e. provides me with more specific product information whenever I request for it, recommends products according to my preferences and interests).

Intention of Online Repurchase:

It is the likelihood that a customer will purchase again from the retailer's website (adapted from Fishbein and Ajzen 1975).

PI1. I am willing to purchase (such products) online from theretailer.com again in the future.

PI2. I will probably purchase (such products) online from theretailer.com again in the future.

PI3. I will like to purchase (such products) online from theretailer.com again in the future.

Online Price Satisfaction:

It is a positive affect arising from the online prices of products offered by the multi-channel retailer (adapted from Ganesan 1994).

PS1. Online price relative to **other retailers' department stores** (1- Highly dissatisfied, 7- Highly satisfied)
PS2. Online price relative to **other online retailers** (1- Highly dissatisfied, 7- Highly satisfied)

APPENDIX B. PRE-TESTS

B.1 Pretest of the Initial-Interaction Phase

Measures	SA	IQ	SQ	IS	ODS	CCS	PS	WOM	OfCT	OfET	OnCT	PI
Item-Scale Correlations	0.82	0.74	0.62	0.75	0.68	0.72	0.76	0.80	0.65	0.85	0.74	0.86
	0.85	0.76	0.75	0.50	0.76	0.87	0.76	0.84	0.83	0.87	0.80	0.87
	0.85	0.70	0.79	0.58	0.50	0.79		0.80	0.70	0.90	0.70	0.77
		0.72	0.71						0.65		0.61	
									0.65		0.83	
									0.78		0.74	
									0.63		0.61	
									0.67		0.66	
									0.72		0.55	
Number of Measures	3	4	4	3	3	3	2	3	9	3	9	3
Cronbach's Alpha	0.92	0.87	0.86	0.77	0.80	0.89	0.86	0.90	0.91	0.93	0.91	0.92

Table B.1.1 Reliabilities of Constructs in the Initial-Interaction Phase

B.2 Pretest of the Post-Initial Purchase Phase

Measures	PSat	FSat	CUS	OnCT	OnET	DWom	DOff	PI	PS
Item-Scale Correlations	0.80	0.69	0.91	0.85	0.97	0.84	0.95	0.92	0.71
	0.55	0.89	0.93	0.86	0.92	0.93	0.94	0.93	0.71
	0.73	0.83	0.89	0.85	0.96	0.87	0.94	0.94	
	0.66	0.83		0.84					
	0.78	0.81		0.87					
				0.89					
				0.77					
				0.78					
				0.85					
Number of Measures	5	5	3	9	3	3	3	3	2
Cronbach's Alpha	0.87	0.93	0.96	0.96	0.98	0.94	0.97	0.97	0.82

Table B.1.2 Reliabilities of Constructs in the Post-Initial Purchase Phase

APPENDIX C: TESTS FOR NON-RESPONSE BIAS

C.1 Comparing Early and Late Respondents in Before-Interaction Phase

Demographic			Low Touch Product Early N=111	Late N=111	T-stat (P-value)	High Touch Product Early N=111	Late N=111	T-stat (P-value)
Age	<20	Frequency	2	2	0 (1)	2	2	0 (1)
		% within grp	1.8%	1.8%		1.8%	1.8%	
	21-25	Frequency	9	6	0.80 (0.78)	9	6	0.80 (0.78)
		% within grp	8.1%	5.4%		8.1%	5.4%	
	26-30	Frequency	14	6	1.89 (0.06)	14	6	1.89 (0.06)
		% within grp	12.6%	5.4%		12.6%	5.4%	
	31-35	Frequency	12	15	-0.62 (0.54)	12	15	-0.62 (0.54)
		% within grp	10.8%	13.5%		10.8%	13.5%	
	36-40	Frequency	11	4	1.89 (0.06)	11	4	1.89 (0.06)
		% within grp	9.9%	3.6%		9.9%	3.6%	
	>40	Frequency	63	78	**-2.11 (0.04)**	63	78	**-2.11 (0.04)**
		% within grp	56.8%	70.3%		56.8%	70.3%	
Gender	**Male**	Frequency	61	79	**-2.54 (0.01)**	61	79	**-2.54 (0.01)**
		% within grp	55.0%	71.2%		55.0%	71.2%	
	Female	Frequency	50	32	**2.54 (0.01)**	50	32	**2.54 (0.01)**
		% within grp	45.0%	28.8%		45.0%	28.8%	
Academic Background	High School	Frequency	27	17	1.69 (0.09)	27	17	1.69 (0.09)
		% within grp	24.3%	15.3%		24.3%	15.3%	
	Bachelor's	Frequency	67	60	1.11 (0.26)	67	60	1.11 (0.26)
		% within grp	61.4%	54.0%		61.4%	54.0%	
	Master	Frequency	3	11	**-2.23 (0.03)**	3	11	**-2.23 (0.03)**
		% within grp	2.7%	9.9%		2.7%	9.9%	
	PhD	Frequency	14	23	-1.63 (0.10)	14	23	-1.63 (0.10)
		% within grp	12.6%	20.7%		12.6%	20.7%	
Internet Purchasing Experience	None	Frequency	4	5	-0.34 (0.73)	4	5	-0.34 (0.73)
		% within grp	3.6%	4.5%		3.6%	4.5%	
	Since 2006	Frequency	4	8	-1.19 (0.24)	4	8	-1.19 (0.24)
		% within grp	3.6%	7.2%		3.6%	7.2%	
	Since 2005	Frequency	15	9	1.30 (0.19)	15	9	1.30 (0.19)
		% within grp	13.5%	8.1%		13.5%	8.1%	
	Since 2004	Frequency	16	15	0.19 (0.85)	16	15	0.19 (0.85)
		% within grp	14.4%	13.5%		14.4%	13.5%	
	Since 2003	Frequency	18	18	0 (1)	18	18	0 (1)
		% within grp	16.2%	16.2%		16.2%	16.2%	
	Since 2002	Frequency	24	17	1.21 (0.23)	24	17	1.21 (0.23)
		% within grp	21.6%	15.3%		21.6%	15.3%	
	Before 2002	Frequency	30	39	-1.31 (0.19)	30	39	-1.31 (0.19)
		% within grp	27.0%	35.1%		27.0%	35.1%	

Demographic			Low Touch Product Early N=111	Late N=111	T-stat (P-value)	High Touch Product Early N=111	Late N=111	T-stat (P-value)
Offline Purchasing Experience from retailer	Since 2006	Frequency	10	10	0 (1)	10	10	0 (1)
		% within grp	9.0%	9.0%		9.0%	9.0%	
	Since 2005	Frequency	12	8	0.94 (0.35)	12	8	0.94 (0.35)
		% within grp	10.8%	7.2%		10.8%	7.2%	
	Since 2004	Frequency	16	7	**2.00 (0.05)**	16	7	**2.00 (0.05)**
		% within grp	14.4%	6.3%		14.4%	6.3%	
	Since 2003	Frequency	8	4	1.19 (0.24)	8	4	1.19 (0.24)
		% within grp	7.2%	3.6%		7.2%	3.6%	
	Since 2002	Frequency	12	10	0.45 (0.65)	12	10	0.45 (0.65)
		% within grp	10.8%	9.0%		10.8%	9.0%	
	Before 2002	Frequency	53	72	**-2.62 (0.01)**	53	72	**-2.62 (0.01)**
		% within grp	47.7%	64.9%		47.7%	64.9%	

Table C.1.1 Demographics of Early and Late Respondents in Before-Interaction Phase

Construct		Low Touch Product Respondents Early N=111	Late N=111	T-stat (P-value)	High Touch Product Respondents Early N=111	Late N=111	T-stat (P-value)
Perceived Structural Assurance of Internet	Mean	11.62	11.80	-0.40 (0.69)	11.62	11.80	-0.40 (0.69)
Indirect Sanctions Effectiveness	Mean	12.40	13.35	-1.91 (0.06)	12.40	13.35	-1.91 (0.06)
Direct Sanctions Effectiveness	Mean	14.40	14.30	0.23 (0.82)	14.40	14.30	0.23 (0.82)
Cross Channel Sanctions Effectiveness	Mean	13.48	12.96	0.99 (0.32)	13.48	12.96	0.99 (0.32)
Offline Cognitive Trust	Mean	37.03	36.78	0.24 (0.81)	37.03	36.78	0.24 (0.81)
Offline Emotional Trust	Mean	14.64	14.66	-0.05 (0.96)	14.64	14.66	-0.05 (0.96)
Perceived Risk	Mean	16.67	17.00	-0.57 (0.57)	19.03	19.51	-0.09 (0.93)
Trust in the Online Operations of the Retailer	Mean	41.45	41.97	-0.49 (0.63)	41.53	40.66	0.80 (0.43)
Word of Mouth within Social Network	Mean	3.79	5.36	-1.79 (0.08)	4.28	5.11	-0.99 (0.33)

Construct		Low Touch Product Respondents Early N=111	Late N=111	T-stat (P-value)	High Touch Product Respondents Early N=111	Late N=111	T-stat (P-value)
Intention of Online Purchase	Mean	13.11	13.28	-0.40 (0.69)	12.71	12.37	0.76 (0.44)

Table C.1.2 Construct Scores of Early and Late Respondents in Before-Interaction Phase

C.2 Comparing Early and Late Respondents in Initial-Interaction Phase

Demographic			Low Touch Product Early N=104	Late N=105	T-stat (P-value)	High Touch Product Early N=100	Late N=100	T-stat (P-value)
Age	<20	Frequency	2	0	1.42 (0.16)	2	0	1.43 (0.16)
		% within grp	1.9%	.0%		2.0%	.0%	
	21-25	Frequency	15	30	**-2.54 (0.01)**	16	29	**-2.23 (0.65)**
		% within grp	14.4%	28.6%		16.0%	29.0%	
	26-30	Frequency	15	26	-1.91 (0.06)	12	26	**-2.57 (0.01)**
		% within grp	14.4%	24.8%		12.0%	26.0%	
	31-35	Frequency	17	19	-0.35 (0.73)	17	17	0 (1)
		% within grp	16.3%	18.1%		17.0%	17.0%	
	36-40	Frequency	13	17	-0.76 (0.45)	13	16	-0.60 (0.55)
		% within grp	12.5%	16.2%		13.0%	16.0%	
	>40	Frequency	42	13	**4.84 (0.00)**	40	12	**4.76 (0.00)**
		% within grp	40.4%	12.4%		40.0%	12.0%	
Gender	**Male**	Frequency	54	40	**2.03 (0.04)**	47	39	1.15 (0.25)
		% within grp	51.9%	38.1%		47.0%	39.0%	
	Female	Frequency	50	65	**-2.03 (0.04)**	53	61	-1.15 (0.25)
		% within grp	48.1%	61.9%		53.0%	61.0%	
Academic Background	High School	Frequency	28	33	-0.80 (0.43)	25	32	-1.12 (0.26)
		% within grp	26.9%	31.9%		25%	32%	
	Bachelor's	Frequency	69	61	1.23 (0.22)	68	57	1.65 (0.10)
		% within grp	66.3%	58.1%		68%	57%	
	Master	Frequency	1	3	-1.00 (0.32)	2	3	-0.46 (0.64)
		% within grp	1%	2.9%		2%	3%	
	PhD	Frequency	6	8	-0.52 (0.60)	5	8	-0.88 (0.38)
		% within grp	5.8%	7.6%		5%	8%	
Internet Purchasing Experience	**None**	Frequency	6	0	**2.53 (0.01)**	6	0	**2.53 (0.01)**
		% within grp	5.8%	.0%		6.0%	.0%	
	Since 2006	Frequency	2	3	-0.47 (0.64)	2	3	-0.45 (0.65)
		% within grp	1.9%	2.9%		2.0%	3.0%	
	Since 2005	Frequency	3	8	-1.53 (0.13)	7	7	0 (1)
		% within grp	2.9%	7.6%		7.0%	7.0%	

Demographic			Low Touch Product Early N=104	Late N=105	T-stat (P-value)	High Touch Product Early N=100	Late N=100	T-stat (P-value)
	Since 2004	Frequency	24	13	**2.04 (0.04)**	16	13	0.60 (0.55)
		% within grp	23.1%	12.4%		16.0%	13.0%	
	Since 2003	Frequency	18	15	0.60 (0.55)	20	13	1.34 (0.18)
		% within grp	17.3%	14.3%		20.0%	13.0%	
	Since 2002	Frequency	20	22	-0.33 (0.75)	16	21	-0.91 (0.36)
		% within grp	19.2%	21.0%		16.0%	21.0%	
	Before 2002	Frequency	31	44	-1.84 (0.07)	33	43	-1.47 (0.14)
		% within grp	29.8%	41.9%		33.0%	43.0%	
Offline Purchasing Experience from retailer	**Since 2006**	Frequency	7	15	-1.80 (0.07)	5	15	**-2.45 (0.02)**
		% within grp	6.7%	14.3%		5.0%	15.0%	
	Since 2005	Frequency	10	20	-1.96 (0.05)	14	17	-0.60 (0.55)
		% within grp	9.6%	19.0%		14.0%	17.0%	
	Since 2004	Frequency	14	14	0.04 (0.97)	12	13	-0.22 (0.83)
		% within grp	13.5%	13.3%		12.0%	13.0%	
	Since 2003	Frequency	11	4	1.92 (0.06)	9	4	1.47 (0.14)
		% within grp	10.6%	3.8%		9.0%	4.0%	
	Since 2002	Frequency	7	8	-0.25 (0.80)	5	8	-0.88 (0.38)
		% within grp	6.7%	7.6%		5.0%	8.0%	
	Before 2002	Frequency	55	44	1.60 (0.11)	55	43	1.74 (0.08)
		% within grp	52.9%	41.9%		55.0%	43.0%	

Table C.2.1 Demographics of Early and Late Respondents in Initial-Interaction Phase

		Low Touch Product Respondents Early N=104	Late N=105	T-stat (P-value)	High Touch Product Respondents Early N=100	Late N=100	T-stat (P-value)
Perceived Structural Assurance of Retailer's Website	Mean	12.95	13.47	-1.10 (0.27)	12.74	13.45	-1.53 (0.13)
Perceived Information Quality	Mean	18.40	18.15	0.46 (0.65)	18.13	18.14	-0.02 (0.99)
Perceived System Quality	Mean	17.76	17.96	-0.38 (0.71)	17.58	17.93	-0.65 (0.52)
Indirect Sanctions Effectiveness	Mean	12.90	12.95	-0.11 (0.91)	12.92	12.97	-0.11 (0.91)
Direct Sanctions Effectiveness	Mean	14.02	14.13	-0.27 (0.79)	13.99	14.05	-0.14 (0.89)
Cross Channel Sanctions Effectiveness	Mean	13.13	12.52	1.18 (0.24)	12.79	12.40	0.75 (0.46)
Offline Cognitive Trust	Mean	32.48	31.53	1.09 (0.28)	32.08	31.39	0.83 (0.41)
Offline Emotional Trust	Mean	14.94	14.50	0.46 (0.65)	14.66	14.47	0.47 (0.64)

		Low Touch Product Respondents			High Touch Product Respondents		
		Early N=104	Late N=105	T-stat (P-value)	Early N=100	Late N=100	T-stat (P-value)
Perceived Risk	Mean	17.63	18.04	-0.67 (0.51)	20.13	21.07	-1.54 (0.12)
Trust in the Online Operations of the Retailer	Mean	41.29	41.29	0 (1)	40.40	41.24	-0.84 (0.40)
Word of Mouth within Social Network	Mean	13.75	13.72	0.07 (0.94)	11.40	12.18	-1.51 (0.13)
Online Price Satisfaction	Mean	8.44	8.84	-1.50 (0.13)	8.18	8.47	-1.12 (0.27)
Intention of Online Purchase	Mean	13.41	13.38	0.10 (0.90)	12.75	12.57	0.47 (0.64)

Table C.2.2 Construct Scores of Early and Late Respondents in Initial-Interaction Phase

C.3 Comparing Early and Late Respondents in Post-Initial Purchase Phase

Demographic			Low Touch Product Early N=103	Late N=104	T-stat (P-value)	High Touch Product Early N=100	Late N=100	T-stat (P-value)
Age	<20	Frequency	0	2	-1.42 (0.16)	0	1	-1.00 (0.31)
		% within grp	.0%	1.9%		.0%	1.0%	
	21-25	Frequency	14	8	1.38 (0.17)	19	5	**3.12 (0.00)**
		% within grp	13.6%	7.7%		19.0%	5.0%	
	26-30	Frequency	20	6	**3.00 (0.00)**	25	5	**4.13 (0.00)**
		% within grp	19.4%	5.8%		25.0%	5.0%	
	31-35	Frequency	23	17	1.10 (0.27)	18	22	-0.71 (0.48)
		% within grp	22.3%	16.3%		18.0%	22.0%	
	36-40	Frequency	9	12	-0.67 (0.50)	8	11	-0.72 (0.47)
		% within grp	8.7%	11.5%		8.0%	11.0%	
	>40	Frequency	37	59	**-3.07 (0.50)**	30	56	**-3.84 (0.00)**
		% within grp	35.9%	56.7%		30.0%	56.0%	
Gender	Male	Frequency	51	52	-0.07 (0.94)	45	52	-0.99 (0.32)
		% within grp	49.5%	50.0%		45.0%	52.0%	
	Female	Frequency	52	52	0.07 (0.94)	55	48	0.99 (0.32)
		% within grp	50.5%	50.0%		55.0%	48.0%	
Academic Background	High School	Frequency	26	21	0.86 (0.39)	28	17	1.88 (0.06)
		% within grp	25.2%	20.2%		28.0%	17.0%	
	Bachelor's	Frequency	63	68	-0.63 (0.53)	59	63	-0.58 (0.56)
		% within grp	61.2%	65.4%		59.0%	63.0%	
	Master	Frequency	2	4	-0.82 (0.41)	3	7	-1.30 (0.20)
		% within grp	1.9%	3.8%		3.0%	7.0%	
	PhD	Frequency	12	11	0.25 (0.80)	10	13	-0.66 (0.51)
		% within grp	11.7%	10.6%		10.0%	13.0%	

Demographic			Low Touch Product Early N=103	Late N=104	T-stat (P-value)	High Touch Product Early N=100	Late N=100	T-stat (P-value)
Internet Purchasing Experience	Since 2006	Frequency	2	0	1.41 (0.16)	3	0	1.76 (0.08)
		% within grp	1.9%	.0%		3.0%	.0%	
	Since 2005	Frequency	7	5	0.62 (0.54)	8	5	0.86 (0.39)
		% within grp	6.8%	4.8%		8.0%	5.0%	
	Since 2004	Frequency	11	7	1.02 (0.31)	10	6	1.05 (0.30)
		% within grp	10.7%	6.7%		10.0%	6.0%	
	Since 2003	Frequency	15	19	-0.72 (0.47)	14	18	-0.77 (0.44)
		% within grp	14.6%	18.3%		14.0%	18.0%	
	Since 2002	Frequency	18	20	-0.32 (0.75)	14	19	-0.96 (0.34)
		% within grp	17.5%	19.2%		14.0%	19.0%	
	Before 2002	Frequency	50	53	-1.26 (0.13)	51	52	-0.14 (0.88)
		% within grp	27.0%	35.1%		51.0%	52.0%	
Online Purchasing Experience from retailer	**Since 2006**	Frequency	16	9	1.51 (0.13)	19	6	**2.84 (0.01)**
		% within grp	15.5%	8.7%		19.0%	6.0%	
	Since 2005	Frequency	28	29	-0.11 (0.91)	25	26	-0.16 (0.87)
		% within grp	27.2%	27.9%		25.0%	26.0%	
	Since 2004	Frequency	23	21	0.37 (0.71)	21	23	-0.34 (0.87)
		% within grp	22.3%	20.2%		21.0%	23.0%	
	Since 2003	Frequency	13	13	0.02 (0.98)	13	13	0 (1)
		% within grp	12.6%	12.5%		13.0%	13.0%	
	Since 2002	Frequency	11	13	-0.40 (0.69)	9	15	-1.31 (0.19)
		% within grp	10.7%	12.5%		9.0%	15.0%	
	Before 2002	Frequency	12	19	-1.34 (0.18)	13	17	-0.79 (0.43)
		% within grp	11.7%	18.3%		13.0%	17.0%	

Table C.3.1 Demographics of Early and Late Respondents in Post-Initial Purchase Phase

		Low Touch Product Respondents Early N=103	Late N=104	T-stat (P-value)	High Touch Product Respondents Early N=100	Late N=100	T-stat (P-value)
Intention of Online Repurchase	Mean	15.20	14.61	1.38 (0.17)	15.29	14.69	1.34 (0.18)
Online Cognitive Trust	Mean	44.74	43.39	1.22 (0.22)	44.15	42.75	1.18 (0.24)
Online Emotional Trust	Mean	14.95	14.83	0.29 (0.78)	14.47	14.18	0.62 (0.54)
Perceived Risk of Product Type	Mean	19.02	18.44	0.85 (0.40)	20.44	19.48	1.38 (0.17)
Satisfaction with Order Procurement	Mean	25.11	24.83	0.44 (0.66)	24.87	24.88	-0.01 (0.99)
Satisfaction with Order Fulfillment	Mean	25.32	25.38	-0.08 (0.93)	25.27	25.43	-0.23 (0.82)
Perceived Disparity with WOM from	Mean	14.34	13.97	0.92 (0.36)	14.03	13.70	0.77 (0.44)

		Low Touch Product Respondents			High Touch Product Respondents		
		Early N=103	Late N=104	T-stat (P-value)	Early N=100	Late N=100	T-stat (P-value)
Social Network							
Perceived Disparity with Offline Purchasing Experiences	Mean	13.50	13.40	0.21 (0.83)	12.72	12.87	-0.29 (0.77)
Perceived Retailer's Willingness to Customize	Mean	14.89	14.62	0.63 (0.53)	14.74	14.45	0.65 (0.52)
Online Price Satisfaction	Mean	9.27	9.03	0.80 (0.43)	9.27	9.14	0.41 (0.68)

Table C.3.2 Construct Scores of Early and Late Respondents in Post-Initial Purchase Phase

APPENDIX D: STATISTICAL COMPARISONS OF PATH COEFFICIENTS BETWEEN LOW TOUCH AND HIGH TOUCH PRODUCTS

$\mathbf{S_{pooled}} = \sqrt{\{[(N_l - 1) / (N_l + N_h - 2)] \times SE_l^2 + [(N_h - 1) / (N_l + N_h - 2)] \times SE_h^2\}}$

$\mathbf{t} = (PC_h - PC_l) / [S_{pooled} \times \sqrt{(1/N_l + 1/N_h)}]$

where $\mathbf{S_{pooled}}$ = pooled estimator for the variance

t = t-statistic with $N_l + N_h - 2$ degrees of freedom

$\mathbf{N_l}$ = sample size of model for low touch products

$\mathbf{N_h}$ = sample size of model for high touch products

$\mathbf{SE_l}$ = standard error of path in structural model for low touch products

$\mathbf{SE_h}$ = standard error of path in structural model for high touch products

$\mathbf{PC_l}$ = path coefficient in structural model for low touch products

$\mathbf{PC_h}$ = path coefficient in structural model for high touch products

Example: To compare the relationship between perceived non-structural assurance and trust in the online operations of the retailer across product types in the before-interaction phase,

$\mathbf{N_l} = 222$

$\mathbf{N_h} = 222$

$\mathbf{SE_l} = 0.0542$

$\mathbf{SE_h} = 0.0527$

$\mathbf{PC_l} = 0.329$

$\mathbf{PC_h} = 0.340$

$\mathbf{S_{pooled}} = \sqrt{\{[(222 - 1) / (222 + 222 - 2)] \times 0.0542^2 + [(222 - 1) / (222 + 222 - 2)] \times 0.0527^2\}}$

$= 0.05346$

$\mathbf{t} = (0.340 - 0.329) / [0.05346 \times \sqrt{(1/222 + 1/222)}]$

$= 2.17$