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Essays On The Role Of Product Characteristics In Information Source Importance

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Dedication

I dedicate this work to my heavenly father and mother—Esfandiar and Afsar—for their unconditional love, relentless support, and selfless sacrifice. I know I cannot pay them back even in a million earthly lives.

ESSAYS ON THE ROLE OF PRODUCT CHARACTERISTICS IN INFORMATION SOURCE IMPORTANCE

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Abstract

The goal of this dissertation is to contribute to our understanding of relative importance of different information sources that consumers use to guide their purchasing behavior. Specifically, this work aims to model the product characteristics affecting the importance of each information source to consumers as they seek to purchase a given product. Although the extant literature has examined this topic, the efforts have not been cohesive and a comprehensive model of the phenomenon has yet to be developed, limiting our understanding of the topic. Gaining insight into the effects of product characteristics on the importance of different sources of information is significant since such insights may extend our understanding of consumer information search behavior and, ultimately, guide managers' decisions regarding their allocation of promotional budgets to different information sources. For this reason, examining how product characteristics affect consumers' perceptions of the importance of different information sources is the focus of this work.

Study 1 is an attempt to identify and list all of the factors that affect importance of each source of information in the consumer information search process. A comprehensive review of the extant literature sought to identify the most significant of these factors. The review revealed the insufficient attention paid to the role of product characteristics, and the dominance of the economic and psychological/motivational approaches in this research stream. As a solution, study 1 puts forward a model—the PCM model—that combines product characteristics with the economic and psychological factors as predictors of information source importance, thus offering a new integrated approach to the study of information search behavior.

Study 2 extends the investigation in study 1 by identifying the specific product characteristics that affect information source importance, using an exploratory, qualitative

approach. To do so, 210 participants were recruited on Amazon MTurk. Participants were asked to rate the relative importance of each information source when gathering information prior to purchasing a named product class. Then, the participants were asked to describe the product characteristics that made them rate the importance of each information source the way that they did. An initial list of 19 product characteristics was then extracted from the respondents' responses. Next, this list was further refined and developed into a 34-item scale—the Product Characteristic (PC) scale—that can be used to assess any product based on 12 dimensions.

In study 3, the PCM model developed in study 1 was put to test to explain the importance of information sources across different product classes. To achieve this goal, 506 respondents were recruited on Amazon MTurk. First, the respondents rated the importance levels of the information sources on a 0-10 scale for a given product, as the dependent variables. Second, they assessed the product's characteristics, as the independent variables, using the PC scale developed in study 2. Third, the economic and psychological variables identified in study 1 were also measured, as covariates. Finally, the effects of product characteristics, as well as the economic and psychological variables on the importance of information sources were estimated using PLS-SEM.

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Introduction

Consumer information search (CIS) refers to the effort that a consumer expends in order to acquire information from the environment (e.g., Srinivasan and Ratchford 1991). Schmidt and Spreng (1996) define information search as the stage of the decision-making process wherein consumers collect and integrate information from different internal and external sources before they make a choice. In internal search, consumers retrieve information from memory, whereas in external search they access information outside of their memories.

CIS is one of the most enduring research areas in the field of consumer behavior (Beatty and Smith 1987). Marketing scholars' interest in CIS can be traced back at least to 1917 (e.g., Copeland 1917) and the importance of understanding consumers information search behavior for scholars, managers, and public policy makers has been acknowledged (e.g., Bennett and Mandell 1969; Kim, Albuquerque, and Bronnenberg 2010; Moorthy, Ratchford, and Talukdar 1997; Murray 1991; Srinivasan 1990; Westbrook and Fornell 1979). Consequently, the literature on CIS is voluminous and possesses a long and rich history (Peterson and Merino 2003). Perhaps, one main reason for the importance placed on CIS is that a major part of consumer purchase process comes after, and thus is influenced by, the information search stage. Indeed, search activities lead to a variety of important outcomes, such as better choice decisions, increased product and market expertise, heightened satisfaction with a purchasing decision, and product return intentions (e.g., Maity and Arnold 2013; Punj and Staelin 1983).

Despite the valuable insights offered by the bulk of research on CIS behavior, fundamental questions remain unanswered (Gursoy 2001; Moorthy, Ratchford and Talukdar 1997). The difficulties associated with developing valid measures to represent theoretically-

based determinants of search behavior have led to the existence of unanswered questions, theoretical contradictions, and unsettled issues in the CIS literature (Newman and Lockeman 1975; Urbany, Dickson, and Wilkie 1989). One of these questions pertains to consumers' use of information sources. As Pauwels et al. (2011) note, though CIS has been studied for several decades, the role of information sources in CIS and consumers' decision making has been under-examined. In this regard, this dissertation identifies two major gaps.

First, almost all of the studies examining the antecedents of information search only focus on external search, and even in that case, do not consider, or distinguish between, different types of external sources of information (e.g., Hu, Huhmann, and Hyman 2007; Huang, Lurie, and Mitra 2009; Lee and Cranage 2010). This practice may bring about at least two issues. On one hand, the question of what determines the level of emphasis consumers put on the internal source of information deserves attention, too, as marketing managers may benefit from managing this information source as much as they may benefit from managing any other sources of information. Although the act of managing internal sources of information may not sound as intuitive as managing external sources, attempting the former may still be worthwhile if this source of information proves to play an important role in the purchase decisions under some circumstances. The plummeting of a company's stock prices after a product recall is a reminder of the significance of managing internal sources of information after such mishaps.

On the other hand, pooling different sources of external information together and treating them as a single source may lead to missing possible nuances in their effects. For example, assuming that consumers' ability to utilize an external source of information impacts its utilization level, do consumers need equal levels of ability to watch a TV commercial (one external source), and to decipher a Consumer Reports' table of specifications about a number of

professional cameras (another external source)? Alternatively, when it comes to choosing a product that is oftentimes consumed in conjunction with others—such as movies to watch, are anonymous, online product recommendations (one external source) and friends' and family's recommendations (another external source) equally important for consumers? As one last example, in light of the fact that members of generation X are unusually skeptical of marketing messages, are they expected to see equal benefits in listening to TV commercials (one external source) and testimonials from personally-known colleagues and neighbors (another external source)? If the answer to at least some of such questions is no, researchers must examine these external sources separately to capture their potentially different effects, a practice hard to find in the extant literature.

The consequences of pooling distinct external sources together and treating them as one is twofold: 1) from an academic perspective, it leads to blindness to theoretical nuances among these sources, and 2) from a managerial perspective, the research findings fall short of being practical and applicable since some external sources are more relevant to some managers than others. For instance, sales people, as a source of information, may be more relevant to business-to-business, rather than business-to-consumer markets. By separately examining the dynamics of each external information source, a study can provide separate insights from which different managers can benefit differently.

Second, one area that has been only scantly examined is how product characteristics in each product class influence information search behavior. Before moving on, however, defining product, product class, and product characteristics may prove facilitative, as they are among the focal concepts in this dissertation.

Phillip Kotler (1967, p. 289) defines a product as "a bundle of physical, service, and symbolic particulars expected to yield satisfactions or benefits to the buyer." William Stanton (1981, p. 161) defines product as "a set of tangible and intangible attributes including packaging, color, price, manufacturer's prestige, retailer's prestige and manufacturer's and retailer's services which buyer may accept as offering satisfaction of wants and services."

Although product class and product category have been used interchangeably in the literature, this dissertation does not distinguish between the two, and uses product class. What constitutes a product class has been a challenging task (Raju 1992), and the subject of much debate (e.g., Day, Shocker, and Srivastava 1979; Geistfeld, Sproles, and Badenhop 1977; Miracle 1965). In the face of arbitrary boundaries, the notion of a unique product class is an oversimplification (Day, Shocker, and Srivastava 1979). As such, this dissertation suffices to benefit from already-established product classifications, rather than devising one. However, what may be more easily agreed upon is that the substitutability and functional similarity of products are the salient forces binding them into one product class. For example, coffee, tea, and bottled water fall under a single product class—beverages—as they can substitute one another, to satisfy thirst. Moreover, laptops, TVs, and monitors fall under a single product class—electronics—as they have similar functions.

As Geistfeld, Sproles, and Badenhop (1977) note, the concept of product characteristics has historically lacked a precise definition, has been approached intuitively, and has been conveyed as synonymous with the term product attribute. As it can be inferred from Stanton's (1981) above-mentioned definition of a product, some product characteristics are tangible, such as a product's size, shape, weight, cost, and material. On the other hand, some product characteristics are intangible, such as a product's complexity, luxury, value, personality, degree

of differentiation, search vs. experience, and hedonic vs. utilitarian nature. A product may even be characterized as frivolous or decadent (Chang 2008), or as inductive to a feeling of guilt before, during, and after purchase (Kivetz and Simonson 2002; Strahilevitz and Myers 1998).

Returning to the previous discussion on the second gap this dissertation intends to fill, most studies partially or completely ignore the role of product characteristics in CIS. For instance, Beatty and Smith (1987) list seven categories containing approximately 60 variables that are proposed to affect information search behavior, but none of these categories directly relate to the product. Even in the few cases in which product characteristics have been examined among factors affecting information source importance, these studies have been limited in scope. For example, Schmidt and Spreng (1996) propose 15 antecedents to external information search, with only one that is directly related to the product. In the same fashion, Newman and Staelin (1973) identify only one product characteristic that serves to influence information search behavior. Still more, Cox (1967, p. 604) argues that the "amount and nature of perceived risk will define consumers' information needs, and that consumers will seek out sources, types, and amounts of information that seem most likely to satisfy their particular information needs."

Major shortcomings, however, exist even in studies that focus on the role of product characteristics. For instance, Zhu and Zhang (2010) examine how product and consumer characteristics moderate the influence of online consumer reviews on product sales using data from the video game industry. This study's weakness lies in the fact that it only considers others' information and it features a limited product set. Huang, Lurie, and Mitra (2009) examine consumers' information search behavior across search and experience goods, finding that the time spent online is the same for both product classes, but the behavior (e.g. web browsing pace) differs between the two. The weakness of this paper is that managerial implications regarding the

allocation of resources to promotional budgets is not clear. Also, only one information source is discussed in this paper. In addition, a meta-analysis by Babic et al. (2015) investigates the moderating effect of product characteristics on effectiveness of others' information. What is missing here is that only one information source is examined, while the authors provide no reasonable justification for their choice of the five product characteristics used in the study.

Moon, Bergey, and Iacobucci (2010) build on the concept of influence mix or internal and external sources of information to examine how information from one's own and others' information affects the performance of movies, controlling for movie characteristics. In fact, they state (p. 112) that "in the movie industry, the uniqueness of each movie makes movie choice challenging." However, this study is limited to movies and does not take marketers' information into account.

All of the aforementioned studies suffer from limited generalizability across different product classes, information sources, or both. In sum, there is still no systematic examination for how product characteristics drive consumers to rely more heavily on one or another information source, across a wide variety of products. One reason for this limitation is that a large number of previous studies consider only one product. In such a situation, an examination of the effects of product characteristics on search behavior may appear irrelevant. However, it is particularly important to answer this question as businesses debate how best to allocate billions of advertising dollars across different communications media (Dreazen 1999). To a major extent, the managerial significance of studying product characteristics stems from the fact that while managers may know less about the situational and psychological determinants of CIS, they are masters of their products, and understand their characteristics very well. As such, if managers

know the relationship between product characteristics and CIS in general, they will be able to predict how the relationship will look like for their products, given its characteristics.

The three studies in this dissertation try to achieve three main goals and, thus, fill the two gaps identified above. First, they integrate the extant literature on consumers' use of information sources, providing a comprehensive model reflecting the determinants of each information source's importance. Second, focusing on product characteristics, one of the types of determinants found in the model, they utilize a qualitative approach to identify a list of product characteristics, and develop a scale to measure them. Third, they empirically test the model, providing managers with a practical method for predicting the importance of each information source separately, given a specific product offering.

Study 1: Information Search Behavior, Information Sources, and Determinants of their Importance: An Integrative Review

The general question that this dissertation intends to answer is: how product characteristics influence consumers' information search behavior? In order to set the stage for this investigation, the first study delves into the CIS literature. The outline of this chapter is as follows. The first section offers a comprehensive review of literature on CIS and its various subtopics, such as on-going versus pre-purchase information search, internal and external information sources, and the determinants of their importance, as seen from different research perspectives. Following that, section two offers a model—the Product-Contingent Model, which integrates existing perspectives. This newly-developed model will act as the impetus for the rest of the dissertation.

1.1. Literature Review

1.1.1. Consumer Information Search

When making purchase decisions, consumers go through a process referred to as consumers' decision making process. This process includes five stages (Kinnear and Bernhardt 1990; Solomon, Hughes, Chitty, Marshall, and Stuart 2013). 1) Need or problem recognition—which is driven by the perceived difference between the ideal and status-quo situation, 2) information search—which is defined as fetching knowledge from memory or from external sources, 3) evaluation of alternatives—which involves evaluating competing alternatives with regards to salient beliefs about the consequences and combining this knowledge to make the final choice, 4) purchase decision—which is about purchasing the chosen alternative, and 5) post-

purchase evaluation—which includes using the chosen alternative and re-evaluating it based on its performance. This study centers on the second stage—the information search stage. Search is often defined as consumers' intentional exposure to information prior to purchase (Peter and Olson 1987), and information search is defined as the process of seeking relevant information about potential solutions to the problem from the external environment, or activating knowledge from memory (Peter, Olson, and Grunert 1999).

Additionally, Bloch, Sherrell, and Ridgway (1986) consider a distinction between pre-purchase search and ongoing search. According to these authors, pre-purchase search refers to information search pertaining to a specific purchase, while ongoing search refers to search independent of specific purchase needs or decisions. This dissertation conforms to the conventional definition of search as a pre-purchase activity.

1.1.2. Sources of Information

As the above definition of information search suggests, consumers use two broad categories of information sources: internal and external (Murray 1991). Below, the study describes both internal and external information sources in more detail.

Internal sources of information. Consumers' memories can act and be referred to as internal sources of information (Bettman 1979). Internal search occurs when consumers scan the existing information in memory when making a purchase decision. Over time, consumers store information in memory about past purchase experiences, including experiences in a product class and previous learning about the environment (Murray 1991). Experience creates knowledge, which in turn leads to internal search in subsequent decision situations (Jacoby, Chestnut, and Silberman 1977; Van Raaij 1977). As such, consumers' internal information sources play a significant role in their purchase decisions, especially in the case of habitual decision making

(Simonson and Rosen 2014). For example, the information that consumers have in memory towards brands of cereal will significantly influence which brand of cereal that they will purchase in the future. Moreover, internal information sources play an important part in repeat-purchase decisions. In this dissertation, the word sources is used in the plural form to be consistent with the literature.

External sources of information. Consumers generally begin their information search with internal search, and no further search may be done if they find the information in memory sufficient for the purpose at hand. However, if they realize that the internal information at their disposal is not sufficient for the goal in mind or that it is contradictory with itself, they may resort to external information search (Choi 1993). In other words, external search happens when internal search cannot provide sufficient information (Bettman 1979; Engel, Blackwell, and Miniard 1990). External search refers to "the degree of attention, perception, and effort directed toward obtaining environmental data or information related to the specific purchase under consideration" (Beatty and Smith 1987, p. 85). Different scholars have used different measures of the amount of external search. Among these, some of the most common measures include: the number of information sources used (Bennett and Mandell 1969; Duncan and Olshavsky 1982; Lehto, Kim, and Morrison 2006; Newman and Staelin 1972), the number of alternatives considered (Dommermuth 1965; Ratchford 1982), the number of stores visited (Beatty and Smith 1987; Bucklin 1966; Dommermuth 1965; Duncan and Olshavsky 1982; Urbany 1986), and some composite measures created by combining the above measures (Beatty and Smith 1987; Claxton, Fry, and Portis 1974; Hu, Huhmann, and Hyman 2007; Lee and Cranage 2010; Newman and Staelin 1972).

In external search, consumers seek additional information from external sources such as advertisements and news from various media, friends, family, package labels, direct marketing material, public relations, and sales promotions, among others. Broadly speaking, these external sources can be classified into: 1) marketers, 2) personal others, and, 3) impersonal others (e.g., Engel, Blackwell, and Miniard 1986). A more detailed description of these three sources follows.

Marketers. Marketers represent another source of information that affects purchasing decisions. One of the roles that marketing activities play is to supply information to customers. The information may come in different forms, such as print ads, TV or radio commercials, personal selling, product packaging, product brochures, and online marketing campaigns. Marketing efforts are typically controllable by the organization, making them an important part of the promotional mix.

Personal and impersonal others. Consumers receive information from others. This type of information may come from personal sources such as friends or family, impersonal sources such as online customer reviews or offline reviews in consumer magazines, and direct inspection of others (for example, through observation and inferencing). According to a global Nielsen (2009) survey of 26,486 Internet users in 47 markets, other customers' recommendations are the most credible form of advertising according to 78% of the study's respondents, which makes this source of information an important one to explore. This study distinguishes personal and impersonal others' information to add richness to its results. Personal others' information comes from those that the consumer personally knows such as family and friends. On the other hand, impersonal others' information usually comes from those that the consumer personally does not know such as internet forum members and authors of online reviews or consumer reports. This distinction is valuable in the sense that it adds more clarity to the research results. Moreover, it

makes it possible to control for source-related effects, such as source credibility, to better isolate the effects of product characteristics on information source importance in study 3.

Simonson and Rosen (2014, p. 24) suggest that we consider the mix of the information sources taking part in a "zero-sum game." That is, "the greater the reliance on one source, the lower the need for the others. For example, if the impact of others' information on a purchase decision about a food processor goes up, the influence of marketers' information or the internal information sources, or both, must go down." That the influence mix possesses such a zero-sum nature could be justified from different perspectives. One intuitive reason is that individuals have limited resources—mainly time—available to them to gather the required information through their own reflections, others' information, and marketers' information. Individuals' total information search time for each purchase can be considered as the total time spent on all of these sources. Assuming that individuals wish to keep their total search time and effort for each purchase constant, changing the time and effort spent on one source must be compensated with a change in time and effort spent on one or more of the other sources. Moreover, one may consider the effect of information overload on consumers' information processing behavior. As Malhotra (1984) notes, consumers try to limit their intake of information to prevent cognitive overload to avoid confusion, cognitive strain, and other dysfunctional consequences.

Another argument for the zero-sum nature of the influence mix comes from the accessibility/diagnosticity framework put forward by Feldman and Lynch (1988). According to this framework, any piece of information in a person's possession influences any evaluation that that person makes. It states that the likelihood that information is used is a function of the accessibility of other pieces of information, and the perceived diagnosticity of the information (the extent to which it can discriminate between the choices available to a person), among others.

Thus, an implication that can be drawn from this framework is that when two pieces of information from two different sources are both diagnostic, the one that is accessible is used at the peril of the one that is not. This is another way of saying that the competition between information sources represents a zero-sum game.

Finally, Ratchford, Lee, and Talukdar (2003, p.202) provide some evidence for this assumption, as they found that the time spent gathering information on the Internet "draws time" from other sources. Similarly, Dhar and Chang (2009) find evidence of a zero-sum game among information sources when it comes to their effect on sales in the music industry.

Based on the above discussion, the importance that consumers give to each source must be inter-correlated. This inter-correlation bears an important implication for the research presented. Briefly, this implication points to a limitation in previous research, as it has not considered each information source simultaneously. This issue will be discussed in more detail in the method section. Meanwhile, the following hypothesis is developed to test the premise that the variables are inter-correlated.

H_1: As the importance of an information source increases, the total importance of the other information sources decreases.

As the above hypothesis suggests, as one of the information sources increases in importance, one, a subset, or all of the other sources may decrease in importance. In any case, as long as the total importance of these other sources decreases, the assumption of a zero-sum nature holds. A numerical example may clarify this point. If there are four information sources—A, B, C, and D, each with an importance score of 20, the grand total importance score will be 80. Now, if A's importance rises to, for example, 35, the subtotal importance of B, C, and D, collectively, has to drop from 60 to 45, to maintain the grand total of 80 (35+45). For this 15-

point reduction to happen, one of these cases has to realize: 1) one of B, C, or D has to lose 15 points in importance, while the other two remain intact, 2) alternatively, two of B, C, and D have to lose a total of 15 points in importance, while the other one remains intact, 3) finally, B, C, and D have to lose a total of 15 points in importance, while none remain intact. No matter which case results, the subtotal importance of B, C, and D will decrease by 15 points to compensate for the 15-point increase in A's importance and, thus, maintain the grand total of 80.

1.1.3. Determinants of Information Source Importance

So, what determines the relative importance of these information sources for consumers? Different research perspectives may lend different theoretical directions to answer this question. Thus, a thorough review of such perspectives is due at this point. According to Srinivasan (1990), the CIS literature is dominated by three major theoretical approaches. The first is the economics approach, which uses a cost-benefit framework to study information search. The second is the psychological/motivational approach, which incorporates the individual, and task-related variables into the study of CIS. The third stream is called the Cognitive Information Processing (CIP) approach, which focuses on memory and cognitive processing. A description of the main tenets, strength, weaknesses, and scholarly works in each of these research streams follows.

1.1.4. The economics approach

The core concept in the economics approach to CIS is the cost-benefit framework, pioneered by George Stigler (1961). Stigler's revolutionizing argument was that consumers' knowledge of the market place is not perfect; instead, it is governed by the economics of information. That is, consumers consider the trade-off between the costs and benefits of acquiring information before setting off to search for it. Moreover, individuals may have

different perceptions of this trade-off, and thus demonstrate heterogeneity in their desire to search for the same piece of information. Despite the amendments and modifications applied to Stigler's original model (e.g., Butters 1977; Kohn and Shavell 1974; Ratchford 1982; Rothschild 1974; Salop and Stiglitz 1977; Stiglitz 1979; Wilde and Schwartz 1979), its core principles still hold. At its core, the model asserts that consumers acting to optimize their search behavior engage in and continue to search for information only as long as the expected marginal return of the search outweighs its expected marginal cost. This approach could also be called the normative approach to CIS, as it stipulates how consumers should behave and what the norms are in their quest for information.

The propositions from Stigler's cost-benefit framework of search behavior can be listed as:

- The expected savings from a given search are related positively to the dispersion of prices.
- The extent of search is negatively related to the cost of search, ceteris paribus.
- The existence of price dispersion in the marketplace is due only partially to seller heterogeneity. It is also a manifestation of buyer ignorance.
- The gain from search decreases with continued search.
- The more spent on the commodity, the greater will be the return from search.
- The more search that a buyer undertakes, the lower will be the average price paid, and the smaller will be the variance of prices that the buyer considers.

The economics approach is built upon the notion of search benefits and costs. Search benefit has been loosely measured in this stream of research and has commonly been conceptualized as the change in the expected or perceived value of the utility as a result of one

more unit of search (e.g., Chan and Leland 1982; Hey and McKenna 1981; Kihlstrom 1974; Kohn and Shavell 1974; Nelson 1970; Wiggins and Lane 1983; Wolinsky 1983). Some marketing scholars have borrowed this approach from the economics literature to use it in the study of CIS (e.g., Avery 1996; Cachon, Terwiesch, and Xu 2008; Diehl, Kornish, and Lynch 2003; Duncan and Olshavsky 1982; Feick, Hermann, and Warland 1986; Hauser, Urban, and Weinberg 1993; Hodkinson and Kiel 2003; Jepsen 2007; Klein and Ford 2003; Lynch and Ariely 2000; Moorthy, Ratchford, and Talukdar 1997; Morris, Tabak, and Olins 1992; Punj and Staelin 1983; Putrevu and Ratchford 1997; Ratchford, Lee, and Talukdar 2003; Schmidt and Spreng 1996; Seiler 2013; Srinivasan and Ratchford 1991; Srivastava and Lurie 2001). In particular, Ratchford (1980, 1982) conceptualized search benefits as the change in the consumers' monetary valuation of a brand's attributes. In a different manner, in their examination of the trade-off between the incremental benefits and decision costs associated with choosing from a larger set of brands, Hauser and Wernerfelt (1990) conceptualized search benefit as the increase in the expected utility from having one additional brand in the consideration set. Srivastava and Lurie (2001), however, conceptualized search related perceived benefits as the perceived difference between the prices in hand and the lowest price believed to be available in the marketplace that could be found by engaging in search behavior. Regardless of how the benefit of search is conceptualized, the common assumption has been that it can be measured in monetary terms.

On the contrary, the cost of search has two components to it: an explicit monetary cost and an implicit opportunity cost. The explicit monetary cost is the amount of money that consumers have to spend to gain information. However, the implicit opportunity cost has been measured in various ways such as the degree of loss in utility (e.g., Chan and Leland 1982; Hagerty and Aaker 1984; Kihlstrom 1974; Kohn and Shavell 1974; Manning and Morgan 1982;

Nelson 1970; Wiggins and Lane 1983), evaluation cost ("cost of thinking") (e.g., Diehl, Kornish, and Lynch 2003; Hauser and Wernerfelt 1990), and the amount of time or earnings foregone (e.g., De Vany and Saving 1983; Lynch and Ariely 2000; Ratchford 1982; Stigler 1961).

Although the notion of search costs and benefits has been traditionally applied to external search or search as a whole, this study takes a more granular approach, and considers the search costs and benefits associated with individual information sources. The preceding discussion of the cost-benefit framework leads to the following hypotheses:

H_2: The perceived costs associated with using an information source are negatively related to its perceived importance.

H_3: The perceived benefits associated with using an information source are positively related to its perceived importance.

As mentioned before, different researchers have operationalized search costs and benefits in different ways. The current study follows Srinivasan and Ratchford (1991) in using Peter and Tarpey's (1975) scale to measure the perceived costs of search using four items addressing the four types of perceived risk, namely, financial, performance, physical, and convenience risk. The scale was modified to reflect the perceived costs of search associated with each information source, rather than search in general (See the appendix A for the scales).

It is worthwhile mentioning that, following Ratchford, Talukdar, and Lee (2001), this study does not attempt to directly measure the monetary cost of using an information source. It is because delineating the share of one specific purchase in the monetary cost of using an information source may prove impossible. For example, an individual may pay the monetary cost of using an issue of Consumer Reports magazine but use it for multiple purchases, making it difficult to determine the share of each individual purchase in the total cost of the magazine.

Alternatively, an individual may pay the cost of subscribing to an internet service provider but use the service for a multitude of other tasks, besides searching for information.

As for measuring the search benefits, the construct of perceived benefits is operationalized in this study with Srinivasan and Ratchford's (1991) 7-item scale. However, some modifications were made to the scale to make it context specific. First, the tense of some sentences was changed from past to present to reflect the typical state of perceived benefits associated with search, rather than with the benefits derived from a particular information search in the past. Second, one item—"Shopping around at various dealers helped me to find the lowest price when I bought my new car"—was dropped as it makes sense only for products sold through dealers. Third, some of the original items were slightly reworded to measure the search benefits derived from each information source, rather than from the search in general. Fourth, this study uses only three of the seven scales, to keep the overall questionnaire parsimonious.

The cost-benefit framework is a useful theoretical framework, as much of the research on CIS leverages it to explain consumers' information search behavior. In particular, the models provided in this stream of research allow for a comparison between how consumers should search versus how they actually search for information. Nonetheless, this approach is not bereft of shortcomings. One common criticism of this approach is that its main constructs, search benefit and costs, have been loosely defined. In this regard, benefits can be anything monetary or non-monetary that act to increase an individual's utility. Costs, as well, can be anything monetary or non-monetary that act to decrease, or prevent an increase in, an individual's utility. These loose definitions make it difficult to derive testable hypotheses based on the cost-benefit framework (Miller 1993). As such, only a few studies have included variables as explicit representatives of the costs and benefits of information search (Ducncan and Olshavsky 1982;

Punj and Staelin 1983; Srinivasan and Ratchford 1991). Regarding this shortcoming, Moorthy, Ratchford, and Talukdar (1997, p. 264) note that "the economic theory of search, stated at the micro level, amounts to the statement that consumers weigh the costs and benefits of search when making decisions. This is hardly a testable proposition. Whatever empirical content the theory has comes from interpreting the basic constructs of the theory in more micro, empirical terms and studying the interactions among these constructs."

Moreover, the cost-benefit framework considers human beings to be completely rational, self-interest seeking entities who weigh the costs and benefits of search against each other and adjust their search behaviors accordingly. However, human beings are not completely rational, and their decisions are affected by various other factors such as their demographics (e.g., Bhatnagar and Ghose 2004; Cleveland et al. 2003), involvement (e.g., Beatty and Smith 1987), knowledge (e.g., Srinivasan and Ratchford 1991) and prior experiences and beliefs (e.g., Urbany 1986), among others. As such, this approach falls short of taking into account all of the cognitive and emotional biases and simplifying heuristics that consumers use in their real-life decision-making (Kahneman and Tversky 1979). Moreover, not taking into account the potential interactions between these psychological factors, on one hand, and search benefits and costs, on the other, is another shortcoming of the cost-benefit framework. To conclude, due to the resulting inability of the economics approach to provide a comprehensive picture of consumers' actual search behavior, researchers embarked on another approach, namely, the psychological/motivational approach (Schmidt and Spreng 1996).

1.1.5. The psychological/motivational approach

The psychological/motivational approach describes the psychological and motivational processes governing the CIS patterns and information processing. Linked to motivation theory,

the psychological/motivational approach holds that individuals' search behavior is significantly influenced by their socio-demographic characteristics. This approach revolves around three major constructs: motivation, involvement, and knowledge (Kim and King 2009). A significant volume of marketing studies on CIS fit into this research stream (e.g., Awasthy, Banerjee, and Banerjee 2012; Beatty and Smith 1987; Bettman 1979; Bettman and Jacoby 1976; Brucks 1985; Bucklin 1966, 1969; Claxton, Fry, and Portis 1974; Dholakia 2001; Duncan and Olshavsky 1982; Jacoby, Speller, and Kohn 1974; John, Scott, and Bettman 1986; Johnson, Meischke, Grau, and Johnson 1992; Kiel and Layton 1981; Kim, Lehto, and Morrison 2007; Moore and Lehmann 1980; Moorthy, Ratchford, and Talukdar 1997; Mourali, Laroche, and Pons 2005; Newman and Staelin 1972; Peter, Olson, and Grunert 1999; Punj and Staelin 1983; Srinivasan and Ratchford 1991; Srinivasan and Tikoo 1992; Urbany 1986; Urbany, Dickson, and Wilkie 1989).

In line with Schmidt and Spreng (1996), this study assumes that the psychological/motivational stream subsumes the CIP approach. Thus, this approach will not be discussed under a separate heading. The CIP approach concentrates on the cognitive processes that occur after an exposure to a stimulus and before the behavioral response (Brucks 1985). The information stored in memory—prior knowledge—is one focal variable in this approach, and its effects on information processing activities have been well documented (e.g., Alba 1983; Bettman and Park 1980; Johnson and Russo 1984; Park 1976; Srull 1983).

Some researchers have drawn a conceptual distinction between subjective knowledge (i.e., what individuals perceive that they know) and objective knowledge (i.e., what is actually stored in their memories). Subjective knowledge reflects individuals' degree of confidence in

their knowledge, while objective knowledge refers to what they actually know about a product class.

This study deals only with the subjective type of knowledge for the following reasons. First, Brucks (1985) compares the effects of objective and subjective knowledge of a product class (sewing machines) on consumer search behavior outcomes. Variability of search, which is expressed as the standard deviation of the amount of information acquired across alternatives, is the outcome that is most relevant to this study. However, Brucks (1985) found no meaningful difference between the effects of objective and subjective knowledge on variability of search. Second, operationalizing and measuring subjective knowledge is easier than operationalizing and measuring objective knowledge, and as such, the former is more commonly used by researchers (Huy Tuu, Ottar Olsen, and Thi Thuy 2011). Third, unlike a study such as Brucks (1985), this study aims not to pinpoint the conceptual differences between these two types of knowledge, but instead to use these concepts as a means to an end—to study CIS across product classes. Fourth, this study excludes respondents without any experience with different product classes studied. Experience in this sense is more representative of objective than subjective knowledge. As such, by excluding respondents with no experience, this study is curtailing the variance in the respondents' objective knowledge, effectively making this variable less influential in the pursuing statistical analyses. Fifth, subjective and objective knowledge are strongly correlated, and including both may lead to multicollinearity issues (e.g. Cordell 1997).

The psychological/motivational approach encompasses not just CIP, but a number of psychological theories used to study the CIS with the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1981) as the most frequently referenced. ELM is an information processing theory of persuasion that offers a framework for understanding the causes and effects of attitude

change. ELM suggests that two distinct routes to persuasion exist. One route is called the central route, which involves effortful cognitive activities in which the individual receiving the message carefully uses knowledge and prior experience to assess all of the information presented to support the promoted position.

Using the central route, individuals think deeply about the contents of a given message and actively generate positive and/or negative thoughts toward it (Petty and Cacioppo 1979). In this high elaboration mode, the formation of and change in consumers' attitudes depends on the strength of arguments in the message—that is, the central cues. Besides processing through the central route, individuals might process a message through the peripheral route, whereby simple cues in the persuasion context either induce an affective state (such as happiness) that becomes associated with the advocated position (as in classical conditioning) (Staats and Staats 1958), or result in a relatively simple heuristic that individuals can use to assess the message's validity (Petty and Cacioppo 1983; Petty, Wegener, Fabrigar, Priester, and Cacioppo 1993).

The reason that ELM has been extensively used to study CIS is due to the fact that this model can explain consumers' choice of information source based on their motivation and ability, which is also congruent with Bettman and Park's (1980) theorizations. In other words, ELM asserts that when consumers are motivated and able to take the central route and elaborate on the information, they may opt for the sources that can provide them with detailed and rich information. On the other hand, consumers may suffice to use the more simplistic and superficial kinds of information, if they lack motivation and/or ability to engage in elaboration.

ELM asserts that an individual's ability and motivation determine which processing route s/he will take. Motivation to search refers to an individual's desire to engage in effortful collection and processing of information, characterized by both the intensity and directionality of

the effort (Bettman 1979; Schmidt and Spreng 1996). Motivation has been represented by a variety of factors, the most dominant of which is involvement (Celsi and Olson 1988; Lutz, MacKenzie, and Belch 1983; Maheswaran and Sternthal 1990; Petty and Cacioppo 1986). Involvement has been shown to influence consumers' cognitive and behavioral processes during the decision making process (e.g. Chakravarti and Janiszewski 2003; Kokkinaki 1999; Laurent and Kapferer 1985). Involvement in this context is expressed as the personal relevance of the topic to the receiver (Richins and Bloch 1986; Zaichkowsky 1985), and is considered a motivational state (Celsi and Olson 1988). Several studies have established the positive relationship between involvement and information search efforts (e.g., Beatty and Smith 1987; Dholakia 2001).

It may be worthwhile mentioning at this juncture that different conceptualizations of involvement exist (e.g., Clarke and Belk 1979; Laurent and Kapferer 1985; Park and Young 1986). Laurent and Kapferer (1984) consider 4 major conceptualizations of involvement. 1) The perceived importance of the product (its personal meaning), 2) the perceived risk associated with the product purchase, 3) the symbolic or sign value attributed by the consumer to the product, its purchase, or its consumption, 4) the hedonic value of the product, its emotional appeal, its ability to provide pleasure and affect. The first conceptualization can be considered product involvement.

The present study adopts the first conceptualization—product involvement—since it is the one closest to the context of the present study. Of the two types of product involvement—enduring and situational (Richins and Bloch 1986)—the current study is only concerned with enduring involvement since there is no situation-specific element to the theoretical framework of this study. On the contrary, enduring involvement reflects a person's ongoing interest in a

product class (Warrington and Shim 2000), and thus, is relevant to the current study as it examines a phenomenon across different product classes.

For these reasons, the following hypothesis is proposed:

H_4: Enduring involvement is positively related to the importance of external information sources.

Following Novak, Hoffman, and Yung (2000), this study uses three of the McQuarrie and Munson's (1991) five-item importance subscale to measure the enduring involvement construct since this measure's validity has been widely evidenced (Bian and Moutinho 2011) (See the appendix A for the scales).

According to ELM, ability to search is another factor that influences search behavior. Schmidt and Spreng (1996) defined the ability to search as the perceived cognitive capability of searching for and processing information. Different studies have operationalized the ability to search in different ways. In particular, Schmidt and Spreng (1996) used consumers' education and subjective and objective knowledge of product class to represent ability, while proposing a positive relationship between these two variables and external information search. Also, Johnson et al. (1992) studied the effect of various factors on consumers' selection of different information sources (doctors, friends/family, organizations, and media) to search for cancer-related information. Their findings suggest that personal experience/knowledge—the amount of purchase or usage experience with a particular product class—is the most important operationalization of the ability to search. This is in line with Celsi and Olson's (1988, p.210) assertion that "ability to process is largely a function of the amount and type of knowledge that a person has acquired through experience."

The literature, however, provides contradictory findings on the relationship between knowledge and search behavior. Nevertheless, overall, the relationship between these variables exhibits an inverted-U shape, with moderate levels of knowledge corresponding to the highest levels of search effort (Punj and Staelin 1983). This finding could be extended to the context of this study by examining individuals' search behavior when their subjective knowledge exceeds a specific threshold. Here, the individual may perceive that a lower marginal benefit results from relying on the internal information sources after exceeding a certain threshold. These hypotheses follow from the previous discussion on ability-search relationships.

H_5: Consumers' ability to use an information source influences its importance.

H_{5a}: Consumers' education is positively related to the importance placed on others' and marketers' information (external information sources).

H_{5b}: Consumers' subjective knowledge has an inverted-U shaped relationship with the importance placed on internal information sources.

Due to the expected zero-sum nature of the relationship between the importance levels of information sources discussed in section 1.2, the following hypotheses are offered:

H_{5c}: Consumers' education levels are negatively related to the importance placed on the internal information sources.

H_{5d}: Consumers' subjective knowledge has a U-shaped relationship with the importance placed on the external information sources.

To conclude, ability (represented by education and subjective knowledge) and motivation to search (represented by felt involvement) are chosen to speak for the psychological/motivational approach, in line with Kim and King (2009).

To summarize this section, whereas the economics approach focused on the costs and benefits associated with search, the psychological/motivational approach centers on three major constructs: involvement, motivation, and ability. Despite the advantages of the psychological/motivational stream to investigate consumers' search behavior, it has its own disadvantages. First, as it is a problem with research in psychology and social sciences in general, measurement and testability has always been an issue in this stream of research, as multiple operationalizations of this construct have made it difficult to compare competing models. Second, the psychological/motivational approach does not take into account the economic incentives for search, and in this way positions itself as a substitute, rather than a complement, to the economics approach. However, as Moorthy, Ratchford, and Talukdar (1997) note, the behavioral approach can be given an economic interpretation, and the economic approach can be given a behavioral interpretation, and, thus, it is more useful to view these two approaches as complementary, rather than as contradictory. Although this integration of psychological/motivational and economics approaches has enabled a more panoramic view of CIS (e.g., Gursoy and McCleary 2004; Rose and Samouel 2009), a problem that still persists is the lack of sufficient attention to the role of product class in CIS. The next section introduces the product-contingent model as a solution, which possesses the strength of both psychological/motivational and economics approaches, while also taking into account the role of product classes.

1.2. The product-contingent model

The recent integration of the psychological/motivational and economics approaches has been a major step forward in providing a clearer picture of search behavior (e.g., Gursoy and

McCleary 2004; Rose and Samouel 2009). However, the lack of sufficient attention to the role of product class in CIS still represents an avenue for future research.

Although studies have been done on the role of product characteristics in consumer search behavior, their number and scope are negligible compared to the plethora of studies on the effects of psychological/motivational and economics factors. Klein (1998) considers the search versus experience classification of goods. In this vein, a good is defined as a search good when full information about the dominant product attributes can be known prior to purchase. However, a good is defined as an experience good when either of these two conditions holds. First, an experience good is one in which full information on its dominant attributes cannot be known without direct experience. Second, an experience good is defined as such when the costs and difficulty of gaining information on its dominant attributes are more than those resulting from directly experiencing the product. Klein and Ford (2003) support the hypothesis that consumers' information search is more extensive for search goods compared to that for experience goods. Schmidt and Spreng (1996) consider the role of product complexity on search behavior. However, among 15 determinants of search behavior, product complexity was the only one related to product class.

As another example of the lack of attention paid to product characteristics, Beatty and Smith (1987) studied 60 different determinants of search behavior, none of which were related to product class. Even in the few studies that examined CIS across product classes, the small set of product classes that were investigated significantly limits the external validity of the findings and makes it difficult or impossible to conduct useful follow-up analyses, such as developing a typology of products. For example, Strutton and Lumpkin's (1992) and Kim and King's (2009) studies are limited to pharmaceutical and medical products. Moreover, Freiden and Goldsmith

(1989) examined CIS, but only for four services: medical, legal, dental, and veterinary services, and no goods. Srinivasan and Ratchford (1991) and Klein and Ford (2003) limited their studies to focus strictly on cars, while Bhatnagar and Ghose (2004) keyed in on online retailing. Zhu and Zhang (2010) limited their study to video games, and the only product characteristic that they considered was the games' popularity. Furthermore, Pedraja and Yague (2001) consider CIS in the context of restaurants, and Lee and Hogarth (2000) limited its focus on CIS in the credit card industry. Lastly, Park, Yoon, and Lee (2009) study consumer information search behavior only across two product classes: clothing and electronic appliances. Thus, the limitations of previous research call for additional work to tease out the effects of product characteristics on search behavior, and on the relative importance of information sources.

Therefore, the product-contingent model (PCM) represents an attempt to fill this void and to invite researchers to investigate CIS, while considering the effects of product characteristics on this process. In particular, the model is developed to study the effects of product characteristics on the importance of information sources. However, the scant literature on this topic does not offer enough guidance to formulate specific, directional hypotheses about the effects of product characteristics on the importance of information sources. Moreover, a comprehensive list of such product characteristics has not yet been developed. Therefore, this study puts forward the following general hypothesis, which will be unpacked and probed in study 3.

H_6: Product characteristics have direct effects on the importance of information sources.

PCM recognizes both the psychological/motivational and economics approaches, and, based on Thompson's (1967) contingency theory, claims that some psychological/motivational and economic factors moderate the relationship between the product characteristics and the

importance of information sources. PCM regards perceived benefits, ability, and motivation as amplifying moderators. That is, if a product characteristic is positively related to the importance of an information source, this positive relationship intensifies as perceived benefits, ability, or motivation to use the source increase. On the other hand, PCM regards perceived costs as a reversing moderator. That is, if a product characteristic is positively related to the importance of an information source, this positive relationship weakens as the costs associated with using the source increase.

These hypotheses follow from the previous discussion on the moderated effects of product characteristics on an information source's importance:

H_7: The perceived costs associated with using an information source negatively moderates the relationship between the source's importance and the product characteristics.

H_8: The perceived benefits associated with using an information source positively moderates the relationship between the source's importance and the product characteristics.

H_9: Enduring involvement positively moderates the relationship between the product characteristics and external information sources' importance.

H_{10}: Consumers' subjective knowledge positively moderates the relationship between the product characteristics and an information source importance.

H_{11}: Consumers' education positively moderates the relationship between the product characteristics and an information source importance.

Figure 1.2 provides a graphical representation of how PCM overlaps with and complements the psychological/motivational and economics approaches. The figure also shows the most dominant constructs found in each approach.

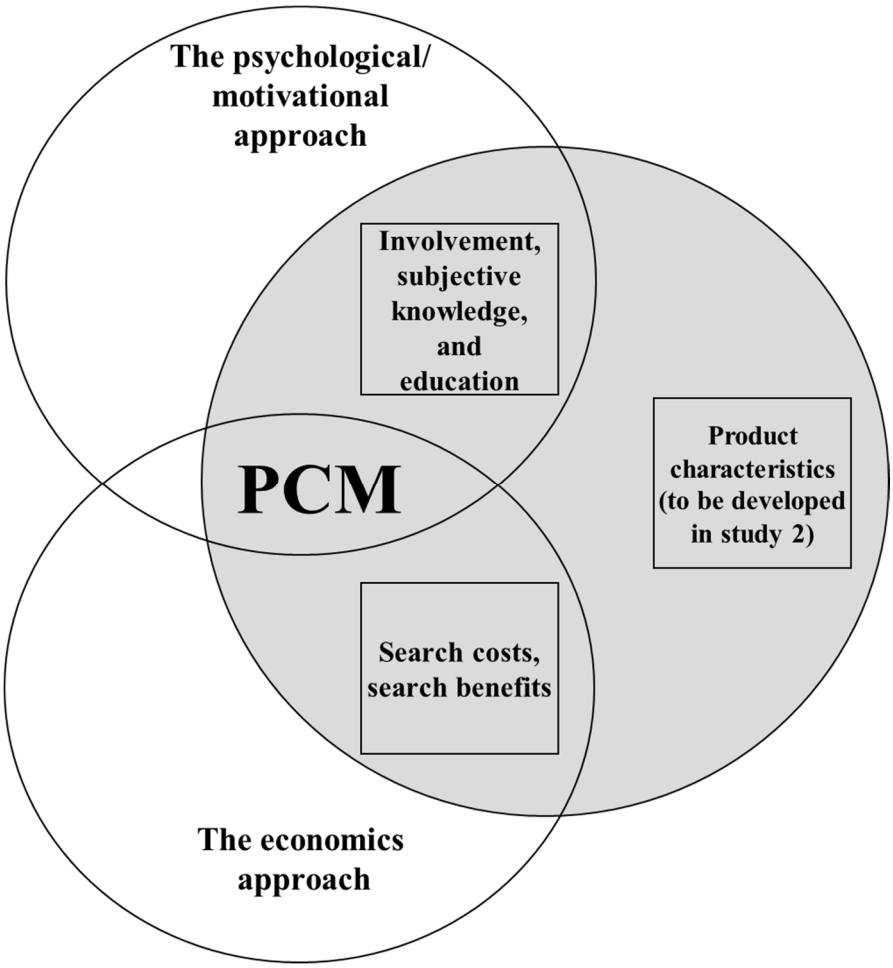

Figure 1.2: The Product-Contingent Model (PCM) Overlaps and Complements the Economic and Psychological Approaches by Including Product Characteristics as Additional Predictors of Information Source Importance

However, to consider the PCM model functional and testable, first a list of such product characteristic needs to be developed. Developing this list is the goal of study 2.

Study 2: Developing a Scale for Product Characteristics that Determine the Importance of Information Sources

2.1. Introduction

Consumer information search (CIS) refers to the effort that a consumer expends to acquire information from the environment (e.g., Srinivasan and Ratchford 1991). Schmidt and Spreng (1996) define information search as the stage of the decision-making process wherein consumers collect and integrate information from different internal and external sources before they make a choice. These external sources can be classified as: marketers' information, and others' information. To intelligently allocate their promotional budgets across information sources, managers need to know the relative importance of each source for their customers. So, the question here is what determines the importance of each information source for consumers? However, the use of different approaches to answer this question has resulted in a host of different constructs and hence operationalizations, leading to a fragmented literature base with contradictory findings.

Therefore, the goal of this study is to enrich the CIS literature by reconciling two of its main approaches—the economics, and psychological/motivational approaches—while elaborating on the role of product-related contingencies in CIS research, and information source importance. The current study contributes to this goal by generating a list of product characteristics and developing a scale for it, which the next study utilizes to study the effects of product characteristics on information source importance.

The structure of this study is as follows. First, the study provides a brief overview of the economics approach, some representative studies using the approach, as well as its shortcomings.

Second, the study briefly reviews the psychological/motivational approach, some representative studies using the approach, as well as its shortcomings. Third, the study discusses the lack of attention paid to the role of product characteristics in CIS in either approach, and introduces the product-contingent model as a solution which takes into account the insights from these two approaches, as well as the product characteristics, in its study of CIS and determinants of information source importance. Finally, a qualitative inquiry is undertaken to identify such product characteristics, and develop a scale to measure them.

1.2.1. The economics approach

Pioneered by George Stigler (1961), the economics approach is built on the cost-benefit framework. The cost-benefit framework's assumption is that consumers act to optimize their search behavior and thus, engage in and continue to search until the expected marginal cost of search exceeds its expected marginal return. That is, consumers' search for information depends on their perceived trade-off between the costs and benefits involved.

The cost-benefit framework is a useful theoretical framework and, as such, numerous marketing scholars have borrowed this approach from the economics literature to use it in the study of CIS (e.g., Diehl, Kornish, and Lynch 2003; Hodkinson and Kiel 2003; Jepsen 2007; Klein and Ford 2003; Lynch and Ariely 2000; Ratchford, Lee, and Talukdar 2003; Srivastava and Lurie 2001). Nonetheless, this approach has its own weaknesses. One weakness of this approach is that search costs and benefits—its main constructs—have been loosely defined. As Miller (1993) notes, this lack of clear definitions makes it challenging to derive testable hypotheses based on the cost-benefit framework. Another weakness of the economics approach is that it assumes human beings to be completely rational, self-interest seeking entities whose search behaviors obey the result of a cost and benefit analysis. As such, this approach falls short

of taking into account all of the cognitive and emotional biases and simplifying heuristics that consumers use in their real-life decision-making (Kahneman and Tversky 1979).

1.2.2. The psychological/motivational approach

Linked to motivation theory, the psychological/motivational approach describes the psychological and motivational processes governing the consumers' search behavior and information processing. As such, the approach is very popular among marketing scholars and has been used in numerous CIS studies (e.g., Beatty and Smith 1987; Dholakia 2001; Kim, Lehto, and Morrison 2007; Mourali, Laroche, and Pons 2005).

Despite the advantages of the psychological/motivational approach, it has disadvantages, too. First, measurement and testability has always been an issue in this stream of research, and multiple operationalizations of one single construct have made it difficult to compare competing models, which is a problem in psychology and social sciences research in general. Second, the psychological/motivational approach does not take into account the economic incentives for search, and in this way positions itself as a substitute, rather than a complement, to the economics approach.

To summarize the review of the economics and psychological/motivational approach, whereas the economics approach hinges on the two constructs of costs and benefits of search, the psychological/motivational approach centers on two constructs of motivation and ability. The majority of studies have utilized one of these two approaches and disregarded the other. However, as Moorthy, Ratchford, and Talukdar (1997) note, the behavioral approach can be given an economic interpretation, and the economic approach can be given a behavioral interpretation, and it is more useful to view these two approaches as complementary, rather than contradictory. Although the integration of economics and psychological/motivational approaches

has offered a more panoramic lens to view CIS through (e.g., Gursoy and McCleary 2004; Rose and Samouel 2009), this view still does not take into account the role of product characteristics. This study offers product-contingent model as a solution, bridges over the psychological/motivational and economics factors and studies their joint effects while also taking into account the role of product classes. The next section describes the product-contingent model.

1.2.3. The product-contingent model

The CIS literature is replete with applications of psychological/motivational and economics approaches, while neglecting the role of product characteristic in search behavior. Of course, a number of studies have examined the role of product characteristics in search behavior, but these studies typically suffer from limitations in number and scope. For example, although Schmidt and Spreng (1996) considered the role of product complexity in search behavior, that is the only product-related factor, among the total of 15 factors that they considered. Klein (1998) considered the search vs. experience classification of goods. A good is defined as a search good when full information about the dominant product attributes can be known prior to purchase. A good is defined as an experience good if full information on dominant attributes cannot be known without direct experience, information search for dominant attributes is more costly/difficult than direct product experience, or both. Relatedly, Klein and Ford (2003) found that consumers' search for information is more extensive when purchasing search goods compared to experience goods. Beatty and Smith's (1987) study is another example of a lack of attention to product characteristics. They studied 60 different determinants of search behavior, but none of them were related to product class. Even in the few studies on the effects of product characteristics on CIS, the small set of product classes investigated significantly limits the

external validity of findings and make useful follow-up analyses—such as the cluster analysis of products—difficult or impossible to be accomplished. For example, Strutton and Lumpkin's (1992) and Kim and King's (2009) studies are limited to pharmaceutical and medical products. Moreover, Freiden and Goldsmith (1989) examined CIS, but only for four services: medical, legal, dental, and veterinary services, and no goods. Srinivasan and Ratchford's (1991), and Klein and Ford's (2003) limited focus on cars, Bhatnagar and Ghose's (2004) on online retailing, Pedraja and Yagüe's (2001) on restaurants and Lee and Hogarth's (2000) limited focus on credit cards are other examples of limitations that make it impossible to draw firm conclusions about the effect of product class on search behavior, and on the importance of information sources to be specific.

The Product-Contingent Model (PCM) is an attempt to fill this void by studying the effects of product characteristics on the importance of information sources. At the same time, the model acknowledges the significance of psychological/motivational and economics approaches, making it an integrative model. In particular, inspired by Thompson's (1967) contingency theory, PCM further posits that not only do product characteristics have direct effects on an information source importance, but also that psychological/motivational and economic factors may also moderate these effects. Also, PCM allows researchers to evaluate the effects of product characteristics in isolation by partialling out those associated with both psychological/motivational and economic factors—namely, ability and motivation to search, and search costs and benefits. Figure 1.2 (in study 1) is a graphical representation of the psychological/motivational and economics approaches, the main representative constructs in each and how PCM overlaps with, and compliments them.

At its core, PCM proposes that a number of product characteristics influences the importance of information sources. Although this study has already identified the most dominant psychological/motivational and economic factors to examine, the list of product characteristics is still limited to the few that the literature has to offer—namely, the search versus experience nature of the product, and the product's complexity. However, in order to complete PCM and test the hypotheses derived from this model, a scale covering a well-rounded and comprehensive list of such product characteristics needs to be developed first. Developing this scale—the PC scale—is the goal of this study.

2.2. Development of the PC Scale

The scale development process followed in this study is adapted from Walsh and Beatty (2007), and is shown in table 2.2.1.

Table 2.2.1: The Process Followed to Develop the Product Characteristics (PC) Scale

Stage	Actions Taken	Outcome
1. Scale Generation and Initial Purification	• Open-ended elicitation procedure (n =188) • Consultation of the relevant literature • Generation of 121 initial questionnaire items • Face validity check (n = 9) • Q-sorting (n = 10)	Proposal of a 19-dimenioned, 96-item scale
2. Scale Refinement	• Exploratory Factor Analysis (n = 503) • Confirmatory Factor Analysis (n = 503)	Reduction of the scale to 15 dimensions and 52 items
3. Scale Validation	• Calculation of composite reliability • Test of convergent validity • Test of discriminant validity • Confirmatory Factor Analyses on the entire scale and individual dimensions	Final scale with 12 dimensions and 34 items

2.2.1. Scale item generation and initial purification

Following Saxe and Weitz (1982), and Walsh and Beatty (2007), an exploratory study was conducted to identify themes—product characteristics in the present context, and then to develop scale items for each theme. To do so, 210 participants were recruited from Amazon MTurk.

Before continuing with the report of the scale development process, a brief discussion of Amazon MTurk may be enlightening since it is the data source used throughout this dissertation. As Buhrmester, Kwang, and Gosling (2011, p. 3) note, "the data obtained from Amazon MTurk are at least as reliable as those obtained via traditional methods." This having been said, it is not surprising that research utilizing this data source has been published in some of the premier marketing journals (e.g., Etkin 2016). Notwithstanding this testimony, for all of the samples collected from MTurk in this dissertation, a number of measures were taken to further ascertain the quality of the data. Specifically, extra fees were paid to use an Amazon MTurk's facility that limits the eligible respondents to those with the experience of taking at least 1,000 surveys on the platform, with at least 99% approval rating on those surveys granted by the recruiters. Moreover, the respondents who failed the attention tests imbedded in the surveys (e.g., the attention-testing multiple choice questions "What was this survey about?" or "Please only choose [one of the options]"), as well as those with no experience purchasing the given product were excluded from the sample. Finally, responses that were completed too quickly (identified by visual inspection of the box plots of the duration that it took for the respondents to finish the survey) were eliminated.

Returning to the scale development discussion, the initial 210 responses reduced to a usable sample size of 188 responses after the above-mentioned quality measures were enforced (See Appendix B for the demographics of the sample).

The respondents took an online survey in which they were first informed about the concept of search behavior and the four information sources. Then, they were asked to rate the relative importance of each information source assuming that they were in the process of information search prior to purchase of the given product class (e.g., a cellphone). The online survey apparatus allowed the respondents to move a slider to the left or the right to set the importance of each information source on a 0–10 scale. Then, through an open-ended question, the respondents were asked to describe the product characteristics that influenced the importance level that they placed on each information source.

Following Aaker (1997, p.349), to reduce the chances of respondents focusing on a particular brand or product class, they were told at the beginning of the survey that "since this study is not about any brand or product class in particular, try to think of as many different types of brands in various product categories when you describe each product characteristic."

To add generalizability to the PC scale, 14 different product classes were used in the survey. Specifically, some characteristics may be focal to some products while irrelevant to others. Using a wide range of products to develop the PC scale makes it applicable to a wider range of situations. However, the literature on information search does not provide a comprehensive list of product classes that could have been used for this purpose. Thus, this study generated a list of product classes by intersecting four existing product classifications, namely those found in Lovelock (1983), the General Agreement on Trade in Services' (GATS) services sectoral classification list (W/120), Plakoyiannaki and Zotos (2009), and Google's product classification scheme. These classification schemes were chosen since they cover a wide range of products from search to experience, from hedonic to utilitarian, from simple to complex, from services to goods, and so on. The resulting 14 product classes are: airline, automobile, cellphone,

cosmetics, detergent, instrument, Internet, jeans, jewelry, juice, movie, refrigerator, shampoo, and university.

Appendix C shows a screenshot of the survey for one product and one information source. The same questions were asked for all of the four information sources, as well as all of the 14 product classes.

Scrutinizing the 188 qualitative responses led to the preliminary identification of 19 product characteristics that, according to the respondents, led them to evaluate the importance of each information source the way that they did (see appendix D for an example of how product characteristics were identified). The labeling of the characteristics was guided by the literature; whenever a product-related label was found that closely defined a characteristic, the label was used.

Subsequently, 121 questionnaire items that seemed to capture the essence of the qualitative responses were generated for each identified characteristic. Some of the items are reverse-coded to minimize acquiescence bias (Weijters and Baumgartner 2012) and act as cognitive "speed bumps" (Podsakoff, MacKenzie, Lee, and Podsakoff 2003). In line with Swain, Weathers, and Niedrich (2008), and Weijters and Baumgartner (2012), this study uses polar opposites (antonyms), rather than negation, as a means of achieving reversal. To further mitigate acquiescence bias, the questions were randomized. Moreover, following Baumgartner and Steenkamp (2001), the initial item battery maintained roughly equal numbers of regular and reverse-coded items in each dimension. Lastly, whenever possible, language from the qualitative responses or the literature was used to guide wording of the items. In the latter case, the citation to the source appears after the item, in parentheses. It is worthwhile mentioning that only individual items—rather than entire scales—were borrowed from the literature. It is either

because such a scale did not exist or was not suitable for the context of this study. For example, though Cox, Cox, and Zimet (2006) provide a complete scale to measure product risk, their scale was developed for a single product (lotion) used in their experiments, and many of the scale items would not make sense with the variety of the products used in this study. Appendix E shows the list of product characteristics and their initial items.

First purification. After the initial battery of items was developed, it was given to nine marketing or management scholars (four faculty members and five PhD students) to review the items with respect to the given product characteristic explanations. Here, following Saxe and Weitz (1982), the judges rated the items as *clearly representative*, *somewhat representative*, or *not representative*. Items were retained only if at least five of the judges rated them as *clearly representative*, and none rated them as *not representative*. Nineteen items were dropped at this stage, leaving the scale with 102 items. Moreover, following Saxe and Weitz, one unrelated item was also included to monitor the judges' attentiveness. None of the judges were removed because of inattention.

Second purification. To further purify the items, a variation of the Q-sort technique (Funder, Furr, and Colvin 2000) was used; 10 respondents were recruited on Amazon MTurk and were asked to assign each of the randomized items to one of the 19 product characteristics, after they read a brief explanation of what each characteristic means. One additional category—labeled "unknown"— was included to capture ambiguous or unclear items. One item was dropped because it was assigned to the unknown category, and five more items were dropped because they were mis-assigned to a different characteristic by more than one respondent. A total of 96 items successfully passed this stage.

2.2.2. Scale refinement

The 96 items that passed the previous stage entered the scale refinement process. For this stage, 550 respondents were recruited on Amazon MTurk. The sample demographics are comparable to those of the sample used in the previous stage (See Appendix B for the demographics of the sample). All of the quality control considerations mentioned in the initial purification stage were present in this stage as well. After eliminating the responses that failed the embedded quality checks, 503 usable responses remained. Given the number of survey items, this sample size satisfies Bryant and Yarnold's (1995) rule of 5, which states that the subjects-to-variables ratio should be at least 5. Moreover, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (.71) and the Bartlett's test of sphericity ($p < .000$) support the suitability of factor analysis for the data.

Following Anderson and Gerbing (1988), a covariance-based Exploratory Factor Analysis (EFA) and a subsequent Confirmatory Factor Analysis (CFA) were performed to test the PC scale's psychometric properties. Following Walsh and Beatty (2007), Principal Axis Factoring (PAF) was used as the extraction method, since the purpose of the EFA conducted here was understanding the latent structure underlying the observed variables, rather than their pure reduction (Conway and Huffcutt 2003). The present study used oblique rotation since the product characteristics are not expected to be completely orthogonal. Direct Oblimin and Promax rotation methods provided exactly the same results, except some negligible differences in factor loadings. As such, following Walsh and Beatty (2007), rotation was done using the Promax algorithm.

Based on the results of a CFA, 44 items were discarded because of their low item-to-total correlations and the factor loadings, using a cutoff value of .40 for both (Maimaran and

Simonson 2011; Ramani and Kumar 2008). Furthermore, except for two factors that had two items each, all of the factors had at least 3 items each. The 52 remaining items assembled under 15 factors, forming a clean factor structure with no cross-loadings above .20. This means that four of the initially-hypothesized product characteristics were dropped from further analysis. The dropped product characteristics may have been similar in essence to some of the other characteristics, and that may explain why they did not emerge as independent factors. For example, product characteristic *complexity* did not emerge as an independent factor perhaps because its essence had already been partially or wholly captured by other characteristics such as *purchase size*, *product risk*, and *rate of product obsolescence*.

2.2.3. Scale validation

The last stage in the scale development process is establishing the scale's composite reliability, convergent and discriminant (construct) validity, as well as assessing its dimensionality (Gerbing and Anderson 1988). The composite reliability coefficients of the dimensions range from .73 to .82, indicating that the measures are internally consistent (Kohli, Shervani, and Challagalla 1998).

Construct validity was established by measuring the average variance extracted (AVE) for each dimension (Fornell and Larcker 1981). This is a commonly-used procedure to establish construct validity (e.g., Wulf, Odekerken-Schroder, and Iacobucci 2001; Kandemir, Yaprak, and Cavusgil 2006; Ramani and Kumar 2008). The AVE is a measure of the amount of variance captured by each dimension of the scale.

To establish convergent validity, Fornell and Larcker (1981) recommend that AVEs be greater than .50. However, 8 of the PC scale dimensions pass this test and the other 7 do not, as their AVEs range between .4 and .5. Due to how it is calculated, each dimension's AVE is

sensitive to the number of the items in the dimension. So, in an attempt to simultaneously improve AVE values, as well as the scale's parsimony, only the three items with the largest factor loadings (in absolute values) in each dimension were retained and other items were dropped. Scale parsimony is in special demand in the current study since the scale is going to be used in conjunction with several other scales. This reduced the number of items to 43 (13 dimensions with three items each, plus two dimensions with two items each). After this step, only three dimensions have AVEs below .5. Those three dimensions were dropped, leaving the scale with 12 dimensions and 34 items (10 dimensions with three items each, plus two dimensions with two items each). In a follow-up CFA conducted on the scale, the standardized factor loadings ranged from .40 to .91, and were all statistically significant at 95% confidence level, which further suggests that all of the dimensions exhibit convergent validity (Ramani and Kumar 2008).

Evidence of discriminant validity among the dimensions of the PC scale come from a test suggested by Fornell and Larcker (1981). According to this test—the AVE-SV test—a dimension is said to have discriminant validity if its AVE exceeds the highest squared correlation that the dimension has with the other dimensions in the scale. The measurement error-adjusted, inter-dimensional squared correlations derived from the CFA ranged from .00 to .19 while the AVEs ranged from .50 to .67. Thus, all possible pairs of the PC scale dimensions passed this test, evidencing their discriminant validity. Table 2.2.2 shows the squared correlations among the dimensions, as well as the AVE and composite reliability values for each dimension.

Table 2.2.2: The PC Scale's Constructs, their Inter-Correlations, Composite Reliability and AVE Values

Constructs (Dimensions)	**CR**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1. Product serviceness	.75	*.51*											
2. Product prevalence	.77	.02	*.53*										
3. Collective consumption	.73	.00	.12	*.58*									
4. Product history	.78	.00	.09	.04	*.64*								
5. Affective consumption	.79	.00	.02	.17	.00	*.55*							
6. Brand equity	.82	.00	.13	.06	.02	.11	*.62*		.				
7. Product differentiation	.81	.03	.01	.00	.05	.01	.02	*.59*					
8. Consumption risk	.81	.19	.00	.01	.00	.09	.02	.01	*.58*				
9. Rate of product obsolesce	.80	.00	.00	.00	.05	.12	.03	.14	.05	*.56*			
10. Purchase size	.82	.00	.00	.00	.10	.00	.00	.05	.01	.09	*.61*		
11. Public consumption	.78	.03	.06	.12	.04	.09	.08	.01	.00	.00	.00	*.55*	
12. Product variety	.78	.01	.00	.00	.02	.02	.02	.05	.01	.06	.02	.00	*.54*

Notes: The second column (CR) shows each construct's composite reliability.
The off-diagonal values are the squared correlations among the dimensions, and the diagonal values (italicized) are the AVEs for the dimensions. A construct demonstrates discriminant validity if its AVE is greater than the variance it shares with any other constructs (i.e., the squared correlation coefficients).

It is worthwhile mentioning that the AVE-SV method was used here since Voorhees et al. (2016) have evidenced its superior performance across different sample sizes, compared to some of the alternative methods. Although Voorhees et al. warn that AVE-SV method may not perform as well in presence of significant inter-item cross loadings, as well as insufficient AVE values in excess of inter-item correlations, the current study does not suffer from these conditions.

Next, separate CFAs were performed on each dimension of the PC scale to establish their dimensionality. For every dimension, a single-factor measurement model had an acceptable fit (i.e., CFI > .90), which implies that each dimension was unidimensional (Kohli, Shervani, and Challagalla 1998). Moreover, the 12-dimensioned, 34-itemed PC scale was tested in its entirety

in a CFA model. The fit indices indicated a good fit with the data ($\chi 2 = 1709.00$, degrees of freedom = 461; CMIN/DF = 3.707; CFI = .929; TLI = .880; RMSEA = .053).

Finally, the Harman's one-factor test was performed to check for common method variance (CMV) (Harman 1976; Podsakoff et al. 2003). EFA identified multiple factors with eigenvalues greater than one in the non-rotated factor structure, while none of the factors explained more than 50% of the variance, which suggests that CMV is not a concern (Podsakoff and Organ 1986). Additionally, a one-factor model yielded very poor fit ($\chi 2 = 6091.17$, degrees of freedom = 527; CMIN/DF = 11.558; CFI = .193; TLI = .141; RMSEA = .145). Next, a chi-square difference test against the hypothesized 12-factor model indicated that the fit in the one-factor model was significantly worse ($\Delta\chi 2 = 4382.17$, Δ degrees of freedom = 66, $p < .01$), providing additional evidence that CMV is not an issue in the model.

Appendix F shows the final PC scale, its items and dimensions.

Study 3: Predicting Information Source Importance Based on Product Characteristics

3.1. Introduction

This dissertation started by asking a major question: what is the effect of product characteristics on the importance of information sources? Study 1 reviewed the literature for an answer. The outcome of the literature review, and the proposed solution to the identified gaps, was the PCM model, which has product characteristics as it focal independent variables, and psychological and economic factors as covariates. As the literature review revealed, there exists no such comprehensive list of product characteristics that the PCM model could have utilized. That is why in study 2, an extensive scale development process was undertaken to develop a scale to measure product characteristics. The resulting scale—the PC scale—consists of 12 dimensions, with a total of 34 items. Using the PC scale, study 3 attempts to empirically test the PCM model in its entirety. In other words, the goal of study 3 is: 1) testing the direct relationship between product characteristics and importance of information sources, and 2) testing the direct and moderating effects of the psychological and economic covariates. It is noteworthy that the use of the term covariate, DV, and IV is native to some methods (e.g. MANOVA) but not to some others (e.g., SEM). However, throughout this dissertation, regardless of the method used, the three terms covariate, DV, and IV are used. In particular, the product characteristics are referred to as IVs, and the psychological and economic variables as covariates to reflect the idea that the former act as primary variables of interest and the latter act as secondary variables of interest.

Figure 3.1 depicts the PCM model and the hypothesized relationships in it.

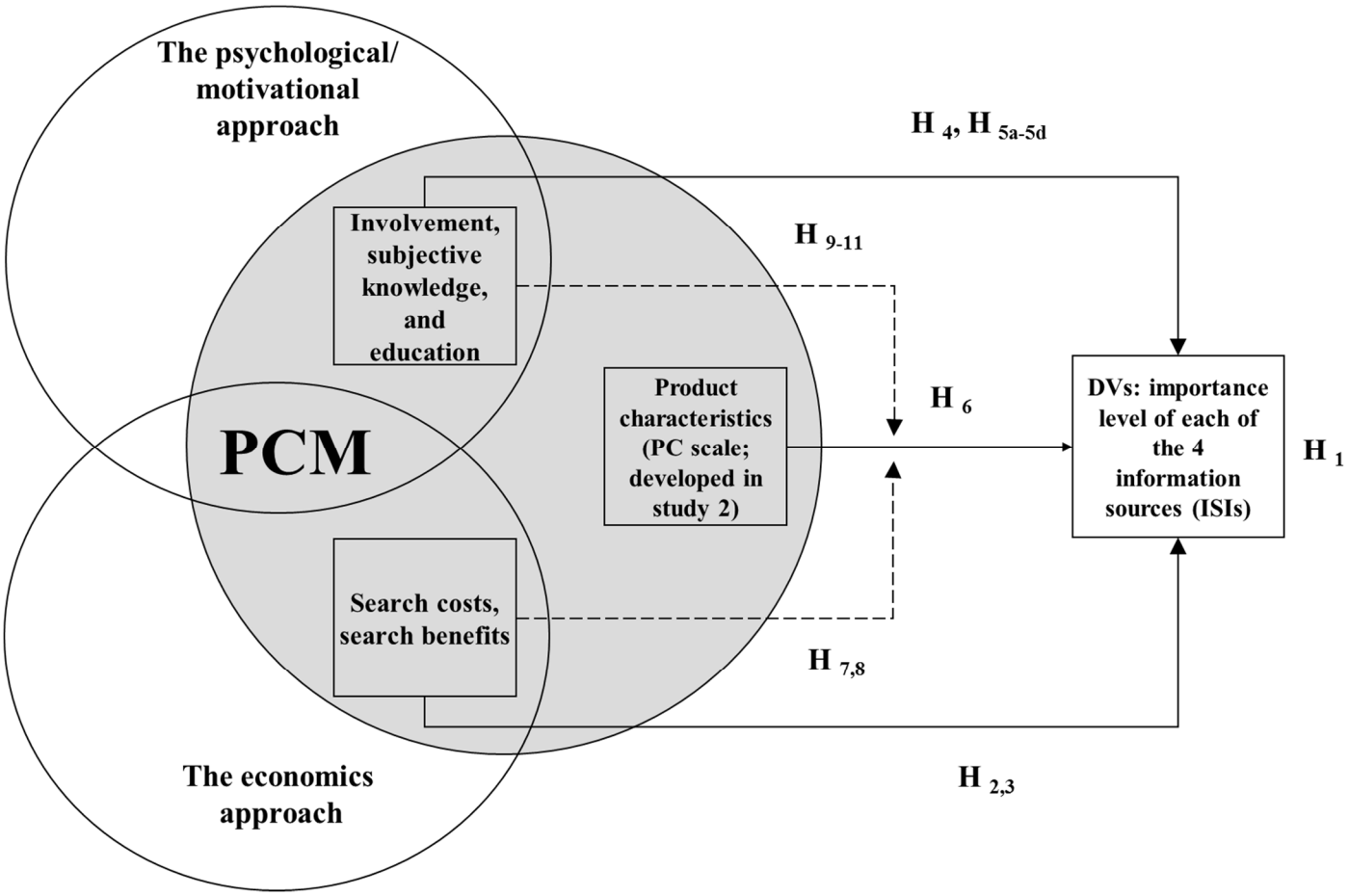

Figure 3.1: The PCM Model, with the Hypothesized Effects of Product Characteristics, and Economic and Psychological Factors on Information Source Importance

Note: The solid lines indicate direct effects, while dotted lines indicate moderating effects.

3.2. Method

3.2.1. Sample and data

To test the PCM model, 506 respondents were recruited from Amazon MTurk. The same quality control measures taken in the previous studies where taken in this study as well. After

removing respondents who had failed these quality control measures, the sample reduced to a usable sample of 487 responses. Appendix B (right-most column) shows the demographic characteristics of the sample in this study.

A post hoc power analysis was performed to ensure the adequacy of the sample size. Results indicate that the current sample has excellent statistical power (larger than 99%) to detect medium-sized effects (larger than .15) (Cohen 1992), at 95% confidence level, exceeding the traditional 80% minimum threshold for statistical power (Button et al. 2013; Cohen 1988). Moreover, this sample size far exceeds the mean sample size of 246.4 reported by Shah and Goldstein (2006) in their review of studies that used the same method that this study does, as well as the median sample size of 180 reported in a similar review by Baumgartner and Homburg's (1996).

Respondents were asked to imagine that they were going to purchase a given product, such as a cell phone. Then they rated the importance of each information source—the dependent variable (DV)—when gathering information prior to purchasing the given product. Next, the respondents assessed the product's characteristics—the independent variables (IVs)—by filling out the PC scale. Finally, they responded to the items intended to measure the psychological and economic covariates, namely, involvement, education, subjective knowledge, and costs and benefits of each of the four information sources.

3.2.2. Variables and measures

The DV—the importance levels of the information sources (ISIs)—were measured on a 0-10 scale. A 0-10 range in the DV measurement allows for more diverse statistical analyses, since the measured variable can be considered to be continuous. The respondents moved a slider to the left or right to rate each ISI, as shown in the upper part of appendix C.

The IVs—the product characteristics—were measured using the PC scale developed in study 2. The scale utilized 34, 7-point Likert items, anchored at the end points with strongly agree (1) and strongly disagree (7). These 34 items fall under 12 dimensions, each interpreted as one product characteristic in the context of this study.

Among the covariates, search costs was measured by Peter and Tarpey' (1975) scale, search benefits by Srinivasan and Ratchford's (1991) scale, enduring involvement by Novak, Hoffman, and Yung's (2000) scale, subjective knowledge by Flynn and Goldsmith's (1999), and education by a traditional demographic item with seven levels.

Moreover, social desirability bias was measured to control for the respondents' potential to respond in a socially-desirable way. Following Steenkamp, De Jong, and Baumgartner (2010), the traditionally-used Marlowe-Crowne scale was not used in this study. Instead, the Paulhus' (1991) Balanced Inventory of Desirable Responding (BIDR) scale was used. However, the BIDR scale in its entirety, with 40 items, is too long. Zerbe and Paulhus (1987, p. 253) state that social desirability bias has two dimensions: 1) self-deception, which is "the conscious tendency to see oneself in a favorable light," and 2) impression management, which is "the conscious presentation of a false front, such as deliberately falsifying test responses to create favorable impressions." They further argue that impression management is the culprit in confounding research data, and self-deception should not be considered a contaminant as it is a relatively invariant personality trait. As such, to keep the overall scale parsimonious, and following Steenkamp, De Jong, and Baumgartner (2010), the current study uses only 10 BIDR items reflecting the impression management dimension.

Since the current study is a cross-sectional study with self-reported data, Common Method Variance (CMV) may confound the relationships among the constructs (Chang,

Witteloostuijn, and Eden 2010). Following Zeugner-Roth, Žabkar, and Diamantopoulos (2015), an item unrelated to the model constructs ("Germany is a country of my dreams") was included in the survey to be later used to check for CMV.

Appendix G shows the descriptive statistics of all of the measured variables in this study, including the DVs, the IVs, and the covariates.

3.2.3. Analysis

The model to be tested in this study—the PCM model—calls for a multivariate analysis. Like many models tested in the marketing field, the PCM model includes multiple IVs. However, the PCM model includes not only multiple IVs, but it also includes multiple DVs. Moreover, the DVs in this study, as argued previously, are expected to be inter-correlated. Thus, creating a number of equations with each DV regressed on the IVs and covariates may violate the assumption of independence of errors of each equation. When modeling multiple DVs, a researcher faces a choice among three options: 1) to analyze each DV separately, 2) to perform a multivariate analysis such as MANOVA, or 3) to aggregate the DVs before the analysis. An analysis of the correlations among the DVs may help the researcher to decide which option to choose (Dattalo 2013). If the correlations are low ($r < .2$), option 1 is appropriate simply because the DVs are statistically distinct and there is no need for a multivariate analysis. If the correlations are moderate ($.2 < r < .5$), a multivariate analysis is appropriate since performing a number of univariate analyses may inflate the family-wise type I error and also ignore possible conceptual relationships among the DVs. In case of high positive correlations ($r > .5$), option 3 is the appropriate option since the DVs are too similar to be considered separately (Stevens 2009).

In the present data sample, except one DV, all of the other DVs are significantly correlated with one another, with correlations ranging from .10 to .40, and an average of .16 (in

absolute values). This clearly calls for a method that incorporates the inter-correlations among the DVs. Otherwise, the independence of residuals, which is an assumption of linear models, may not be granted. In addition, the multiple outcomes may also exert various causal influences on one another. Thus, separate causal analysis of each DV may not be appropriate.

Given the causal structure of the PCM model, the inter-correlations among the DVs, and a search in the literature on social sciences methodology, three statistical techniques were shortlisted as candidates to be used in the current study: Multivariate Multiple Regression (MMR), Multivariate Analysis of Covariance (MANCOVA), and Structural Equation Modeling (SEM). Each of these methods offers advantages and disadvantages, and the method ultimately used in this study is the one that offers the best ratio of advantages to disadvantages. Usefully-interpretable MANCOVA results require categorizing the covariates, the IVs, or both. However, the drawbacks of categorizing continuous variables are well-known (e.g., Fitzsimons 2008). This makes MANCOVA a more appropriate method for experimental studies, in which manipulations create natural categories. MMR is an econometric model that can handle multiple DVs without the need to categorize the IVs or covariates. Nonetheless, MMR assumes that no measurement errors exist, while it is a well-known fact that questionnaire data do suffer from measurement errors (Steenkamp and Baumgartner 2000). This makes MMR a more appropriate method for objectively-measured data that can grant the no measurement error assumption more convincingly.

SEM, on the other hand, is bereft of the above limitations. SEM acts as a two-step procedure: first it invokes a measurement model, and then it imputes a structural model, thus taking into account the measurement error during the estimation of the structural model (Bagozzi 1983). Moreover, as Stemmler, von Eye, and Wiedermann (2015, p. 207) mention, “with SEM,

one can model multiple (correlated) dependent variables." The above-mentioned discussion leaves little argument against the claim that SEM may be the most desirable method among the three candidates for the current study.

Before performing the SEM, however, its assumptions need to be checked. These assumptions include sampling adequacy, absence of extreme multicollinearity, and normality (Hair, Joseph, Anderson, Tatham, and Black 1998). Sampling adequacy was discussed in the *sample and data* section, and also was further ascertained by the KMO sampling adequacy value of .73 (Baek, Kim, and Yu 2010).

An examination of Variance Inflation Factor (VIF), as a collinearity diagnostic factor, suggested no threatening levels of multicollinearity (see appendix H for the correlations). Only two pairs of variables have correlations above .50, and the average of the correlations (in absolute values) is .12. Accordingly, the largest resulting VIF was 1.8, which is far below the maximum threshold of 5 suggested by Hair, Ringle, and Sarstedt (2011).

The third assumption—normal joint distribution of the observed variables—was not satisfied, as is frequently the case in practice (e.g., Hwang, Malhotra, Kim, Tomiuk, and Hong 2010; Magidson 1982). Unfortunately, the traditional class of SEM models (CB-SEM) uses the Maximum Likelihood estimation algorithm, which requires the distribution of the observed variables to be normal. However, when the assumption of normality is violated, another class of SEM models—Partial Least Squares SEM (PLS-SEM)—can be, and should be used (Hair, Sarstedt, Ringle, and Mena 2012).

PLS-SEM is an alternative to CB-SEM with more relaxed assumptions about data and specification of relationships (e.g., Dijkstra 2010; Jöreskog and Wold 1982). PLS-SEM estimates latent variable scores as exact linear combinations of their observed variables, and treats them as

perfect substitutes for the observed variables (Fornell and Bookstein 1982). As such, the latent variable scores capture the variance that can be used to explain the endogenous variables. In other words, "CB-SEM estimates model parameters so that the discrepancy between the estimated and sample covariance matrices is minimized. In contrast, PLS-SEM maximizes the explained variance of the endogenous latent variables by estimating partial model relationships in an iterative sequence of ordinary least squares (OLS) regressions" (Hair et al. 2012, p. 415). Estimating models via a series of OLS regressions implies that PLS-SEM relaxes the assumption of multivariate normality needed for maximum likelihood–based SEM estimations (for a detailed discussion on the similarities of and differences between CB-SEM and PLS-SEM, see Fornell and Bookstein 1982; Dijkstra 2010; Hwang et al. 2010).

Of course, PLS-SEM has its own limitations. For example, PLS-SEM does not offer a global optimization criterion that can be interpreted as the overall model's goodness of fit. That being said, goodness of fit indices are especially helpful when the research's goal is theory testing and comparing alternative models. On the contrary, this study's primary interest is not comparing competing models. Instead, this study can be considered to be more of an exploratory study than a theory testing one. PLS-SEM is particularly appropriate when the research's objective is exploratory (Gefen and Straub 1997; Hair et al. 2012). In addition, although PLS-SEM does not offer the traditional, chi-squared-based fit indices (e.g., CFI) that CB-SEM does, it offers other useful measures of fit and significance, such as SRMR, R^2 values for all endogenous variables, *t*-values, and standard errors to test the significance of the path coefficients, through a bootstrapping process. Tenenhaus, Amato, and Esposito Vinzi (2004) suggest that the average R^2 values be used as the global goodness of fit index for PLS-SEM.

Another limitation of PLS-SEM is related to concerns about the bias and consistency of its estimates, compared to those of CB-SEM (Hair et al. 2012). However, simulations have shown that there is no significant differences in bias and consistency of estimates across CB- and PLS-SEMs (Reinartz, Haenlein, and Henseler 2009).

The PCM model, as shown in figure 3.1, was set up as an SEM model, as shown in figure 3.2, and was estimated using the SmartPLS software. Note that the observed variables and the interaction terms are hidden from view to avoid clutter in the figure. Moreover, the costs and benefits of individual information sources are not shown separately, for the same reason.

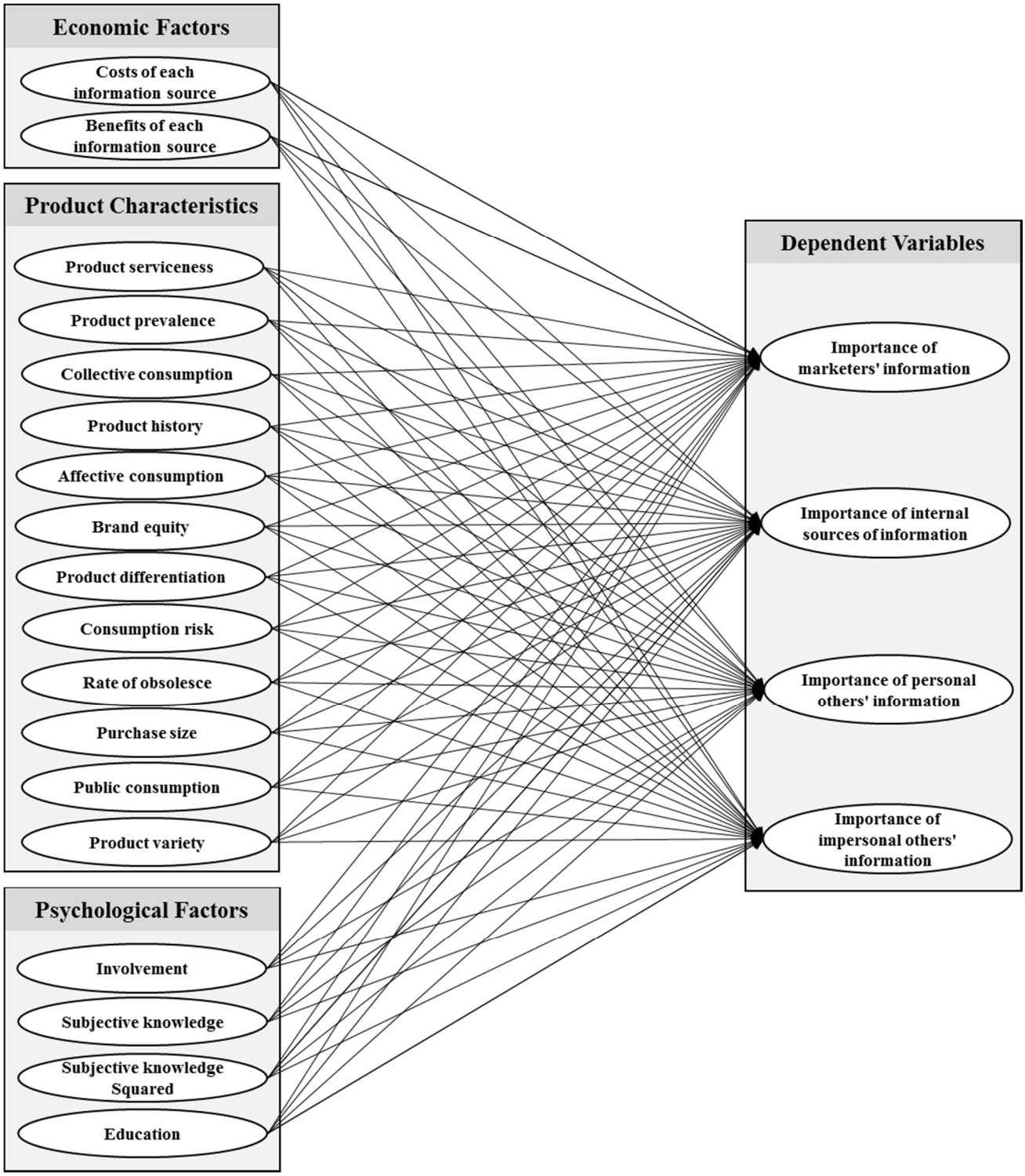

Figure 3.2: A Simplified Structural Equation Modeling Representation of the PCM Model

Note: The observed variables and the interaction terms are hidden from view to avoid clutter. Moreover, the costs and benefits are not shown separately for individual information sources for the same reason.

Responding to Hair et al.'s (2012) call for more transparent reporting of the PLS-SEM procedural detail, Appendix I provides the specific technicalities related to the software and computational options used in this study.

3.3. Results

It may be worthwhile to review what this dissertation has been about so far. The dissertation started by posing the following question: what are the effects of product characteristics on the importance of the information sources (ISIs) that consumers use before making a purchase? To answer this question, a comprehensive review of the literature on consumer information search (CIS) was done in study 1. The review revealed that although CIS has been studied from the psychological and economic perspectives, little attention has been paid to the role of product characteristics in consumers' information search behavior. As a result, a new model of CIS—the Product Contingent Model (PCM)—was developed (figure 3.1) to reflect the hypothesis that the effects of the psychological and economic factors should not be studied without taking into account the characteristics of the product under study. Simply put, these three factors do interact with one on the way to influence CIS. To empirically test the PCM model, a scale was needed to test a given product's characteristics. This was the goal of study 2. The outcome of this study was the Product Characteristics (PC) scale, with 12 dimensions and 34 items. Equipped with this new scale and a number of other scales borrowed from the literature, study 3 performed a PLS-SEM analysis to test the effects of psychological, economic and product characteristics on the ISIs. This section examines the results of this analysis and makes conclusions about the hypotheses previously made in the dissertation.

Before attempting, however, to interpret the PLS-SEM results, some preliminary analyses are due. It may be as well observed that, secondary to its main purpose, this study provided an opportunity to validate the PC scale for a second time. First, with regards to the measurement model, an examination of the factor loadings for the observed variables, as well as the composite reliability and AVE values for the constructs confirms that the survey possessed desirable psychometric features, such as a robust factor loading structure, and convergent and discriminant validity. These values are given in Appendix J. Since the examination procedure was fully discussed in study 2, it is not discussed here in detail, for the sake of brevity. In sum, the AVE and composite reliability values are much better this time. While in study 2, the AVE values for the PC scale ranged from .51 to .64, with an average of .57, in study 3, these values ranged from .59 to .92, with an average of .78. In a similar fashion, while in study 2, the composite reliability values for the PC scale ranged from .73 to .82, with an average of .79, in study 3, these values ranged from .81 to .97, with an average of .91. These improvements resulted from the scale's more desirable factor loading structure in the study 3 sample. Second, with regards to the fit of the scale's structural model, the CFA fit indices, too, indicated even a better fit with the data ($\chi 2$ = 1405.051, degrees of freedom = 461; CMIN/DF = 3.048; CFI = .920; TLI = .903; RMSEA= .053).

The second concern to be dealt with before analyzing the PLS-SEM results is related to some of the biases that could have contaminated the data. To check for the potential confounding effect of social desirability bias, the correlations between the BIDR scale and each of the 23 constructs in the model were analyzed. Although a few of the correlations turned out to be significant, their magnitudes were all smaller than the upper threshold of .20 (Steenkamp, De

Jong, and Baumgartner 2010), suggesting that social desirability bias is not a significant thread to the validity of the findings.

To check for common method variance, following Zeugner-Roth, Žabkar, and Diamantopoulos (2015), both ex ante (procedural) and ex post (statistical) measures were taken. As for procedural measures, survey questions were presented to the respondents in a randomized fashion to prevent priming effects, with both positively and negatively-worded items. As for statistical measures, Lindell and Whitney's (2001) marker variable technique was used to assess common method variance using "Germany is a country of my dreams." All of the significant bivariate correlation coefficients remained significant after the effects of the marker variable were partialled out. Furthermore, the Harman's one-factor test (Harman 1976; Podsakoff et al. 2003) demonstrated that there are multiple factors with eigenvalues greater than one in the non-rotated factor structure, and none of the factors explain more than 50% of the variance (Podsakoff and Organ 1986). In light of these two analyses, it seems safe to conclude that CMV does not pose a major threat to this study.

With these preliminary analyses performed, interpreting the results and testing the hypotheses come next. For the sake of convenience, all of the hypotheses from the previous sections are reproduced in this section.

H_1: As the importance of an information source increases, the total importance of the other information sources decreases.

H_1 is related to the inter-correlations between the ISIs. The rationale behind the hypothesis is related to the concept of humans' cognitive capacity. Put in a different way, individuals try to limit their intake of information to prevent cognitive overload and the subsequent cognitive strain, confusion, and other consequences (Malhotra 1984). In order to test

this hypothesis, summated variables were computed for the ISIs by adding up their values, while each time leaving out one of the ISIs. In this fashion, four summated variables were calculated. If the correlations between each of these summated variables and the ISI that is absent in the variable is negative, this may support H_1. Table 3.3.1 shows the correlations among the four ISIs and the summated variables. As can be seen from the table, almost all of the correlations are significant, but not negative. The only negative correlation exists between importance of internal information and importance of impersonal others' information. As such, H_1 is rejected. The discrepancy between this hypothesis and evidence may be explained by the fact that the cognitive capacity argument that drives the hypothesis relates to consumers' information search behavior, while the evidence relates to consumers' perceptions of the ISIs. In other words, although consumers may limit their information intake from other sources if they reach their cognitive capacity through intake of information from one source, they may not necessarily perceive the other sources as less important. That is, consumers do not rate the importance of one information source at the expense of another, implying that there is no zero-sum game among the importance levels of different information sources.

Table 3.3.1: The Inter-Correlations among the ISIs and their Summated Forms

The ISIs and their Summated Forms	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Sum of internal, personal others, and impersonal others	1	.743***	.732***	.726***	.133***	.546***	.800***	.663***
2. Sum of marketers, personal others, and impersonal others		1	.833***	.747***	.648***	.069	.699***	.711***
3. Sum of internal, marketers, and impersonal others			1	.841***	.700***	.482***	.414***	.568***
4. Sum of internal, personal others, and marketers				1	.660***	.612***	.663***	.203***
5. Importance of marketers' information					1	.031	.126***	.108**
6. Importance of internal information						1	.227***	-.101**
7. Importance of personal others' information							1	.394***
8. Importance of impersonal others' information								1

Notes: * $p < .10$, ** $p < .05$, *** $p < .001$

Each summated form/variable excludes one of the ISIs. Summated forms number 1, 2, 3, and 4 exclude marketers, internal, personal, and impersonal sources, respectively.

Table 3.3 shows the results of the PLS-SEM that can be used to test the rest of the hypotheses. To facilitate interpretation, the results are classified into 4 different panels, each panel for each DV—ISI. The table lists the effects for psychological and economic factors, as well as the product characteristics, regardless of their significance levels. However, due to the large number of interaction terms, to avoid cluttering the table, only the significant interaction terms are listed.

Table 3.3.2: Path Coefficients and their Bootstrapped Statistics Capturing the Effects of the Covariates, Product Characteristics, and their Interactions on the ISIs

Panel A **Dependent Variable: Importance of Marketers' Information** **Adjusted R^2 = 64%**							
		Bootstrapped Statistics					
	Path Coefficient	**Sample M**	**Sample SD**	***t*-Value**	***p*-Value**	**2.5% CI**	**97.2% CI**
Covariates							
Benefits	.723***	.730	.041	17.504	.000	.630	.789
Costs	-.012	-.012	.041	.281	.779	-.097	.063
Education	-.030	-.031	.035	.854	.394	-.098	.038
Involvement	.038	.040	.045	.855	.393	-.052	.115
Subjective knowledge	-.132***	-.132	.050	2.640	.009	-.239	-.040
Subjective knowledge Squared	-.049	-.047	.031	1.586	.113	-.115	.009
Product Characteristics							
Affective consumption	.022	.028	.037	.602	.548	-.057	.094
Brand equity	.073*	.064	.043	1.690	.092	-.005	.164
Collective consumption	.029	.031	.039	.738	.461	-.053	.096
Product differentiation	.038	.035	.040	.939	.348	-.038	.120
Product history	.010	.016	.042	.249	.804	-.069	.090
Rate of product obsolesce	-.008	-.013	.040	.211	.833	-.076	.074
Product's prevalence	.055	.058	.037	1.469	.142	-.031	.121
Public consumption	.041	.022	.049	.837	.403	-.042	.136
Purchase size	-.053	-.043	.046	1.164	.245	-.157	.017
Consumption risk	.035	.044	.039	.898	.370	-.047	.102
Product’s serviceness	-.028	-.031	.043	.650	.516	-.110	.058
Product variety	-.016	-.015	.041	.398	.691	-.105	.068
Interactions							
Benefits x Brand equity	.094**	.095	.045	2.078	.038	.010	.176
Benefits x Product variety	-.096**	-.091	.042	2.286	.023	-.174	-.016
Education x Affective consumption	-.076**	-.080	.037	2.043	.042	-.145	-.001
Involvement x Product's prevalence	-.065*	-.064	.037	1.745	.082	-.142	-.000

Panel B Dependent Variable: Importance of Internal Sources of Information Adjusted R^2 = 62%							
		Bootstrapped Statistics					
	Path Coefficient	Sample M	Sample SD	*t*-Value	*p*-Value	2.5% CI	97.2% CI
Covariates							
Benefits	.552***	.563	.058	9.530	.000	.413	.648
Costs	-.055	-.044	.051	1.086	.278	-.158	.030
Education	.040	.042	.037	1.097	.273	-.032	.106
Involvement	.053	.049	.052	1.008	.314	-.046	.151
Subjective knowledge	-.012	-.007	.048	.253	.801	-.105	.084
Subjective knowledge Squared	-.015	-.012	.032	.456	.649	-.081	.046
Product Characteristics							
Affective consumption	-.002	.000	.047	.050	.960	-.091	.083
Brand equity	.016	.018	.043	.382	.703	-.071	.099
Collective consumption	-.019	-.013	.042	.445	.657	-.099	.065
Product differentiation	-.052	-.055	.046	1.147	.252	-.136	.040
Product history	.161***	.157	.050	3.233	.001	.063	.259
Rate of product obsolesce	-.033	-.039	.041	.802	.423	-.102	.053
Product's prevalence	-.028	-.025	.038	.740	.459	-.105	.043
Public consumption	.003	-.012	.039	.077	.939	-.052	.091
Purchase size	-.062	-.063	.045	1.367	.172	-.140	.027
Consumption risk	.092**	.097	.043	2.135	.033	.000	.176
Product's serviceness	.032	.030	.048	.665	.507	-.060	.124
Product variety	.041	.043	.042	.978	.329	-.032	.129
Interactions							
Benefits x Product differentiation	.140**	.144	.067	2.099	.036	.000	.263
Benefits x Rate of product obsolesce	-.120**	-.117	.060	2.007	.045	-.246	-.018
Benefits x Purchase size	.153**	.162	.070	2.200	.028	.002	.275
Education x Consumption risk	-.124**	-.122	.053	2.352	.019	-.239	-.028
Involvement x Product differentiation	-.097*	-.087	.052	1.857	.064	-.200	-.003
Involvement x Rate of product obsolesce	.095**	.097	.048	1.976	.049	.006	.204
Involvement x Purchase size	-.086*	-.074	.051	1.673	.095	-.188	-.000

Involvement x Product variety	.117**	.112	.055	2.118	.035	.013	.218

Panel C
Dependent Variable: Importance of Personal Others' Information
Adjusted R^2 = 67%

		Bootstrapped Statistics					
	Path Coefficient	**Sample M**	**Sample SD**	***t*-Value**	***p*-Value**	**2.5% CI**	**97.2% CI**
Covariates							
Benefits	.736***	.731	.042	17.531	.000	.664	.823
Costs	.071	.	.048	1.493	.136	-.003	.163
Education	.004	.003	.032	.113	.910	-.059	.067
Involvement	.123**	.127	.047	2.588	.010	.028	.209
Subjective knowledge	-.119***	-.121	.043	2.769	.006	-.199	-.037
Subjective knowledge Squared	.004	.003	.030	.118	.906	-.057	.063
Product Characteristics							
Affective consumption	-.002	.008	.037	.046	.963	-.075	.065
Brand equity	-.042	-.050	.037	1.146	.252	-.113	.026
Collective consumption	.032	.026	.039	.833	.405	-.043	.109
Product differentiation	.068	.062	.046	1.478	.140	-.027	.160
Product history	.040	.035	.037	1.094	.274	-.035	.108
Rate of product obsolesce	-.057	-.055	.042	1.354	.176	-.136	.035
Product's prevalence	.045	.056	.038	1.178	.239	-.042	.107
Public consumption	-.018	-.015	.039	.471	.638	-.090	.063
Purchase size	-.047	-.042	.042	1.117	.265	-.139	.030
Consumption risk	.007	.009	.042	.157	.876	-.073	.099
Product’s serviceness	.083*	.079	.044	1.891	.059	.006	.183
Product variety	-.024	-.017	.040	.617	.537	-.123	.039
Interactions							
Costs x Product differentiation	-.141**	-.127	.057	2.459	.014	-.272	-.043
Education x Collective consumption	.098**	.095	.039	2.500	.013	.025	.170
Education x Rate of product obsolesce	-.120***	-.112	.037	3.220	.001	-.202	-.053
Education x Product's prevalence	.082**	.075	.040	2.072	.039	.016	.169
Involvement x Product variety	.084*	.079	.047	1.793	.074	.000	.166

Panel D Dependent Variable: Importance of Impersonal Others' Information Adjusted R^2 = 67%							
		Bootstrapped Statistics					
	Path Coefficient	Sample M	Sample SD	*t*-Value	*p*-Value	2.5% CI	97.2% CI
Covariates							
Benefits	.644***	.635	.042	15.302	.000	.567	.732
Costs	-.051	-.061	.045	1.140	.255	-.130	.049
Education	-.007	-.003	.040	.175	.861	-.093	.061
Involvement	.150***	.153	.049	3.046	.002	.045	.235
Subjective knowledge	-.144***	-.144	.050	2.878	.004	-.240	-.045
Subjective knowledge Squared	-.009	-.006	.037	.240	.810	-.085	.057
Product Characteristics							
Affective consumption	-.066	-.059	.046	1.441	.150	-.171	.009
Brand equity	-.047	-.047	.041	1.154	.249	-.126	.035
Collective consumption	.071	.070	.039	1.837	.067	-.011	.144
Product differentiation	.122**	.112	.050	2.427	.016	.026	.213
Product history	.043	.040	.041	1.055	.292	-.031	.125
Rate of product obsolesce	-.084**	-.081	.042	2.007	.045	-.168	-.011
Product's prevalence	.033	.042	.041	.814	.416	-.051	.099
Public consumption	-.006	-.008	.046	.128	.898	-.103	.076
Purchase size	.069	.070	.044	1.567	.118	-.029	.148
Consumption risk	.006	.013	.039	.142	.887	-.079	.070
Product’s serviceness	-.018	-.022	.048	.371	.711	-.113	.083
Product variety	-.016	-.011	.043	.372	.710	-.103	.056
Interactions							
Benefits x Affective consumption	.098*	.094	.053	1.839	.067	.000	.193
Benefits x Rate of product obsolesce	.122**	.120	.049	2.482	.013	.011	.205
Costs x Product's prevalence	-.075*	-.062	.043	1.730	.084	-.170	-.004
Education x Product differentiation	.085**	.086	.043	1.969	.049	-.002	.165
Education x Product history	-.088*	-.098	.047	1.872	.062	-.167	-.000
Involvement x Affective consumption	-.123***	-.123	.041	2.995	.003	-.206	-.045
Involvement x Product’s serviceness	.105**	.098	.051	2.053	.041	.005	.201

H_2: The perceived costs associated with using an information source are negatively related to its perceived importance.

The signs of the coefficients for costs of the information sources, with the exception of personal others', are negative as expected, but the effects do not reach significance. It can be concluded that the costs of using the information sources do not significantly determine their importance for consumers. One explanation for this finding may be that H_2 was made based on the evidence from older studies, while the costs of information are increasingly disappearing in this day and age. Individuals receive marketers' information at their doorsteps, can call friends and family for information at the click of a button, can thumb through the Consumer Reports magazine at one of the many local Barnes and Noble, can scan a product bar code in a brick and mortar store and instantly read thousands of consumer reviews of the product online, as well as have all of their online purchases stored in their online account for future reference. As such, it is not totally surprising if the current evidence suggests that with the increasingly diminishing costs of information, they no longer play a significant role in the consumer's choice of information sources. To conclude, H_2 is rejected.

H_3: The perceived benefits associated with using an information source are positively related to its perceived importance.

The benefits of the information sources, as opposed to costs, significantly and positively influence their importance, as hypothesized. It is noteworthy that with an average path coefficient of .66, this effect is the largest in the model. The role of benefits is specially large with regards to marketers' and personal others' information. This has significant implications for marketers when it comes to being clear about the benefits of their information, as well as how

they manage reference groups and opinion leaders. This finding will be further elaborated on in the discussion and implications sections. In conclusion, H_3 is fully supported.

H_4: Enduring involvement is positively related to the importance of external information sources.

Interestingly, enduring involvement is significantly, and in the hypothesized direction, related to only two of the ISIs. Involvement seems to have no significant influence on the importance of marketers' and internal sources of information while having a positive and significant influence on the importance of personal and impersonal others' information. This finding specifically supports one of the core arguments of this dissertation that external sources of information should be studied separately. Had marketers' and others' sources been pooled, the significant effects of the latter may have been obviated by the nonsignificant effects of the former and, thus, may have been totally missed. This point will be further elaborated on in the discussion and implication sections. In sum, H_4 is supported, though not fully, since the effect of involvement is not significant for internal information sources, is indeed positive and significant for two of the external sources of information, but not for the third one.

H_5: Consumers' ability to use an information source influences its importance.

H_{5a}: Consumers' education is positively related to the importance placed on others' and marketers' information (external sources).

Schmidt and Spreng (1996) argued that as education levels increase, consumers exert more effort in reaching external sources of information. However, according to the present evidence, education has no significant effect on how important or non-important consumers consider those external, as well as the internal, sources of information. What may need further investigation is the gap between how much importance consumers put on a specific source and

how much effort they are willing to invest in reaching that information source. It may be the case that a specific source is not inherently important for a consumer; however, for some reasons, the consumer may still reach for that information source. For example, one may not consider social trends to be important factors in his/her clothing purchases, but still visits social media websites out of fear of missing out on what his or her peers are wearing or talking about.

H_{5b}: Consumers' subjective knowledge has an inverted-U shaped relationship with the importance placed on internal information sources.

The rationale behind H_{5b} is that as individuals' subjective knowledge of products increases, their reliance on their own memory as a source of information increases. However, as the level of subjective knowledge exceeds a specific threshold, individuals may start questioning the extent of their reliance on their knowledge, and reach outside themselves to external sources for information. In order for this hypothesis to be supported, the coefficient of subjective knowledge must be positive and the coefficient of its quadratic form (*subjective knowledge squared* in table 3.3.2) must be negative. However, this is not the case: for the internal source of information, neither subjective knowledge nor its quadratic form have any significant effect. However, for all of the external sources, subjective knowledge has a significant and negative effect. This suggests that as individuals' subjective knowledge increases, they consider the external sources of information to be less and less important. This may sound counterintuitive since one would expect the importance of the internal information sources to rise in this situation. However, this finding becomes more understandable when one considers the findings from testing hypothesis 1: that consumers do not rate the importance of one information source at the expense of another, and, thus, there is no zero-sum game among the importance levels of different information sources. Accordingly, the importance of the three external information sources may decrease all

together, without the importance of the internal information sources increasing. The correlation coefficients in table 3.3.1 support this view. In conclusion, the evidence suggests that as individuals' subjective knowledge increases, they put less importance on the external information sources while maintaining the level of importance that they put on their internal information sources.

H_{5c}: Consumers' education levels are negatively related to the importance placed on the internal information sources.

Education bears no significant direct effect on any of the ISIs, as mentioned previously. The arguments made for H_{5a} may apply here as well. It may be worthwhile mentioning that although education does not have the hypothesized direct effects, its existence in the model is crucial since it has several significant interactions with other variables in the model. Since education interacts with some nonsignificant variables and brings about significant moderation effects, it may be argued that education is a suppressor variable in the PCM model, and as such, it proved useful to have it included in the model.

H_{5d}: Consumers' subjective knowledge has a U-shaped relationship with the importance placed on the external sources.

As hypothesized, as individuals' subjective knowledge increases, they consider external sources of information less and less important. However, the evidence does not show a nonlinear relationship between the two variables as the quadratic form of subjective knowledge does not reach significance. This means that, as subjective knowledge increases, the importance of the external sources of information—marketers, personal and impersonal others—decreases, in a linear fashion. In summary, H_5 is partially supported.

So far, the hypotheses derived from the literature, and of secondary interest to this dissertation, were examined. That is why the involved variables are grouped as "covariates" in table 3.3.2. Below, the hypotheses that are of primary interest to this dissertation are examined. Specifically, the hypotheses related to the effects of product characteristics, as well as their interactions with the psychological and economic factors, on the ISIs are tested against evidence.

H_6: Product characteristics have direct effects on the importance of information sources.

Hypothesis H_6 is exploratory by nature. Specific directional relationships between individual product characteristics and the ISIs were not hypothesized since the literature does not provide sufficient guidance on these relationships. The evidence partially supports H_6 since some—but not all—of the product characteristics have direct effects on the ISIs. Below, significant effects of specific product characteristics and the ISIs are reviewed.

Brand equity is positively and significantly related to the importance of marketers' information. This means that as a product's brand equity increases, marketers' information becomes more and more important to consumers. An explanation for this effect may come from the negative perception of marketers' information that some individuals may have. Specifically, some individuals are cynical of marketing messages and, as such, may put less importance on this source of information. However, when faced with a marketing message from a brand with high brand equity, they may find themselves in a position to trust the message more easily. This finding has significant implications for brand creation and trust building, which will be elaborated on in the discussion and implications sections.

As for the importance of internal sources of information, product history and consumption risk bear significant and positive influences on it. As product history increases, individuals put more importance on their own memory as a source of information. This seems

logical since a longer product history means that individuals have had a longer time to form perceptions about and gain experiences with the product. Naturally, the more diverse and plentiful these perceptions and experiences are, the more useful and important they will be for individuals.

In a similar fashion, the evidence shows that as consumption risk increases, individuals put more and more importance on their own memory. This may be explained by the speculation that when health and safety are concerned, individuals' own first-hand experiences may seem to be the most credible source of information to them. Another explanation relates to products that may pose different levels of risk to different individuals, and thus, render external sources of information less, and internal sources of information more important. For example, a cosmetics product that one individual considers safe may pose risk for another individual with a different skin type. In such a scenario, what the first individual may have to say about the product may become of less importance to the second individual.

Product serviceness—which refers to the size of the service component in a product—is significantly and positively related to the importance of personal others' information. Services are, by nature, intangible and harder to evaluate beforehand. In addition, services often involve close and one-on-one personal interactions. Under these circumstances, it is not surprising that the information from people that an individual personally knows rises in importance. This is based on the speculation that these people are more similar in terms of their personalities to the individual. As the saying goes, birds of a feather flock together. As such, their experience with the service provider may be a harbinger of the individual's future experience with the service provider.

With regards to the importance of impersonal others' information, two product characteristics have significant effects on it. Product differentiation has a positive and significant effect on the importance of this information source. Product differentiation is all about offering unique qualities that are different from other competing products. As differentiation among alternative products increases, there will be a larger set of pair-wise comparisons to be made among all of the alternatives. That is, as differentiation increases, comparisons become more complex, numerous, and multi-dimensional for consumers. Given this situation, the consumer needs to rely on a larger set of opinions, from a large enough number of individuals who could have possibly had the chance to experience the vast differences offered by differentiated products. In other words, for highly differentiated products, the act of comparing and contrasting the alternatives relies more heavily on consumer teamwork.

A tangential discussion related to product differentiation involves product variety. On all of the four information sources, these two variables have opposite effects. For external sources, product variety's effect has a negative sign but for internal information sources, it has a positive sign. This suggests that differentiation and variety may represent two types of choice and diversity—choice and diversity in quality vs. choice and diversity in quantity. This finding deserves future research.

The last significant direct effect of product characteristics on ISIs comes from the rate of product obsolescence. As the former increases, the importance of the impersonal others' information source decreases. This finding is quite counterintuitive and difficult to explain. One would expect the importance of this information source to increase with increasing rates of obsolescence, since higher rates of obsolescence demand a constant need for up-to-date

information, which can be considered a feature of impersonal others' information. For example, there are hundreds or thousands of reviews of newest products published online every day.

H_7: The perceived costs associated with using an information source negatively moderates the relationship between the source's importance and the product characteristics.

Hypothesis H_7 is supported since costs indeed negatively moderate the relationship between some of the product characteristics and the ISIs. In particular, product differentiation is positively related to the importance of personal others' information. However, the interaction between product differentiation and the importance of this information source is negative, meaning that costs act as a dampening force on the relationship between product differentiation and the importance of this information source. That is, as costs of gaining information from personal others increases, the positive effect of product differentiation on the importance of this information source decreases. In other words, at lower and average levels of costs, this information source becomes more important as differentiation increases. However, when costs of accessing information from this source reach high enough levels, this relationship can turn negative.

Figure 3.3.1: The Moderating Effect of Costs on the Relationship between Product Differention and the Importance of Personal Others' Information

A similar story can be told of the interaction between costs and product prevalence, and its effects on the importance of impersonal others' information. Product prevalence is positively related to the importance of this information source, meaning that as the prevalence of a product in the market increases, the importance of information coming from people one does not personally know increases as well. This is understandable since as a product is used by more and more people, the information from them may become increasingly useful even if they are not personally known by the individual. The network effect—whereby a product becomes more valuable when more people use it—may be the driving force behind this relationship. On the other hand, costs have a negative moderating effect on this relationship. That is, as costs of gaining information from people not personally known increase, the positive effects of product prevalence on the importance of this information source decreases.

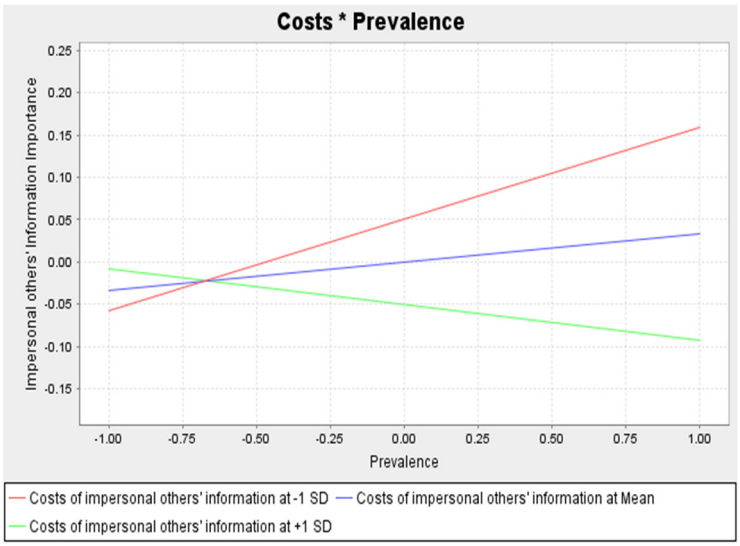

Figure 3.3.2: The Moderating Effect of Costs on the Relationship between Product Prevalence on the Importance of Impersonal Others' Information

H_8: The perceived benefits associated with using an information source positively moderates the relationship between the source's importance and the product characteristics.

Although the moderating effects of search costs proved noteworthy, the moderating effects of search benefits prove even more noteworthy, as they are significant with regards to at least two product characteristics for each of the four ISIs.

Benefits and brand equity have a positive and significant interaction effect on the importance of marketers' information. Brand equity, as mentioned before, has a positive relationship with the importance of this information source, which becomes even stronger as the benefits of this information source increase, as hypothesized.

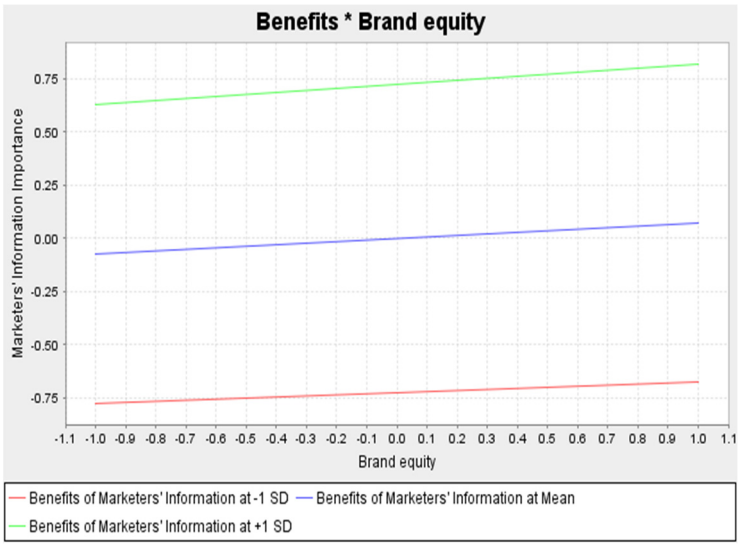

Figure 3.3.3: The Moderating Effect of Benefits on the Relationship between Brand Equity and the Importance of Marketers' Information

Benefits also have a significant but negative moderating effect on the relationship between product variety and importance of marketers' information. Since product variety itself is negatively related to the importance of this information source, perceived benefits are acting as facilitators to this relationship. In other words, as benefits increase, the negative relationship between product variety and the importance of this information source becomes even more negative, unlike what was hypothesized.

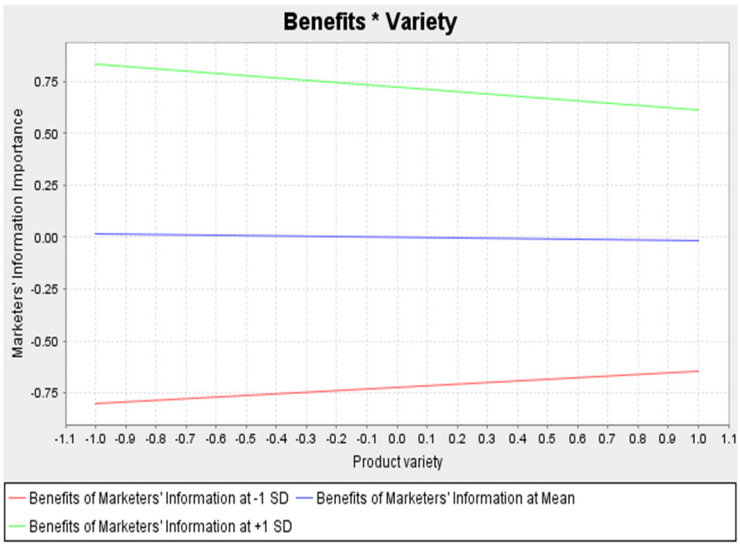

Figure 3.3.4: The Moderating Effect of Benefits on the Relationship between Product Variety and the Importance of Marketers' Information

Benefits have significant interaction effects on the importance of internal information sources as well. Namely, product differentiation is negatively related to importance of this information source, and its interaction with benefits is positive and significant. This shows that, as hypothesized, as the benefits of this information source increases, the negative relationship between its importance and product differentiation dampens.

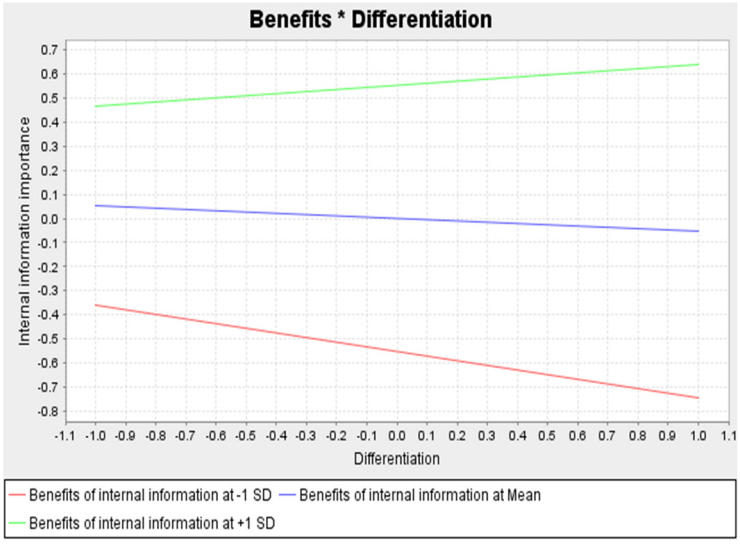

Figure 3.3.5: The Moderating Effect of Benefits on the Relationship between Product Differentiation and the Importance of Internal Sources of Information

Rate of product obsolescence is negatively related to the importance of internal information sources, and its interaction with benefits is negative and significant. This shows that, unlike what was hypothesized, as the benefits of this information source increase, the negative relationship between its importance and the rate of obsolescence strengthens. In other words, as benefits of this information source increases, its importance increases only if the product has a relatively low rate of obsolescence.

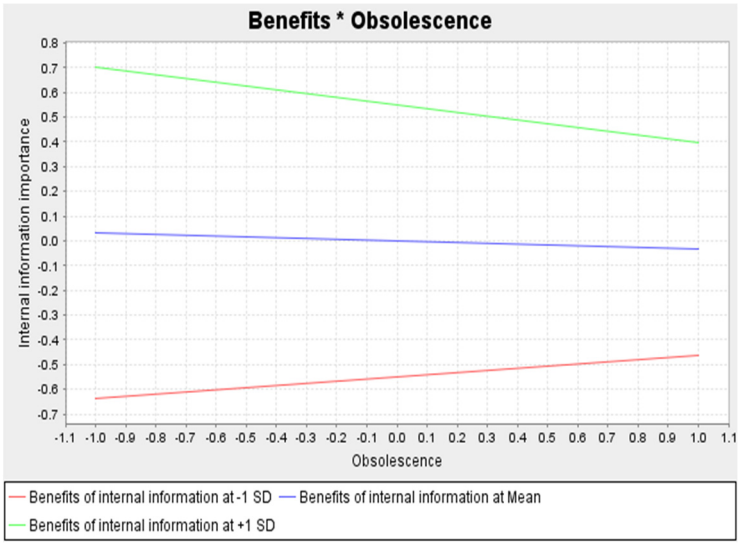

Figure 3.3.6: The Moderating Effect of Benefits on the Relationship between the Rate of Product Obsolescence and the Importance of Internal Sources of Information

Benefits have a significant and positive interaction with purchase size, too. Purchase size itself is negatively related to the importance of internal sources of information. This means that as the benefits of this information source increase, the negative relationship between purchase size and the importance of this information source dampens, as hypothesized.

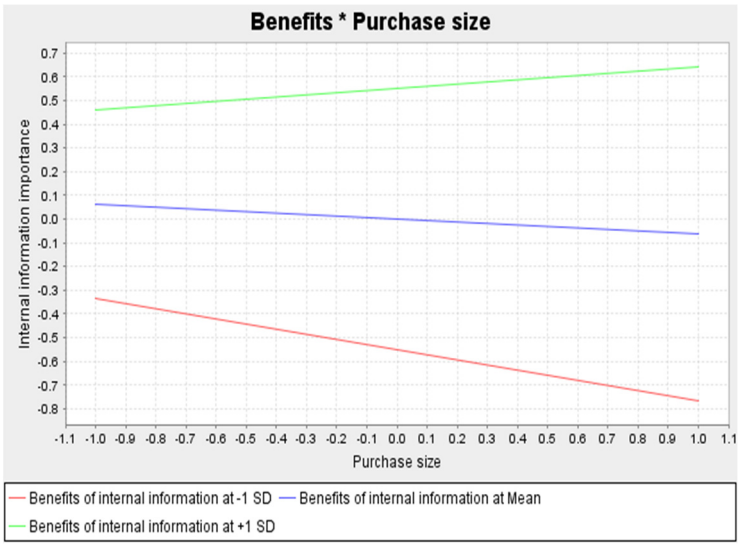

Figure 3.3.7: The Moderating Effect of Benefits on the Relationship between Purchase Size and the Importance of Internal Sources of Information

Benefits positively moderate the negative relationship between importance of impersonal others' information and affective consumption, supporting the hypothesis. One explanation for this finding may derive from the speculation that individuals tend to discount the importance of information coming from others that they do not personally know, when affects and emotions are at stake. However, as the benefits of this type of information rise, individuals may start to take this source of information into account.

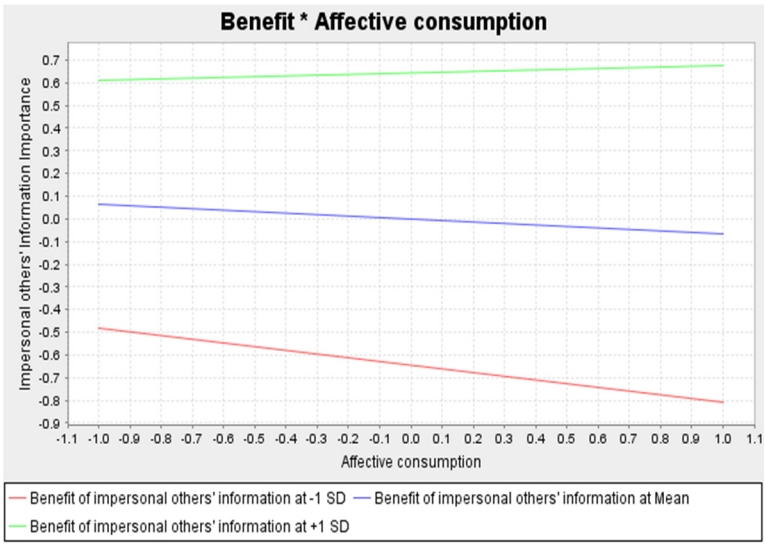

Figure 3.3.8: The Moderating Effect of Benefits on the Relationship between Affective Consumption and the Importance of the Impersonal Others' Information

The moderating effect of benefits on the relationship between the importance of impersonal others' information and rate of product obsolescence proved to be as hypothesized. In particular, as mentioned previously, the importance of this information source decreases as the rate of obsolescence increases. However, as the benefits of this information source increases, this relationship may weaken to the point of becoming positive. Otherwise stated, at higher levels of benefits, this information source increases in importance as the product's rate of obsolescence increases.

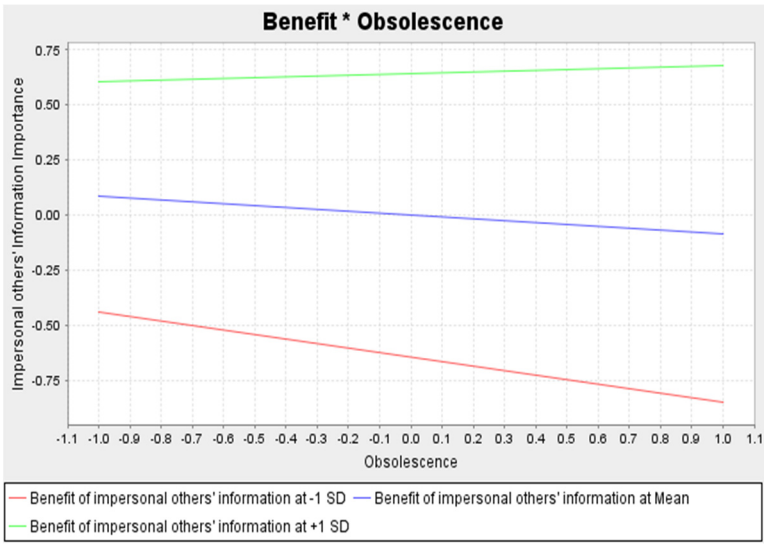

Figure 3.3.9: The Moderating Effect of Benefits on the Relationship between the Rate of Product Obsolescence and the Importance of the Impersonal Others' Information

In sum, out of the seven significant moderating effects of perceived benefits, six have the expected sign. Thus, H_8 is supported for the most part.

H_9: Enduring involvement positively moderates the relationship between the product characteristics and external information sources' importance.

Involvement turned out to be one of the most important covariates in the study. Although involvement's direct influence is limited to only personal and impersonal others' information, its indirect influence through interactions with product characteristics spans across all of the four information sources.

Involvement negatively moderates the positive relationship between product prevalence and the importance of marketers' information. This means that as a product's prevalence increases, the importance of marketers' information increases. However, the positive relationship weakens at higher levels of involvement and may eventually turn negative. This finding does make sense for everyday and simple products that are widely marketed. For example, individuals

may consider marketing messages about shampoos to be important since those messages are typically stimulating and exciting, perhaps showcasing attractive models and celebrities. However, a specific individual who has high involvement with shampoos may prefer to get information from a dermatologist, and not from marketing messages.

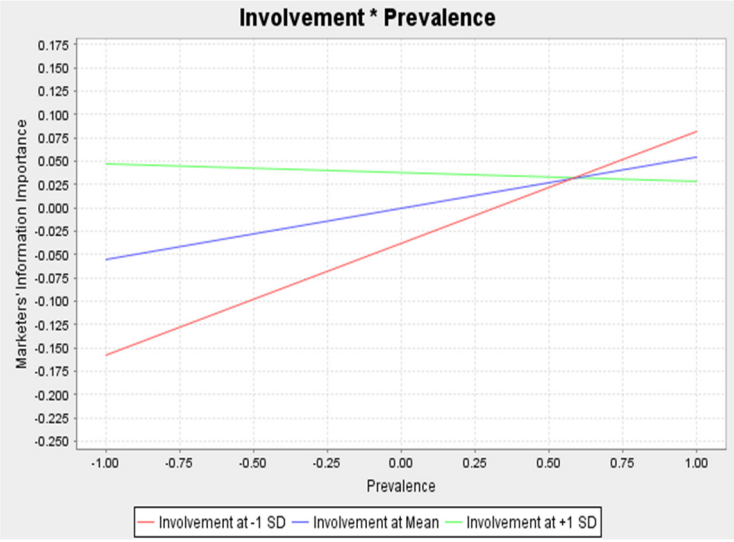

Figure 3.3.10: The Moderating Effect of Involvement on the Relationship between Product Prevalence and the Importance of the Marketers' Information

The evidence suggests that involvement's influence is most visible with regards to internal sources of information, through its significant interactions with product differentiation, rate of obsolescence, purchase size, and product variety. The closeness of concepts such as internal information source, involvement, and introspection may provide some clues as to why this is the case. These relationships are discussed in more detail below.

As product differentiation increases, the importance of internal sources of information decreases. This can be explained by the speculation that when competing products are different in their own unique ways, the utility of one's limited memory decreases. As expected, there is a negative moderating effect of involvement on the negative relationship between product

differentiation and the importance of this information source, which means that at higher levels of involvement, the negative relationship will be stronger—even more negative. This finding is not surprising at all: The limitations of one's own memory become even more worrying, as a poor decision resulting from limited information will be more taxing on the individual in the case of high-involvement products. As such, as involvement and product differentiation increase, they form positive synergy to decrease the perceived importance of internal information sources.

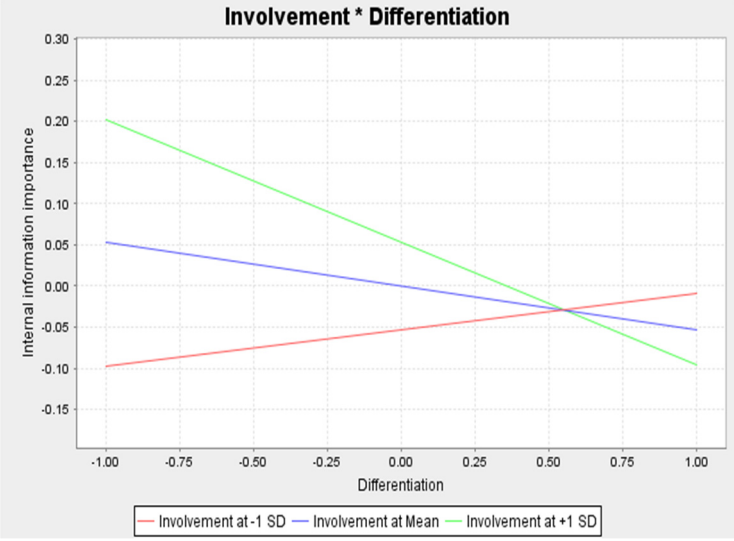

Figure 3.3.11: The Moderating Effect of Involvement on the Relationship between Product Differentiation and the Importance of Internal Sources of Information

As the rate of product obsolescence increases, the importance of internal sources of information decreases. This is reasonable since individuals' past memories, beliefs, and experiences will be less valuable if they are no longer applicable to the current generation of products, as a result of the past products becoming obsolete. Interestingly, and unlike what was hypothesized, the moderating effect of involvement on this negative relationship is positive. This suggests that at higher levels of involvement, the negative effects of the rate of obsolescence on the importance of internal information sources dampens. Stated differently, evidence suggests

that as involvement with a product and the rate of obsolescence rises, individuals are more likely to discount the disutility of their outdated information and put more emphasis on it. This finding could very well explain the behavior of some car enthusiasts who still live with their memories of old cars and judge new cars with their old criteria. Since these individuals are highly involved with cars, their own memory is an important source of information for them even though their experiences and beliefs relate to car models that are considered obsolete based on current standards. This finding is also compatible with risk-aversion as a part of the human nature. In the case of high involvement, for example a life or death situation, individuals may simply rely on what they know themselves rather than what others may tell them, even if they know that what they know is not up-to-date.

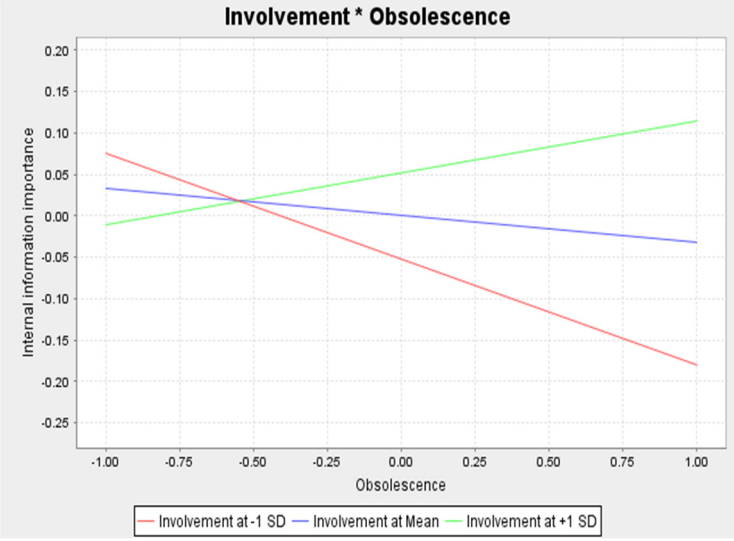

Figure 3.3.12: The Moderating Effect of Involvement on the Relationship between the Rate of Product Obsolescence and the Importance of Internal Sources of Information

As purchase size increases, the importance of internal sources of information decreases. This sounds logical since for bigger-ticket products, consumers may perceive higher risks, put

less emphasis on what they know, and reach out to external sources of information. As involvement with the product increases, this negative relationship becomes stronger and more negative, as hypothesized. This can be explained by the speculation that involvement and purchase size tap into two complementary domains of consumer psychology—affective and cognitive, respectively. Involvement is more closely related to affect and purchase size is more closely related to cognition. When purchasing a product that is high on both involvement and purchase size, consumers are engaged on both affective and cognitive levels. Subsequently, if a wrong purchase decision is made in this situation, they have to endure both affective and cognitive discomfort. Under these circumstances, individuals may be more willing to reach out to external, more comprehensive sources of information, compared to when they do not worry about either affective (high involvement), cognitive (high purchase size) discomfort, or both.

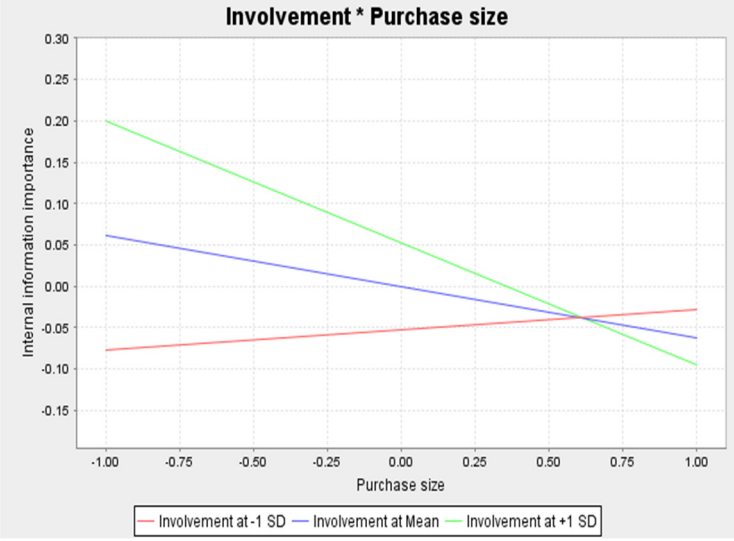

Figure 3.3.13: The Moderating Effect of Involvement on the Relationship between Purchase Size and the Importance of Internal Sources of Information

The last product characteristic that interacts with involvement to influence the importance of internal sources of information is product variety. As product variety increases, the

importance of this information source also increases. This may sound counter-intuitive at first, given the increasing set of options to choose from, the resulting quest for more and more information, and albeit, the boundedness of one's own memory. However, one explanation for this phenomenon may come from the notion of the curse of too many choices. This notion is based on the speculation that as a product's variety increases, individuals lose their ability to tell the differences among the available choices, and resort to simplifying heuristics, which are fetched from internal sources of information. As involvement increases, this positive relationship between variety and importance of internal information increases, demonstrating a positive moderating effect, as hypothesized. Otherwise stated, when faced with too many choices without clear distinctions (variety without differentiation), individuals resort to their own internal information sources in order to escape from a plethora of useless information that is trying to convince them that a choice exists, while none is easily observed by them. This effect is fortified when involvement is high.

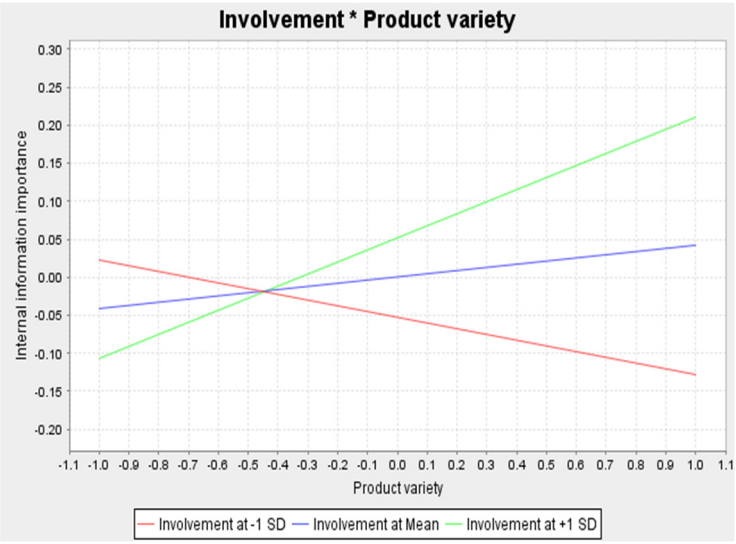

Figure 3.3.14: The Moderating Effect of Involvement on the Relationship between Product Variety and the Importance of Internal Sources of Information

The importance of personal others' information is not directly influenced by product variety, but it is influenced by it at the lowest and highest levels of involvement. That is, at moderate levels of involvement, variety has no significant relationship with the importance of this information source. Perhaps, information coming from personal others is not versatile enough to be helpful in enabling consumers to choose one product among many. For example, cars come under many brands and names and in many models and specifications, and thus can be considered to be high-variety products. On the other hand, it is not surprising to see that a large proportion of an individual's family and friends own a limited variety of brands and models due to their shared beliefs, needs, and preferences (for example, imagine a German family residing in the US most of whom drive only a few brands of German cars), making the variety of their information no match for the variety of the options available to the individual. As involvement increases, the role of personal preferences and tastes may become more significant and the opinion from the same family and friends, though limited, may grow in importance. An example of this phenomenon may be found in one's decision on which university to attend. If this is a very high involvement decision involving personal preferences and tastes, individuals may put high importance on the information from people they know, since those people are the ones who best know their tastes and preferences and, thus, which university would best satisfy them. In this example, although individuals have a multitude of brands to choose from, because of the high level of involvement in the decision, they may stay within the realm of the familiar by relying on the information coming from friends and family.

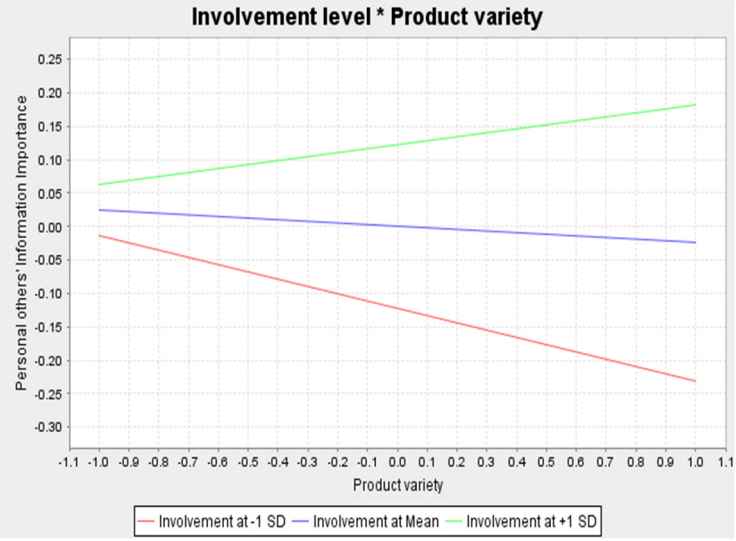

Figure 3.3.15: The Moderating Effect of Involvement on the Relationship between Product Variety and the Importance of Personal Others' Information

Involvement plays a part in the importance of the information coming from impersonal others as well, through its interactions with affective consumption and product serviceness. The more affective the consumption of a product is, the less important the information from others not personally known to an individual is. Jewelry may be considered a product with highly affective consumption since consumers often use the product to enhance their emotional state. The evidence here suggests that the more affective a product's consumption is, the less important the information from impersonal others is. Involvement is a much related concept to affective consumption, and as such, it is not surprising that there is positive synergy between these two factors. Specifically, as involvement increases, the negative effect of affective consumption on the importance of impersonal others' information becomes even more negative. Consider a situation that is high on both involvement and affect. For example, consider someone purchasing a piece of jewelry to appear more self-confident (high affect) at a sibling's wedding ceremony (high involvement). The findings discussed above may explain why such a person may discount

the importance of the reviews on online jewelry shops and, instead visit a brick and mortar jewelry shop in person to closely examine the product and gain firsthand information before purchase.

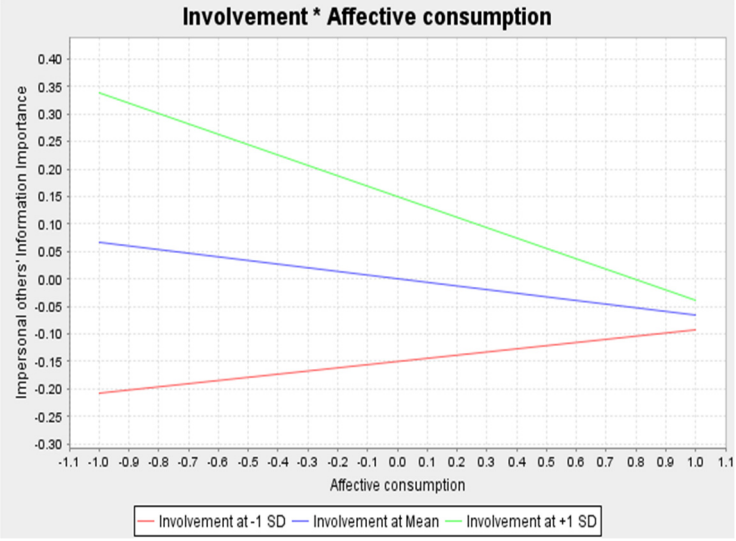

Figure 3.3.16: The Moderating Effect of Involvement on the Relationship between Affective Consumption and the Importance of Impersonal Others' Information

The last significant interaction that involvement has with the product characteristics is with serviceness. According to the evidence, as the service component of a product changes—that is as the product becomes more or less of a service than a good—the importance of impersonal others' information does not change significantly. However, at higher levels of involvement, as a product's serviceness increases, the importance of impersonal others' information increases as well. This can be logically explained by the role of intangibility and inter-personal interactions in service purchases, which brings about perceived risk and uncertainty with the purchase. For instance, receiving a haircut can be considered as an example of receiving a service. Under normal conditions, an individual may not consider what others s/he does not know have to say about a particular barber shop. However, in a high-involvement

situation, for example when receiving a haircut before an important meeting or ceremony, the same individual may expand his/her search to the information from impersonal others. Evidence suggests that importance of impersonal others' information is not significantly different across different levels of involvement if the product is low on serviceness. That is, this is not the case with goods. One explanation for this finding may come from the consistency of quality in goods and its potential inconsistency in services. Sticking to the example of the haircut as a service, one may receive different levels of haircut quality from different barbers, making it important to reach out to a variety of opinions before purchase, when involvement is high. However, in the case of purchasing a good, one may expect a more consistent level of quality, regardless of the involvement level.

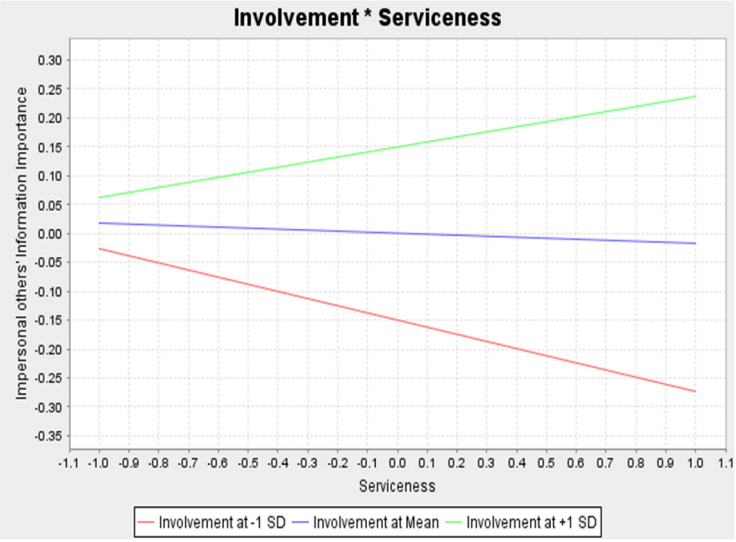

Figure 3.3.17: The Moderating Effect of Involvement on the Relationship between Product Serviceness and the Importance of Impersonal Others' Information

In sum, out of the eight significant moderating effects of involvement, six have the expected sign. Thus, H_9 is supported for the most part.

H_{10}: Consumers' subjective knowledge positively moderates the relationship between the product characteristics and an information source importance.

Subjective knowledge is the only covariate that showed no interaction with any of the product characteristics. As a result, H_{10} is rejected.

H_{11}: Consumers' education positively moderates the relationship between the product characteristics and an information source importance.

Affective consumption does not significantly influence the importance of marketers' information, but only at moderate levels of education. The findings show that as an individual's education increases, the importance of marketers' information decreases for products whose consumption is more affective. Marketers often try to leverage the affective side of the product and consumption to make their messages more enticing. For example, a charity may include images of malnourished children in its advertisements to trigger its patrons' humanitarian impulses. However, a highly-educated individual may be able to better weed out the hyperboles, see through the superficial motives, and into the underlying cause. Such an individual may be more defensive toward marketing messages when consumption is affective rather than cognitive, since feelings and emotions are at stake. Alternatively expressed, marketing messages may manage to leverage affect in the audience to bring about desired reactions but when the audience is highly-educated, this practice may backfire.

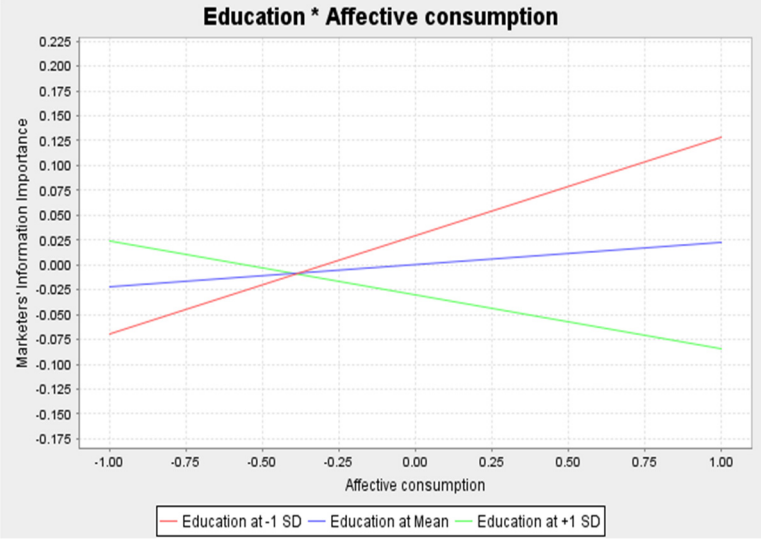

Figure 3.3.18: The Moderating Effect of Education on the Relationship between Affective Consumption and the Importance of Marketers' Information

As previously-mentioned findings suggest, as consumption risk increases, the importance of internal sources of information increases, too. This effect strengthens with increasing education, as hypothesized. One way to explain this finding is to argue that marketers are, by law, often required to provide accurate information about a product's consumption risk. For example, marketing messages about pharmaceutical products, which are good examples of high-risk products, must contain information about any possible side effects. Alternatively, investment funds must include a statement to the effect of "past performance does not guarantee future performance" when promoting their shining past performance. What is more, aside from the legal requirements, companies, more often than not, wish to prevent damage to their images by providing the market with inaccurate information. In view of all this, consumers may consider the information coming from marketers to be a highly-reliable and credible type of information for high-risk products. This may be especially true with individuals with higher education since they may be in a better financial situation to get into high-risk situations in the first place, for

example by buying stocks in the stock market, buying products in bulk, or getting into long-term contracts with service providers to get a bargain price. In addition, these individuals may find it easier to rely on marketers' information in high-risk situations since they are more capable of taking legal actions if that information turns out to have been deceitful. This finding support the hypothesis.

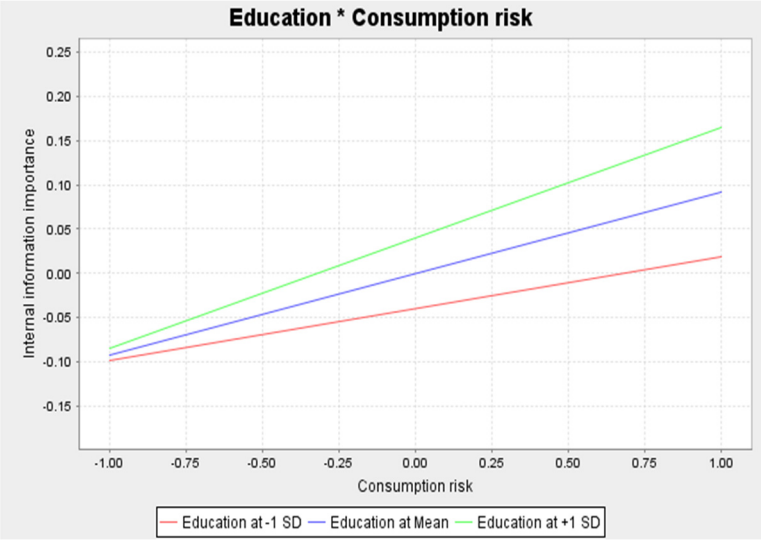

Figure 3.3.19: The Moderating Effect of Education on the Relationship between Consumption Risk and the Importance of Internal Sources of Information

When it comes to the importance of the information from personal others, the moderating influence of education is very noteworthy, as it interacts with three different product characteristics to indirectly influence the importance of this information source. Whether or not a product is consumed collectively (in a group) does not influence the importance of this information source but it is only the case at moderate levels of education. As education increases, the nonsignificant positive effect of collective consumption gains more and more significance. In other words, at higher levels of education, individuals pay more attention to information from people that they know, as the collective aspect of consumption increases. Simply put, if a product

is consumed in a group, the highly-educated individuals are the ones who pay the most attention to the opinions of group members when it comes to the purchase decision. This finding is compatible with the hypothesis.

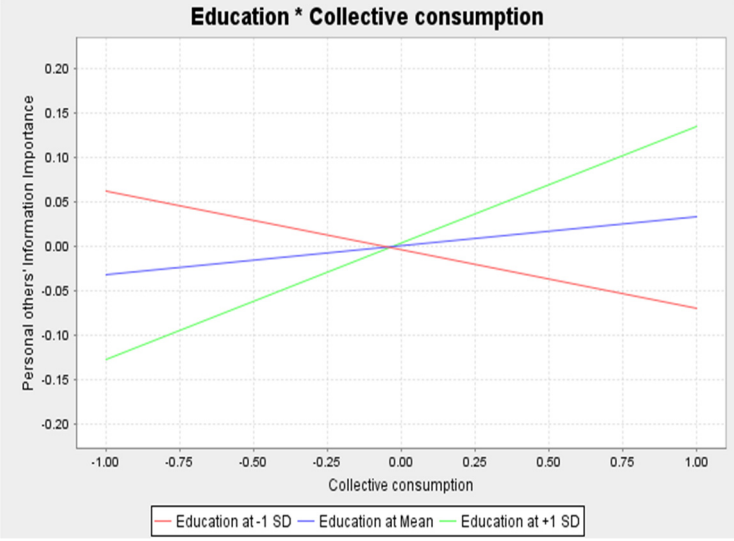

Figure 3.3.20: The Moderating Effect of Education on the Relationship between Collective Consumption and the Importance of Personal Others' Information

As the rate of a product obsolescence increases, the importance of personal others' information decreases, nonsignificantly. At higher levels of education, however, this relationship becomes significant and more negative, which supports the hypothesis. One explanation for this relationship can be established on the speculation that individuals with higher levels of education may have a smaller family and social circle, as well as less available time to interact with them. As such, the information that they may receive from the people that they know may be more limited than what individuals with lower levels of education can receive from their larger families and social circles. This limitedness of information combined with its quick obsolescence can make the source of this type of information less important for more well-educated individuals.

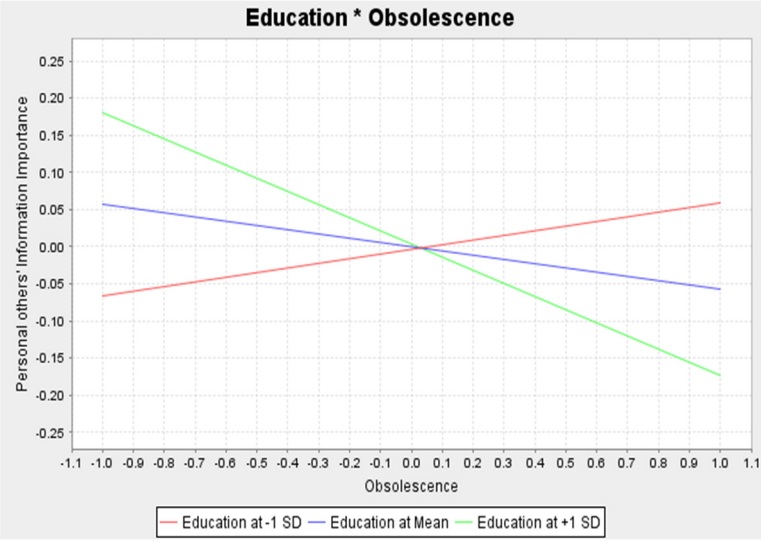

Figure 3.3.21: The Moderating Effect of Education on the Relationship between the Rate of Obsolescence and the Importance of Personal Others' Information

As prevalence of a product increases, the importance of personal others' information increases. This finding makes sense since as a product's prevalence increases, the chance that someone an individual personally knows has experience with the product increases as well. As hypothesized, education has a positive moderating effect on this positive relationship, making it even stronger. This effect is conceptually related to the effects of the rate of obsolescence and education on the importance of this information source, which was discussed in the last paragraph. Prevalence in this case may have an effect opposite to what obsolescence does (as confirmed by the path coefficients), given the assumption that the size of personal others as a source of information shrinks as education increases. In other words, the higher prevalence of a product has a more significant effect on the importance of the personal others' information since it somehow offsets the negative effects of its undesirably-smaller size. In an exaggerated-to-illustrate scenario, if a product is used literally by everyone in the population, then everyone an

individual knows must have used the product. As such, personal others gain importance as a source of information. Put simply, even if the size of the information source is smaller, the prevalence of the product raises the chance that someone from that small source has experience with the product. For instance, a highly-educated individual with a smaller social circle may not be able to find someone in that circle who has experience with a specialty product that one in 10,000 people use. However, the same individual may have a better chance of finding multiple people in his social circle who have experience with a convenience product that one in every five people use. According to the present evidence, personal others will be a more important source of information for more prevalent products as long as the education level is high enough.

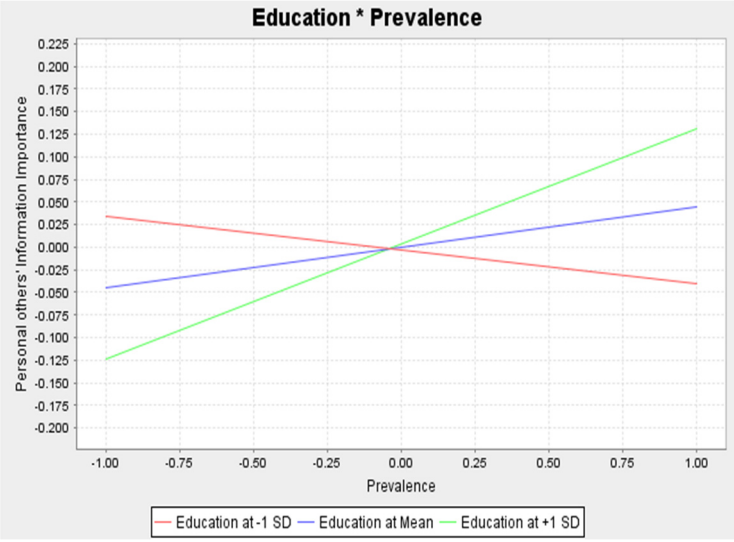

Figure 3.3.22: The Moderating Effect of Education on the Relationship between Product Prevalence and the Importance of Personal Others' Information

The last set of moderating effects of education on the relationship between the product characteristics and the importance of information sources relates to the impersonal others' information. As mentioned previously, increasing product differentiation increases the importance of this information source significantly. As education increases, this positive

relationship strengthens, in accordance with the hypothesis. One explanation for this may come from the highly-educated individuals' greater ability to take advantage of this information source. While everyone can utilize this information source to gain information on the unique features of differentiated products, the higher the individuals' education levels, the higher their ability to do so. For example, information from academic articles about the latest pharmaceutical products, as an example of impersonal others' information, may be utilized by a highly-educated person but not much so by others.

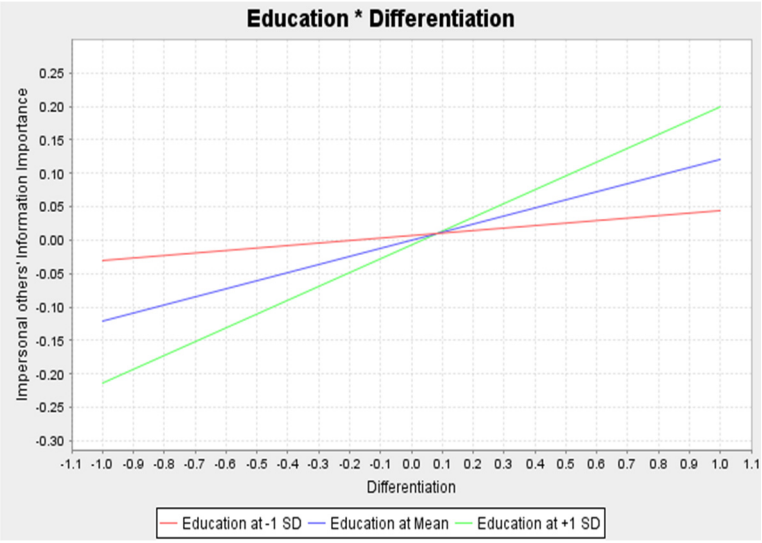

Figure 3.3.23: The Moderating Effect of Education on the Relationship between Product Differentiation and the Importance of Impersonal Others' Information

A similar story seems to hold true with regards to the importance of impersonal others' information, product history, and their interactions with education. As product history increases, this information source rises in importance. However, as education increases, this relationship turns more and more negative, which seems counterintuitive and does not support the hypothesis. One explanation for this relationship may come from the conjecture that as a product's history extends into the past, more and more can be known about it for oneself, adding to the importance

of the internal source of information. The positive and significant effect of product history on the importance of internal information sources proves this point. However, in case of newer products, the impersonal others' information becomes scarcer and, thus, more valuable, especially for the highly educated individuals who are more capable of uncovering and using this scarce information.

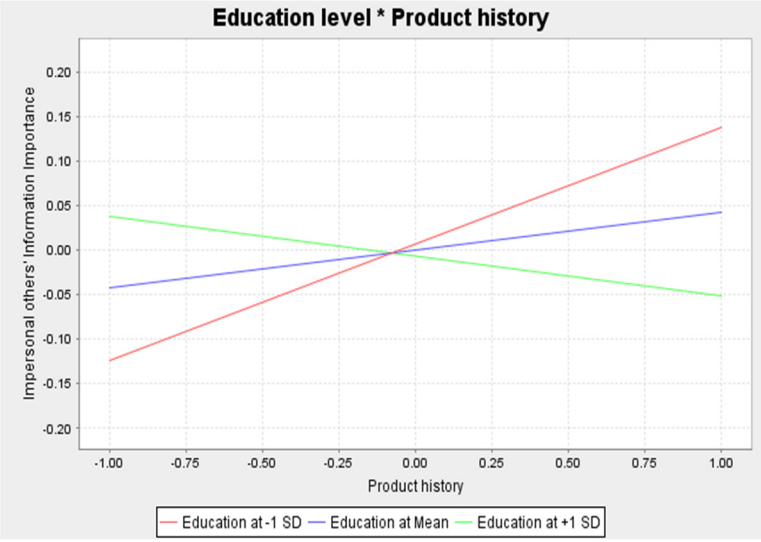

Figure 3.3.24: The Moderating Effect of Education on the Relationship between Product History and the Importance of Impersonal Others' Information

3.4. Discussion

The introduction of this dissertation started with identifying two gaps in the literature. The first gap relates to the absence of studies on product characteristics, alongside psychological and economic factors, as predictor variables in CIS models. The second gap relates to the common practice of the previous studies in focusing on just external sources, rather than on both internal and external sources, and even in doing so, not distinguishing between different types of external sources. The dissertation offers the PCM model as a solution to bridge these two gaps.

The discussion that follows attempts to affirm the consequences of overlooking these two gaps, and in turn, to substantiate the merits of the PCM model.

One way to establish the legitimacy of the PCM model is to ask and answer the following questions. What if the role of product characteristics is removed from the PCM model? What if the three external sources assessed separately in the PCM model are pooled and assessed as a single source? Stated concisely, what if the PCM model is reduced to mirror the models found in the literature? What would happen to the variance explained in the ISIs? The answers follow.

The advantage of the PCM model can be verified by qualitatively reviewing table 3.3.2. There is a total of 39 significant effects in the table. Only 10 of these effects represent what is classified in the literature as psychological and economic approaches, while the other 29 significant effects are due to the additional component—the product characteristics—that the PCM model contributes to the literature. Below, the advantage of the model is examined in a more objective manner.

First of all, the variance levels in the ISIs explained by the PCM model are very desirable. As table 3.3.3 shows, 64%, 62%, 67%, and 67% of variances in the importance levels of marketers', internal, personal others', and impersonal others' information, respectively, are explained by the model. As a rule of thumb, in marketing research, R^2 values of .25, .50, and .75 for endogenous latent variables in a structural model can be described as weak, moderate, or strong, respectively (Hair, Ringle, and Sarstedt 2011). As such, all of the R^2 values derived from the PCM model fall in between moderate and strong, with the bulk closer to strong.

Although the R^2 value is an insightful piece of information to judge the model's explanatory power, it would be useful to have another global fit index better tailored to SEM models. Tenenhaus, Amato, and Esposito Vinzi (2004) offer one such index. They propose a

goodness of fit index (GoF) to assess the fit of both outer-measurement (the relationship between constructs and their respective indicators) and inner-structural models measurement (the relationship between constructs) to the data simultaneously. In this way, the GoF acts as a global fit index for validating the PLS model. The GoF is computed as the product of the square root of the average communality of all of the constructs and the square root of the average R^2 values of the endogenous constructs. These values are .90 and .81, respectively, in the present study. Thus, the GoF for the PCM model is .73, which suggests excellent fit (e.g., Latan and Ghozali 2012; Schepers, Wetzels, and Ruyter 2005).

To further substantiate the contribution of the PCM model to the literature, this study compares the R^2 values from the model, to those of two competing models that reflect the current status of the literature. In table 3.3.3, model 1 is the full PCM model whose fit was just discussed. Model 2 is constructed by removing product characteristics from the PCM model. That is, model 2 is model 1 minus the effects of product characteristics, and naturally the interactions between them and the psychological and economic factors. This leaves model 2 with psychological and economic factors only, as predictors of the ISIs. Model 3, is exactly like model 2 except for the fact that the three external sources of information—marketers, personal, and impersonal others—have been pooled to form an aggregate external information source. Pooling was done by taking the average values of the three sources. For example, the benefits of the aggregate external source were calculated by taking the average of the benefits of the separate external sources. Similarly, the importance of the aggregate external source was calculated by taking the average of the importance levels of marketers', personal, and impersonal others. As table 3.3.3 shows, there are significant decreases in R^2 values as the original PCM model is reduced to model 2, and then to model 3. The average R^2 in models 1, 2, and 3 are .65,

.48, and .34, respectively. As such, only model 1's explanatory power can be said to be above the moderate level, while those of models 2 and 3 are below the moderate effect-size level (Hair, Ringle, and Sarstedt 2011).

In model 3, the role of product characteristics is ignored, and information sources are simply viewed as either internal or external, without distinguishing between the different types of the latter. When external sources are considered separately in the original PCM model, their average R^2 is .66, while when they are averaged to form an aggregate external source, the R^2 reduces to .26.

Table 3.3.3: A Comparison of Variance Explained across Three Competing Models

Dependent Variables	**Adjusted R^2**		
	Model 1	**Model 2**	**Model 3**
Marketers' information	0.64	0.53	-
Internal information	0.62	0.44	.43
Personal others' information	0.67	0.52	-
Impersonal others' information	0.67	0.45	-
Aggregate external source	-	-	.26
Average Adjusted R^2	.65	.48	.34

Notes: Model 1: The full PCM model
Model 2: The model without product characteristic as independent variables
Model 3: The model without product characteristic as independent variables, and with external sources pooled (averaged)

Another argument for separation of different external sources comes from the discrepant effects of some of the variables across these sources. Take, for example, the effects of perceived benefits and involvement. Benefits have quite uniform effects across these three external sources. However, involvement's effect is negative and significant for marketers', positive and significant for both personal and impersonal others', and nonsignificant for internal sources of information. What this observation suggests is that by pooling the external sources together, the opposing

effects may counteract one another, leading to spurious collective effects and hence erroneous research conclusions.

Now that some evidence is provided to validate the PCM model as a whole, a number of more specific insights from the model ensue. The PCM model is not equally explanatory across different ISIs, and its variables are not equally explanatory. Table 3.3.4 shows the number of significant effects for each ISI from each variable. It can been seen from the table that benefits, involvement, rate of product obsolescence, and product differentiation are among variables with the largest number of significant effects on the ISIs. Moreover, the internal and impersonal others are the sources with the largest number of significant effects, followed by personal others and marketers.

According to table 3.3.4, the number of significant effects from product characteristics and their interactions on marketers, internal, personal others, and impersonal other sources are 5, 10, 6, and 9. This means that product-related factors are most influential on the importance of the internal and impersonal others', and less influential on the importance of marketers' and personal others' information.

Table 3.3.4: Counts of Significant Effects by Independent and Dependent Variables

	Dependent Variable				Total
	Importance of marketers' information	**Importance of internal information**	**Importance of personal others' information**	**Importance of impersonal others' information**	
Benefits	3	4	1	3	11
Costs	0	0	1	1	2
Education	1	1	3	2	7
Involvement	1	4	2	3	10
Subjective knowledge	1	0	1	1	3
Subjective knowledge Squared	0	0	0	0	0
Affective consumption	1	0	0	2	3
Brand equity	2	0	0	0	2
Collective consumption	0		1	0	1
Product differentiation	0	1	1	2	4
Product history	0	1	0	1	2
Rate of product obsolesce	0	2	1	2	5
Product's prevalence	1	0	1	1	3
Public consumption	0	2	0	0	2
Purchase size	0	2	0	0	2
Consumption risk	0	2	0	0	2
Product’s serviceness	0	0	1	1	2
Product variety	1	1	1	0	3
Total	11	20	14	19	64

Note: the counts include both direct effects and moderation effects of the variables.

3.5. Implications

The research presented has several major theoretical and managerial implications regarding CIS, which is “vital to both marketing managers and scholars because information search is an early influential stage in the purchase decision process” (Murray 1991, p. 10). From

a theoretical perspective, this research adds to the existing knowledge on information search behavior, which is a corner stone of marketing research. For one reason, consumer information search behavior is tightly tied to consumer shopping behavior, including the vital topics of consumer choice, and choice-making processes, and product return intentions (e.g. Beatty and Smith 1987; Bettman 1974; Maity and Arnold 2013; Punj and Staelin 1983). As Bagozzi noted, "more philosophical, theoretical, and empirical work is needed with regard to the concept of choice" (1992, p. 358). Moreover, according to Edmondson (1997), fifteen percent of Americans say that they want sales advice when shopping for jeans, and this share increases to two-thirds when shopping for prescription drugs. As a further matter, Simonson and Rosen (2014) note that habitual purchases (such as buying milk) tend to be dominated by internal information sources, while fashion products, along with most experience goods, seem to be heavily influenced by others' information. Despite such evidence that information source importance varies across products, this study is the first to exclusively identify product characteristics that cause such variation and attempt to predict such importance levels, in light of these characteristics.

In particular, the current study offers two major theoretical contributions to the literature. First, through analyses of R^2 values, it provides evidence that the psychological and economic factors that the literature has previously identified may fall short of sufficiently explaining information search behavior, specifically the importance of different information sources for consumers. The PCM model offered in this study fills this gap by introducing the role of product characteristics, significantly increasing the variance explained in the model. In fact, the psychological and economic factors proved to be significant predictors, as well. The need for simultaneously considering these covariates and the product characteristics in CIS models was evidenced every time one of the covariate's direct effects was nonsignificant, but its interaction

effect with a product characteristic was shown to be significant. For example, education per se had no significant direct effect on any of the ISIs. It would have been easy to dismiss this variable from the model were it not for its significant interactions with many of the product characteristics. As table 3.3.4 shows, omission of education on this premise would have led to missing seven significant effects. Thus, what academicians may take out of this discussion is that a desirable model to explain information search behavior is one that incorporates all of the three types of factors: psychological, economic, and product-related factors. As a related contribution, this dissertation has made adhering to the above advice easier for other researchers by designing, validating, and revalidating a concise scale that can be used to assess any given product on 12 dimensions, using 34 items.

Second, while most of the studies in the CIS literature focus almost exclusively on external sources of information, and pool these sources together as if they were of the same nature, the current study exposed this as a malpractice. Specifically, by disentangling the external sources and examining them separately, this study showed that the theorized antecedents of these sources do not influence them in a uniform fashion. For example, the results from the SEM analysis showed that some antecedents that have a significant influence on one external source may not have such an influence on others. More interestingly, the results showed that a single antecedent may have significant influence on two different external sources, but in opposite directions. As this is the case and as suggested by the significant correlations among the importance levels of the information sources, pooling such information sources may lead to the influences counteracting each other, leaving the researcher with nonsignificant, or misleadingly significant effects. To support this claim, this study empirically showcased the significant loss of explanatory power that occurs from pooling external sources.

The separate examination of external information sources in this study brought about one more major theoretical contribution. Internet marketing is of increasing importance to marketing researchers since the rise of the Internet has changed the way consumers communicate, learn, shop and buy products (Kim and Lennon 2008). As Ward (2013) notes, the extreme convenience and omnipresence of the Internet has given it a "supernormal" nature. By separately analyzing the impersonal source of information as an independent source, this dissertation provided an opportunity to extend some of its findings and implications to the domain of online marketing. Although this information source does not perfectly square up with the Internet as an information source, it is very similar to it: one main example of impersonal others' information is online reviews. In fact, from the beginning of the data gathering process, the respondents in each study were instructed to consider "online reviews" and "expert opinions on websites such as Cnet.com" (and consumer reports) as examples of information coming from impersonal others. In view of this point, the findings related to impersonal others' information (panel D in table 3.3.2) may extended to internet marketing, with some caution, or be used as propositions for further research in this area. Some examples follow.

For instance, impersonal others is the only source whose importance increases as product differentiation increases. Would this imply that Internet may be a specially-effective medium to market highly-differentiated products? On the other hand, this information source is the only source whose importance decreases as products' rate of obsolescence increases. Would this imply that consumers do not think that online information is updated fast enough to keep up with newest product innovations and specifications? This sounds controversial, and worthy of further investigation for this exact reason. On a related note, the interaction of the rate of obsolescence and benefits of this information source is positive, meaning that as benefits increase, the negative

effects of obsolescence and the source's importance dampens, which is a desirable effect for online marketers. The question is how can online marketers increase consumers' perceived benefits of online information? Yet another implication for internet marketing may come from the interaction between involvement and affective consumption. The importance of impersonal others' information decreases as affective consumption increases. This means that online marketers may have a more difficult job marketing products whose consumption is highly affective. However, the interaction of involvement and affective consumption dampens this negative relationship, an effect that online marketers can leverage. The question is how can marketers increase consumers' involvement with affective products in an online setting? Much research has been done on managing consumer involvement, but how much of it can be extended to online settings while marketing affective products? In sum, online marketing researchers are recommended to peruse tables 3.3.2 (especially panel D) and 3.3.4 to find inspirations and research questions for future research.

As for managerial implications, understanding consumers' information search behavior is crucial for firms' strategic decision making (Moorthy, Ratchford, and Talukdar 1997) and designing optimal marketing communication campaigns because it represents a primary and critical stage at which marketing can influence consumers' decision making (Tarkiainen and Sundqvist 2009; Wilkie and Dickson 1985). Based on the buying decision process found in almost every marketing textbook, for a product to sell, it must first be in consumers' consideration sets (e.g, Engel, Kollat, and Roger 2015; Solomon et al. 2013). However, a product may have the chance to get into consumers' consideration sets if it is found during their search process—the stage preceding the consideration set formation stage. To be found in consumers' search process, the product must be found in the right information sources; the one(s) consulted

by consumers. By knowing each information source's importance to consumers, managers can prioritize those sources, and thus allocate their promotional budgets more effectively. Moreover, managers should be aware that besides affordability, reach, strength of impact, and so on, product class may be another factor in prioritizing the advertising media. Accordingly, insights into how product characteristics can affect information source importance are worth managers' attention in the sense that with the growing number of information sources available to consumers, managers may fail to manage these sources effectively without such insights. In addition, firms' resource constraints dictate that managers invest in information sources that are most important for consumers and, thus, for firms. So, if managing all of the information sources with equal might and energy is not an option, which sources should managers pay more or pay less attention to?

The set of findings from this study can act as a guide for managers in answering the above question. Specifically, managers can consult tables 3.3.2 and table 3.3.4 to figure out which information source is more or less important to their consumers given the product they are marketing. Specifically, managers are advised to follow this process: First, assess the economic and psychological factors in the target market. These are the types of information that marketing managers may already have as a result of their segmentation studies. Preferably, this information must be gained by sampling from each target segment. Second, assess the product on the 12 dimensions of the PC scale. Third, using the coefficients from table 3.3.2, predict the importance of each information source for consumers when purchasing the product in question. Predictive models such as Discriminant Analysis can then be constructed using those coefficients. Needless to say, the information sources that the models identify as more important for consumers must receive more attention from managers.

Although the psychological and economic factors are individual factors, this does not mean that managers may have no control over them. Regarding the significance of perceived benefits in the present findings, it seems worthwhile for managers to try to enhance the perceived benefits of the information sources. For example, one concern that may reduce the perceived benefits of impersonal sources of information is consumers' doubt in the credibility of the information from a source not personally known (Pan and Chiou 2011). For example, consumers may suspect the authenticity of online reviews, which will reduce their perceived benefits. A solution may involve finding innovative ways to verify online reviews so that they appear authentic to consumers. Video testimonials may be perceived more authentic as written testimonials since they are impossible to make without the knowledge and consent of the person who is supposed to have made the testimony. Showcasing the firm's webpages on customer review websites that are known to effectively filter inauthentic customer reviews (such as Yelp.com) may prove helpful, as well.

Another managerial implication from this study relates to the role of education. As shown in the results section, many of the information search dynamics depend on individuals' education levels. This calls for adequately taking into account the education levels of the target market in any promotional initiative that may be influenced by education-related effects, as discussed in the results section of this study. For example, since the findings suggest that resorting to emotional appeals in advertisement may lose potency as education levels increase, this strategy may be avoided for highly-educated audience.

Still more, as table 3.3.4 shows, internal sources of information may be considered the most important source of information for consumers in general. While it may be more difficult for managers to impact this information source, it may be worth the attempt, given its

importance. Branding, positioning, post-purchase behavior management, loyalty programs, portrayal of corporate social responsibility and firm authenticity come to mind as examples of impacting the internal information sources—that is consumers' memories, beliefs, and experiences with a particular brand or product. More specific recommendations can be made by referring to specific characteristics of products. For example, based on table 3.3.2, one can argue that as product history increases, the role of internal information sources increases, and thus, most attention must be made to loyalty programs and initiatives such as reminder advertising and frequent flier programs.

Last but not least, as mentioned previously in the discussion of the theoretical implications of this dissertation, the findings and implications related to the impersonal source of information may be extended to the task of online marketing management.

3.6. Conclusions, Limitations, and Recommendations for Future Research

The present dissertation is an attempt to advance the extant literature on consumer information search (CIS) behavior. Particularly, the effects of product characteristics on the importance of four different information sources were examined.

At the heart of the matter, the dissertation offers two distinct advancements to the literature. First, it developed a reliable and valid scale—the PC scale—to assess any given product on a well-rounded set of characteristics, from more subjective ones such as affective consumption to more objective ones such as product variety. The dissertation argues that in order to accurately understand the importance of information sources for consumers, it is crucial to take into account the characteristics of the product at hand. That is, the psychological and economic determinants of information source importance that the extant literature offers, though

important factors, are not sufficient to explain the larger part of the variations in the importance of information sources, and this explanation should be contingent on the product being studied. As such, the dissertation offers a model—the Product Contingent Model—that seeks to explain the importance of information sources by incorporating the psychological, economic, and product-related factors in one single approach.

Second, this dissertation provides empirical evidence that when explaining the importance of information sources, external sources must be studied separately, and not as an aggregate source. The evidence shows that the effects of the psychological, economic and product-related factors on the external sources vary from one to another, and thus, it is crucial to consider them independently and study them as such.

With this view in mind, the current dissertation does not come without its own limitations. First, due to the integrative nature of the PCM model, including every single psychological and economic factor in the model could have made it so unwieldy that deriving understandable interpretations of the results, and well as methodological mishaps such as multicollinearity and convergence issues, could have become a burden. As a result, the model only includes the factors that have the highest level of empirical support in the literature. Omission of the less-supported factors could have made masked some relationships.

Another limitation comes from the fact that the current dissertation measures importance of information sources, and not the time or energy actually spent on them. That is, it may be one matter of how important one information source is to someone and it may be a totally different matter concerning how much resources s/he is willing to spend on that source to gain information. Of course, this could be considered an advantage of the current research's design since it obviates the effects of some of the factors not present in the model, such as individuals'

income and time availability. On the down side, nevertheless, whenever interpreting the results of this study, one should be cognizant that they relate to the perceived importance of the sources, not the time or energy that consumers actually spend on them.

As for future research, the last limitation mentioned above may be a good candidate. It may be interesting to explore the gap between a source's importance to an individual and the amount of resources that the individual is actually willing to spend to access information from that source. In this sense, this research topic is analogous to the topic of exploring the gap between consumers' intentions and actual behavior.

On a related note, some of the findings of this study are incongruent with those of the extant literature. For example, this study did not find any nonlinear relationship between subjective knowledge and information source importance. For instance, the literature suggests that a U-shaped relationship exists between subjective knowledge and the resources spent on the external sources of information. It could very well be the fact that the importance of these sources linearly decreases with increasing subjective knowledge. However, after their subjective knowledge reaches a certain threshold, individuals feel a sort of cognitive dissonance pushing them to rely more on the external sources (even if not deemed as important), to maintain an image of open-mindedness toward others' information. In other words, could it be the fact that individuals may rely on an information source in practice even if they do not consider it to be an important source of information? Without further research, the answer to this question will remain unknown.

One more area that future research can probe into is the potential interactions among the product characteristics. Now that a scale for these variables exist, this task is easier to perform, and it is not difficult to imagine interesting findings from testing these interactions. For one

example, Ambler et al. (2002) argue that brands may be less important in service-oriented industries than they are in goods-oriented industries. However, as can be verified from appendix H, the correlation between product serviceness and brand equity is positive (and significant). Although the contexts of the two studies are different, this positive correlation can act as a ground to argue that if brand equity is higher in services, why would it be considered less important for service-oriented industries? By examining the interaction effect of these two variables on the importance of information sources, one can test empirically how brands and servicessness may act together to make one information source less or more important.

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Appendix A: The Scales[1] Used in the PCM Model

- **Information Source Importance** (Dependent Variable)

  1) By moving the slider to the left (0) or right (10), indicate the relative importance of information from marketers prior to purchasing a cell phone.[2]

  2) Operationalized as (1) above, except for information from my own memory.

  3) Operationalized as (1) above, except for information from others I know.

  4) Operationalized as (1) above, except for information from others I don't know.

- **Product Characteristics** (Focal Independent Variables)

  The PC scale, with 34 items, as shown in appendix F.

- **Search Costs** (adapted from Peter and Tarpey 1975)

  1) I think it is probable that using information from marketers before a purchase would lead to financial, performance, physical, or convenience loss for me.

  2) Operationalized as (1) above, except for information from my own memory.

  3) Operationalized as (1) above, except for information from others I know.

  4) Operationalized as (1) above, except for information from others I don't know.

- **Perceived benefits of search** (adapted from Srinivasan and Ratchford 1991)

  1) By searching for more information from marketers, I am certain of making the best buy.

  2) Operationalized as (1) above, except for information from my own memory.

  3) Operationalized as (1) above, except for information from others I know.

  4) Operationalized as (1) above, except for information from others I don't know.

  5) I learn which products are suitable for me by using information from marketers.

[1] Unless otherwise stated, all the scales were formatted as 7-point, Likert-type scales, anchored at the end points with strongly agree(1) and strongly disagree (7)

[2] Each respondent was asked to assume that s/he was going to purchase a given product.

6) Operationalized as (5) above, except for information from my own memory.

7) Operationalized as (5) above, except for information from others I know.

8) Operationalized as (5) above, except for information from others I don't know.

9) I get exactly what I want by searching enough in information from marketers before I buy my new product.

10) Operationalized as (9) above, except for information from my own memory.

11) Operationalized as (9) above, except for information from others I know.

12) Operationalized as (9) above, except for information from others I don't know.

- **Motivation to Search**

A. Enduring involvement (adapted from Novak, Hoffman, and Yung 2000)

1) The purchase of a [product class] is important to me.

2) The purchase of a [product class] is irrelevant to me (reverse-coded).

3) The purchase of a [product class] means a lot to me.

- **Ability to Search**

A. Subjective knowledge (adapted from Flynn and Goldsmith 1999)

1) I know pretty much about [product class]s.

2) I do not feel very knowledgeable about [product class]s (reverse-coded)

3) Compared to most other people, I know more about [product class]s.

B. Education

1) What is your highest education level?

Education was measured on 7 levels (coded from 1 to 7): High school or Equivalent, Vocational/Technical school, Some College, College Graduate, Master's degree, and Doctoral Degree.

- **Social Desirability Bias- MRT Dimension** (adapted from Paulhus 1991)

  1) I sometimes tell lies if I have to. (RC)
  2) I never cover up my mistakes.
  3) I always obey laws, even if I am unlikely to get caught.
  4) I have said something bad about a friend behind his or her back. (RC)
  5) When I hear people talking privately, I avoid listening.
  6) I have received too much change from a salesperson without telling him or her. (RC)
  7) When I was young I sometimes stole things. (RC)
  8) I have done things that I don't tell other people about. (RC)
  9) I never take things that don't belong to me.
  10) I don't gossip about other people's business.

Appendix B: The Demographics of the Samples in Studies 2 and 3

Demographic Variables	Study 2				Study 3	
	Stage 1 (n = 188)		Stage 2 (n = 503)		n = 487	
	Count	%[3]	Count	%	Count	%
Age						
18-19	0	0	6	1	15	3
20-24	11	6	9	2	34	7
25-34	90	48	181	36	229	47
35-44	48	25	147	29	117	24
45-54	9	05	92	18	34	7
55-64	28	15	48	10	58	12
65 or over	2	1	16	3	0	0
Missing	0		4		0	
Ethnicity						
White/Caucasian	129	69	370	74	373	76
African American	36	19	30	6	23	5
Hispanic	6	3	26	5	28	6
Asian	17	9	53	11	62	13
Native American	0	0	6	1	0	0
Pacific Islander	0	0	4	1	0	0
Other	0	0	10	2	1	0
Missing	0		4		0	
Education						
Grammar School	2	1	62	12	0	0
High school or Equivalent	18	10	30	6	74	15
Vocational/Technical school	3	2	152	30	46	10
Some College	48	25	187	37	151	31
College Graduate	73	39	58	12	172	35
Master's degree	42	22	2	0	41	8
Doctoral Degree	2	1	8	2	3	1
Missing	0		4		0	
Gender						
Male	88	47	287	42	188	39
Female	100	53	212	58	299	61
Missing	0		4			
Marital Status						
Divorced	14	7	50	10	48	10
Living with Another	12	6	31	6	66	14
Married	65	35	197	39	153	31
Separated	7	4	2	0	2	0
Single	90	48	207	41	211	43
Widowed	0	0	12	2	7	2

[3] Percentages are rounded to integer numbers, and are corrected for missing values.

Missing	0		4		0	
Income						
Under 10,000	11	6	31	6	28	6
10,000-19,999	27	14	69	14	62	13
20,000-29,999	32	17	71	14	77	16
30,000-39,999	32	17	74	15	85	17
40,000-49,999	11	6	48	10	31	6
50,000-74,999	29	15	101	20	85	17
75,000-99,999	24	13	61	12	69	14
100,000-150,000	9	5	30	6	32	7
Over 150,000	13	7	14	3	18	4
Missing	0		4		0	
Residence						
United States	179	95	454	91	466	96
Other	9	5	45	9	21	4
Missing	0		4			
Employment						
Paid Employee	138	73	337	68	341	70
Self-employed	14	7	110	22	119	24
Not Working	36	19	52	10	27	6
Missing	0		4		0	

Appendix C: The Questionnaire Used in the Scale Generation and Initial Purification Stage

By moving the slider to the right or left, indicate the relative importance of **information from marketers** when gathering information prior to purchasing **Jewelry.**

What characteristics of this product made you rate the importance of this information source the way you did? Just focus on the product, NOT on your personality or the situation. Example response: Because this product has --------. This product also is----------. Moreover, the ------ of this product----.

Appendix D: An Example of How Product Characteristics were Extracted from the Qualitative Responses in Study 2

	Information Sounces			
	Marketers	**Internal**	**Personal Others**	**Impersonal Others**
Qualitative reponse alluding to product characteristics influencing the importance of the information sounces	"Because this product **has many features** that need to be pointed out to me, marketers are a good source of information."	"This product is also **common place** and having recall of experiences with it can help me make a good choice."	"Because this product has **people all over using it**, I can get their input when making a decision. More input helps me make good decisions."	"Because **this product is everywhere**, I don't need to talk to people I don't know to find out about it."

From this above sample response, the study identifies two product characteristics. First, the "because this product has many features…." Comment suggests higher importance for the information coming from marketers because automobiles have many features to consider before purchase. This product characteristic was labeled "product complexity."

Second, the comments "this product is also common place," "this product has people all over using it," or "this product is everywhere," suggests higher importance for the internal and personal others, but lower importance for impersonal others sources of information. This product characteristic was labeled "common consumption" in this study.

All of the 188 responses were scrutinized in the same fashion, and product characteristics and representative items for them were generated. The result is 119 items, under 19 latent product characteristics that, according to the qualitative analysis, influence the ISI.

Appendix E: Product Characteristics and Their Associated Initial Items

Product Characteristic	Explanation	Example Verbatim Comment[1]	Product	Questionnaire Items
Experience nature of product (Nelson 1974)[2]	Experience in Nelson's (1974) experience vs. search sense.	The product is something that can't be viewed without purchase so it is very hard to be able to use memory	Movie	1. This product is dominated by attributes for which full information can be acquired prior to purchase. (RC) (Nelson 1974) 2. I cannot be sure how this product will perform until I try it. 3. There is much information out there that can give me some ideas about the quality of this product before purchase. (RC) 4. It's easy to evaluate the performance of this product before buying it. (RC) 5. It's easy to predict the quality of this product by seeing it in store displays. 6. Seeing the product in advertisements says much about its quality. (RC) 7. Sales people can say much about the quality of this product before I experience it firsthand. (RC)
Product differentiation (Belk 1981)	Are the competing alternatives differentiated or the product is more of a commodity?	Automobiles used to be a lot alike, but nowadays they have a lot of differences	Automobile	1. The quality of this product may differ slightly, but it is essentially uniform across producers. (RC) 2. I believe most of the competing products in this class are very different. 3. When it comes to this product, I think all are the same. (RC) 4. When purchasing this product, I need to compare and contrast the alternatives.

[1] Spelling and grammatical errors in the respondents' comments have not been corrected.

[2] In the case a label was found in the literature that closely defined a characteristic, the label is used, and is followed by an example source, in parentheses.

Product variety (Lancaster 1990)	Is there more or less a monopoly or are there large number of alternatives?	… advertisements remind you of all the choices available	Detergent	1. There are many options to choose from when purchasing this product. 2. There are only a few brands that dominate the market for this product class. (RC) 3. This product comes under many different names and brands. 4. When purchasing this product, your choice is limited to only a few brands/providers. (RC)
Product's evaluation subjectivity	How significant is the role of personal taste on product evaluations? Do different people have different evaluations of the same product or evaluations are fairly objective?	However, our tastes and needs for cosmetics might differ…	Shampoo	1. Different people have different opinions when it comes to this product. 2. This product can be evaluated objectively. (RC) 3. How someone evaluates this product is a matter of personal taste. 4. Everyone wants different things in this product.
Product's serviceness (Murray and Schlacter 1990)	How much of a service nature is there in the product? That is, how big is the role of buyer-seller human interaction on product evaluations?	I like to know what people I know think of this product such as speed, reliability, pricing, and how they were treated.	Internet	1. I care a lot about how the provider of this product treats me. 2. There is minimal human interaction involved with the seller when purchasing this product. (RC) 3. The quality of the product provider is as important as the quality of the product itself. 4. After-sales services constitute a trivial part of my experience with this product. (RC) 5. It's important for me to sustain the memory of how well my connection was with the [product class name] provider/seller. 6. The quality of the customer service department is a trivial factor when purchasing this product. (RC) 7. How neat the product provider is makes a major difference on my experience with the product. (Cronin and Taylor 1992)

Product's prevalence[1]	Is the product commonly used in the population, or special individuals and groups use it?	This product can be used by many and thus they have the ability to give stories…	Airline	1. This product is used throughout the world. 2. It is easy to find someone who has never used this product. (RC) 3. Roughly speaking, everyone uses this product one way or another. 4. This product plays a part in almost everyone's life. 5. I am one of the few people I know who uses this product. (RC) 6. This product is used by almost every type of person.
Collective consumption (Lovelock 1983)	Is the product used individually or in groups?	I often watch movies with my daughter and son-in-law who live with me.	Movie	1. I usually use this product on my own. (RC) 2. I usually use this product together with other people. 3. I consume this product individually. (RC) 4. I like to have this product on hand when friends and family come to my place. 5. I use this product when I am part of a group.
Consumption risk (Cox, Cox, and Zimet 2006)	Could consumption of this product pose risks to one's health?	Because this product could contain many harmful ingredients…	Cosmetics	1. This product has the potential to do harm to the consumer and others (Bloch and Richins 1983) 2. When purchasing this product, I pay little attention to the risk it imposes on my health. (RC) 3. Safety is an important consideration for me when buying this product. 4. Buying the wrong product may pose significant bodily harm to me. 5. There is little health risk involved in using this product. (RC) 6. Before purchase, I need to make sure that the ingredients/parts used in this product are safe.
Product complexity (Griffin 1997)	How much expertise is required to	… because I am really not informed on technical things	Cell phone	1. This is a rather simple product. (RC) 2. It is rather difficult to learn about this product (Gatignon and Robertson 1991).

[1] Although Sirgy, Johar, and Wood (2015) use the label "common usage" to refer to a very similar product characteristic, this label may be also interpreted as the common way a product is used. Thus, this paper uses the label product prevalence to prevent this misinterpretation.

	evaluate the product?	and wouldn't mind an opinion in this case		3. There are few crucial attributes to this product (RC) (Moore and Lehmann 1980) 4. There is much technicality involved in choosing the right product. 5. Pretty much anyone can be an expert on this product. (RC) 6. It is rather difficult to determine which attributes of this product are the most important. (Schmidt and Spreng 1996) 7. Some general ideas and basic information about the product is all I need to make the right choice. (RC)
Rate of product obsolesce (Samiee and Roth 1992)	How fast the product evolves, thus, how fast information about the product becomes obsolete?	Every day a new automobile is being launched	Automobile	1. New versions of this product come out often. 2. This product has been almost the same for as long as I remember. (RC) 3. It could be hard to keep up with the latest features of this product. 4. This product has been basically the same thing since inception. (RC) 5. There are frequent major changes in this product's platform, component, or design. (Sood and Tellis 2005) 6. There has been little change in this product over years. (RC)
Purchase size (Rao 1969)	What is the monetary size of the purchase?	Refrigerators can be VERY expensive	Refrigerator	1. Purchase of this product requires significant amount of money. 2. Regardless of one's income, buying this product is a rather small purchase. (RC) 3. This is a type of product that you need significant resources to buy. 4. Purchase of this product is what I would call a small ticket purchase. (RC)
Product history (Goretsky 1983)	How long the product has been around? How familiar it	My own memory, my memories of what I liked as a kid…. Play a BIG	Juice	1. This product, in one form or another, has been around for a long time. 2. This product is what can be called a modern-day product. (RC) 3. I have owned several models of this product.

	is to the general public?	part in what I/we buy.		4. This product is something relatively new to me. (RC) 5. I have been buying this product for years.
Purchase frequency (Fourt and Woodlock 1960)	How often is the product purchased?	I have very limited experience with buying jewelry…	Jewelry	1. The purchase of this product is a once-in-a-lifetime experience. (RC) 2. I buy this product on a regular basis. 3. It's easy to go for a long time without repurchasing this product. (RC) 4. I frequently interact with the provider of this product. (Jen, Chou, and Allenby 2003). 5. I have purchased this product only a few times.
Product impulsiveness[1]	Does the product provoke impulse buying?	They are in all the magazines, and they look so appealing, it makes me want to try them.	Cosmetics	1. I often experience a sudden, powerful and persistent urge to buy this product immediately. (Rook 1987) 2. When purchasing this product, I go with the alternative that makes maximum economic sense. (RC) 3. A lot of the time, I purchase this product without any pre-planning. 4. When I see this product in an attractive ad, it's hard to resist the temptation to purchase it. 5. I do lots of research prior to purchasing this product. (RC)
Affective consumption (Schindler and Holbrook 2003) [2]	Is the product consumed to enhance one's affective state?	…how it should sound/feel to me	Instrument	1. I feel connected to this product on an emotional level. 2. This product is a trivial part of my life. (RC) (Mittal 1989) 3. This product is an extension of me. 4. How this product feels is a trivial factor when purchasing it. (RC) 5. Using this product is likely to elicit intense feelings in me (Schindler, and Holbrook 2003).
Public consumption Bourne (1957)	Is the product used in private or public?	… when I wear them out in public	Jeans	1. I use this product mainly in private. (RC) 2. This product is used in front of other people. 3. Social visibility is an important factor when purchasing this product (Moore and Lehmann 1980)

[1] Rook and Fisher (1995) developed a scale for a similar construct called buying impulsiveness. However, they conceptualize it as a personal trait while this paper conceptualizes impulsiveness as a product characterisitc.

[2] Westbrook (1987) refers to this construct as "product/consumption-based affective responses"

				4. When I use this product, I'm usually by myself. (RC) 5. I take into account my desire to make a favorable impression on others when deciding what product to buy (Ratner and Kahn 2002). 6. I am indifferent to what others think of this product. (RC)
Geographical quality variation	Could the same product be evaluated differently in different geographical areas?	Services from the same provider can vary in different areas	Internet	1. I think the quality of this product is the same in different geographical areas. (RC) 2. Where I'm living has an impact on the quality I receive when purchasing this product. 3. How this product performs in any two different locations is similar. (RC) 4. The location in which this product is made has little or no effect on its perceived quality. (RC)
Brand equity (Keller 1993)	How important are the roles of brand names and brand loyalty in the given product class	The brand and the name of the company is tells the quality of the product	Cosmetics	1. The brand name says little about the quality of the product. (RC) 2. Even if all brands of this product class were the same, there is a specific brand that I would prefer to buy. (Washburn and Plank 2002) 3. Brand names have little to do with quality when it comes to this specific product. (RC) 4. When it comes to purchasing this product, I consider myself to be loyal to a specific brand. (Delgado-Ballester and Munuera-AlemaÂn 1999) 5. In this product class, there is no certain brand that is significantly more reputable. (RC) 6. In this product class, there is a certain brand that offers me a product with a constant quality level. (Delgado-Ballester and Munuera-AlemaÂn 1999)

Appendix F: The Final PC Scale, with its Items' Factor Loadings

Product Characteristic	Explanation	Questionnaire Items	Item's Factor Loading[1]
Product differentiation (Belk 1981)	Are the competing alternatives differentiated or the product is more of a commodity?	1. I believe most of the competing products in this class are very different.	.76
		2. When it comes to this product, I think all are the same. (RC)[2]	.75
		3. The quality of this product may differ slightly, but it is essentially uniform across producers. (RC)	.79
Product variety (Lancaster 1990)	Is there more or less a monopoly or are there large number of alternatives?	1. There are only a few brands that dominate the market for this product class. (RC)	.61
		2. This product comes under many different names and brands.	.79
		3. When purchasing this product, your choice is limited to only a few brands/providers. (RC)	.79
Product's serviceness (Murray and Schlacter 1990)	How much of a service nature is there in the product? That is, how big is the role of buyer-seller human interaction on product evaluations?	1. I care a lot about how the provider of this product treats me.	.65
		2. The quality of the product provider is as important as the quality of the product itself.	.83
		3. It's important for me to sustain the memory of how well my connection was with the [product class name] provider/seller.	.63

[1] Since some items have been negated, factor loadings are shown as absolute values.
[2] Stands for Reverse-Coded

Product's prevalence[1]	Is the product commonly used in the population, or special individuals and groups use it?	1. Roughly speaking, everyone uses this product one way or another.	.79
		2. This product plays a part in almost everyone's life.	.71
		3. This product is used by almost every type of person.	.69
Collective consumption (Lovelock 1983)	Is the product used individually or in groups?	1. I like to have this product on hand when friends and family come to my place.	.72
		2. I use this product when I am part of a group.	.80
Consumption risk (Cox, Cox, and Zimet 2006)	Could consumption of this product pose risks to one's health?	1. When purchasing this product, I pay little attention to the risk it imposes on my health. (RC)	.66
		2. Safety is an important consideration for me when buying this product.	.83
		3. Before purchase, I need to make sure that the ingredients/parts used in the product are safe.	.79
Rate of product obsolesce (Samiee and Roth 1992)	How fast the product evolves, thus, how fast information about the product becomes obsolete?	1. This product has been almost the same for as long as I remember. (RC)	.71
		2. This product has been basically the same thing since inception. (RC)	.75
		3. There has been little change in this product over years. (RC)	.79
Purchase size (Rao 1969)	What is the monetary size of the purchase?	1. Purchase of this product requires significant amount of money.	.84
		2. Regardless of one's income, buying this product is a rather small purchase. (RC)	.77

[1] Although Sirgy, Johar, and Wood (2015) use the label "common usage" to refer to a very similar product characteristic, this label may be also interpreted as the common way a product is used. Thus, this paper uses the label product prevalence to prevent this misinterpretation.

		3. Purchase of this product is what I would call a small ticket purchase. (RC)	.72
Product history (Goretsky 1983)	How long the product has been around? How familiar it is to the general public?	1. I have owned several models of this product.	.82
		2. I have been buying this product for years.	.77
Affective consumption (Schindler and Holbrook 2003) [1]	Is the product consumed to enhance one's affective state?	1. I feel connected to this product on an emotional level.	.82
		2. This product is an extension of me.	.70
		3. Using this product is likely to elicit intense feelings in me (Schindler, and Holbrook 2003).	.71
Public consumption Bourne (1957)	Is the product used in private or public?	1. I use this product mainly in private. (RC)	.84
		2. This product is used in front of other people.	.68
		3. When I use this product, I'm usually by myself. (RC)	.69
Brand equity (Keller 1993)	How important are the roles of brand names and brand loyalty in the given product class	1. Even if all brands of this product class were the same, there is a specific brand that I would prefer to buy. (Washburn and Plank 2002)	.78
		2. When it comes to purchasing this product, I consider myself to be loyal to a specific brand. (Delgado-Ballester and Munuera-AlemaÂn 1999)	.91
		3. In this product class, there is a certain brand that offers me a product with a constant quality level. (Delgado-Ballester and Munuera-AlemaÂn 1999)	.64

[1] Westbrook (1987) refers to this construct as "product/consumption-based affective responses"

Appendix G: The Descriptive Statistics of the Variables as Measured in Study 3

Variables	Mean	Median	Mode	SD	Min.	Max.	Skewness	Kurtosis
DVs								
Importance of marketers' information	4.59	5.00	5.00	2.87	0.00	10.00	0.06	-1.03
Importance of internal information	7.45	8.00	10.00	2.39	0.00	10.00	-0.99	0.40
Importance of personal others' information	7.00	7.00	8.00	2.36	0.00	10.00	-1.19	1.28
Importance of impersonal others' information	5.46	6.00	5[1]	2.55	0.00	10.00	-0.31	-0.55
IVs								
Product's serviceness (summated)[2]	14.06	15.00	16.00	4.83	3.00	21.00	-0.44	-0.65
Product's prevalence (summated)	15.78	17.00	18.00	4.49	3.00	21.00	-0.90	-0.05
Collective consumption (summated)	9.56	10.00	12.00	3.04	2.00	14.00	-0.41	-0.60
Product history (summated)	11.33	12.00	14.00	3.15	2.00	14.00	-1.30	0.94
Affective consumption (summated)	10.26	10.00	3.00	5.37	3.00	21.00	0.25	-1.06
Brand equity (summated)	13.63	15.00	18.00	4.66	3.00	21.00	-0.33	-0.80
Product differentiation (summated)	14.12	15.00	15.00	4.52	3.00	21.00	-0.38	-0.78
Consumption risk (summated)	12.75	14.00	21.00	5.65	3.00	21.00	-0.23	-1.13
Rate of product obsolesce (summated)	13.12	13.00	9.00	5.27	3.00	21.00	-0.06	-1.20
Purchase size (summated)	12.61	13.00	21.00	6.21	3.00	21.00	-0.12	-1.39
Public consumption (summated)	11.48	10.00	10.00	4.96	3.00	21.00	0.31	-0.75
Product variety (summated)	14.15	15.00	17.00	4.43	3.00	21.00	-0.33	-0.79
Covariates								
Benefits of marketers' information (summated)	12.18	13.00	15.00	5.10	3.00	21.00	-0.26	-0.92
Costs of marketers' information (summated)	14.69	14.00	8.00	6.17	4.00	28.00	0.19	-0.66
Benefits of internal information (summated)	16.98	18.00	21.00	4.09	3.00	21.00	-1.20	1.01
Costs of internal information (summated)	9.78	9.00	4.00	4.83	4.00	27.00	0.81	0.52

[1] Multiple modes exist. The smallest value is shown.

[2] The descriptive statistics are provided for independent variables and the covariates in their summated form since providing such statistics for each single indicator variables would have led to an unwieldy and less useful table.

Benefits of personal others' information (summated)	16.02	17.00	18.00	3.85	3.00	21.00	-1.00	0.99
Costs of personal others' information (summated)	10.71	10.00	8.00	4.50	4.00	28.00	0.63	0.48
Benefits of impersonal others' information (summated)	13.57	15.00	15.00	4.35	3.00	21.00	-0.53	-0.40
Costs of impersonal others' information (summated)	12.89	12.00	8.00	5.29	4.00	28.00	0.39	-0.32
Subjective knowledge (summated)	12.53	12.00	12.00	2.03	7.00	21.00	0.90	2.33
Enduring involvement (summated)	12.92	13.00	13.00	1.98	6.00	21.00	-0.93	1.46
Education	2	7	4.14	1.2	2	7	-0.43	-0.56

Note: Education was measured as a categorical variable. To interpret this variable's descriptive statistics, please see Appendix A for more detail including the coding scheme.

Appendix H: Pearson Correlations among the Summated Independent Variables and the Covariates in Study 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1	.18	.12	.14	.37	.26	.09	.27	.24	.43	.19	.08	.02	.19	.45	.19	.05	.15	.12	.12	.14	.10	.07
2	.18	1	.17	.18	.19	.00	.10	.01	.04	.21	.27	.05	.01	.10	.01	.11	.09	.06	.05	.06	.06	.02	.04
3	.12	.17	1	.05	.25	.05	.08	.05	.20	.09	.22	.02	.06	.23	.27	.07	.05	.04	.05	.03	.07	.05	.00
4	.14	.18	.05	1	.04	.08	.12	.06	.03	.50	.24	.10	.09	.21	.02	.11	.14	.25	.32	.00	.14	.04	.04
5	.37	.19	.25	.04	1	.19	.28	.02	.14	.21	.12	.06	.01	.21	.36	.16	.05	.00	.16	.03	.22	.03	.17
6	.26	.00	.05	.08	.19	1	.25	.33	.05	.02	.09	.15	.11	.15	.20	.18	.07	.27	.14	.15	.04	.03	.05
7	.09	.10	.08	.12	.28	.25	1	.11	.40	.08	.02	.44	.02	.19	.25	.10	.08	.01	.08	.00	.01	.05	.04
8	.27	.01	.05	.06	.02	.33	.11	1	.14	.10	.14	.16	.12	.07	.16	.09	.02	.18	.01	.01	.09	.02	.08
9	.24	.04	.20	.03	.14	.05	.40	.14	1	.18	.10	.19	.04	.21	.31	.04	.08	.03	.09	.01	.05	.17	.11
10	.43	.21	.09	.50	.21	.02	.08	.10	.18	1	.27	.01	.02	.14	.26	.03	.12	.17	.24	.02	.12	.08	.03
11	.19	.27	.22	.24	.12	.09	.02	.14	.10	.27	1	.09	.05	.07	.01	.01	.06	.08	.17	.02	.13	.05	.03
12	.08	.05	.02	.10	.06	.15	.44	.16	.19	.01	.09	1	.07	.04	.03	.01	.08	.08	.13	.01	.06	.03	.06
13	.02	.01	.06	.09	.01	.11	.02	.12	.04	.02	.05	.07	1	.12	.02	.05	.07	.01	.04	.03	.02	.04	.01
14	.19	.10	.23	.21	.21	.15	.19	.07	.21	.14	.07	.04	.12	1	.24	.04	.02	.23	.16	.06	.01	.02	.04
15	.45	.01	.27	.02	.36	.20	.25	.16	.31	.26	.01	.03	.02	.24	1	.17	.03	.05	.08	.05	.08	.08	.04
16	.19	.11	.07	.11	.16	.18	.10	.09	.04	.03	.01	.01	.05	.04	.17	1	.47	.09	.09	.16	.09	.10	.11
17	.05	.09	.05	.14	.05	.07	.08	.02	.08	.12	.06	.08	.07	.02	.03	.47	1	.05	.30	.05	.37	.02	.49
18	.15	.06	.04	.25	.00	.27	.01	.18	.03	.17	.08	.08	.01	.23	.05	.09	.05	1	.50	.39	.17	.03	.10
19	.12	.05	.05	.32	.16	.14	.08	.01	.09	.24	.17	.13	.04	.16	.08	.09	.30	.50	1	.16	.67	.06	.30
20	.12	.06	.03	.00	.03	.15	.00	.01	.01	.02	.02	.01	.03	.06	.05	.16	.05	.39	.16	1	.43	.39	.08
21	.14	.06	.07	.14	.22	.04	.01	.09	.05	.12	.13	.06	.02	.01	.08	.09	.37	.17	.67	.43	1	.14	.57
22	.10	.02	.05	.04	.03	.03	.05	.02	.17	.08	.05	.03	.04	.02	.08	.10	.02	.03	.06	.39	.14	1	.45
23	.07	.04	.00	.04	.17	.05	.04	.08	.11	.03	.03	.06	.01	.04	.04	.11	.49	.10	.30	.08	.57	.45	1

Note: To save space, each variable is represented by a number, as shown below:

Number	Corresponding variable	Number	Corresponding variable
1	Product serviceness	13	Education level
2	Product prevalence	14	Subjective knowledge
3	Collective consumption	15	Enduring involvement
4	Product history	16	Benefits of marketers' information
5	Affective consumption	17	Costs of marketers' information
6	Brand equity	18	Benefits of internal information
7	Product differentiation	19	Costs of internal information
8	Consumption risk	20	Benefits of personal others' information
9	Rate of product obsolesce	21	Costs of personal others' information
10	Purchase size	22	Benefits of impersonal others' information
11	Public consumption	23	Costs of impersonal others' information
12	Product variety		

Appendix I: The Technicalities and Computational Options in the PLS-SEM Performed in Study3

The software used to perform the PLS-SEM analysis in study 3 was SmartPLS (Ringle, Wende, and Becker 2015), version 3. The software options described below were set in accordance to Hair et al.'s (2012) recommendations.

As for the PLS algorithm, starting values for weights for initial approximation of the latent variable scores were set to a uniform value of 1 as initial values for each of the outer weights. Moreover, weighting scheme, maximum iterations and stop criteria were set to *path*, 300, and 10^{-3}, respectively.

As for bootstrapping, sign change option was set to *individual sign changes*. The Number of bootstrap samples was 5,000, and number of bootstrap cases was 487 (equal to the number of valid observations in the sample). To calculate bootstrapping confidence intervals, *Bias-Corrected and Accelerated (BCa)* method was used. Test type was set to *two-tailed* at a significance level of .05.

Appendix J: The Psychometric Properties of the Scale Used in Study 3

Construct	Questionnaire Items	Item's Factor Loading[1]
Product differentiation AVE[2] = .76 CR[3]= .90	1. I believe most of the competing products in this class are very different.	.79
	2. When it comes to this product, I think all are the same. (RC)[4]	.75
	3. The quality of this product may differ slightly, but it is essentially uniform across producers. (RC)	.71
Product variety AVE = .63 CR= .83	1. There are only a few brands that dominate the market for this product class. (RC)	.54
	2. This product comes under many different names and brands.	.82
	3. When purchasing this product, your choice is limited to only a few brands/providers. (RC)	.83
Product's serviceness AVE = .81 CR= .93	1. I care a lot about how the provider of this product treats me.	.64
	2. The quality of the product provider is as important as the quality of the product itself.	.83

[1] Since some items have been negated, factor loadings are shown as absolute values.
[2] Stands for Average Variance Extracted
[3] Stands for composite reliability
[4] Stands for Reverse-Coded

	3. It's important for me to sustain the memory of how well my connection was with the [product class name] provider/seller.	.63
Product's prevalence[1] AVE = .84 CR= .94	1. Roughly speaking, everyone uses this product one way or another.	.78
	2. This product plays a part in almost everyone's life.	.74
	3. This product is used by almost every type of person.	.66
Collective consumption AVE = .71 CR= .83	1. I like to have this product on hand when friends and family come to my place.	.73
	2. I use this product when I am part of a group.	.80
Consumption risk AVE = .77 CR= .91	1. When purchasing this product, I pay little attention to the risk it imposes on my health. (RC)	.72
	2. Safety is an important consideration for me when buying this product.	.70
	3. Before purchase, I need to make sure that the ingredients/parts used in the product are safe.	.69
Rate of product obsolesce AVE = .88 CR= .96	1. This product has been almost the same for as long as I remember. (RC)	.59
	2. This product has been basically the same thing since inception. (RC)	.71
	3. There has been little change in this product over years. (RC)	.79
Purchase size	1. Purchase of this product requires significant amount of money.	.86

[1] Although Sirgy, Johar, and Wood (2015) use the label "common usage" to refer to a very similar product characteristic, this label may be also interpreted as the common way a product is used. Thus, this paper uses the label product prevalence to prevent this misinterpretation.

AVE = .92 CR= .97	2. Regardless of one's income, buying this product is a rather small purchase. (RC)	.81
	3. Purchase of this product is what I would call a small ticket purchase. (RC)	.79
Product history AVE = .85 CR= .92	1. I have owned several models of this product.	.82
	2. I have been buying this product for years.	.79
Affective consumption AVE = .88 CR= .96	1. I feel connected to this product on an emotional level.	.79
	2. This product is an extension of me.	.78
	3. Using this product is likely to elicit intense feelings in me (Schindler, and Holbrook 2003).	.73
Public consumption AVE = .59 CR= .81	1. I use this product mainly in private. (RC)	.83
	2. This product is used in front of other people.	.56
	3. When I use this product, I'm usually by myself. (RC)	.79
Brand equity AVE = .84 CR= .94	1. Even if all brands of this product class were the same, there is a specific brand that I would prefer to buy. (Washburn and Plank 2002)	.59
	2. When it comes to purchasing this product, I consider myself to be loyal to a specific brand. (Delgado-Ballester and Munuera-AlemaÂn 1999)	.71
	3. In this product class, there is a certain brand that offers me a product with a constant quality level. (Delgado-Ballester and Munuera-AlemaÂn 1999)	.79
Benefits of marketers' information	1. By searching for more information from marketers, I am certain of making the best buy.	.95
	2. I learn which products are suitable for me by using information from marketers.	.95

AVE = .90 CR= .96	3. I get exactly what I want by searching enough in information from marketers before I buy my new product.	.95
Benefits of internal information AVE = .87 CR= .95	1. By searching for more information from my own memory, I am certain of making the best buy.	.93
	2. I learn which products are suitable for me by using information from my own memory.	.92
	3. I get exactly what I want by searching enough in information from my own memory before I buy my new product.	.94
Benefits of personal others' information AVE = .86 CR= .95	1. By searching for more information from my own memory, I am certain of making the best buy.	.92
	2. I learn which products are suitable for me by using information from my own memory.	.94
	3. I get exactly what I want by searching enough in information from my own memory before I buy my new product.	.93
Benefits of impersonal others' information AVE = .89 CR= .96	1. By searching for more information from my own memory, I am certain of making the best buy.	.94
	2. I learn which products are suitable for me by using information from my own memory.	.95
	3. I get exactly what I want by searching enough in information from my own memory before I buy my new product.	.95
Costs of marketers' information AVE = .72 CR= .91	1. I think it is probable that using information from marketers before a purchase would lead to financial loss for me.	.90
	2. I think it is probable that using information from marketers before a purchase would lead to performance loss for me.	.92
	3. I think it is probable that using information from marketers before a purchase would lead to physical loss for me.	.74
	4. I think it is probable that using information from marketers before a purchase would lead to convenience loss for me.	.83
Costs of internal information	1. I think it is probable that using information from my own memory before a purchase would lead to financial loss for me.	.90

AVE = .73 CR= .92	2. I think it is probable that using information from my own memory before a purchase would lead to performance loss for me.	.92
	3. I think it is probable that using information from my own memory before a purchase would lead to physical loss for me.	. 78
	4. I think it is probable that using information from my own memory before a purchase would lead convenience loss for me.	.81
Costs of personal others' information AVE = .69 CR= .90	1. I think it is probable that using information from people I personally know before a purchase would lead to financial loss for me.	.86
	2. I think it is probable that using information from people I personally know before a purchase would lead to performance loss for me.	.90
	3. I think it is probable that using information from people I personally know before a purchase would lead to physical loss for me.	.76
	4. I think it is probable that using information from people I personally know before a purchase would lead to convenience loss for me.	.79
Costs of impersonal others' information AVE = .80 CR= .92	1. I think it is probable that using information from marketers before a purchase would lead to financial loss for me.	.89
	2. I think it is probable that using information from marketers before a purchase would lead to performance loss for me.	.91
	3. I think it is probable that using information from marketers before a purchase would lead to physical loss for me.	.81
	4. I think it is probable that using information from marketers before a purchase would lead to convenience loss for me.	.83
Enduring involvement AVE = .84 CR= .94	1. The purchase of a [product class] is important to me.	.95
	2. The purchase of a [product class] is irrelevant to me (RC).	.89
	3. The purchase of a [product class] means a lot to me.	.91
Subjective knowledge AVE = .78 CR= .90	1. I know pretty much about [product class]s.	.94
	2. I do not feel very knowledgeable about [product class]s (RC).	.86
	3. Compared to most other people, I know more about [product class]s.	.85

Vita

Saeed Tajdini earned his Bachelor of English Language from the Tarbiat Moallem University (Iran) in 2009. In 2012 he received his Master of Business Administration from the University of Tehran (Iran). In 2013 he joined the doctoral program in Business Administration at the University of Texas at El Paso (UTEP), from which he graduated in spring 2017.

Dr. Tajdini ranked in the top 0.1% among 35,657 participants in the nationwide entrance exam to the Master of Business Administration programs in Iran. He graduated with a 4.0 GPA, and was awarded a certificate of excellence for his academic accomplishments during the master's program. At the University of Texas at El Paso, Dr. Tajdini was the recipient of Dodson Research Grant and multiple academic travel grants. While pursuing his PhD degree at UTEP, Dr. Tajdini taught more than 12 different classes with a 4.6/5 average student evaluation. Moreover, he has had 7 presentations and proceedings at national and international conferences, and one publication at the Journal of Marketing Theory and Practice.

Dr. Tajdini's dissertation entitled, "Essays on the Role of Product Characteristics on Information Source Importance," was supervised by Dr. Edward Ramirez. Dr. Tajdini has accepted a position as a tenure-track, assistant professor of marketing at the AACSB-accredited college of business at the Indiana University Southeast. He can be reached at stajdini@utep.edu.