THE MODERATING ROLE OF COGNITIVE FIT IN CONSUMER CHANNEL PREFERENCE

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ABSTRACT

Past studies showed that, to deploy the best possible consumer interface, companies must pay close attention to the factors and the consumer behavior that lead to channel preference. This study presents the results of an experiment designed to improve our knowledge of consumer channel preference by testing cognitive fit theory in a commercial context. Data from two different samples (749 students dealing with the process of buying a computer from a well-known electronic goods retailer and 290 union members attempting to buy an airplane ticket from a well-known travel agency) were analyzed. Our results show that the cognitive fit level, or the fit between how information is presented to the consumer (i.e., online store vs. bricks-and-mortar store of the same retailer) and the nature of the problem to be solved (i.e., the information search task), moderates the relationship between the individual characteristics and product characteristics identified in past studies and consumer channel preference. The findings of this research support cognitive fit theory in a commercial context and open up a new way of explaining consumer channel preference. Theoretical and managerial implications, limitations on the study and future research directions are discussed.

Keywords: electronic commerce, consumer channel preference, consumer interface, consumer behavior, multi-channel.

1. Introduction

In the last two decades, many new technologies such as the Internet have been invented and used by companies to do business. The use of these technologies has radically transformed commercial practices [Yao and Liu 2005]. The fast growth of technological innovations, the impressive number of technologies available and their multiple functionalities have increased the complexity of managers' tasks and raised new challenges and problems for companies that want to design an effective and efficient consumer interface [Madlberger 2006; Rosenbloom 2007].

Many studies concerned with the strategic dimensions of electronic commerce have concluded that one key factor for the success of e-commerce practices is the deployment of a consumer interface focused on consumer needs [Lin 2003; Stone et al. 2002; Willcocks and Plant 2001]. The choice of a channel is the first decision that consumers make, and it shapes their entire shopping process [Keen et al. 2004]. This means that companies must pay close attention to the factors and the consumer behavior that lead to channel preference. The development of such knowledge would help businesses make better decisions about implementing e-commerce practices and designing effective and efficient channel interfaces geared to consumers. Such knowledge could enable them to stand out from the pack and enhance the value of their products and services [Currie and Parikh 2006].

This paper presents the results of an empirical design to develop an understanding of consumer preference by testing cognitive fit theory in a commercial context. More specifically, our objective is to link the antecedents of consumer channel preference identified by past studies with cognitive fit. Accordingly, we first present the factors identified in past studies as impacting consumer channel preference. We then examine cognitive fit theory. Third, we describe the methodology used to test the proposed hypotheses. Next, we present the analyses and results and, finally, we discuss the theoretical and managerial implications of these results, their limitations and avenues for future research.

2. Literature Review

2.1. Antecedents of Consumer Channel Preference

Factors identified in previous studies provide vital input in explaining consumer channel preference. Based on the results of meta-analyses presented by Constantinides [2004], Chang et al. [2005], and Zhou et al. [2007], we can summarize these factors in two major categories. The first category is related to individual characteristics. Factors

such as confidence level and perceived risk, attitude towards the channel, level of channel experience, and type of consumer motive influence consumers' behavior and therefore should be examined.

Consumer Channel Confidence and Perceived Channel Risk

Consumer channel confidence and perceived channel risk play an important role in consumers' decision-making. This is particularly true of online consumers [Bart et al. 2005; Chang et al. 2005; Hsu and Wang 2008; Yang et al. 2006], because e-commerce activities are technology-intensive and therefore entail only limited human contact. This feature of e-commerce makes it essential to build consumer confidence and reduce perceived risk [Molesworth and Suortti 2002]. As Black et al. [2002] and Bhatnagar et al. [2000] have stated, the probability that a consumer will prefer a channel increases significantly if the level of confidence in that channel is high and the perceived risk is low. Montoya-Weiss et al. [2003] establish that the perceived risk associated with the use of a Web site has a negative impact on consumers' preference for and satisfaction with that channel. Thus, based on past studies, consumer channel confidence would positively explain consumer channel preference and perceived channel risk would negatively explain consumer channel preference.

Consumer Channel Attitude

Many studies link consumers' attitude toward a channel with their preference for that channel [Fayawardhena 2004; Madlberger 2006; So et al. 2005]. Those studies showed that a positive attitude toward a channel strongly influences the intention to buy using it. It also has a positive impact on the desire to browse e-merchants' Web sites and a negative impact on the intent to change channels [Fayawardhena 2004]. Consequently, further to the literature analysis, consumer channel attitude would positively explain consumer channel preference.

Consumer Channel Experience

Studies have shown that consumer channel experience influences consumer channel preference [Frambach et al. 2007; Montoya-Weiss et al. 2003]. For example, Sexton et al. [2002] showed that e-commerce preferences, behavior and use are influenced by the consumer's experience level with the Internet. This also strengthens e-purchasing intent and follow-through [George 2002]. Foucault and Scheufele [2002] mentioned that a positive and pleasant e-purchasing experience boosts the likelihood that the consumer will repeat the experience of buying online and thereby gain more experience with the channel. Thus, the more experience consumers have with a channel, the more likely they would be to choose that channel.

Types of Consumer Motives

Past studies showed that the type of consumer motives influences consumers' channel preference [Sanchez-Franco and Rolden 2005; Sivaramakrishnan et al. 2007]. For example, Black et al. [2002] pointed out that consumers who are driven by instrumental motives tend to prefer convenience channels, such as the Internet, whereas consumers driven by social motives prefer face-to-face channels, such as physical stores. Donthu and Garcia [1999], Li et al. [1999], and Swaminathan et al. [1999] obtained similar results for convenience-oriented consumers, who prefer the Internet, versus social-oriented consumers, who prefer physical stores. Kaufman-Scarborough and Lindquist [2002] and Degeratu et al. [2000] showed a connection between Internet use and the perception of convenience provided by that channel. Joines et al. [2003] emphasized that consumers who are driven by economic motives (an instrumental motive) spend more time searching for product and service information and are much more likely to use multiple channels in their shopping process. Rohm and Swaminathan [2004] observed four factors motivating online shoppers: (1) search for convenience, (2) disinclination to go out to a store, (3) desire for information for planning and shopping purposes, and (4) search for product and brand alternatives offered by retailers. All of these motivating factors are instrumental. Based on past studies, then, we anticipated that the more instrumental a consumer's motives are, the more likely this consumer would be to prefer to use Web sites. Conversely, this implies that the more social the motives are, the more likely the consumer would be to prefer to visit bricks-and-mortar stores.

The second major category of factors is related to product characteristics. Factors such as product complexity, product intangibility, and the consumer's product involvement affect consumer behavior regarding a channel.

Product Characteristics: Complexity and Intangibility

Consumer channel preference is also influenced by product characteristics [Peppard and Rylander 2005; Zhang and Li 2006]. Black et al. [2001] and Mukherjee and Hoyer [2001] conclude that product complexity affects channel preference. Complex products are perceived as high risk, causing consumers to prefer personalized, face-to-face channels allowing for strong interaction [Klein et al. 2004; Zhang and Reichgelt 2006]. In addition, the intangibility of the product influences consumer behavior when it comes to deciding on a channel [Eggert 2006; Phau and Poon 2000]. One example is fully digitizable products, such as music, which can easily be bought and sold on the Internet. This type of product has a positive impact on consumer preference for the Internet. In sum, based on the literature analysis, the less complex and the more tangible consumers perceive a product to be, the more likely they will be to use electronic channels, and vice versa.

Consumer Product Involvement

Finally, many studies link consumer product involvement with consumer channel preference [Demangeot and Broderick 2006; Eroglu et al. 2003; Nysveen and Pedersen 2005]. In general, these studies showed that the higher consumers' product involvement is, the more information they need about the product and the more active they are in seeking that information. The literature analysis, then, implies that the greater the consumer product involvement, the stronger the consumer channel preference.

All this empirical evidence from past studies led us to formulate the following hypothesis:

Hypothesis 1: *Consumer channel preference is explained by the following characteristics:* (a) *consumer channel confidence,* (b) *perceived channel risk,* (c) c*onsumer channel attitude,* (d) *consumer channel experience,* (e) *consumer motives,* (f) *perceived product complexity,* (g) *perceived product intangibility, and* (h) *consumer product involvement.*

2.2. Cognitive Fit Theory

Originally proposed by Vessey [1991], cognitive fit theory draws on decision-making and cost-benefit theories. We learn from decision-making theory that problem-solving is based on the mental image of the problem at hand [Endsley 1995]. The sharper that image, the better the decision-making performance will become. Building on this line of thinking, cognitive fit theory holds that an individual's performance in solving a decision-making problem (e.g., buying a product) will depend on the fit between the way in which information for solving the problem is presented (e.g., product array in bricks-and-mortar store versus comparative table in Web site) and the nature of that problem (e.g., getting a feel for the product versus getting concrete information about its price and features). In addition, Vessey [1994] showed in connection with cost-benefit theory that individuals instinctively seek information presentation formats that improve their decision-making performance and offer a better fit between the information presented and the type of problem to be solved.

Studies over the years have validated this theory in different contexts, such as the presentation of information in the form of tables or graphs [Vessey 1991, 1994], geographical maps [Smelcer and Carmel 1997], pictures [Umanath and Vessey 1994], and audiovisual formats [Lee et al. 2001]. Empirical validation of this theory has also come from studies of information presentation in the contexts of computer systems development [Agarwal et al. 2000; Shaft and Vessey 2006; Sinha and Vessey 1992; Vessey and Glass 1998], financial and accounting information systems [Dunn and Grabski 2001; Umanath and Vessey 1994], geographic information systems [Dennis and Carte 1998; Khatri et al. 2006], decision support systems [Speier et al. 2003; Speier and Morris 2003], expertise management systems [Huang et al. 2006], and motor tasks, such as driving an automobile [Beckman 2002]. Recently, the theory received some validation in the explanation of online shopping tasks [Hong et al. 2004], but only a few studies have tested cognitive fit from a commercial perspective.

The findings of past consumer behavioral studies showed that consumers are likely to adopt different behaviors in their information search process depending on the product type [Hassanein and Head 2005; Korgaonkar et al. 2006; Lichtenstein and Williamsson 2006; Teo 2006]. According to cognitive fit theory, this result is not surprising. The information sought by a consumer who is shopping for a car, for example, is obviously different from that sought by a consumer who wants to buy a book, a television, a refrigerator, clothing, stationery, jewelry, etc. [Korgaonkar and Karson 2007]. Thus, depending on the product the consumer wants, the nature of the information sought will be different, as will the preference for the use of a particular channel [Hassanein and Head 2005]. In cognitive fit theory, this result is explained by the fact that the best cognitive fit related to the use of a channel differs depending on the product and the type of information the consumer is looking for.

Past studies have also shown that the effects of factors explaining consumer behavior differ depending on the channel [Pavlou and Fygenson 2006]. Thus, for example, the process of building consumer confidence in a retailer differs based on whether the relationship is with an online or a bricks-and-mortar store [Kuan and Bock 2007]. As well, the importance attributed to perceived risk and the role this factor plays are different depending on whether the store is online or bricks-and-mortar [Muthitacharoen et al. 2006]. In accordance with cognitive fit theory, we believe that these different behaviors can be explained by the fit between the information presentation format of a channel and the type of information sought by the consumer (the cognitive fit). In other words, in accordance with the definition of a moderator variable proposed by Arnold [1982] and Sharma et al. [1981], we believe that cognitive fit moderates the link between the characteristics presented in the previous section and consumer channel preference. This leads us to formulate the following hypothesis:

Hypothesis 2: *Cognitive fit moderates the relationship between consumer channel preference and* (a) *consumer channel confidence,* (b) *perceived channel risk,* (c) *consumer channel attitude,* (d) *consumer channel experience,* (e) *consumer motives, (f) perceived product complexity,* (g) *perceived product intangibility, and* (i) *consumer product involvement.*

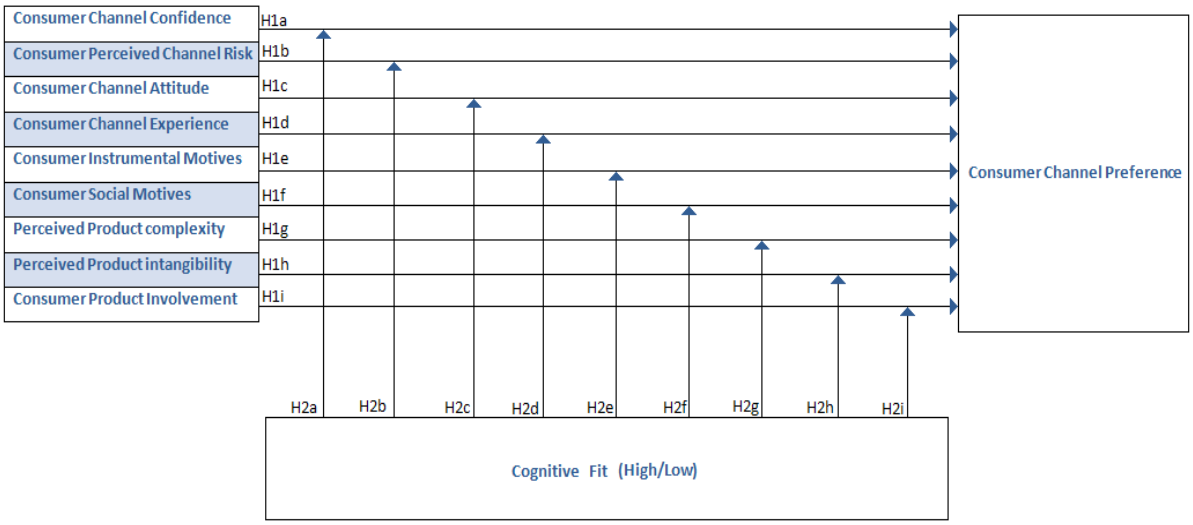

Figure 1: Conceptual Framework

3. Method

In accordance with Calder et al.'s [1981] recommendation, we deployed a research design with high internal validity. Thus, we limited the experiment to a comparison between two channels: bricks-and-mortar stores and online stores. Moreover, we focused the study on consumers seeking information with a view to buying a personal computer (sample 1) or an airline ticket (sample 2). These products appear perfectly suitable for our purpose, because consumers can carry out their information searches via several channels, including bricks-and-mortar stores and online stores. To ensure that the respondents possessed a minimum knowledge of Internet use, an online survey was designed to collect such data.

To operationalize the online survey and ensure that every respondent answered on the same basis, we tried to present a situation that was very close to real life. Thus, we presented the respondents in sample 1 with the bricks-and-mortar store and the online store of a well-known national retailer of electronic goods, and we presented the respondents in sample 2 with the bricks-and-mortar and online stores of a well-known international travel agency. Each respondent received information about both stores operated by the particular retailer. We showed each respondent eight pictures (four for each store) that corresponded to critical events in the buying decision process (e.g., the presentation of the product's features) and provided an explicit description of how the store works (e.g., how the consumer takes possession of the product; how the consumer pays) and how post-purchase service works. Appendix A presents an example of such a description.

In order to control the order effect, for each retailer, two questionnaires were developed and randomly presented to the respondents. One questionnaire started with the presentation of the bricks-and-mortar store and the other with the online store. No significant differences between the results of the two questionnaires were observed for either retailer, confirming that there is no order effect.

3.1. Sample

According to Calder et al. [1981, 1982, 1983] and McGrath and Brinberg [1983], a homogeneous sample (even a convenience sample such as students) is acceptable, if not desirable, for our kind of research objective because it provides a stronger test of the theory. We therefore limited our solicitation to a specific homogeneous group. First, we used e-mail lists provided by four university students' associations to recruit students from the same city in sample 1. We invited the students to visit a Web site and to complete a survey about the purchase of a computer. One cash prize of $500 was offered to boost the response rate. We tested primary versions of the multi-item questionnaire on a convenience sample of 204 students. After a few adjustments to the questionnaire, we sent out the invitations to the e-mail lists. A total of 809 other questionnaires were entered in the database. After analysis, 749 usable questionnaires were retained to test the hypotheses. As we expected, the profile of sample 1 is homogeneous and fairly representative of the universities' student population (see Table 1).

Our decision to collect data from a student sample was based on Calder et al.'s [1981] recommendation and on the fact that many other studies in e-commerce have surveyed students. Thus, sample 1 should provide new and interesting knowledge. But, because of the propensity of students to use the Internet and the bias that could create, we decided to collect data from another homogeneous group to increase the study's external validity. Our objective was to choose a very different group. We therefore used e-mail lists provided by a union at a large manufacturing company to collect data from sample 2. As we did with sample 1, we invited the union members to visit a Web site and to complete the survey, but this time it concerned the purchase of an airline ticket. Another $500 cash prize was offered to boost the response rate. A total of 327 questionnaires were recorded in the database, of which 290 were usable for our analyses. The profile of sample 2 is also presented in Table 1. As we expected, the respondents in sample 2 are older, less educated, more predominantly male, and have a higher income level than the respondents in sample 1.

Table 1: Demographic Profile of Samples

		Sample 1	Sample 2
Age	18 to 25	57.1%	6.7%
	26 to 35	28.4%	22.1%
	36 to 50	9.9%	41.7%
	50 and older	1.2%	25.6%
	Did not answer	3.4%	3.7%
Education	University	78.0%	12.9%
	Undergraduate	*48.0%*	*12.9%*
	Graduate	*30.0%*	*0.0%*
	College	14.6%	58.4%
	Less than college	3.1%	22.1%
	Did not answer	5.6%	6.6%
Sex	Female	53.8%	23.8%
	Male	43.3%	68.8%
	Did not answer	2.9%	7.4%
Income	Less than $20,000	54.2%	12.1%
	$20,001 to $40,000	24.7%	32.4%
	$40,001 to $60,000	12.1%	40.4%
	More than $60,000	4.9%	5.9%
	Did not answer	4.0%	9.2%

3.2. Measures

Following Vessey's [1991] recommendations, the cognitive fit level was manipulated by means of scenarios. Three scenarios that corresponded to a high cognitive fit situation and three others that corresponded to a low cognitive fit situation for the bricks-and-mortar store, and three scenarios that corresponded to a high cognitive fit situation and three others that corresponded to a low cognitive fit situation for the online store were developed. Each scenario presents a simple, specific information search task that a consumer usually executes during the consumption process. For example, scenario #1 states, "You want to find out the price of a computer that has the following characteristics: HP desktop computer with a Pentium 4 processor, a 100-GB hard disk and 512 MB of RAM." Scenario #5 reads, "You want to compare the look of different models of computers." Based on cognitive fit theory, the information acquisition task in scenario #1 corresponds to a symbolic task. According to Vessey [1994], symbolic tasks involve extracting discrete, and therefore precise, data values, and such tasks are best accomplished using analytical processes. On the other hand, scenario #5 corresponds to a spatial task. Spatial tasks assess the problem area as a whole rather than as discrete data values and therefore require one to make associations or perceive relationships in the data. Such tasks are best accomplished using perceptual processes. Even though both kinds of tasks can be achieved using either channel, empirical evidence from Black et al. [2002] and Degeratu et al. [2000] showed that consumers perceive Web sites as being better for analytical processes and bricks-and-mortar stores as better for perceptual processes. Thus, according to cognitive fit theory and based on the pictures and descriptions presented to the respondents, scenario #1 corresponds to a high cognitive fit situation for online stores and a low cognitive fit situation for bricks-and-mortar stores, while scenario #5 corresponds to a high cognitive fit situation for bricks-and-mortar stores and a low cognitive fit situation for online stores.

The other measures were developed following the procedures proposed by Churchill [1979]. Multi-item scales were generated based upon previous measures. As in many other studies [e.g., Gehrt and Yan 2004; Keen et al. 2004; Nowlis and Simonson 1997], seven-point Likert scales anchored by *not very probable that I would use [the channel]* to *very probable that I would use [the channel]* were used to measure consumer channel preference level for each of the 12 scenarios. We also adapted and translated into French the four-item consumer channel confidence scale developed by Bhattacherjee [2002], the four-item perceived risk scale from Gupta et al. [2004], the three-item channel attitude scale from Mathwick and Rigdon [2004], the four-item channel experience level scale from King and Xia [1997], the three-item instrumental motives and the three-item social motives scale from Korgaonkar and Wolin [1999], the three-item perceived product complexity scale from Mukherjee and Hoyer [2001], the five-item perceived product intangibility scale from Laroche et al. [2001] and the six-item consumer product involvement scale from Mathwick and Rigdon [2004].

4. Analyses and Results

4.1. Reliability and Validity

First, we ran exploratory factor analyses using principal component analysis to determine the psychometric properties of the items composing the different scales. Except for perceived product intangibility, for which we deleted two items, all items loaded as theoretically expected and no other items needed to be removed. The Cronbach's alpha of the scales for all measures ranged from 0.68 to 0.96 for sample 1 and from 0.71 to 0.97 for sample 2 (see Table 2), supporting the reliability of the measures.

We then ran confirmatory factor analyses (CFA) using EQS 6.1 software for the bricks-and-mortar store model and the online store model [Byrne 2006]. As shown in Table 2, the models provided a satisfactory fit to the data, indicating the unidimensionality of the measures [Anderson and Gerbing 1988]. All factor loadings were highly significant ($p < .001$) and all the estimates for the average variance extracted (AVE) were higher than 0.50, with the exception of the high and low cognitive fit preference in the online store model for sample 1 and low cognitive fit preference in the online store model for sample 2 [Fornell and Larcker 1981]. Here, because these measures were specifically and newly developed for the study, the AVE higher than 0.40 is acceptable [Menguc and Auh 2006; Zhou et al. 2005].

Finally, we assessed the discriminant validity of all of our measures by using two-factor CFA models. An unconstrained and a constrained model for each possible pair of constructs were run and compared. In all cases, the chi-square value of the unconstrained model was significantly less than that of the constrained model, supporting the discriminant validity of the measures [Anderson and Gerbing 1988]. Overall, the results showed that the measures in our study possess adequate reliability and validity.

Table 2a: Confirmatory Factor Analysis (Sample 1)

	Online Store Model					Bricks-and-Mortar Store Model				
	Std. Loading	Mean	SD	α	AVE	Std. Loading	Mean	SD	α	AVE
Consumer Channel Confidence		5.12	1.35	0.92	0.74		5.47	1.06	0.84	0.56
Confidence 1	0.830****					0.797****				
Confidence 2	0.862****					0.629****				
Confidence 3	0.830****					0.722****				
Confidence 4	0.926****					0.839****				
Perceived Channel Risk		3.34	1.16	0.84	0.57		3.43	1.08	0.85	0.60
Risk 1	0.737****					0.801****				
Risk 2	0.852****					0.862****				
Risk 3	0.773****					0.727****				
Risk 4	0.651****					0.702****				
Consumer Channel Attitude		4.41	1.20	0.89	0.68		4.77	1.27	0.90	0.72
Attitude 1	0.571****					0.847****				
Attitude 2	0.841****					0.889****				
Attitude 3	0.999****					0.823****				
Consumer Channel Experience		5.72	1.37	0.96	0.86		5.77	1.13	0.94	0.84
Experience 1	0.860****					0.893****				
Experience 2	0.942****					0.977****				
Experience 3	0.942****					0.905****				
Experience 4	0.961****					0.885****				
Consumer Instrumental Motives		6.47	0.79	0.84	0.64		6.47	0.79	0.84	0.63
Inst_mot 1	0.660****					0.670****				
Inst_mot 2	0.792****					0.806****				
Inst_mot 3	0.924****					0.894****				
Consumer Social Motives		4.72	1.72	0.90	0.81		4.72	1.72	0.90	0.74
Social_mot 1	0.816****					0.906****				
Social_mot 2	0.896****					0.806****				
Social_mot 3	0.982****					0.874****				
Perceived Product Complexity		4.94	1.43	0.84	0.61		4.94	1.43	0.84	0.71
Complexity 1	0.998****					0.972****				
Complexity 2	0.718****					0.745****				
Complexity 3	0.569****					0.798****				
Perceived Product Intangibility		5.74	1.45	0.96	0.84		5.74	1.45	0.96	0.86
Intangibility 1	0.884****					0.901****				
Intangibility 2	0.904****					0.920****				
Intangibility 3	0.962****					0.956****				
Consumer Product Involvement		5.36	1.11	0.89	0.51		5.36	1.11	0.89	0.53
Involvement 1	0.633****					0.660****				
Involvement 2	0.671****					0.687****				
Involvement 3	0.878****					0.889****				
Involvement 4	0.875****					0.870****				
Involvement 5	0.703****					0.695****				
Involvement 6	0.485****					0.510****				
Preference High Fit		5.84	1.34	0.68	0.46		5.99	1.28	0.77	0.58
Scenario Hi-Fit 1	0.710****					0.694****				
Scenario Hi-Fit 2	0.738****					0.866****				
Scenario Hi-Fit 3	0.568****					0.717****				
Preference Low Fit		2.21	1.36	0.71	0.41		3.26	1.78	0.83	0.63
Scenario Lo-Fit 1	0.684****					0.896****				
Scenario Lo-Fit 2	0.623****					0.795****				
Scenario Lo-Fit 3	0.598****					0.676****				
Goodness-of-fit statistics	$\chi2$ = 1008.081; df = 624; $\chi2$ / df = 1.629; ΔBentler-Bonett = 0.947; CFI = 0.979; IFI = 0.979; GFI=0.927; RMSEA = 0.030					$\chi2$ = 1156.413; df = 624; $\chi2$ / df =1.851; ΔBentler-Bonett = 0.936; CFI = 0.969; IFI = 0.970; GFI=0.919; RMSEA = 0.036				

Table 2b: Confirmatory Factor Analysis (Sample 2)

	Online Store Model					Bricks-and-Mortar Store Model				
	Std. Loading	Mean	SD	α	AVE	Std. Loading	Mean	SD	α	AVE
Consumer Channel Confidence		5.10	1.37	0.93	0.78		5.38	1.03	0.85	0.60
Confidence 1	0.869****					0.764****				
Confidence 2	0.871****					0.631****				
Confidence 3	0.855****					0.776****				
Confidence 4	0.931****					0.892****				
Perceived Channel Risk		3.23	1.23	0.88	0.63		3.45	1.18	0.89	0.67
Risk 1	0.793****					0.833****				
Risk 2	0.883****					0.919****				
Risk 3	0.812****					0.778****				
Risk 4	0.668****					0.742****				
Consumer Channel Attitude		4.73	1.23	0.91	0.77		4.73	1.30	0.92	0.80
Attitude 1	0.817****					0.849****				
Attitude 2	0.914****					0.945****				
Attitude 3	0.901****					0.892****				
Consumer Channel Experience		5.65	1.45	0.97	0.92		5.75	1.14	0.95	0.86
Experience 1	0.946****					0.951****				
Experience 2	0.990****					0.987****				
Experience 3	0.941****					0.850****				
Experience 4	0.953****					0.912****				
Consumer Instrumental Motives		6.46	0.86	0.88	0.70		6.46	0.86	0.88	0.70
Inst_mot 1	0.733****					0.773****				
Inst_mot 2	0.814****					0.874****				
Inst_mot 3	0.952****					0.854****				
Consumer Social Motives		4.68	1.83	0.92	0.78		4.68	1.83	0.92	0.73
Social_mot 1	0.936****					0.826****				
Social_mot 2	0.828****					0.944****				
Social_mot 3	0.887****					0.780****				
Perceived Product Complexity		4.98	1.45	0.88	0.67		4.98	1.45	0.88	0.78
Complexity 1	0.990****					0.980****				
Complexity 2	0.790****					0.807****				
Complexity 3	0.630****					0.850****				
Perceived Product Intangibility		5.57	1.52	0.97	0.93		5.57	1.52	0.97	0.94
Intangibility 1	0.959****					0.963****				
Intangibility 2	0.982****					0.985****				
Intangibility 3	0.950****					0.956****				
Consumer Product Involvement		5.29	1.13	0.91	0.56		5.29	1.13	0.91	0.58
Involvement 1	0.706****					0.724****				
Involvement 2	0.703****					0.707****				
Involvement 3	0.847****					0.864****				
Involvement 4	0.906****					0.906****				
Involvement 5	0.768****					0.767****				
Involvement 6	0.484****					0.522****				
Preference High Fit		5.81	1.48	0.81	0.66		5.82	1.46	0.79	0.57
Scenario Hi-Fit 1	0.782****					0.854****				
Scenario Hi-Fit 2	0.873****					0.770****				
Scenario Hi-Fit 3	0.776****					0.611****				
Preference Low Fit		2.39	1.55	0.71	0.46		3.33	1.86	0.86	0.73
Scenario Lo-Fit 1	0.744****					0.875****				
Scenario Lo-Fit 2	0.647****					0.899****				
Scenario Lo-Fit 3	0.630****					0.774****				
Goodness-of-fit statistics	$\chi2$ = 876.225; df = 624; $\chi2$ / df = 1.40; ΔBentler-Bonett = 0.908; CFI = 0.971; IFI = 0.972; GFI=0.858; RMSEA = 0.040					$\chi2$ = 881.496; df = 624; $\chi2$ / df = 1.41; ΔBentler-Bonett = 0.900; CFI = 0.968; IFI = 0.969; GFI=0.859; RMSEA = 0.040				

4.2. Tests of Hypotheses

Hypothesis 1

Following Hair et al. [1998], regression analysis was used to test hypothesis 1. Because there are two different samples and four contexts (high cognitive fit vs. low cognitive fit; and online store vs. bricks-and-mortar store), a total of eight regression analyses proved necessary and were carried out to determine the relationship between the dependent variable (consumer channel preference) and the nine independent variables. As Table 3 shows, each model is significant at $p < .001$ and the R^2 ranged from 0.11 to 0.34.

As we can see in Table 3, based on the analysis of sample 1, the results show that students' preference for using online stores to search for information about personal computers is significantly explained by consumer channel confidence (0.144^{****}), perceived channel risk (-0.068^{**}), channel attitude (0.148^{****}), channel experience (0.163^{****}), instrumental motives (0.090^{****}), social motives (-0.081^{***}) and product involvement (0.065^{**}), and is significantly explained by channel attitude (0.128^{****}), instrumental motives (-0.239^{****}), social motives (-0.082^{***}), perceived product complexity (-0.067^{**}) and product involvement (0.203^{****}) when carrying out a low cognitive fit information search task. Moreover, the preference for using bricks-and-mortar stores is significantly explained by channel confidence (0.080^{**}), channel experience (0.146^{****}), instrumental motives (0.192^{****}), social motives (0.200^{****}), perceived product intangibility (-0.074^{**}) and product involvement (-0.153^{****}) when performing a high cognitive fit information search task, and is significantly explained by perceived channel risk (0.063^{**}), channel attitude (0.147^{****}), instrumental motives (-0.094^{****}), social motives (0.224^{****}), product complexity (-0.158^{****}), product intangibility (-0.092^{***}) and product involvement (-0.082^{**}) when carrying out a low cognitive fit information search task.

The results of the analysis of sample 2 show that the preference of union members from a large manufacturing company for using online stores to search for information about airline tickets is significantly explained by channel confidence (0.359^{****}), perceived channel risk (-0.100^{**}), channel experience (0.132^{**}), instrumental motives (0.098^{**}) and social motives (-0.082^{**}) when executing a high cognitive fit information search task, and is significantly explained by perceived channel risk (0.179^{**}), channel attitude (0.207^{****}), instrumental motives (-0.250^{****}), social motives (-0.104^{**}), perceived product complexity (-0.099^{*}) and product involvement (0.291^{****}) when performing a low cognitive fit information search task. Finally, this sample's preference for using bricks-and-mortar stores is significantly explained by channel confidence (0.112^{**}), channel experience (0.185^{**}), instrumental motives (0.257^{****}), social motives (0.221^{****}), perceived product intangibility (-0.085^{*}) and product involvement (-0.242^{****}) when conducting a high cognitive fit information search task, and is significantly explained by perceived channel risk (0.050^{**}), channel attitude (0.221^{****}), instrumental motives (-0.169^{****}), social motives (0.285^{****}), and product complexity (-0.138^{***}) when carrying out a low cognitive fit information research task.

Many observations arise out of the results of our analysis. First, as Table 3 shows, each of the independent variables significantly explains the level of consumer preference in at least one specific context. In fact, the variable that is least often significant is perceived product intangibility, which is significant in three contexts out of a possible eight. This **partially supports H1**. These results tend to show that there must be more complex models than those we have tested, which need to include significant relationships among the various independent variables (e.g., channel confidence and perceived channel risk), and possibly moderating and mediating relations as well. Thus, more research must be done to gain an in-depth understanding of this phenomenon and better define the role played by each variable.

Second, our motivation for collecting data from two almost diametrically opposed samples was to minimize the possible impact of biases introduced by the composition of our sample and the choice of product. Thus, we wanted to verify whether there were major differences between these two respondent profiles in order to increase the external validity of our study. When we compare the results obtained with our two samples, however, we find that there are very few differences. In fact, we see that, out of 36 relations analyzed to explain consumer channel preference, only four differ from one sample to the other, namely the relation with consumer channel attitude in the high cognitive fit context for the online store model, the relation with perceived product intangibility in the low cognitive fit context for the bricks-and mortar store, and the relations with consumer product involvement in the high cognitive fit context for the online store and in the low cognitive fit context for the bricks-and mortar store. Consequently, this finding increases the external validity of our results and enables us to state that the impact of sample and product on the results of our study is low.

Third, several other observations concerning the different variables should be mentioned. The first concern consumer instrumental and social motives. These are the only variables that are significant in all contexts and for both samples in our study. We must therefore ask ourselves whether these are the most relevant predictive variables in explaining consumer channel preference. Other studies should be done to explore this alternative in more depth. However, our result is coherent and can be connected to cognitive fit theory. Referring to this theory, we can explain this result by the fact that, depending on the nature of consumers' motives, their preferred problem-solving process

will differ, as will the kind of information they look for. We believe that consumers who have more social motives prefer to solve problems by using perceptual processes, whereas consumers who have more instrumental motives have a preference for analytical processes. Further research should be done to test this hypothesis and investigate the underlying mechanisms.

In this regard, the correlations we observe are interesting to analyze. The relationship between consumer instrumental motives and preference level is opposite for both samples. It is positive when the scenarios correspond to a high cognitive fit situation and negative when they correspond to a low cognitive fit situation. This means that consumers perceive that their instrumental needs, namely the needs related to solving a problem analytically, can be met equally well by an online store as by a bricks-and-mortar store; nevertheless, a high cognitive fit situation is indispensable and will determine channel preference.

Along the same lines, for both samples, we see that all relations between consumer social motives and consumer channel preference are negative when the task must be performed using an online store and positive when it must be done using a bricks-and-mortar store. This means that, unlike bricks-and-mortar stores, online stores are not perceived as meeting social and problem-solving needs that are based on perceptual processes; thus, a consumer who has significant social motivations will not be inclined to use an online store but will prefer bricks-and-mortar stores. This is an interesting result because the Web sites presented in our studies offered areas where consumers could interact and discuss questions with sales representatives. In theory, these areas should compensate for the lack of human contact. It would therefore be interesting to examine this subject more closely to verify the actual effectiveness of online stores' socialization tools and determine how relevant they really are.

Other observations concerning the consumer channel confidence and perceived channel risk variables should also be noted. Among other things, we should point out that, even though these relationships are not always significant, their direction is always opposed. Thus, when the context corresponds to a low cognitive fit situation, the relations with confidence are negative and the relations with perceived risk are positive. Conversely, in high cognitive fit situations, relations with confidence are positive and those with perceived risk are negative. Thus, as anticipated, confidence and perceived risk have opposite impacts. However, when we examine the impact of these variables in more detail, we see that their influence on consumer channel preference differs depending on the context. Among other things, relations with confidence are never significant in low cognitive fit situations, but those with risk are. This means that, when consumers find themselves in low cognitive fit situations, risk becomes a determining factor in explaining their preference level, but confidence is not. Conversely, in high cognitive fit situations, confidence is always significant. Based on our results, then, confidence influences the preference level only when consumers are in high cognitive fit contexts. What we therefore need to take away from these results is that, despite the possibility that there are important conceptual connections between confidence and perceived risk and the fact that these two concepts may influence each other, the two variables play different roles and may be involved in different ways in explaining consumer behavior and channel preference.

Finally, we observe that several variables play a role in certain contexts but none at all in others. These situations also deserve greater attention because they may represent refinements of our understanding of consumer behavior, as manifested in channel preference, and interesting avenues for future research. Among other things, we should point out that the relationships with consumer channel attitude and perceived product complexity are significant in all low cognitive fit contexts and, except for the attitude variable in the online store context, never in high cognitive fit contexts. Conversely, consumer channel experience is only significant in high cognitive fit contexts, and not at all in low cognitive fit contexts. As well, we see that perceived product intangibility is never significant for online stores, but, except for the low cognitive fit context with sample 2, is always significant for bricks-and-mortar stores. These results mean that our knowledge of consumer behavior in terms of channel preference needs to be refined and that different models must be considered depending on the channel and on the type of task the consumer is executing in the consumption process.

On the same topic, we should note that results are substantially different for the online store and bricks-and-mortar store models. Thus, depending on the sample and the cognitive fit context, we find that from 4 to 7 differences out of the 9 relationships tested for each model differ. Thus, more than 50% of the results are different for the online store and bricks-and-mortar store models, which justifies the separate analyses.

Table 3a: Results of Multiple Regression Analysis (Sample 1)

	Online Store Model				Bricks-and-Mortar Store Model			
	Preference High Fit (β)	*Sig.*	Preference Low Fit (β)	*Sig.*	Preference High Fit (β)	*Sig.*	Preference Low Fit (β)	*Sig.*
Consumer Channel Confidence	0.144	0.00	-0.004	0.47	0.080	0.03	-0.040	0.16
Perceived Channel Risk	-0.068	0.04	0.033	0.21	-0.006	0.43	0.063	0.04
Consumer Channel Attitude	0.148	0.00	0.128	0.00	0.025	0.27	0.147	0.00
Consumer Channel Experience	0.163	0.00	-0.012	0.41	0.146	0.00	0.025	0.27
Consumer Instrumental Motives	0.090	0.00	-0.239	0.00	0.192	0.00	-0.094	0.00
Consumer Social Motives	-0.081	0.01	-0.082	0.02	0.200	0.00	0.224	0.00
Perceived Product Complexity	0.035	0.17	-0.067	0.05	0.004	0.46	-0.158	0.00
Perceived Product Intangibility	0.049	0.11	0.044	0.15	-0.074	0.03	-0.092	0.01
Consumer Product Involvement	0.065	0.03	0.203	0.00	-0.153	0.00	-0.082	0.02
	R^2=0.26**** R^2_{adj}= 0.25****		R^2=0.11**** R^2_{adj}= 0.10****		R^2=0.15**** R^2_{adj}= 0.14****		R^2=0.18**** R^2_{adj}= 0.17****	

Table 3b: Results of Multiple Regression Analysis (Sample 2)

	Online Store Model				Bricks-and-Mortar Store Model			
	Preference High Fit (β)	*Sig.*	Preference Low Fit (β)	*Sig.*	Preference High Fit (β)	*Sig.*	Preference Low Fit (β)	*Sig.*
Consumer Channel Confidence	0.359	0.00	-0.049	0.27	0.112	0.04	-0.069	0.14
Perceived Channel Risk	-0.100	0.04	0.179	0.04	-0.028	0.31	0.050	0.05
Consumer Channel Attitude	0.059	0.17	0.207	0.00	-0.054	0.20	0.221	0.00
Consumer Channel Experience	0.132	0.04	-0.064	0.22	0.185	0.03	0.035	0.30
Consumer Instrumental Motives	0.098	0.03	-0.250	0.00	0.257	0.00	-0.169	0.00
Consumer Social Motives	-0.082	0.02	-0.104	0.05	0.221	0.00	0.285	0.00
Perceived Product Complexity	0.072	0.11	-0.099	0.06	0.023	0.34	-0.138	0.01
Perceived Product Intangibility	-0.050	0.21	0.086	0.11	-0.085	0.06	-0.076	0.11
Consumer Product Involvement	-0.003	0.48	0.291	0.00	-0.242	0.00	-0.066	0.13
	R^2=0.34**** R^2_{adj}= 0.33****		R^2=0.19**** R^2_{adj}= 0.16****		R^2=0.22**** R^2_{adj}= 0.20****		R^2=0.24**** R^2_{adj}= 0.21****	

Hypothesis 2

Following Arnold [1982], a distinction between the degree of relationship between two variables is said to moderate this relationship. Since the groups compared are not independent, we used the procedures proposed by Bruning and Kintz [1997, pp. 82-83] and tested the difference in the magnitude of the correlations by using t-tests between the correlation coefficient (*r*) of each variable in high cognitive fit and low cognitive fit situations to test H2.

As Table 4 shows, all the t-tests are statistically significant at $p < .05$ in the online store model except for consumer product involvement in sample 2. Thus, 17 of the 18 relationships that we tested are moderated by cognitive fit, **supporting H2 in the online store context**.

Moreover, the results show that the t-tests are statistically significant at $p < .05$ in the bricks-and-mortar model for consumer channel confidence, consumer channel experience, consumer instrumental motives, perceived product complexity and perceived product intangibility, and for consumer channel attitude in sample 2. Thus, **hypothesis 2 is partially supported in the bricks-and-mortar context**.

As with H1, the objective of collecting data from two very different samples was to verify whether there are major differences in their results, in order to minimize possible sample-based biases and increase the external validity of our results. As we have seen, out of 18 possible differences between the samples, only two are observed, namely a difference concerning the results for consumer product involvement for the online store model and consumer channel attitude for the bricks-and-mortar store model. We can therefore conclude that the effect related to our sampling method is very low.

Table 4: Results of Moderating Test

Online Store Model (sample 1)

	Preference High Fit (*r)*	Preference Low Fit (*r)*	T-Test	*p*
Consumer Channel Confidence	0.371	0.052	6.89	0.000
Perceived Channel Risk	-0.279	-0.014	-5.52	0.000
Consumer Channel Attitude	0.329	0.128	4.26	0.000
Consumer Channel Experience	0.402	0.047	7.76	0.000
Consumer Instrumental Motives	0.195	-0.188	7.97	0.000
Consumer Social Motives	-0.196	-0.089	-2.19	0.014
Perceived Product Complexity	0.256	0.005	5.18	0.000
Perceived Product Intangibility	0.284	0.064	4.60	0.000
Consumer Product Involvement	0.231	0.149	1.70	0.045

Bricks-and-Mortar Store Model (sample 1)

	Preference High Fit (*r)*	Preference Low Fit (*r)*	T-Test	*p*
Consumer Channel Confidence	0.167	-0.012	3.66	0.000
Perceived Channel Risk	-0.083	-0.132	1.00	0.160
Consumer Channel Attitude	0.141	0.174	-0.68	0.250
Consumer Channel Experience	0.207	0.000	4.26	0.000
Consumer Instrumental Motives	0.233	-0.118	7.31	0.000
Consumer Social Motives	0.231	0.287	-1.20	0.115
Perceived Product Complexity	0.000	-0.227	4.67	0.000
Perceived Product Intangibility	-0.06	-0.228	3.48	0.000
Consumer Product Involvement	-0.079	-0.142	1.28	0.098

Online Store Model (sample 2)

	Preference High Fit (*r)*	Preference Low Fit (*r)*	T-Test	*p*
Consumer Channel Confidence	0.532	-0.029	8.08	0.000
Perceived Channel Risk	-0.367	0.139	-6.72	0.000
Consumer Channel Attitude	0.348	0.149	2.61	0.047
Consumer Channel Experience	0.433	0.015	5.65	0.000
Consumer Instrumental Motives	0.257	-0.212	6.05	0.000
Consumer Social Motives	-0.218	-0.035	-2.27	0.012
Perceived Product Complexity	0.310	-0.024	4.28	0.000
Perceived Product Intangibility	0.272	0.064	2.64	0.004
Consumer Product Involvement	0.184	0.202	-0.23	0.410

Bricks-and-Mortar Store Model (sample 2)

	Preference High Fit (*r)*	Preference Low Fit (*r)*	T-Test	*p*
Consumer Channel Confidence	0.173	-0.081	3.12	0.001
Perceived Channel Risk	-0.017	-0.067	0.60	0.274
Consumer Channel Attitude	0.059	0.200	-1.74	0.042
Consumer Channel Experience	0.230	-0.026	3.17	0.001
Consumer Instrumental Motives	0.322	-0.198	6.75	0.000
Consumer Social Motives	0.215	0.327	-1.46	0.073
Perceived Product Complexity	0.028	-0.200	2.80	0.003
Perceived Product Intangibility	-0.070	-0.242	2.14	0.017
Consumer Product Involvement	-0.136	-0.101	-0.43	0.335

5. Conclusion

Past studies showed that companies wishing to deploy the best possible consumer interface would do well to pay close attention to the factors that lead to consumer channel preference. This preference shapes consumers' entire shopping process and their behavior vis-à-vis the use of channels. In this vein, the main contribution of this paper is to open up a new way of explaining consumer channel preference by presenting some empirical evidence on the validity of cognitive fit theory in the commercial context. Based on this theory, our results show that the fit (high or low cognitive fit) between the way in which information is presented to the consumer (i.e., online store vs. bricks-and-mortar store of the same retailer) and the nature of the problem to be solved (i.e., information search task) moderates the relationship between the individual characteristics and product characteristics identified in past studies and consumer channel preference. This result has theoretical and managerial implications that we will now discuss.

Theoretical Implications

First, we observed that there are differences between the models explaining consumer channel preference in high and low cognitive fit situations. This distinction will therefore have to be considered in the analysis of factors leading to consumer channel preference. According to our study, the factor dynamics explaining consumer channel preference change when consumers find themselves in a low vs. a high cognitive fit situation. Consequently, we encourage researchers to consider this distinction in their future research.

We also observed that the models explaining consumer preference for bricks-and-mortar stores and online stores differ. Our results suggest that it would be appropriate to make a clear distinction between models explaining consumer channel preference for these various channels. From this perspective, our results indicate that, for the online store models, cognitive fit acts as a moderating variable between all the study variables and channel preference. For the bricks-and-mortar store models, on the other hand, this moderating relation acts only on the confidence, experience, instrumental motives, product complexity and product intangibility variables. However, this conclusion must be viewed with caution. Remember that, as Bruning and Kintz [1997] indicated, we tested moderation by analyzing the difference in the magnitude of the correlations using t-tests. However, in addition to the degree of relationship, it is also possible to observe moderating effects based on the form of relationship [Baron and Kenny 1986]. The design of our study does not allow us to test whether there is any moderating effect based on this factor. Consequently, even though our results do not reveal any moderating relationship, there may still be one. Future research will have to investigate this question; regardless of the outcome of those studies, our results indicate the existence of different models based on the channel.

The results of our analyses also tend to demonstrate that the variables have significant effects in specific contexts. It is possible that these variables do not play a role in all cases, and that interaction, moderating and mediating effects are involved.

Managerial Implications

As Weinberg et al. [2007] demonstrated, consumers often use a variety of channels to make their purchases. As these authors showed, 65%-70% of consumers are multi-channel shoppers. Given this reality, it is critical that organizations adopt a multi-channel mindset and actually employ multiple channels. The results of this study underscore how important it is for companies to develop a deep understanding of the kind of information consumers are seeking in their information search process. This knowledge will allow companies to efficiently adapt the way they exploit the various channels and deploy multi-channel strategies in order to better meet their consumers' information needs. Our results tend to support the idea that the best approach to developing electronic commerce strategies is to establish them according to the consumer interface as a whole and not to limit them only to the Web site itself. Accordingly, companies should count on synergy between channels and focus on meeting consumers' information needs in the consumption process. They should set up consumer interfaces that will benefit from the complementarities that exist between the consumer information search task and the execution of the transaction and between the various types of information sought by consumers.

However, more studies must be done to verify whether it is even possible to offer all kinds of information via a single channel. For example, our results indicate that consumers have a negative perception of Web sites' ability to respond to their social motivations. However, the Web sites in our experiments presented dynamic communication tools that allow for real-time discussions and interactions with representatives. In principle, these tools could compensate for the lack of human contact and therefore respond to social motivations. Nevertheless, despite the presence of these tools, consumers' perceptions are still negative. It would therefore be relevant to improve our knowledge of this subject and determine the actual effectiveness of these socialization tools in online stores.

Limitations and Directions for Future Research

This study was an introductory study and the results must be considered as such. Thus, many limitations must be pointed out, orienting future research. First, the nature of the experiment means that the results cannot be generalized. Replicating the study in different contexts by looking at an extended geographic area, seeking samples

from many other, more representative groups, involving more products in different categories and testing the model with other channels such as telephone and catalog sales will improve the external validity. With this aim in mind, future research must be undertaken to explore these possibilities.

Moreover, it is important to remember that the methodology used in this study may have generated certain biases that must be considered when interpreting the results. For example, the fact that we collected our data by means of an online questionnaire may have introduced a bias since it is possible that respondents with a particular profile are more inclined to use the Internet. As well, the fact that we provided a description of the various functions instead of having participants really experience the purchasing process could have created certain limitations, inasmuch as, despite our precautions, the various participants' understanding of the task may have differed, which could also have created a bias in their responses. In short, it would be interesting to carry out a study using other data collection methods to verify the validity of these results.

We should also recall that the objective of this research is to explain consumer channel preference. We must, however, emphasize that preference does not necessarily lead to the actual choice of the preferred channel. Future research must be carried out to better understand the relationship between consumer channel preference and the actual use of a channel. We believe that other, more extrinsic, factors such as channel proximity, the ease with which a channel can be accessed, and time constraints may be important. Other studies will have to be undertaken to test this assumption.

Our results also lead us to believe that future studies will be needed to develop a better understanding of consumer channel preference. Our study was a first step in a new direction, but much work remains to be done. For example, we believe that a study should investigate the concept of cognitive fit. The fit between the information presentation format of a channel and the type of information the consumer is looking for is probably a matter of perception. It is possible that a low cognitive fit situation might be perceived as being high cognitive fit by a consumer who has solid expertise in the use of that particular channel. Therefore, it would be interesting to extend the study of the fit construct, its various dimensions, and the factors influencing the perception of fit.

Moreover, we believe that it would be interesting to test a consumer behavior model that integrated all variables and then test, probably with structural equation models, the link between those variables. For example, we think that consumer motives, confidence, risk and attitude are related in some way. A more complete model for each situation must be tested.

Finally, we encourage future researchers to investigate in depth the impact of the nature of information in consumer channel preference, channel choice, and channel use. Despite the limitations of our study, there is every evidence that this research avenue is a promising one that will allow us to make new discoveries in our quest for knowledge concerning consumer behavior in a multi-channel context and when using online stores.

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APPENDIX A

An Example of a Retailer Description in the Questionnaire

Option #2

Option #2 corresponds to a branch of a large national company that specializes in the sale of electronic products (*Retailer's name*). It sells a wide variety of products and its computer department offers numerous models of computers.

Each computer model is placed on a display stand. Small descriptive labels are attached, indicating the price and several key features. It is possible to try out the computers on site. Several consultants are available to help you make the right decision and complete your purchase and to tell you about the various products.

Assume that this outlet is located less than two minutes away from your home and that you would have to wait 48 hours to get your computer.

Here are some pictures to give you a better idea of this store.

Four pictures follow, presenting:

- Picture #1: General overview of the store
- Picture #2: View of the computer department
- Picture #3: View of a display stand
- Picture #4: View of the checkout counter