Factors Affecting Consumer Satisfaction of Online Purchase

Theresa Lauraeus  
Aalto University  
theresa.lauraeus@aalto.fi  

Timo Saarinen  
Aalto University  
timo.saarinen@aalto.fi  

Anssi Öörni  
University of Oulu  
anssi.oorni@oulu.fi  

Abstract

Consumers frequently engage in pre-purchase search to extract up-to-date information for their purchase decisions. Search is an essential part of online comparison-shopping and decision-making process as it reduces purchase related uncertainty and increases the likelihood of purchase satisfaction.

In this paper, we study how determinants of pre-purchase search, purchase related uncertainty and the type of the search process influence consumers’ perceived satisfaction with the online purchase.

Our analysis of 351 consumers show that the classic determinants such as product class knowledge, time availability, attitudes toward shopping, and search effort do not significantly affect perceived purchase satisfaction. Instead, we find that involvement and purchase related uncertainties have stronger effect on satisfaction. However, the type of the search process turned out to be the most important factor behind perceived purchase satisfaction.

1. Introduction

Consumers often experience uncertainty while making purchase decisions [29], [54], [56], [57], [38], or making online purchases [61], [62], [63], [29], [57], [32], [33]. Conceptually, consumer purchase decision process can be described as a series of steps progressing from problem recognition, to information search, to evaluation of alternatives, to purchase decision, and finally to implementing the purchase [48]. Consumers acquire information necessary to purchase decisions mainly via different types of information search. Consumers look for information of products in an attempt to decide what, when, and from whom to purchase. In this paper, we conceptualize the online purchasing process as a search and decision making process, linking it into a search theory base and the general decision making phases by Simon [50].

Kohli et al. [27] found strong support for relation of satisfaction and the design and choice phases of online consumers’ decision-making process. They also found that the support for the decision-making process in electronic channel measured by the cost and time savings, will lead to higher satisfaction.

Kambil and van Heck [24] predict based on their studies of nearly 100 markets that by decade's end, online exchanges and auctions will be an essential part of business [24]. They explain how to design and effectively use markets and auctions to connect with customers, to increase efficiency and to find the best information yielding to high satisfied customers [24]. It seems evident that the future development of electronic consumer markets crucially hinges on development of more advanced shopping aids that will enable consumers, not only retrieve and sift product information, but also help assess this information, judge products and sellers, and even evaluate their purchase related preferences [24], [35].

We need more research on online consumer behavior and consumer perceived satisfaction of purchase, because consumer oriented technology continues to offer new opportunities. Our understanding of consumer behavior remains far from perfect despite the large progress that has been made over the past few decades. The complexity of consumer decision phenomenon is depicted by the notion that more than 60 determinants have been related to the amount of pre-purchase consumer search [48]. In earlier studies some researchers have made attempts to model the online consumer experience [59], the factors influencing the consumer search behavior [14], [29], [48], [53], [7], [45], [37], [33] that is an essential part of consumer decision making process [10], [11], [19], [21], [33], [42], [48], [34]. Consumer satisfaction has emerged as one of the central concepts of consumer centric business for it has been related to desired outcomes in many consumer relations, such as brand loyalty [12], [34], repurchase intentions [21], [34], recommending [43] and complaining [23], [47]. As a result, consumer satisfaction is seen as a worthwhile interim goal in the pursuit of profitable retail business. There are some interesting studies on consumer perceived satisfaction on online purchase [27], [3], [12], [19], [21], [23], [34], [43], [47]. However, we still...
regularly fall short of being able to attribute purchase related satisfaction to its constituents.

Consumer perceived satisfaction has been theoretically connected to cost savings and amount of external information search as its antecedents [45]. The varied measures of search effort [40], [45], [53], [12], substantially complicates identification of the primary antecedents of satisfaction among the large number of factors related to external search [48]. We elect to concentrate on those measures which have a clear theoretical relation to the dependent measure of interest, purchase satisfaction.

In this paper, we aim to study how pre-purchase search effort, time availability, type of search process, involvement, product class knowledge, purchase related uncertainty and attitudes toward shopping influence consumers’ perceived satisfaction with the online purchase.

2. Theory

We will next discuss the constructs of Beatty and Smith [6] in more depth followed by discussions of purchase related uncertainty and type of search process. While the definitions of consumer satisfaction are varied, they all agree that satisfaction is a response (emotional or cognitive) pertaining to a particular focus determined at a particular time [19]. For the purposes of the current study, we define consumer satisfaction as a self-evaluation of the purchase measured by price and quality.

We have identified the works of Punj and Staelin [45] and Beatty and Smith [6] as a fruitful starting point. The former connects amount of search and its antecedents to purchase related satisfaction while the latter refines the determining variables into a set of four constructs: 1) product class knowledge, 2) time availability, 3) purchase involvement, and 4) attitudes towards shopping. As past research has acknowledged that amount of search does not completely subsume the effect on search, we elect to include the amount of search in the set of independent variables. The economics of information stream of research adds two determinants to our set of determinants, uncertainty [54] and type of the search process, both of which have been related to the quality of the purchase decision.

2.1. Search effort

Consumers are likely to search for information as long as they believe that the benefits of acquiring information outweigh the cost of information search as indicated in “the economics of information” theory [54]. The economics of information theory is based on the premise that buyers do not fully inform themselves about the alternatives available in the markets because of high search costs [54], [46]. The theory implies that both the benefits and the costs of search are related to the number of alternatives considered. Thus, it is more likely that good alternatives are included in the subset of products considered as search effort and the size of the consideration set increases. Alba et al. [1] while discussing the merits of online and interactive home shopping (IHS), posit that the vast number of alternatives available to consumers is a significant benefit of IHS compared with other retail formats. Bakos [4] suggests that declining search costs in the electronic markets will enable consumers to engage in more extensive pre-purchase search. Thus, consumers should be able to extend their pre-purchase information search and consumers will visit a higher number of retailers [4], [5]. Thus, high search effort will probably lead to more satisfied purchase. Consumer perceived satisfaction has been theoretically connected to amount of external information search [45].

H1: High search effort influence on purchase satisfaction.

2.2. Time availability

The value of time is a controversial topic. Clearly, the opportunity cost of time varies from consumer to consumer. Time constraints profoundly affect the difficulty of the decision. Hauser, Urban and Weinberg studied how consumers allocate time when searching for information [20]. Increased time constraints have been found to lead the decision-maker to simplify the task at hand, to accelerate the information processing [8], to selectively focus on information [36], and to change the decision strategy employed [44]. Low time constraints will lead probably consumers to increase search effort and the size of consideration set. Thus, it is more likely that good alternatives are included in the subset of products considered as the size of the consideration set increases. Thus, low time constraints will likely lead to more satisfied outcome.

H2: Low time constraints have an influence on purchase satisfaction

2.3. Product class knowledge

Punj and Staelin [45 p. 368] distinguished between organization of product information and actual product attributes. They included in the concept of Prior Memory Structure “the consumer’s knowledge of the
buying process as well as knowledge associated with the product category in general". The concept has since been adopted under the labels of Product Class Knowledge [13] and Product Category Knowledge (PCK) [18].

Usable Prior Knowledge [45 p. 368], on the other hand, refers to the actual, detailed information accumulated. The concept has since received multiple labels, yet, the one that seems to enjoy the most widespread acceptance is Brand Knowledge (BK) [13], [18]. The two types of knowledge are usually seen conceptually distinct types, the PCK capturing the evaluative dimension and BK the actual product details.

Studies focusing on PCK have usually identified positive association between knowledge and the magnitude of search effort [13]. Thus, a high level of product class knowledge will probably lead to better purchase decision and more satisfying purchase.

**H3**: A high product class knowledge has a positive effect on purchase satisfaction.

### 2.4. Search process

Experienced and inexperienced consumers often resort to different types of search patterns [32], [60]. While experienced consumers utilize largely the information already in their long-term memory, inexperienced consumers have to retrieve this information from the environment. The former search pattern is often depicted as simultaneous search, Whinston et al. [60] consisting of a single information retrieval phase followed by the decision. The essence of simultaneous search is that a consumer is able to evaluate available products side by side. Simultaneous search have found to combine low search costs and high efficiency [32]. Sequential search, on the other hand, often comprises multiple consecutive information retrieval and decision phases, each of which contributes to the total search cost.

Internet search technology has partly automated the search processes and enables consumers to execute more sophisticated and efficient searches. Consumers may shift search increasingly from the domain of sequential search towards simultaneous search.

There are, however, prerequisites related to consumer preferences that have to be satisfied before such transformation is possible. In particular, consumers should have stable preference structures to be able to accurately model the decision problem at hand. As pure simultaneous search is rather demanding on the consumer’s cognitive capabilities, combinations of sequential and simultaneous searches are likely to prevail. We term such search processes iterative.

Theoretically, pure simultaneous search should be the most efficient search process and sequential search the least efficient. However, simultaneous search tends to require more expertise. Iterative search allows back-and-forth movement and learning as consumers compare product information from different offerings [32]. We believe that hybrid, iterative search combines realistically the best combination of cognitive effort and efficiency, and thus will lead to better purchase decision and more satisfying purchase.

**H4**: High iterative search level is related to purchase satisfaction.

### 2.5. Uncertainty

Uncertainty is one of the central concepts in consumer behavior literature. It captures the lack of the individual’s control over how future is going to unfold. Consumers often perceive uncertainty while making decisions [33], [56], [58], [59], [40], [27] or making purchases on the Internet [62], [63], [64], [32], [59]. Thus, Consumers must update their information, and there is often no better means to do that than search.

Herbert Simon [51 p. 2] established the dominant model of the decision-making process as a three phase "intelligence-design-choice" sequence, which was later supplemented with a fourth stage of “implementation” as many authors felt it significant enough to be shown separately [52 pp. 26-27]. As the previously discussed uncertainties cover only the first three steps of decision making, we propose that a fourth type of uncertainty, implementation uncertainty (IU), should be added to the host of pre-purchase uncertainties [33].

**Intelligence Phase – Knowledge Uncertainty.** In the intelligence phase, consumers are searching the environment for information for decisions [52]. In this intelligence phase of decision making, we see contribution to Stigler’s Knowledge uncertainty (KU) as well as Urbany et al. study of knowledge uncertainty [54], [57]. According to Urbany et al. KU captures doubts consumers have about their own ability to judge sellers and products well enough to execute reasonable product comparison. We define knowledge uncertainty as uncertainty regarding what is known about the alternatives of the specific decision problem, or how to acquire the necessary information to make a choice.

**Design Phase – Evaluation Uncertainty.** In Simon’s second decision making phase (Design) the consumer determinates all of the consequences that follow upon each strategy and evaluates the sets of consequences [50]. In this design phase of decision making, we see contribution to Evaluation uncertainty. Evaluation uncertainty (EU) reflects uncertainty of
how to integrate the information available to form judgements about brands or alternatives. We propose that if evaluation uncertainty is high, consumers will have difficulties in comparing information and value criteria.

**Choice Phase – Choice uncertainty.** In the choice phase of Simon’s decision making theory, consumers select a particular course of action, from the available ones. In this choice phase of decision making, we see contribution to Lanzetta’s Choice uncertainty [30], [31]. Urbany et al. [57] defined choice uncertainty as uncertainty regarding which alternative to choose. According to them [57], choice uncertainty covers questions such as what and where to buy.

**Implementation Phase – Implementation Uncertainty.** Implementation phase is important to consumers and there are many uncertainties, especially in online purchasing because of immaterial character of purchase [55]. In this implementation phase of decision making, we see contribution to a new construct of Implementation uncertainty. Implementation uncertainty (IU) means uncertainty about fulfillment of purchase. Implementation phase is important to consumers and there are many uncertainties regarding this phase of decision. In this study, we describe implementation uncertainty as: 1) uncertainty of having problems in purchasing, 2) uncertainty of product availability at shopping time, 3) uncertainty of the fulfillment of the purchase and the delivery.

The position that uncertainty and search are related has received considerable empirical support [for an extensive review, see 21, 33]. Few efforts have been made to study uncertainty composition, Urbany et al. [57] and Moorthy et al. [38] being among the notable exceptions. Stigler in his seminal paper on economics of information [54], established that uncertainty is the driving force behind consumer search. Accordingly, Lanzetta [30] posited that higher levels of uncertainty should lead to more extensive search, and search activity has been observed to increase with uncertainty [31]. High purchase related uncertainty may lead consumers to search more, and thus, extensive search will probably lead to more satisfied purchase.

**H5: Pre-purchase uncertainties are related to purchase satisfaction.**

**2.6. Attitudes toward shopping**

Beatty and Smith [6] theorized that attitudes towards shopping are strong candidates for determining the amount of search. The construct is closely related to purchase involvement but directed towards the process of purchasing rather than the product class. They [6] based their view on previous findings about the strong positive relationship between attitudes towards pre-purchase search and actual search behavior,[17], [26], [16], [45]. Duncan and Olshavsky [16] demonstrated a strong relationship between attitudes toward shopping and regret avoidance: “when important purchase are made quickly, they are usually regretted”.

More recent research has also highlighted the impact of attitudes on the search effort: Schmidt and Spreng [48] propose that motivation to search is affected by shopping enthusiasm [3]. Several studies have also demonstrated that consumers’ attitudes toward shopping continue to influence their behavior in the electronic markets as well [34], [17], [39]. A typical finding is that consumers who find Internet shopping pleasant search for more information. Hence, positive attitude should, in theory at least, lead to better purchase decisions and more satisfied purchase.

**H6: Positive attitude towards shopping is related to purchase satisfaction.**

**2.7. Purchase involvement**

Involvement [28] influences motivation to search according to Schmidt and Spreng [48]. The degree of personal involvement has also been found a key factor in shaping the type of decision process that consumers will follow [13p. 91]. Antil [2] defines involvement as the “level of perceived personal importance and/or interest evoked by a stimulus within a specific situation”. Consumer behavior literature identifies three sets of factors influencing purchase involvement: 1) personal factors, 2) product factors, and 3) situational factors [13 p. 91]. Personal factors are include self-image, looks, and health. Product factors are largely related to risks in purchasing or using the product. Situational factors are related to mode of consumption [13]. If the product is very important or expensive, consumers will search more to reduce purchase related uncertainty, and thus, the extensive search will more probably lead to satisfied outcome.

**H7: High involvement increases purchase satisfaction.**

**3. Method**

**3.1. Survey**

A questionnaire was sent to the random sample of 2000 respondent representing Finnish population (over 18-year old citizen). The questionnaire was pre-tested
with two groups: experts and consumers from different age and demographics. The pre-test was carried out with 27 subjects. The questionnaire was revised accordingly. The context of survey was travel services.

To collect data, we conducted a survey and the respondents responded fairly actively, and we tallied 639 questionnaires. Thus, the response rate was 32 %, which we deem adequate. For this analysis we selected consumers, who has recently bought travel services. Thus, the final number of respondent is 351. Yet, to be more assured that our sample is representative of the Finnish people, we identified the demographic variables having a prominent role in relation to consumer search and compared our data on these with the latest census figures for the Finnish population.

### 3.2 The profile of the respondents

The age profile in our sample corresponds well enough to Finnish population. Our respondents were from 18 to 80 years old Finnish people. Our respondents were 55% males and 45 % females. The corresponding statistics of population in Finland were 49 % males and 51 % females. Males are known to use more internet than females, and we see that our data corresponds to the current population of active Finnish internet users quite well measured by education, location of residence and income. More educated people were more active to respond to our questionnaire. Likewise, people with low education responded a little less than average population in Finland. Moreover, in our sample the group of people with higher income is little larger than in average Finnish population. Our respondents represent well Finnish population in average in location of residence.

### 3.3. Satisfaction measures

We are to find the determinants explaining the satisfaction of online purchase. Satisfaction is measured by two variables: satisfied with the price of the purchase and satisfied with the quality of the purchase.

<table>
<thead>
<tr>
<th>Table 1: The Satisfaction Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with Quality, but not price</td>
</tr>
<tr>
<td>n=33</td>
</tr>
<tr>
<td>Dissatisfied with both</td>
</tr>
<tr>
<td>n=33</td>
</tr>
</tbody>
</table>

Both variables were evaluated by the subjects on a 1-7 scale. Thus, we studied four classes of satisfaction. The first group, Dissatisfied with Both (n=33) consists of those subjects, who were not satisfied with neither the quality nor the price of the purchase. They have bought a journey, which was not suitable for them at all. The second group (n=33) consists of the subjects, who were “Satisfied with the Price, but not Quality”. The third group (n=33), includes respondents who were “Satisfied with the Quality, but not Price”. The subjects “Satisfied with Both” were classified to the fourth group (n=260).

Our aim is to study which of our research hypotheses H1-7 are supported by our survey data. There are one or several underlying quantitative variables behind each hypothesis. The total number of variables is 17 (Table 2).

### 3.4 Variable measures

In consumer search literature, a number of gauges have been suggested for the measurement of the extent of search. Thus, we measured time spent in the process, number of physical and internet stores visited, and number of alternatives considered [40], [45], [53], [12].

All of the following variables were evaluated by on a 1-7 scale. We measured involvement with questions: “Buying this travel was an important purchase for me” and “Buying this travel was an expensive purchase for me”. We measured product class knowledge with question: “Estimate your knowledge about travel services offered”.

We measured iterative search process with question: “I iterated the purchase process when searching for and comparing alternatives”. We measured sequential search process with question: “I searched for and evaluated each travel, one at a time, before turning to the next alternative”. We measured simultaneous search process with question: “I used search agent or comparison shopping tool for searching alternative travels”.

We measured uncertainty with questions: KU: “How uncertain were you about knowing the travel services offered”. EU: “How uncertain were you about your purchase criteria”. CU: “How uncertain were you about which alternative to choose”. IU: “How uncertain were you that you would be able to buy the alternative you had chosen”.

We measured attitude toward shopping with questions: “I like to search travel information in the internet”, ”It is a good idea to search travel information in the internet”, and “It is rational to search travel information in the internet”.

3368
4. Findings

4.1. Tests for potential independent variables

First, we check whether those 17 variables together consist of significant discriminating information on the differences of four group means. For this purpose, we use Wilks’ lambda as a test statistic to test the hypothesis:

\[ H_0: \mu_1 = \ldots = \mu_4 \text{ given } \lambda_1 = \ldots = \lambda_4 \]

where vector \( \mu_i, i = 1,2,3,4 \), refers to the population group means in the 17 dimensional space, and \( \lambda_i, i = 1,2,3,4 \) refers to the covariance matrix of group \( i \). Wilks’ lambda computed from the sample is 0.6961. If there are no significant differences between group means, note that always \( \lambda_1 \geq 1 \). To study, whether \( \lambda_1 < 1 \), we use the F-approximation (see, e.g. Rao (1973, p. 556)). From the sample we get F-value = 2.56 > F(0.01, 51, 1010) = 1.54. Thus we conclude that \( \lambda_1 < 1 \), and further \( \mu_i \neq \mu_j \) for some \( i \neq j \) at risk level less than 1%.

4.2. F-tests for potential independent variables

In Table 2, we have carried out the F-tests for each variable. The results provide us with some hints that not all 17 variables are needed to provide essential discriminating information.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total standard deviation</th>
<th>Pooled standard deviation</th>
<th>Between standard deviation</th>
<th>F value</th>
<th>P(F(3,355) &gt; F-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge and Time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product class knowledge</td>
<td>2.342</td>
<td>2.342</td>
<td>0.243</td>
<td>0.970</td>
<td>0.408</td>
</tr>
<tr>
<td>Time constraints</td>
<td>1.950</td>
<td>1.947</td>
<td>0.239</td>
<td>1.350</td>
<td>0.258</td>
</tr>
<tr>
<td>Involvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement: Importance</td>
<td>1.946</td>
<td>1.912</td>
<td>0.463</td>
<td>5.260</td>
<td>0.002</td>
</tr>
<tr>
<td>Involvement: Price</td>
<td>1.972</td>
<td>1.901</td>
<td>0.638</td>
<td>10.100</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Attitudes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward internet shopping I</td>
<td>1.611</td>
<td>1.611</td>
<td>0.164</td>
<td>0.930</td>
<td>0.424</td>
</tr>
<tr>
<td>Attitude toward internet shopping II</td>
<td>1.603</td>
<td>1.600</td>
<td>0.203</td>
<td>1.450</td>
<td>0.228</td>
</tr>
<tr>
<td>Attitude toward internet shopping III</td>
<td>1.705</td>
<td>1.704</td>
<td>0.191</td>
<td>1.130</td>
<td>0.339</td>
</tr>
<tr>
<td>Search effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search: Number of Sellers</td>
<td>1.324</td>
<td>1.324</td>
<td>0.143</td>
<td>1.050</td>
<td>0.373</td>
</tr>
<tr>
<td>Search: Number of Alternatives</td>
<td>4.033</td>
<td>4.042</td>
<td>0.291</td>
<td>0.470</td>
<td>0.706</td>
</tr>
<tr>
<td>Search: Time</td>
<td>5.326</td>
<td>5.344</td>
<td>0.243</td>
<td>0.190</td>
<td>0.906</td>
</tr>
<tr>
<td>Search process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search process: Sequential</td>
<td>0.492</td>
<td>0.489</td>
<td>0.083</td>
<td>2.580</td>
<td>0.054</td>
</tr>
<tr>
<td>Search process: Parallel/Simultaneous</td>
<td>0.388</td>
<td>0.389</td>
<td>0.018</td>
<td>0.200</td>
<td>0.898</td>
</tr>
<tr>
<td>Search process: Iterative</td>
<td>0.491</td>
<td>0.486</td>
<td>0.095</td>
<td>3.440</td>
<td>0.017</td>
</tr>
<tr>
<td>Uncertainty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge uncertainty</td>
<td>1.613</td>
<td>1.612</td>
<td>0.184</td>
<td>1.160</td>
<td>0.323</td>
</tr>
<tr>
<td>Evaluation uncertainty</td>
<td>1.184</td>
<td>1.151</td>
<td>0.339</td>
<td>7.790</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Choice uncertainty</td>
<td>1.262</td>
<td>1.219</td>
<td>0.400</td>
<td>9.670</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Implementation uncertainty</td>
<td>1.495</td>
<td>1.452</td>
<td>0.439</td>
<td>8.210</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

4.3. Selection of relevant independent variables

For further analysis, we initially pick from Table 2 the variables for which F-Value > F(0.05, 3,355) = 2.63 (risk level \( \alpha = 5\% \)). Those variables are Involvement: Importance, Involvement: Price, Search Process: Iterative, Evaluation Uncertainty, Choice Uncertainty, and Implementation Uncertainty.

To carry out the null hypothesis \( H_0 \) with these variables, we obtain \( F = 5.75 \) > \( F(0.01, 3,355) = 1.95 \), and we conclude \( H_0: \mu_i \neq \mu_j \) for some \( i \neq j \). To check, whether we can drop the remaining 11 variables from further analysis, we test the null hypothesis \( H_0 \) with the remaining 11 variables. We get \( F = 9.01 < F(0.01, 3,355, 3) = 1.68 \), and we conclude \( H_0 \).

Thus there is no evidence that those remaining 11 variables include any essential discriminating information about the differences between the satisfaction classes. It means that variables

**Table 3: The Satisfaction group means of variables essentially contributing to discrimination**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Dissatisfied with both (n=33)</th>
<th>Satisfied with price, not quality (n=33)</th>
<th>Satisfied with quality, not price (n=33)</th>
<th>Satisfied with both (n=260)</th>
<th>Total (n=359)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement: Importance (1-7)</td>
<td>4.51</td>
<td>4.09</td>
<td>5.5</td>
<td>5.26</td>
<td>5.11</td>
</tr>
<tr>
<td>Involvement: Price (1-7)</td>
<td>4.36</td>
<td>3.33</td>
<td>5</td>
<td>3.29</td>
<td>3.55</td>
</tr>
<tr>
<td>Search process: Iterative (0-1)</td>
<td>0.24</td>
<td>0.27</td>
<td>0.58</td>
<td>0.42</td>
<td>0.4</td>
</tr>
<tr>
<td>Evaluation uncertainty (1-7)</td>
<td>2.79</td>
<td>2.48</td>
<td>1.94</td>
<td>1.89</td>
<td>2.03</td>
</tr>
<tr>
<td>Choice uncertainty (1-7)</td>
<td>2.9</td>
<td>2.76</td>
<td>2.33</td>
<td>1.95</td>
<td>2.14</td>
</tr>
<tr>
<td>Implementation uncertainty (1-7)</td>
<td>3.15</td>
<td>1.97</td>
<td>2.51</td>
<td>1.91</td>
<td>2.09</td>
</tr>
</tbody>
</table>

Based on the group means in Table 3, the influence of the variables on satisfaction can be characterized as follows:

**Involvement: Importance.** Involvement influenced purchase satisfaction as predicted: the high-involvement consumers were more satisfied than the low-involvement consumers with the travel they purchased. When consumers feel more attached to the product, they are motivated to ensure that the purchase will meet their wants. They are likely to search both more extensively and more intensively. Since involvement was clearly related to purchase satisfaction even though search effort was not, we deduce that involvement operated through intensity of search in our data.

**Involvement: Price.** High price relative to one’s income influenced purchase satisfaction yet the form of influence was contrary to what was predicted. For the “Satisfied with quality, not price” group this is can be explained by normal price-quality correlation: high quality travels tend to be relatively more expensive. The “Dissatisfied with both” group, however, exhibits market failure. These consumers evidently badly misjudged the travel they bought. While the price-search effort relationship is theoretically strong [54], it has received irregular empirical support. Neither absolute nor relative price of the product have been consistently found to determine the effort put into search or the outcome of search [48]. Our data suggest that while price relative to one’s income may not consistently determine the search effort, it is far from being unimportant as a determinant of consumer behavior. Taken together, the involvement hypothesis (H7) received partial support: High involvement leads to satisfaction, with qualifications.

**Search Process: Iterative.** Iterative search was the only search process type that influenced purchase satisfaction. Iterative search process combines stages of sequential and simultaneous search. The sequential steps are often needed and used for construction of the problem rather than for solving it. Our observation is in line with the relatively recent view of pre-purchase search being a mainly learning process in which the consumer gets educated about his/her preferences [12].

**Evaluation Uncertainty.** Evaluation uncertainty influenced purchase satisfaction as predicted. High pre-purchase evaluation uncertainty affected purchase satisfaction. Evaluation uncertainty comprises doubts about one’s ability to evaluate products. It is connected to incomplete product class knowledge, indecision about the product qualities that determine the eventual performance of the product. In the current context, doubts about the influence of the hotel’s location on the travel experience serve as an example of evaluation uncertainty.

**Choice Uncertainty.** Choice uncertainty influenced purchase satisfaction as predicted. High pre-purchase choice uncertainty affected purchase satisfaction. Uncertain consumers are unsure about the ranking of the choice alternatives. One prominent reason for choice uncertainty is incomparable choice alternatives. If the alternatives do not share their salient characteristics there is no obvious ranking for them even if the preferences are known. It is doubtful if choice uncertainties can be effectively cured unless the industry agreed on a comprehensive ontology of product description on which the shopping aids can be built on.

**Implementation Uncertainty.** Implementation uncertainty influenced purchase satisfaction with qualifications. Its impact was most pronounced for the “Dissatisfied with both” group. It was second highest in the “Satisfied with quality, not price” group: It seems probable that these consumers “bought” themselves some assurance. Taken together, the uncertainty measures support the uncertainty.
hypothesis (H5) with an exception: Knowledge uncertainty did not influence purchase satisfaction. We interpret this as a sign of electronic markets providing sufficient product attribute information.

5. Discussion

Taken together, our analysis provide support for the hypotheses H7 (involvement), H5 (uncertainty), and H4 (iterative search). Our observations suggest that of the classic determinants of the search effort studies only purchase involvement was related to purchase satisfaction. Those consumers who found the product personally more important were likelier to do good job with searching for and choosing a pleasing product. It is also interesting to note that neither tests have provided us any evidence for the variables excluded from the final analysis containing any information towards explaining purchase satisfaction.

The observation about iterative search process being related to purchase satisfaction with the product is in line with observations about the effects of pre-purchase uncertainties. While iterative search is, at least in theory, less efficient than purely simultaneous search, it has the advantage of “educating” consumers about their preferences [32]. This is close to the approach of Keeney and Raiffa [25 p. vii] who advocate for decision analysis, “a prescriptive approach designed for normally intelligent people who want to think hard and systematically about some important real problems.”

Our observations suggest that uncertainty felt prior to the purchase process still remains a strong determinant of purchase satisfaction. Uncertainties related to evaluating and choosing products, in particular, affected the experienced satisfaction. Thus, despite all the progress we have made so far, further research in developing decision aids for the consumers is in need.

The exception to the rule is knowledge uncertainty. Apparently the current electronic markets have advanced past the stage where access to product information has ceased to be a problem. Taken together, the pattern of uncertainty influences on consumer satisfaction suggests that the amount of product information available to consumers exceeds the processing capacity rather than falls short of providing an adequate basis for informed purchase decision. Thus, need for effective tools of evaluation, such as recommendation aids or intelligent agents, appears to be in the rise.

6. Conclusion

Consumers that are satisfied with quality of travel used most often iterative search. It seems that iterative search process leads consumers to satisfied purchase. With Iterative search process i.e. “Search with recall” consumers are able to search long enough to be sure they have found the best alternative. This means that we should develop the search agents to help consumers do iterations while searching information from different sources. Nowadays most search agents are made to compare price, but not quality of products. Still, it seems that the quality of product is most important characteristic for consumers when they estimate their satisfaction on purchase.

We are able to summarize our result: consumer perceived satisfaction of travel online purchase relate more to uncertainty than the external search determinants. One explanation is: It may be more important for a consumer to feel that he knows what he is doing than to know that he is making the most optimal choice.

7. References


[33] Lauraeus-Niinivaara T., (2010), Uncertainty is the Other Side of the Coin of Information Online Search, HCISS Conference paper Jan.2010


