ENHANCING ONLINE PERFORMANCE THROUGH WEBSITE CONTENT AND PERSONALIZATION

NARONGSAK THONGPAPANL
Brock University
St. Catharines, Ontario L2S 3A1 Canada

ABDUL REHMAN ASHRAF
Brock University
St. Catharines, Ontario L2S 3A1 Canada

ABSTRACT

A number of frameworks have been prescribed for online retailers, but still there exists little consensus regarding the amount of information and the level of customization needed to optimize customers’ satisfaction and their purchase intention, and thereby increase sales performance. Against this backdrop, this study aims to contribute to the current practical and theoretical discussions regarding the most effective ways to design and implement online retailers’ website features by empirically examining the interplay between information content and website personalization, and their individual and interactive impact on performance. By applying Structural Equation Modeling analysis to a sample of the top US retailers’ websites, we find that simply providing a large number of information content features to online customers is not enough for companies looking to motivate customers to purchase. However, information that is targeted to an individual customer influences customer satisfaction and purchase intention; customer satisfaction, in turn, serves as a driver to the retailer’s online sales performance.

KEYWORDS: e-commerce, customer satisfaction, purchase intention, website features, information content, personalization, online sales performance

1. INTRODUCTION

Today, distance and time constraints are no longer an impediment to carrying out business worldwide. This is a direct result of the development of the Internet and the increasing use of network-intensive technologies by businesses. Internet Retailer [32] reports that in the United States, total online retail sales and the total number of transactions for the top 500 websites in 2007 rose by 21.8% and 8.8% respectively. The figures indicate that customers have readily adopted the Internet for various purposes including information searching and online shopping. The growth of the Internet in both business-to-business and business-to-consumer domains has been extensively discussed in both the academic and trade literature [12, 48, 64]. Although commerce may be conducted on the Internet in a number of ways, it commonly involves the sale of goods and services through a company’s website. Prior research has investigated the website as a medium for interactive communication [19], e-shopping [84], business-to-business or business-to-consumer transactions [64], and as a tool for customer relationship management [60]. However, businesses today face numerous challenges in their efforts to develop a web presence that is both convincing for visitors and able to fulfill customer needs [1].

Compared to conventional retailing, online retailing is still in its infancy. Since the Internet is a new medium for the purchase of products and services, its novelty may lead to some problems. Past studies have shown that customers perceive Internet shopping as risky [75] due to the lack of direct, face-to-face interaction with the firm and the intangible nature of the products. For example, customers’ major online shopping concerns revolve around whether the products they want to buy online are worth the price (financial risk) [54], or if purchasing products online will result in credit card fraud or personal information theft (information risk) [36]. Due to these potential risk factors, customers may delay their purchases or may not be comfortable buying online [29]. To reduce their perception of risk, online customers rely on the information available online regarding a product’s quality, performance, and functionality. Information gathering reduces risk perception [18] and, moreover, acquiring information encourages customers to make a purchase.

Studies to date report conflicting results regarding the amount of information that a website should provide in order to reduce customer risk perception and enable informed purchase decisions. On the one hand, increasing the available information is known to enhance online customers’ abilities to articulate their needs and to consider alternative products [79]; this leads to an improved online shopping experience and, in the end, a satisfactory transaction. On the other hand, too much information on a website can lead to problems such as information overload [41] and can make it difficult for customers to locate the desired information [41, 64, 89], which negatively affects customers’ decision quality and increases confusion regarding the purchase decision. According to information search and risk perception theories, firms should provide online customers with a convenient and comfortable environment by offering relevant information that is easy to access, process, and explore. In addition to providing information, Web retailers must also make the information user-friendly by offering website dimensions such as website personalization [20].

In reviewing the literature, it is not clear whether the availability of information on a firm’s website is sufficient to influence online customers’ decisions or if the value added by different tools such as website personalization underlies the importance of online information in terms of customer satisfaction and purchase intention. We believe it is important to address these issues because reliance on web technology continues to increase, which makes an effective and efficient website a necessity rather than a luxury [64]. Moreover, answering these questions will help e-retailers design a website that not only attracts customers but also satisfies and motivates online purchases. To shed light on these issues, we construct a conceptual model that empirically investigates the
individual as well as the interaction effects of information content and website personalization tools on customer satisfaction and purchase intention, as well as on online sales performance.

2. LITERATURE REVIEW

The Internet has increasingly become a key driver of businesses during the past ten years and having a website positively impacts a business’ image, makes e-commerce sales possible, increases net profits, and influences customer perceptions of firm effectiveness [64]. In the online context, this research has concentrated predominantly on two frontiers: factors influencing customer satisfaction and purchase intention, focusing on information content and website personalization, and the influence of customer satisfaction and purchase intention on other dimensions of website success, specifically sales performance.

2.1 Customer Satisfaction and Its Antecedents

Customer satisfaction is defined as the customer’s overall evaluation of firm performance based on the total purchase and consumption experience [49]. However, Alba et al. [2] add that satisfaction is more than just the consumption experience. They argue that a customer’s belief that all alternative options have been exhaustively searched and no opportunities have been missed has an impact on customer satisfaction. This belief assures customers that they have made the best possible purchasing decision.

A number of researchers have identified and considered the impact of individual factors on customer satisfaction while shopping online. Whereas the operational frameworks vary in content, common factors such as information content, interactivity, navigation, customization, usability, download speed, customer service, security, and reliability have been identified as integral to a website’s success [57, 76]. Several recent studies have thus proposed different frameworks and identified key website features affecting customer satisfaction in online shopping from the perspective of website usability [57, 90], website design [1, 23, 90], service quality [67, 84, 89], and website quality [45]. For example, Palmer [57] found website usability (based on download delay, navigation, interactivity, responsiveness, and information/content) to be a construct that has a significant impact on customer satisfaction. Similarly, Montoya-Weiss et al. [52] suggest that online service providers can influence customer use of an online channel and overall satisfaction through three website design features (information content, navigation structure, and graphic style) and two sets of customer evaluations (service quality and risk perceptions). Focusing on different e-service quality dimensions and their impact on customer satisfaction, Santos [67] shows that providing better e-service quality not only increases customer satisfaction but also leads to higher customer retention and profitability. In addition, Lin [45, 46] identifies three key website quality dimensions (i.e., system quality, information quality, and service quality) and shows that all three dimensions have an impact on customer satisfaction.

2.2 Purchase Intention and Its Antecedents

Purchase intention has been used extensively in the literature as a predictor of subsequent purchases and plays an important role in helping firms predict customers’ actual purchasing behavior. Pavlou [59] defines purchase intention as the situation that arises when customers willingly involve themselves in online transactions. According to Hausman and Siekpe [28], purchase intention, along with the intention to return, is one of the most commonly referred to online behavioral intentions.

There have been several attempts to identify the dominant factors connected to purchase intention in the online context. Website design, attitude, and trust have been identified as key factors affecting purchase intention. For example, Liang and Lai [42] find website design (security, search engines, navigational hyperlink, service phone, and customized information) to be a construct that has a significant impact on customers’ future visits, and current and future purchases. Therefore, website design features including interactivity influence customer attitudes and positive attitudes towards a website influence purchase intention [73]. In fact, Stevenson et al. [73] conclude that customer attitudes towards websites are very important because improving customer attitudes also improves customer purchase intention.

As customers perceive online transactions to be risky [16, 75], researchers have focused on different trust-building components and their impact on purchase intention. Chen and Barnes [13] show that security, privacy, willingness to customize, and good reputation significantly affect initial trust, which has a positive influence on customer purchase intention. Once trust is developed between the firm and the customer, customer risk perception is reduced; this encourages customers to shop online comfortably [34, 69].

Altogether, researchers have identified several common features that influence customer satisfaction and purchase intention and are instrumental in the success of a website, especially when it comes to information content. Existing research suggests that information content as well as website personalization features offered to online customers are an important component of website usability [57], website design [42, 76], website quality [45], customer attitude [65], and trust [58] and, therefore, play an important role in enhancing customer satisfaction and purchase intention.

2.3 Information Content and Website Personalization

Information content is an important element of customer satisfaction [52, 57] and purchase intention [48, 71], and as information search is often the first step in a customer’s purchase decision-making process, the more information a customer possesses, the better and more informed their decision will be [40]. Information content can include a range of materials such as details related to the services offered, order status, corporate policies, and/or public relations. The availability of information on a website is of great importance and is critical for potential online customers [1]: When customers are supplied with a more extensive set of information before purchasing from a website, they have a clearer idea of what they will receive in terms of products and services. This decreases the level of perceived uncertainty and risk, and increases customers’ comfort levels with their purchasing decisions.

However, as the availability of information increases beyond a certain threshold, more customer effort is required to process the information, and thus, customers feel less satisfied and less confident regarding their purchase decision [35, 41]. It is essential that firms provide some kind of website personalization to streamline the complex task of assessing and processing large quantities of information. Eirinaki et al. [20, p. 99] define website personalization as “any action that adapts the information or services provided by a website to the needs of a particular
user or a set of users,” while Moon et al. [53, p. 31] define it as “customizing some features of a product or service so that the customer enjoys more convenience, lower cost, or some other benefit.” Basically, personalization reduces the perceived complexity caused by excessive information, thereby reducing customers’ search efforts and transaction times and increasing user satisfaction [43]. Furthermore, for the standard website, personalization is inherently better since it takes individual needs into account and creates a trusting relationship between the website and customer by transforming e-commerce into relationship commerce [33]. According to Yang et al. [85], when customers are exposed to personalized content, they tend to seek less information and are likely to spend less time before making the purchase. Similarly, Chang et al. [12] and Kim et al. [36] posit that by providing guidance to individual customers during the purchasing process, website personalization makes the shopping experience easier and increases customers’ feelings of trust and loyalty.

In short, in addition to providing information, online retailers must make customer information searches efficient and effortless by providing tools such as website personalization [43] which, by modifying website information to fit individual needs, enhance online customer satisfaction [43], purchase intention [85], and loyalty [33].

2.4 Online Sales Performance as a Consequence of Customer Satisfaction and Purchase Intention

In this era of recession, sales and the resulting revenue are the top priority of every organization. In addition to advertisements [10] and promotional activities [21], researchers in web retailing have also identified several other factors that contribute to the firm’s sales performance. For example, Ayanso et al.’s [6] analysis of the relationship between retail service areas and the online sales performance of Web retailers shows that Web retailers’ efforts in multi-channel, content, and customer management positively influence their sales performance.

Past researchers have established that customer satisfaction positively influences e-retailers’ sales performance; therefore, online customer satisfaction helps firms generate a loyal customer base and retain customers [22], which subsequently results in future sales through consequential purchases. Similarly, Ayanso et al. [6] have shown that customer satisfaction, by increasing website traffic (i.e., repeat visits) and revenue per transaction (i.e., average ticket amount), positively influences online retailers’ sales performance. Researchers have considered purchase intention as a predictor of actual purchase [59]. Mowen and Minor [55] propose that purchase intention helps a firm evaluate the likelihood that a customer will behave in a certain way regarding the acquisition, use, and disposition of a product. Similarly, Zhengui and Benbasat [88] argue that intention to purchase helps firms analyze the probability that a customer will buy a product/service from a particular website. Together, these previous studies reinforce the fact that purchase intention is fundamentally related to online retailers’ performance outcomes.

3. THEORETICAL BACKGROUND

In this study, we apply the underlying logics of Perceived Risk Theory (PRT) and Information Search Theory (IST) to the e-commerce setting and argue that customers’ perception of online-transaction risks is based on the information made available to them [17, 18]. To reduce the perception of risks, Web retailers should provide relevant information that is easy to access, process, and explore. In addition, Web retailers should also customize/personalize the information to the extent possible to individuals or groups of customers in order to facilitate the information search activities required to minimize risk perception [20]. If the information is offered in a user-friendly and easy-to-process way, customers will feel satisfied and comfortable enough about their online purchase decision.

3.1 Perceived Risk Theory

Researchers initially used perceived risk theory to understand the effect of unusual circumstances or incomplete information on customer purchases [8]. Cox [15] described perceived risk as comprising of two components: uncertainty (i.e., function of the future which is unknowable, uncontrollable, and unpredictable) and adverse consequences (i.e., negative outcomes that can result from a product purchase).

Due to the nature of the online medium, it is likely that perceived purchase risk has even more relevance for online markets than offline. Online customers search and rely more on information regarding products and services before purchasing than offline customers [17]. Scholars of PRT have argued that customers engage in information searches because the initial level of perceived risk related to a product is above the customer’s acceptable level. Information searching is thus considered to be a risk reduction strategy [17] that helps bring the ‘inherent’ risk of purchasing down to a ‘manageable’ level [9].

3.2 Information Search Theory

IST posits that customers will stop searching when the expected benefits of the search equal or exceed the expected costs [72]. As shopping online reduces search costs and effort, individuals tend to use the Internet to locate opportunities for better prices and products. Furthermore, information searching is a critical aspect of most decision-making tasks (i.e., analyzing different possibilities, streamlining problems, and making choices).

Extensive research has been done on how much and what kind of information customers accumulate or search for before making a purchase [11, 51]. Ariely’s [4] research reveals that when the search for information regarding product quality is made easier by the online store design, subjects show less sensitivity to prices and purchase better quality and sometimes more expensive products. Intuitively speaking, the more favorable product/service information customers have, the more likely they are to make a purchase. Furthermore, the greater the intensity of perceived risk, the greater the need for information searches [18, 51], and the higher the risk reduction, the higher the customer satisfaction and purchase intention [38, 52, 81].

4. HYPOTHESES

4.1 Direct Effect of Information Content

4.1.1 Customer Satisfaction

The Internet is an information rich medium. According to Alba et al. [2], the key difference between online and offline shopping is the availability and accessibility of information for online customers. However, due to the virtual nature of the online
shopping environment, products are intangible, so shopping online is perceived to be more risky [16, 75]. The information on a firm’s website plays a vital role in developing trust between the firm and the online customer [23]. Information acquisition, which amplifies online customer trust, also helps customers reduce perceived risk [18, 58, 77], while the availability of information on websites reduces customer search costs [47] and creates an informed shopper [74]. Providing customers with comprehensive information helps them make better buying decisions and enhances customer satisfaction [52]. Therefore, we propose the following hypothesis:

**H1a.** The extent of the information content features presented to online shoppers is positively related to customer satisfaction.

### 4.1.2 Purchase Intention

Information about products and services is almost always obtained before making a purchase. The increased risks associated with online shopping [61] result in more information searching [58]. Lohse et al. [48] and Shim et al. [71] found that searching for product information is the most important predictor of whether a potential customer will make an online purchase. Furthermore, research has shown that a reduced level of perceived risk is also positively associated with purchase intention [81]. The perceived risk impacts a customer’s attitude towards a website, thereby having an indirect impact on purchase intention [29, 61]. Given this, we can posit that the information presented on a firm website will have a positive impact on purchase intention [48, 64], and thus we hypothesize:

**H1b.** The extent of the information content features presented to online shoppers is positively related to customer purchase intention.

### 4.2 Moderating Effect of Website Personalization

#### 4.2.1 Customer Satisfaction

Keeping in mind the huge variations in individual needs, personalized services tend to be considerably more satisfactory than a one-size-fits-all approach. By tailoring the information to the individual needs of customers, website personalization can enhance (i.e., positively moderate) the influence of information content on customer satisfaction. Customers tend to be more satisfied with the online firm when they are provided with relevant information [87] because they are able to make better purchase decisions [70]. Website personalization can offer fast and easy access to desired information [24], which results in higher customer satisfaction [58]. Ultimately, firms that use website personalization to reduce irrelevant information will not only reduce customers’ aimless surfing activities [44], but also provide accurate and timely information that often generates additional sales [62]. Consistent with Shankar et al. [70], we therefore hypothesize:

**H2a.** Website personalization will positively moderate the impact of information content on customer satisfaction.

#### 4.2.2 Purchase Intention

By identifying and providing individualized and meaningful information to each customer, website personalization can augment the impact of information content on a customer’s intention to purchase. Website personalization can also help firms mitigate the problem of information overload. By filtering out irrelevant information, website personalization can provide access to information effectively and efficiently. Website personalization reduces a customer’s perception of risk by facilitating customers’ ability to find the information at the right time [24]. As mentioned,
information acquisition is one method customers use to reduce their risk perception [58, 77], and it significantly influences customers' purchasing behavior [12, 36]. As such, we conclude that by using website personalization, firms can offer customers convenience and a sense of control over the exchange process [80], which significantly influences their purchase intentions [66]. Therefore, we propose:

**H2b. Website personalization will positively moderate the impact of information content on customer purchase intention.**

4.3 Online Sales Performance

4.3.1 Customer Satisfaction

Satisfaction reflects a firm's ability to fulfill customer needs and expectations effectively. According to Miguel et al. [50], customer satisfaction leads to increased store sales by influencing the likelihood of repurchase and fostering favorable word of mouth. In other words, the more satisfying the experienced customers have, the more likely they are to remain loyal, and if they are satisfied with a relationship, they are not motivated to search for alternatives. Therefore, satisfying online experiences, as well as generating positive purchase intention [86], also help firms retain customers. Furthermore, by increasing website traffic and revenue per transaction, customer satisfaction positively influences online retailers' sales performance [5]. Hence, we posit that identifying and fulfilling online customers' informational needs and wants in an effective and knowledgeable way will positively influence customer satisfaction and result in higher sales performance; thus, we propose:

**H3. Customer satisfaction will positively influence online sales performance.**

4.3.2 Purchase Intention

Past studies have found that purchase intention is a predictor of the actual purchase [54, 56] and that customers with positive purchase intention are more likely to make a purchase [59]. Zhengui and Benbasat [88] have extended these findings to the online context. Customers formulate positive purchase intention over a period of time (i.e., they search for information before purchasing a product, which increases their confidence about their choices). Online customers perceive that the availability of useful and relevant information allows them to make better purchase decisions [40]. As such, the availability of useful and relevant information positively influences customers' intentions to purchase and eventually leads to actual purchases [54, 56]. Therefore, we propose:

**H4. Purchase intention will positively influence online sales performance.**

5. METHODOLOGY

To test our hypotheses, we obtained data from Internet Retailer's Top 500 Guide [31], which ranks America's 500 largest online retailers based on their annual sales for the years 2006, 2007, and 2008. We retained data for 207 Web retailers after excluding missing data. We extracted the variables customer satisfaction, purchase intention, and online sales directly from the database. Following Ayanso et al. [6], we calculated our independent variables based on their feature composition (i.e., for every retail website, the score was calculated on the basis of the number of features offered in each of the two website dimensions, information content and website personalization). Specifically, in accordance with the existing literature [5, 6, 30, 63, 64] and Internet Retailer's Guide to Retail Web Site Design & Usability [32], eight website features in our data set were found to be related to information content (i.e., customer reviews, FAQ, product comparison, product ratings, store locator, what's new, top seller, and online circular), and five other website features were categorized under website personalization (product recommendation, site personalization, product customization, registry, and wish list).

5.1 Information Content and Website Personalization Variables

To further validate this categorization and to ensure its reliability, we applied inter- and intra-rater reliability assessment [82]. Specifically, five raters were selected based on their past experience and familiarity with the online retailing literature, and their assessment of the website dimensions and features were carried out at two different time periods. The summary Cohen’s Kappa (K) scores and percentage agreement were calculated for each website dimension (n=2) and also for each website feature (n=13). The average inter- and intra-rater Kappa value of K=0.95 confirms that our classification of website features for information content and website personalization is “perfectly reliable” according to Warner [82].

5.2 Control Variables

First, we controlled for the product variety offered by retailers by using the number of stock keeping units (SKUs; log transformed variable). Second, we controlled for the retailer’s age using the retailer’s year of launch to control for the possible influence of the retailer’s age on customer satisfaction, purchase intention, and sales. Third, we controlled for the type of retailer: that is, whether the retailer is Web-Only or not. Fourth, we controlled for the year of operation (i.e., year in which the data were collected) using a dummy variable (i.e., Year Dummy). Table 1 shows the descriptive statistics and inter-correlations among the variables considered in this study.

5.3 Analysis

The hypothesized model was tested using Structural Equation Modeling (SEM). Following the procedure recommended by Schumacker and Marcoulides [68], the data were analyzed using a covariance matrix as an input, and maximum likelihood was estimated using the Analysis of Moment Structures (AMOS) statistical program, version 17. In order to measure the moderating influence, the interaction effect was modeled by creating an interaction term between information content and website personalization. Furthermore, prior to the main body of analysis, we mean centered the predictor variables and examined the patterns for mean, median, skewness, and kurtosis [14]. We found no threats to validity.

Since our structural model required the estimation of a large number of parameters, we employed Path Analysis (i.e.,
Table 1: Descriptive Statistics and Inter-correlations (n = 207)

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Information Content</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Website Personalization</td>
<td>0.522*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Customer Satisfaction</td>
<td>0.096</td>
<td>0.071</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Purchase Intention</td>
<td>0.208*</td>
<td>0.143</td>
<td>0.066</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sales Performance(\ln)</td>
<td>0.362*</td>
<td>0.220*</td>
<td>0.308*</td>
<td>0.318*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. SKU (\ln)</td>
<td>0.161</td>
<td>0.122</td>
<td>-0.037</td>
<td>0.027</td>
<td>0.245*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Year of Launch</td>
<td>-0.121</td>
<td>-0.086</td>
<td>0.096</td>
<td>-0.027</td>
<td>0.074</td>
<td>-0.045</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Merchant Type</td>
<td>-0.165</td>
<td>-0.091</td>
<td>-0.149</td>
<td>-0.398*</td>
<td>-0.149</td>
<td>0.045</td>
<td>-0.029</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. Year Dummy</td>
<td>0.587*</td>
<td>0.658*</td>
<td>-0.042</td>
<td>0.066</td>
<td>0.193*</td>
<td>0.031</td>
<td>-0.015</td>
<td>-0.068</td>
<td>1</td>
</tr>
<tr>
<td>Mean</td>
<td>0.508</td>
<td>0.656</td>
<td>73.92</td>
<td>78.290</td>
<td>19.877</td>
<td>10.710</td>
<td>11.531</td>
<td>0.350</td>
<td>0.961</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.231</td>
<td>0.198</td>
<td>4.034</td>
<td>6.082</td>
<td>1.134</td>
<td>2.448</td>
<td>3.412</td>
<td>0.473</td>
<td>0.812</td>
</tr>
</tbody>
</table>

Notes: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 2: Results for Path Analysis for the Hypothesized Model

<table>
<thead>
<tr>
<th>Paths from</th>
<th>Antecedents of Customer Satisfaction &amp; Purchase Intention</th>
<th>Hypothesis</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Paths</td>
<td>Information Content</td>
<td>Customer Satisfaction</td>
<td>H1a (Not Supported)</td>
<td>-1.978</td>
<td>2.342</td>
<td>-0.844</td>
</tr>
<tr>
<td></td>
<td>Information Content</td>
<td>Purchase Intention</td>
<td>H1b (Not Supported)</td>
<td>-5.175</td>
<td>3.243</td>
<td>-1.596</td>
</tr>
<tr>
<td></td>
<td>Website Personalization</td>
<td>Customer Satisfaction</td>
<td></td>
<td>2.646</td>
<td>1.862</td>
<td>1.421</td>
</tr>
<tr>
<td></td>
<td>Website Personalization</td>
<td>Purchase Intention</td>
<td></td>
<td>2.247</td>
<td>2.579</td>
<td>0.871</td>
</tr>
<tr>
<td>Moderating Paths</td>
<td>Information Content &amp; Website Personalization</td>
<td>Customer Satisfaction</td>
<td>H2a (Supported)</td>
<td>6.329</td>
<td>2.334</td>
<td>2.711</td>
</tr>
<tr>
<td></td>
<td>Information Content &amp; Website Personalization</td>
<td>Purchase Intention</td>
<td>H2b (Supported)</td>
<td>12.265</td>
<td>3.232</td>
<td>3.794</td>
</tr>
<tr>
<td>Consequences Of Customer Satisfaction &amp; Purchase Intention</td>
<td>Customer Satisfaction</td>
<td>Sales Performance</td>
<td>H3 (Supported)</td>
<td>0.066</td>
<td>0.027</td>
<td>2.465</td>
</tr>
<tr>
<td></td>
<td>Purchase Intention</td>
<td>Sales Performance</td>
<td>H4 (Not Supported)</td>
<td>0.019</td>
<td>0.019</td>
<td>0.974</td>
</tr>
<tr>
<td>Control Paths</td>
<td>SKU</td>
<td>Customer Satisfaction</td>
<td></td>
<td>-0.132</td>
<td>0.112</td>
<td>-1.174</td>
</tr>
<tr>
<td></td>
<td>Year of Launch</td>
<td>Customer Satisfaction</td>
<td></td>
<td>0.143</td>
<td>0.079</td>
<td>1.802</td>
</tr>
<tr>
<td></td>
<td>Merchant Type</td>
<td>Customer Satisfaction</td>
<td></td>
<td>-0.933</td>
<td>0.576</td>
<td>-1.621</td>
</tr>
<tr>
<td></td>
<td>Year Dummy</td>
<td>Customer Satisfaction</td>
<td></td>
<td>-1.285</td>
<td>0.479</td>
<td>-2.685</td>
</tr>
<tr>
<td></td>
<td>SKU</td>
<td>Purchase Intention</td>
<td></td>
<td>-0.029</td>
<td>0.155</td>
<td>-0.186</td>
</tr>
<tr>
<td></td>
<td>Year of Launch</td>
<td>Purchase Intention</td>
<td></td>
<td>-0.016</td>
<td>0.110</td>
<td>-0.149</td>
</tr>
<tr>
<td></td>
<td>Merchant Type</td>
<td>Purchase Intention</td>
<td></td>
<td>-4.64</td>
<td>0.797</td>
<td>-5.820</td>
</tr>
<tr>
<td></td>
<td>Year Dummy</td>
<td>Purchase Intention</td>
<td></td>
<td>-1.05</td>
<td>0.663</td>
<td>-1.585</td>
</tr>
<tr>
<td></td>
<td>SKU</td>
<td>Sales Performance</td>
<td></td>
<td>0.116</td>
<td>0.029</td>
<td>4.040</td>
</tr>
<tr>
<td></td>
<td>Year of Launch</td>
<td>Sales Performance</td>
<td></td>
<td>0.022</td>
<td>0.021</td>
<td>1.052</td>
</tr>
<tr>
<td></td>
<td>Merchant Type</td>
<td>Sales Performance</td>
<td></td>
<td>-0.171</td>
<td>0.167</td>
<td>-1.026</td>
</tr>
<tr>
<td></td>
<td>Year Dummy</td>
<td>Sales Performance</td>
<td></td>
<td>0.259</td>
<td>0.087</td>
<td>2.969</td>
</tr>
</tbody>
</table>
a subset of SEM) to examine the hypothesized relationships [39]. Overall, the model explained 22% of the variance in e-retailer’s sales performance. In order to assess the goodness of fit of the model being tested, multiple fit tests were utilized: chi-square, goodness-of-fit index (GFI>0.90), comparative fit index (CFI>0.90), Tucker-Lewis index (TLI>0.90), and root mean square error of approximation (RMSEA<0.08) [39]. In addition, we also utilized the following four parsimony measures: Akaike Information Criterion (AIC), Expected Cross-Validation Index (ECVI), Consistent AIC (CAIC), and Parsimonious Fit Index (PNFI). Overall, the model fit indices \[\Delta \chi^2 \text{ (18)} = 39.01, \text{ GFI}=0.966, \text{ CFI}=0.973, \text{ TLI}=0.932, \text{ RMSEA}=0.07, \text{ AIC}=113.01, \text{ ECVI}=0.549, \text{ CAIC}=273.32, \text{ and PNFI}=0.381\] show that the hypothesized model fits the data quite well. Furthermore, the model adequately explains the relationships among the variables considered for our sample of 207 e-retailing firms. Table 2 summarizes all the significant relationships in our proposed model along with the supported hypotheses.

5.4 Post Hoc Analysis

In addition to the hypothesized mediating effect only model (Model II), we conducted a Post Hoc analysis in order to explore the possibility that information content, website personalization, and their interaction term may have a direct influence on online sales. We adopted a process similar to Bagozzi and Yi [7] in order to test for the direct and mediating effects of the three antecedents of online sales. First, we tested a direct effect only model (Model I) with direct paths from information content, website personalization, and their interaction term to online sales. Secondly, we tested a direct and mediating effect model (Model III) that included both the direct and indirect impacts (i.e., via customer satisfaction and purchase intention) of the three antecedent variables on online sales. The chi-square statistics shown in Table 3 indicate that the inclusion of mediating variables to explain online sales contributed to a better fit than the direct effect only model (Model I) \[\Delta \chi^2 \text{ (2)} = 15.55, \ p<0.01\] and to the proposed mediating effect only model (Model II) \[\Delta \chi^2 \text{ (3)} = 15.18, \ p<0.01\], thus supporting mediation [27]. Based on the goodness of fit and parsimonious indices, it is obvious that the direct and mediating effect model (Model III) is the best fit to our sample. However, we did not observe any significant difference between the resulting estimates of the mediating only and the direct and mediating effect model, which further validates the robustness of our findings in terms of how the constructs are related.

6. DISCUSSION

We investigated how different website features influence online sales by satisfying online customer’s needs and inducing positive purchase intention. In particular, this study provides insight into whether information content (regardless of how extensive it is) on a firm’s website alone is sufficient to satisfy and generate positive purchase behavior among online customers or if external filtering mechanisms (in this case, website personalization) are necessary. Furthermore, this study provides empirical evidence that clarifies the role of customer satisfaction and purchase intention in analyzing the relationship between different website dimensions (i.e., information content and website personalization) and retailers’ sales performance. Ultimately, this study also contributes to the online retailing literature by explaining the role and implications of online risk perception and information search theories.

Our findings show that even though the importance of information content is heightened significantly in the context of online retailing due to its information intensive nature, information alone is not enough to satisfy and motivate customers to purchase. With respect to subjective states, this study confirms previous research [26] that when people are provided with general information (i.e. non-personalized information), they feel less satisfied and less motivated to buy from that website. However, with website personalization, no matter how extensive the information is, customers feel more satisfied and motivated to carrying out online purchases. In other words, the impact of information content on customer satisfaction and purchase intention can be enhanced by allowing customers easy and quick access to the required information. In terms of PRT and IST, providing rich information without robust personalization does not permit online customers to search easily and quickly for the information necessary to reduce their perceived risks, which leaves customers unsatisfied with their online shopping experiences and unwilling to commit to their online purchases.

Moreover, our findings show that improved customer satisfaction leads to improved sales performance. This finding supports similar findings [e.g., 3, 5, 25] regarding the effects of satisfaction on sales performance. Furthermore, our findings show that purchase intention alone does not affect online sales performance. This finding contradicts previous findings [e.g., 54] that purchase intention is positively associated with the actual purchase. Purchase intention can still be a predictor of an actual purchase, but purchase intention on its own is not sufficient to trigger sales. Instead, consumers who perceived online shopping...
to be superior to traditional shopping and who are confident in the website express an interest in shopping online [46].

7. MANAGERIAL IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

First, our findings indicate that excessive information may not be beneficial to e-customers; rather, customers’ exposure to overabundant information typically leads to poorer subjective states. Online managers who are trying to provide ever-increasing amounts of information in their effort to attract customers should pay more attention to information that is relevant to their customers. Although the cost of personalization is much higher than for a one-size-fits-all approach, our findings show that if well implemented, website personalization offers promising results. Our results should alleviate online retailers’ concerns regarding whether implementing website personalization is financially worthwhile or not.

Second, information filtering techniques on the Internet to date have mainly emphasized the informational aspects of shopping. Based on our findings, in addition to providing recommendations and personalized information, online retailers should provide features that allow users to customize products according to their individual preferences. By tailoring the whole customer experience, website personalization empowers customers to alter the interaction and relationship to suit their personal preferences. Receiving products and services that are personalized helps build emotional connections with customers [83], which ultimately can create satisfied and loyal customers.

Third, our results suggest that customer satisfaction plays an important role in augmenting online retailers’ sales performance. However, the link between customer satisfaction and sales performance cannot be comprehended fully just from observation, conceptual arguments, and descriptive statistics [25]. In this study, we propose a quantitative model that determines the website dimensions (i.e., information content and website personalization) that can positively influence customer satisfaction. It is by improving these dimensions that managers can achieve customer satisfaction and sales. In fact, our findings are consistent with the findings of Internet Retailer [31, 32], which show that customer satisfaction translates into real dollars.

Our research provides a unique perspective for managers given that our analysis is based on real data from a large number of top-performing Web retailers. However, our results and conclusions are not without limitations. The first limitation concerns the number of specific information and website personalization features identified in our study. We recognize that the number of features identified may not represent an exhaustive list of online features implemented by Web retailers. There are certainly other online features that can elevate the role of information content and website personalization. We believe that future research can extend our conceptual model by including and evaluating these other online features.

Furthermore, our approach is quantitative in nature (i.e., it measures information content and website personalization based on the number of features available on the retailer’s website). Future studies investigating the quality of specific features and functions would certainly be a valuable addition to our research. Moreover, our study focuses on how web personalization operates as an information filter that can satisfy and facilitate customers’ purchase decisions. Considering and evaluating other information filtering tools such as navigation would definitely be a useful contribution to the current understanding of these issues.

8. CONCLUSION

Studies to date have presented conflicting results regarding the amount of information that websites should present to customers. Rather than simply focusing on the quantity of information, we examined the broader picture. Using data from top Web retailers, this study extends the literature [e.g., 5, 74] and shows that the extent of retailers’ efforts to provide relevant, easy to digest, and accessible information is positively associated with customer satisfaction and purchase intention. Furthermore, by influencing customer satisfaction through information that is customized to the individual, retailers’ online sales performances are improved. In fact, the long term survival and profitability of online retailers does not depend on the amount of information they provide to customers, but rather on the relevance and accessibility of that information. As Kim and Lee [37] argue, service improvement efforts increase levels of customer satisfaction and purchase intention, which results in improved profitability. Therefore, continued profitability in the web retailing sector depends on personalized customer service and the delivery of relevant, accessible information to customers. To survive and prosper in the online marketplace, Web retailers must reduce their customers’ perceived risks by making the information search process as easy and effortless as possible. Ultimately, customers need to feel valued and the more personalized and anxiety-free their online shopping experience is, the more likely they are to return in the future and build loyalty with that firm.

REFERENCES


Wolfinbarger, M. F. and Gilly, M. C. “EtailQ:


