The Effect of Optimum Stimulation Level and Exploratory Information Seeking on Online Purchase Intention

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Article

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Abstract

The purpose of this article is to determine the effects of the exploratory information seeking tendencies of extroverted individuals resulting from the arousal on online purchase intention. The survey data were collected from 401 respondents in Adana, Turkey. The results reveal that extrovert people who have differences in their level of arousal tend to have exploratory information seeking. Furthermore it was also found that these components have an impact on online purchase intention. Theocratical and practical implications of the findings are discussed through the results of the study.

1. Introduction

Optimum stimulation level (OSL) is a personal trait that determines the level of individuals’ stimulation (Avornyo et al., 2019: 348). Optimum stimulation level is also related to individuals’ environmental stimulation (Raju, 1980). Each individual has his or her own stimulation level and it changes according to complexity and novelty of the environment (Guido et al., 2007: 2). As stated by Steenkamp and Baumgartner (1992, p. 434) “the fact that exploratory tendencies are related to a person's characteristic and stimulation suggests OSL as a major determinant of consumer behaviour with strong exploratory elements.

Matzler et al. (2006) pointed out that consumers who have a higher degree of socialization are more willing to share their experiences with others to attract other people's attention when purchasing a good or a service. Thus, consumers with a high degree of extroversion tend to have a higher proportion of exploratory purchasing motivation (Steenkamp & Burgess, 2002). In addition, extroverted individuals are excited in search of arousal (Zhao & Seibert, 2006, p.260). ‘Extroversion belongs to the interpersonal dimension and is closely related to the quality of social interactions’ (McCrae, R. R., & Costa, 1989, p.586). Extroverted individuals who are taking higher risk change their behaviours more frequently and who have more physical activities are looking for stimulation much more than introvert individuals (Blackburn, 1969). Surfing is one of the components of exploratory behaviour and when individuals reach available information, they desire to keep themselves updated with the latest changes. (Rowley, 2000, p.22).

Exploratory behavior which is characterized by searching for information or doing research on websites affects individuals’ attitude towards the websites. Individuals tend to explore the various possibilities offered by websites and if they develop a positive opinion of these websites their approach behaviors will be triggered (Richard & Chandra, 2005, p. 1022). Menon and Kahn (1995) stated that consumers need arousal due to their tendency for seeking innovation and diversity and taking high risks for stimulation. All consumers, regardless of predisposing trends, mostly use sensory mode in exploratory information seeking (EIS). For the same kind of product while different personality traits create functional perception for some people, it creates aesthetic perception for the others (Venkatraman, Deborah, MacInnis, 1985, p.103). In a study conducted by Legoherel (2009), he stated that exploratory information-seeking behavior is cognitive and exploratory purchasing behavior is caused by sensory stimulation. However, he stated that activities such as innovativeness, diversity search, brand change, entertainment shopping and information seeking behavior are indicators of exploratory tendencies in the consumer buying process.
Personality traits and psychological mode affect the formation of a consumer's purchase motivation and in this study, only the relation of extroverted individuals with arousal was examined. Raju (1980) mentioned that people with low degree of OSL don't accept new and innovative products just to prevent themselves from the risks and this shows that marketers should find a way in order to give a message that their new products are not risky. This study contributes to fill the paucity of consumer behavior research in Turkey related to OSL and its impact on EIS. The findings of this research can guide marketers to carry out their promotional activities considering the need of arousal of consumers' for seeking exploratory information. The findings of this research can also guide manufacturers, as products could be designed according to the variety and curiosity needs of consumers to increase their online purchase intention through exploratory information seeking.

PLEASE INSERT FIGURE 1 NEAR HERE

2. Theoretical Foundations And Hypotheses Development

Extroversion reflects the amount and intensity of relationships of individuals with their environment and refers to the tendency to contact the environment with energy, spirit, enthusiasm, trust and positive experiences (Rolland, 2002, p.8). Extroverted individuals tend to be energetic, enthusiastic, and ambitious (Raja & Johns, 2004). Extroverts are associated with both social and human interactions (Langelaan, Bakker, Doornen, & Schaufeli, 2006, p.525). Highly extroverted individuals are engaging in online shopping activities because it is crucial for them to share and receive information of shopping experiences on digital platforms (Wolfinbarger & Gilly, 2001, p.36). Thoman et al. (2007) states that sharing on the virtual platform is consistent with social motivation. Boedeker, M. (1995) stated in his study that there is a positive correlation between consumers who shop for entertainment and their optimum stimulation level. The optimum stimulation level in extroverted personalities is higher than those with introverted personalities (Ludvigh & Happ, 1974, p. 360). People with high extroversion are expected to believe they have sufficient competence to provide online reviews (Picazo-Vela, Chou, Melcher & Pearson, 2010, p. 688).

Accordingly, H1 hypothesis is as following:

H1: Extroversion has a significant effect on optimum stimulation level.

Online consumers with low arousal levels prefer normal and easy accessible websites that they are familiar with. Individuals with a high arousal level prefer extraordinary websites for their originality and innovativeness because they need to be stimulated and they look for different stimuli (Dhar & Jha, 2014). When the website is quite entertaining (3D pictures, music, colors, etc.), arousal will increase for visitors with high arousal levels (Richard & Chebat, 2016, p. 4–5). Additionally, very low and very high levels of arousal creates negative hedonic tone in individuals. Positive hedonic tone developing in individuals moderate only with sensory stimulation (Ludvigh & Happ, 1974, p. 360).
Some individuals prefer silent settings, while others actively seek to increase their arousal by selecting active, new, complex or unpredictable settings (Raju, 1980, pp. 272–273). Individuals with high arousal levels improve their flow state in their interactions with computer-mediated environments, while individuals with low arousal levels experience anxiety in their interactions with computer-mediated environments (Novak & Hoffman, 1996, p.61). When individuals with high arousal levels are motivated by acquiring information and curiosity, they seek more information than the ones with low arousal levels (Steenkamp & Baumgartner, 1992, p. 434). He et all. (2017) suggested that inquisitive responses may be present for individuals with both high and low arousal levels, but individuals with high arousal levels seek information because they want to search sites they do not know. On the other hand, individuals with low arousal level seek information to reduce the risks presented by foreign websites (Richard & Chebat, 2016, p.4).

According to the discussions above, this research, H2 hypothesis is as follows:

H2: Optimum stimulation level has a significant effect on exploratory information seeking.

Consumers seek information even if they do not buy anything. (Smith, & Sivakumar, 2004, p. 1201). People who seek exploratory information do not pay much attention to the ease of use or reliability of technological products. These people have a high desire and motivation to try technological products (Dabholkar & Bagozzi, 2002, p. 187). Searching information about products on the internet affects the purchasing intentions of consumers (Moe, 2003). Therefore, the services and campaigns offered on websites affect the consumers’ intention to search for new things and also their purchase intentions (Tsao & Chang, 2010, p.1802–1803). Some interactions for searching exploratory information on the internet may be more fun (Smith & Sivakumar, 2004)

Although diversity research is limited on online research, the search for diversity or diverse behavior result from interpersonal goals (McAlister & Pessemier, 1982, p.314). Consumer behavior research has associated consumers’ search for diversity with the presence of an ideal stimulation level as a personal trait for innovation, complexity, or change (Mahatanankoon, 2007; Gu et al., 2018). After all, consumer arousal levels determine the degree of exploratory purchasing tendencies and diversity seeking behaviors in situations such as shopping (Raju, 1980, p. 276; Menon and Kahn, 1995, p. 285) The search for diversity in the context of online shopping can increase online store comparison behavior; therefore, the search for diversity is seen as an important motivation in the online context (Rohm, & Swaminathan, 2004, p. 750).

Environmental psychology proposed by Mehrabian and Russell (1974) deals with environmental stimuli. The online retail environment does not have some of the traditional dimensions such as ambient temperature, odor, texture. In the context of online retail, visual design emerges consumers’ spending long time on websites and increasing intention in their purchases (Koo & Ju, 2010, p. 195). Exploratory behavior is related to the amount of time that an individual uses a computer, and exploratory use causes spending longer hours on internet (Ghani & Deshpande, 1994, p. 383). Justified action and planned
behavior theories argue that the intention to perform a certain behaviour in information technologies will lead to its actual behaviour (Korzaan, 2003, p.26–27).

Consumers who are seeking for exploratory information like not only talking their consumption experiences but also following advertisements and promotional activities (Baumgartner & Steenkamp, 1996). Ort and Bourrain (2005) pointed out that the stimulus that triggers specific behavior stemming from curiosity is unique and that exploratory information seeking behavior includes interpersonal communication and exchange dimensions. They stated that the multifaceted behavior resulting from curiosity was affected by stimuli. According to Hanna and Wagle (1988), highly aroused consumers are more exposed to mass media. Hanna and Wagle (1988) also stated that consumers with a high level of stimulation are more innovative than low aroused consumers for changing brands and approaching new products. Doing research on the internet affects the purchasing intention of consumers (Moe, 2003). Therefore, promotional activities and the design of websites of online stores affect purchase intention of consumers (Tsao & Chang, 2010, p. 1802–1803). Maignan and Lukas (1997) stated that internet helps to support pre-purchase phase, as it helps customers compare different options. Dickson (2000) states that it will not be possible for consumers to discover their interests without the internet. Kwak et al. (2002) found that consumers looking for product information online are more likely to purchase (Aljukhadar & Senecal, 2011, p. 423). Consumers with a high level of opinion seeking behaviour tend to search for more information and advice from others during a purchase decision process (Flynn et al. 1996).

Accordingly, this research's, H3 hypothesis is as follows.

H3: Exploratory information seeking has a significant impact on online purchase intention.

3. Method

3.1. Sample

The universe of this research consists of people who tends to shop online. The sample of this study consists of 410 respondents. Responses of 9 participants collected at extreme points were excluded from the analysis. The analyzes were continued over 401 datas. The convenience sampling method was used to collect data from the participants. A face-to-face survey method was applied to people who voluntarily approved to answer the survey questions in 2018, in Adana, Turkey. In total 49.9% of the respondents are male, 50.1% are female. In terms of the marital status distribution of the participants, 34.4% are married, 65.6% are single. In terms of age distribution of the participants, 35.9% are 18–25 years old, 41.6% are 26–35 years old, 14% are 36–45 years old, 34% are over 46 years old. Educational status of the respondents is found as 8.5% are primary school graduate, 52.4% are high school graduate and 39.1% are undergraduate. As the final demographic variable, household income status of the people participating in the study is examined; 24.9% between 2000–2999 TL, 28.2% between 3000–3999 TL, 15.5% between 4000–4999 TL, 14.2% between 5000–5999 TL and 7% has been determined that they
have an income between 6000–6999 TL, 4.2% between 7000–7999 TL and 6% over 8000 TL. Participants spend an average of 5 hours 46 minutes on the Internet.

3.2. Instruments:

In the first part of the form; the personality scale created by John and Srivastava (1999) was used to determine the extroversion characteristics of the participants. There are a total of 7 questions created by Steemkamp and Baumgartner (1995) to measure the level of stimulation level. The scale created by Baumgartner and Steemkamp (1996) was used to measure participants' exploratory information seeking tendencies. In order to measure the online purchase intention of the participants, 3 questions formed by Hong and Cha (2013) were asked. In addition, in the last part, a total of 6 questions were asked to measure the gender, age, marital status, income level and educational status of the participants, the time they spent on the Internet, and the frequency of their shopping on the Internet. The survey was employed to collect data in Turkey.

PLEASE INSERT Table 1 NEAR HERE

<table>
<thead>
<tr>
<th>Scale Name</th>
<th>Source</th>
<th>Number of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extroversion</td>
<td>John ve Srivastava (1999)</td>
<td>6</td>
</tr>
<tr>
<td>Change Seeker</td>
<td>Steemkamp ve Baumgartner (1995)</td>
<td>7</td>
</tr>
<tr>
<td>Exploratory Information Seeking</td>
<td>Baumgartner ve Steemkamp (1996)</td>
<td>10</td>
</tr>
<tr>
<td>Online Purchase Intention</td>
<td>Hong ve Cha (2013)</td>
<td>3</td>
</tr>
</tbody>
</table>

3.3. Statistical Methods

Confirmatory factor analysis was conducted by using AMOS 6 to test convergent and discriminant validity of the scales that are used in this study. Although these measures are well established in USA, it was important to investigate the measurement equivalence of the instruments and their applicability in Turkish contexts.

As can be seen from Table 2, x2, df, x2 /df, root mean square residual (RMR), goodness of fit index (GFI), comparative fit index (CFI) (Bentler, 1990) and Tucker-Lewis Index (TLI; Tucker and Lewis, 1973) measures were used to assess the measurement equivalence of the variables. In the CFA, all variables were first specified to load onto a single factor. In the second step all the variables were loaded on different factors and the improvement in the goodness of fit measures is investigated.
Table 2
Fit statistics for measurement models

<table>
<thead>
<tr>
<th>Model</th>
<th>x2</th>
<th>df</th>
<th>x2/df</th>
<th>RMR</th>
<th>GFI</th>
<th>CFI</th>
<th>TLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>One factor model a</td>
<td>4075.633</td>
<td>350</td>
<td>11.645</td>
<td>0.193</td>
<td>0.505</td>
<td>0.417</td>
<td>0.371</td>
</tr>
<tr>
<td>Four factor model b</td>
<td>953.785</td>
<td>343</td>
<td>2.786</td>
<td>268.095</td>
<td>0.848</td>
<td>0.903</td>
<td>0.889</td>
</tr>
</tbody>
</table>

Table 2 shows that the reduction in x2 and x2 /df ratio is significant from the one factor model to four factor model. The other fit indexes (i.e. RMR, GFI, CFI and TLI) are all above or very close to generally accepted levels. The improvement in x2 /df and other indices shows us that the four factor model fits the data better than the one and three factor models. This reveals that all variables measured in this research can be differentiated and are distinct constructs.

### 3.3. Findings

Table 3 shows the means, standard deviations and correlations between variables and Reliabilities of Scales.

<table>
<thead>
<tr>
<th></th>
<th>α</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extroversion</td>
<td>.88</td>
<td>3.61</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Optimum Stimulation Level</td>
<td>.94</td>
<td>3.52</td>
<td>1.07</td>
<td>0.326**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Exploratory Information Seeking</td>
<td>.89</td>
<td>2.49</td>
<td>0.835</td>
<td>0.60</td>
<td>0.264**</td>
<td></td>
</tr>
<tr>
<td>4. Online Purchase Intention</td>
<td>.75</td>
<td>4.98</td>
<td>0.594</td>
<td>0.056</td>
<td>0.062</td>
<td>0.092</td>
</tr>
</tbody>
</table>

Notes: **p < .01 *p < .05

If the reliability coefficient varying between 0 and 1 has a value of 0.6 or less, it is generally expressed as insufficient internal consistency (Malhotra & Birks, 2006, p. 314). When the reliability coefficient of the variables in Table 3 is examined, it is seen that all values are greater than 0.6 and this is a desired condition for an adequate level of internal consistency.
Table 4
Regression Weights of Variables In the Model

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSL ←− Extroversion</td>
<td>,392</td>
<td>,057</td>
<td>6.892</td>
<td>,000</td>
</tr>
<tr>
<td>ESI ←− Optimum Stimulation Level</td>
<td>,206</td>
<td>,038</td>
<td>5.485</td>
<td>,000</td>
</tr>
<tr>
<td>OPI ←− Exploratory Information Seeking</td>
<td>,065</td>
<td>,035</td>
<td>1.841</td>
<td>,066</td>
</tr>
</tbody>
</table>

The model fit values appears that our model is well established. X2/df ratio is .539, CFI is 1 NFI is .979 and RMSEA is .00 for the model. And the regression table above shows that the effect of extroversion on the stimulation level and the effect of stimulation level on information seeking are significant. At the last step, even though the effect of information seeking behavior on purchasing intention is slightly over the common level, for mediation it can be seen as acceptable (Barron and Kenny, 1986). These results reveal that our hypotheses are all supported.

4. Discussion

In this context, it is thought that organizing promotional activities that will increase the stimulation level of consumers can be beneficial for the companies especially for those launching new products or services. Consumers with low arousal levels prefer normal and easily accessible websites because they don’t look for novelty, variety and they also don’t want to take some risks especially when they are online. Individuals with a high level of OSL prefer extraordinary websites with their originality and innovativeness because they need to be stimulated and they look for different stimuli, they can search more and search more information; because they are motivated by curiosity. The websites need to be attractive so that they can properly evaluate the content of the websites and they can keep them longer. When the site is quite entertaining (3D images, music, colors, etc.), arousal will increase for visitors with high arousal levels (Richard & Chebat, 2016, p. 4–5). Sales messages that are not only exciting, intriguing, innovative but also stimulating can also be beneficial for them. More exploratory consumers tend to show more interest in sales promotions that encourage and offer added value (Chandon et al., 2000). As the variety of promotional tools is increasing rapidly, marketing managers can choose the most appropriate promotional application among many alternatives to get the best results (Raju, 1995) For example, it would be better to create advertisements which motivate extrovert consumers' social behavior. It may be beneficial for companies to reach their customers according to the sector they are affiliated with, especially when creating their promotional activities. For example, when a tourism company designs a tour package, it may be beneficial to provide all kinds of detailed information on the website (different restaurant names, information about the ways of transportation from the hotel they will stay to the historical places, payment options, etc.). On the other hand, the website of a hospital in question may be suggested to give information such as offering service to the companions of the patients. It is also recommended to make different promotional campaigns for different target groups. For instance, for low stimuli levels such as elderly or retired consumers, it is recommended to give messages that include lower risk or reduce uncertainty especially for technological products. It is also thought that a pre-offer make
consumers try out different experiences such as offering a free lunch for the promotion of a newly opened hotel and making this offer visible on their website. These kinds of promotional activities can be an opportunity for increasing the level of stimulation of consumers. In addition Lepp & Gibson (2008) found out a significant relationship between stimulation and purchase intention in the selection of tourism destinations. Since extroverts feel the need for stimulation, they will be very interested in the media and they will seek information so it is recommended for the companies to deliver interesting and exploratory messages of their products especially on social media. (like sharing videos, organizing diverse and attractive sales promotions, inviting consumers for involving in product use). Consumer behavior research has linked the exploratory searches of consumers to the presence of their stimulation level (e.g., novelty, diversity, difference, curiosity, or a personal reason for change). It is thought that it will be an important source of motivation for the consumers who are looking for diversity in the context of online shopping by increasing the variety of the products or offering new products that can create alteration for the consumers. In future studies, researching different personality traits and also purchase intentions towards omnichannel purchase intention could contribute to make comparisons between different personality traits and purchasing intentions. In addition, in future studies, comparisons can be made between Generation X, Generation Y and Generation Z, and differences and common aspects between generations can be determined. Finally, since studies can be conducted in different cultures it will contribute to revealing differences or similarities between cultures and can be presented as suggestions for future studies.

Declarations

Conflict of interest: There is no conflict of interest in this article.

Informed consent was obtained from all individual participants included in the study.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

This article is based on a doctoral dissertation and the data were obtained for this research in 2018. In 2018, there was no ethics committee approval requirement for data collection while conducting a research in social sciences in Turkey. Therefore, ethical approval was not obtained but it was applied to people who voluntarily approved to answer the survey questions face to face in 2018, in Adana, Turkey.

References


Figures

**Figure 1**

Research Model

**Figure 2**

Path Analyse Result

EXT: Extroversion, OSL: Optimum Stimulation Level, EIS: Exploratory Information Search, OPI: Online Purchase Intention