Chapter 6 DISCUSSION OF RESULTS

This chapter discusses the details of the results of the data analysis conducted for this study. The rationale of using the DeLone and McLean system success models and the adaptations made to suit the context of the study are discussed first. The effect of each independent variable on the dependent variables is discussed in the light of the findings of this study and is compared to the results of other relevant studies from the literature.

Figure 6.1 Research Model and Hypotheses

The purpose of this study was to examine the User’s Experience with an e-Commerce system using travel websites as the unit of study. Based on the DeLone and McLean (2004) model for e-Commerce success, this study explored how system success antecedents affect the User Experience from an e-Commerce system (see Figure 6.1). This study employed a structural model using five hypotheses (see Table 6.1) to examine the relationship between system success variables identified by
DeLone and McLean (2004) and User Experience of an e-Commerce system. Socialness of the website was added as an antecedent for the User Experience variable. Further, the effect of the latent variable of User Experience on the System Usage was explored. The model was tested using survey responses collected from the users of travel websites in India.

### Table 6.1 Summary of Results of Hypotheses Testing

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coefficient</th>
<th>T-statistic</th>
<th>P-Value</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>UX → USG</td>
<td>0.559</td>
<td>11.1464***</td>
<td>&lt;0.0001</td>
<td>Strongly Supported</td>
</tr>
<tr>
<td>SER → UX</td>
<td>0.359</td>
<td>5.954***</td>
<td>&lt;0.0001</td>
<td>Strongly Supported</td>
</tr>
<tr>
<td>SYS → UX</td>
<td>0.262</td>
<td>3.9133***</td>
<td>&lt;0.0001</td>
<td>Strongly Supported</td>
</tr>
<tr>
<td>SOC → UX</td>
<td>0.251</td>
<td>6.6194***</td>
<td>&lt;0.0001</td>
<td>Strongly Supported</td>
</tr>
<tr>
<td>INF → UX</td>
<td>0.103</td>
<td>1.7007*</td>
<td>=0.044</td>
<td>Supported</td>
</tr>
</tbody>
</table>

#### 6.1 The Adapted DeLone and McLean Model

To incorporate the new features enabled by the Internet technology of today, we extended the DeLone and McLean (2004) e-Commerce success model by adding Socialness as an additional antecedent. We, therefore, used four antecedent variables of system success namely System Quality, Information Quality, Service Quality, and Socialness. The variable of User Experience was substituted for the User Satisfaction variable which had been used in many prior studies (Rai et al., 2002; and Sabherwal et al., 2006). The impact of User Experience on System Usage was also studied. For a detailed discussion on the modifications made to the DeLone and McLean (2004) model refer to Section 3.2 in Chapter 3. This resulted in six variables and five
hypothesized relationships as shown in Table 6.1 above. It can be observed that all the hypotheses are supported.

We describe the impact of all variable as they relate to the proposed hypotheses in the sections below.

### 6.2 The Effect of System Quality

We found System Quality to be a significant predictor of User Experience. Various empirical studies have established the positive effect of System Quality on overall system success factors like continued usage, intention to use and overall satisfaction in general (Casalo et al., 2008; Chen & Cheng, 2009; Flavian et al., 2006; Iivari, 2005; Mun, Yun, Kim, Hong, & Lee, 2010; Palmer, 2002; Seddon & Kiew, 2007; and Wang, 2008).

Specifically, Jiang et al. (2010) found System Quality (studied in terms of interactivity) to have a positive effect on User Experience (studied as the cognitive and affective involvement). Similarly, Kim et al. (2009) studied the impact of System Quality (design) on User Experience (cognitive and affective involvement) and found a positive relation between the two.

Many researchers have attempted to measure System Quality in terms of various measures, such as reliability, system accuracy, response time and ease of use (Molla & Licker, 2001). However, these criteria should change with time, with e-Commerce systems becoming more modernized. The measures used for System Quality for this study included the ease of use, appropriate design, fast response, the security of transactions and privacy of personal information of users, compatibility
across platforms, interactive and customized features. Although System Quality was found to be a significant predictor of User Experience, we removed some items representing interactive features of the website and customized features of the website due to low communalities. A possible explanation could be that this study measures the actual post-hoc evaluation of the travel websites by the user. Even though studies have established the positive impact of interactive features (Jiang et al., 2010) and customized features (Pentina, Amialchuk, & Taylor, 2011) on the overall satisfaction and intention to use the website, the low communality values in this study are a reflection of the user’s evaluation of the travel websites in India. The survey instrument developed for this study used the post hoc evaluation of travel website by the user. In other words the users opined on their actual experiences with the travel websites instead of ‘how they would have liked it to be?’ In other words, either the travel websites in India do not provide interactive features as per the user’s expectations or the users do not lay emphasis on the presence of such features.

Some studies have also been unable to establish the positive relation between System Quality, User Satisfaction and the System Usage variables (Chong et al., 2010; and Schaupp et al., 2009). The explanation of this deviation according to the authors could be specification error or representation of real phenomena or both. Similarly, while Mun et al. (2010) found the relation between System Quality and satisfaction to be positive and significant, the same study found the relation between System Quality and System Usage to be insignificant.

The results of this study indicate that the System Quality has a significant positive impact on User’s Experience with an e-Commerce system. The results of this study confirm the findings of prior literature based on the DeLone and McLean
models whereby System Quality is established as a significant antecedent of system success, even though, few studies have found System Quality to have no positive impact on system success. We may conclude, based on the empirical evidence from the data analyses conducted for this dissertation, that System Quality directly affects the User’s Experience and has an indirect positive effect on System Usage. It is therefore, important for e-Commerce firms to design systems that meet the user’s quality requirements and perform as per the user’s expectations. For travel websites the quality of interactive and customized features should be improved and a mere inclusion of such features is not sufficient. Many travel websites in India provide interactive features like instant chats, videos, customized search and so on. However, the results of this study revealed that users of travel websites did not consider these interactive and customized features to be at par with the other system characteristics like ease of use, privacy, security, compatibility across various devices and so on. As such, the firms providing the travel websites need to further investigate as to why the users are not ranking these features as highly as the other system features. Such an evaluation may lead to improvements in the design as well as the users’ experience with the website.

6.3 The Effect of Information Quality

We found Information Quality to be a significant predictor of User Experience (p <0.05). Many studies have found Information Quality to significantly influence system success factors like satisfaction, loyalty, and System Usage in general (Chen & Cheng, 2009; Iivari, 2005; Mun, et al., 2010; Palmer, 2002; Seddon & Kiew, 2007; and Wang & Liao, 2008).
Prior studies have also found Information Quality’s impact on user satisfaction to be insignificant. For example, Schaupp et al. (2009) found the path between Information Quality and satisfaction to be insignificant in the e-Commerce context. Similarly, a study by Landrum Prybutok, Strutton, and Zhang (2008) found Information Quality to have positive relationship with usefulness but a negative relationship with use. It must be noted that the same model may reveal different results when tested across various e-Commerce categories. Factors that are found significant for travel websites may be insignificant in other websites categories and vice versa. A study by Lee and Kozar (2006) found that users of e-Commerce websites assign different levels of importance to the various quality factors depending on the type of product, technology, or the services provided. In a similar vein, Schaupp et al. (2009) found that satisfaction factors may depend upon the website context. Sabherwal et al. (2006) point out that the IS success model suggested by DeLone and McLean needs to be modified when user-related and contextual antecedents of the system are included.

In sum, we conclude that Information Quality positively affects the User’s Experience with an e-Commerce system and our study confirms the findings reported in the prior literature based on DeLone and McLean models as discussed above. e-Commerce firms need to emphasize the importance of providing relevant, accurate, reliable and usable content on their websites in order to create high quality User’s Experience and also to increase System Usage.
6.4 The Effect of Service Quality

We found that Service Quality has a significant positive effect on User’s Experience with a system. This is in line with the findings of earlier research studies. Many studies have found Service Quality to have a positive impact on satisfaction, loyalty and continuous usage intention in general (Chang & Chen, 2009; Chong et al., 2010; Ha & Stoel, 2012; Wang, 2008; and Yilmazsoy, Saad, & Cicmil, 2009). Few studies have also examined the effect of Service Quality on experiential variables (Ding et al., 2011).

A number of studies have used the term Service Quality of e-Commerce websites to refer customer service, logistics and fulfillment service of the e-Commerce firm along with the interface Service Quality like Ha and Stoel (2012); Parasuraman et al. (2005); and Wolfinbarger and Gilly (2003). It must be noted that Service Quality in this study refers to the website interface Service Quality and does not include the provision of service which is beyond the scope of what can be provided by the system. This study uses the conceptualization of Service Quality as suggested by Rowley (2006). Rowley (2006) scoped e-Commerce Service Quality to the service that can be delivered only via the website interface.

In sum therefore, Service Quality measured in terms of reliability, responsiveness, assurance and empathy of the website interface has a significant impact on User’s Experience with an e-Commerce system. This study confirms the findings reported in prior literature whereby Service Quality was found to be an antecedent for system success. The Service Quality has an indirect positive effect on the System Usage. System Usage leads to continual use which in turn leads to loyalty
(Hallowell, 1996). Thus, e-Commerce firms need to focus on providing Service Quality in order to enhance the User’s Experience emanating from the system interaction and in turn the increase the System Usage of the website.

### 6.5 The Effect of Socialness

The results of this study show a highly significant impact of Socialness on User’s Experience with a system. This is in line with the findings of Arnold and Reynolds (2003) who found the social dimension to be the most important variable in hedonic (experiential) shopping. Earlier work on e-Commerce also found Socialness to be an important determinant of success for users whose primary motivation is hedonic (Wolfinbarger & Gilly, 2001). Kim (2011) argues that social interaction in the e-Commerce is enabled by the availability of various interactive channels like blogs, consumer reviews, forums, communities etc.

The Socialness dimension has found prominence in recent literature on User Experience (Kim, et al., 2011; Kohler et al., 2011). For instance Wakefield et al. (2011) examined Socialness in an e-Commerce study and found Socialness to positively affect the variable of User Experience. Similarly, Junglas et al. (2013) tested the impact of Information Quality, System Quality and Socialness on the ‘intention to use’ the system and found the impact of the social component to be highly significant. Also, Huang (2012) found Socialness to have a positive effect on the User’s Experience with an e-Commerce system.

To sum up, the Socialness of an e-Commerce system significantly impacts its User’s Experience and indirectly affects the System Usage. This finding confirms the recent claims by some researchers who consider Socialness of a system to be an
important antecedent for system success. Junglas et al. (2013) suggest the inclusion of the Sociability (Socialness in this study) variable as an important step for evaluating the IS success and technology acceptance. Junglas et al. (2013) argue that the Socialness of the IS has been mostly ignored in the IS literature as most of the studies in the IS literature are focused on what the authors call the “exaggerated emphasis on purpose.” Traditional IS success models and even the technology acceptance models focus on ‘task based’ interaction with the system. With the increasing social impact of technology, inclusion of the Socialness dimension to the otherwise utilitarian dimensions in IS success model is much desired. We found that the Socialness of the system significantly affects the User’s Experience and indirectly influences the System Usage.

**6.6 The Effect of User Experience**

We found User Experience to have a significant positive effect on the System Usage variable. Prior research has also established a positive effect of experiential variables, such as, cognitive absorption, hedonic value on the measures of satisfaction, loyalty and intention to reuse the system (Deng et al., 2010; and Ding et al., 2011). Further, Jiang et al. (2010) also found a positive relationship between User Experience and System Usage of an e-Commerce system. Huang (2011) found User Experience, measured in terms of cognitive and affective dimensions, to have a positive relationship with the System Usage of a virtual goods website.

Kim and Eastin (2011) found a positive relationship between hedonic (experiential) motivation and repeat use and purchase in an e-Commerce website.
Similarly, Hodza (2009) examined User’s Experience with the experiential Geospatial IS and found that User Experience has a positive effect on System Usage.

In conclusion, User Experience variable measured in terms of ‘cognition’, ‘sense’, and ‘affect’ was found to have a positive effect on System Usage. This finding supports the results reported in other empirical studies in the prior literature based on User’s Experience with a system that found User’s Experience to have a significant positive effect on system success. The construct of User Experience captures the user’s internal state, the characteristics of the system, the social setting of the interaction, and the context in which such interaction occurs (Hassenzahl & Tractinsky, 2006). Based upon this conceptualization, we found that system characteristics i.e., System Quality, Information Quality, Service Quality, and Socialness (related to the social characteristics of the system) have a positive effect on User’s Experience. In addition, User’s Experience generated by a user’s interaction with an e-Commerce system positively influences System Usage. This finding is significant because earlier research on IS success has majorly focused only on the utilitarian value of the system (Junglas et al., 2013). This study provides a perspective on how hedonic and utilitarian goals of a user might not be mutually exclusive.

6.7 Summary

The results of this study indicate that all the five proposed hypotheses are supported. Therefore, it can be concluded that system success factors of System Quality, Information Quality, and Service Quality, have a positive effect on User Experience. In addition, we found that Socialness of the website also has a significant positive effect on the User Experience variable. User’s Experience was used to
measure system success due to its growing emphasis in recent literature (Deng et al., 2010; Hassenzahl & Tractinsky, 2006; and Kim & Eastin, 2011). The focus on the construct of User Experience in recent literature both in academics and practice is well emphasized (Hassenzahl & Tractinsky, 2006). The focus on the variable of User Experience is because technology has found its way into our daily lives and major users of technology are customers (Petter et al., 2012). Further, Petter et al. (2012) call for research on individual users of the IS and the inclusion of social impact within the same context. This study has addressed several issues in the Information System evaluation literature, and the DeLone and McLean’s system success research in particular. The inclusion of experiential measures within the DeLone and McLean models is an important improvement to their earlier models. As has been emphasized in recent literature, modern Information Systems are valued for both the utilitarian and the hedonic aspects and a user centric evaluation, needs to focus on both the aspects (Kim et al., 2013; and Hassenzahl & Tractinsky, 2006).

The inclusion of the social aspects of an Information System is also an important contribution to the IS evaluation literature. Few recent studies on IS evaluation have emphasized the importance of considering the social impact of Information System for creating the evaluation measures of an IS (Junglas et al., 2013). The empirical evidence provided in this dissertation shed light on factors that have been ignored in the IS success literature specifically the DeLone and McLean system success models like Socialness and User Experience, and the research model is an important first step in this direction.

As the Information System use becomes more pervasive, researchers and practitioners need to look at system success from a more inclusive and holistic point
of view. The results of this study support an important paradigm shift in the IS research which has mainly focused the utilitarian aspects so far, that of the inclusion of hedonic motivations as an important determinant of system success. In the next chapter, we discuss the implications and limitations of this research. The future research directions are also discussed in the next chapter which concludes the dissertation.