Identification of effective factors on customer loyalty with mobile industry

Soheila Sardar Donighi and Somayeh Davarpanah

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1. Introduction

Customer satisfaction has been a major concern and can be a bridge for building loyal customers (Fornell, 1992; Churchill Jr & Surprenant, 1982; Fornell et al., 1996; Chan et al., 2003; Kotler, P., & Keller, 2012). Eklöf (2000), for instance, considered European customer satisfaction index pan-European telecommunication sector report based on the pilot studies 1999. Hsu et al. (2006) presented an application of customer satisfaction study to derive customer knowledge. Hackl et al. (2000) studied customer satisfaction in the Austrian food retail market. Hellier et al. (2003) investigated customer repurchase intention by looking into a general structural equation model.
Ndubisi (2006) investigated the effect of gender on customer loyalty by looking into a relationship marketing approach. The author aimed to investigate the role of gender in the association of relationship marketing underpinnings with customer loyalty. The results showed that the four underpinnings of relationship marketing were directly associated with customer loyalty.

2. The proposed model

The proposed study of this paper measures the effect of quality of services (Zeithaml, 1996) on different issues such as customer satisfaction, customer complaints, etc. and it is performed among a sample of North Tehran branch of Islamic Azad University in city of Tehran, Iran who had some experience on using mobile services in a 8-month period in 2012. The sample size is determined as follows,

\[
n = \frac{N \times z_{a/2}^2 \times p \times q}{\varepsilon^2 \times (N - 1) + z_{a/2}^2 \times p \times q},
\]

where \( N \) is the population size, \( p = 1 - q \) represents the yes/no categories, \( z_{a/2} \) is CDF of normal distribution and finally \( \varepsilon \) is the error term. Since we have \( p = 0.5, z_{a/2} = 1.96 \) and \( N = 4500 \), the number of sample size is calculated as \( n = 384 \). In our study, we have distributed 400 questionnaires and managed to collect 384 filled ones. All questions were designed in Likert scale in four different categories. Table 1 demonstrates some of the results of our findings,
Table 1
The summary of content verification

<table>
<thead>
<tr>
<th>Component</th>
<th># of questions</th>
<th>Cronbach alpha</th>
<th>Dillon-Goldstein's rho</th>
<th>Eigenvalues</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer expectation</td>
<td>3</td>
<td>0.972</td>
<td>0.983</td>
<td>2.497</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Perceived quality</td>
<td>3</td>
<td>0.96</td>
<td>0.975</td>
<td>2.682</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Expected values</td>
<td>2</td>
<td>0.941</td>
<td>0.972</td>
<td>2.13</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>3</td>
<td>0.958</td>
<td>0.973</td>
<td>2.565</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Price tolerance</td>
<td>2</td>
<td>0.986</td>
<td>0.993</td>
<td>3.865</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Repurchase likelihood</td>
<td>2</td>
<td>0.979</td>
<td>0.99</td>
<td>2.407</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

As we can observe from the results of Table 1, all components can be verified and we can proceed the survey. In addition, the survey has been verified based on different methods and Table 2 summarizes the results of our survey.

Table 2
The summary of validating the questionnaire of our survey

<table>
<thead>
<tr>
<th>Component</th>
<th>Symbol</th>
<th>Different component validation results</th>
<th>Validation Error</th>
<th>Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived expectations</td>
<td>PE</td>
<td>0.973</td>
<td>0.052</td>
<td>202.223</td>
</tr>
<tr>
<td>Perceived quality</td>
<td>PQ</td>
<td>0.968</td>
<td>0.065</td>
<td>233.494</td>
</tr>
<tr>
<td>Perceived value</td>
<td>PV</td>
<td>0.973</td>
<td>0.071</td>
<td>241.242</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>CS1</td>
<td>0.982</td>
<td>0.001</td>
<td>293.653</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>CS2</td>
<td>0.982</td>
<td>0.001</td>
<td>293.653</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>CS3</td>
<td>0.982</td>
<td>0.001</td>
<td>293.653</td>
</tr>
<tr>
<td>Price tolerance</td>
<td>PT1</td>
<td>0.968</td>
<td>0.004</td>
<td>260.207</td>
</tr>
<tr>
<td>Repurchase likelihood</td>
<td>RL1</td>
<td>0.973</td>
<td>0.003</td>
<td>474.012</td>
</tr>
<tr>
<td>Reliability</td>
<td>CC1</td>
<td>-0.929</td>
<td>0.001</td>
<td>1038.698</td>
</tr>
<tr>
<td>Reliability</td>
<td>CC2</td>
<td>-0.929</td>
<td>0.001</td>
<td>1038.698</td>
</tr>
</tbody>
</table>

The results of Table 2 also verify the questionnaire and we can proceed the survey. The proposed model of this paper considers the following hypotheses,

1. Perceived expectation (PE) influences on perceived quality (PQ), positively.
2. Perceived expectation (PE) influences on perceived value (PV), positively (Söderlund, 1998).
3. Perceived quality (PQ) influences on perceived value (PV), positively (Wang, 2004).
4. Perceived quality (PQ) influences on customer satisfaction (CS), positively.
5. Perceived expectation (PE) influences on customer satisfaction (CS), positively.
6. Perceived value (PV) influences on customer satisfaction (CS), positively (Turel, & Serenko, 2006).
7. Customer satisfaction (CS) influences on repurchase likelihood (RL), positively.
8. Customer satisfaction (CS) influences on price tolerance (PT), positively due to special features of service provider (Vilares & Coelho, 2003).
10. Customer complaints (CC) influences on likelihood of repurchase (LR).
11. Customer complaints (CC) influences on price tolerance (PT), positively due to special features of service provider.
2.1. Personal characteristics of the participants

In our survey, 104(27.1%) of the participants were male and 280(72.9%) participants were female students participated. Fig. 1 demonstrates other relevant information associated with this survey.

Most participants were using two primary mobile service providers of HAMRAH AVAL with 52.6% and IranCell with 36.5%.

Table 3 shows details of our findings on some basic statsitics on the survey.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Skewness</th>
<th>kurtosis</th>
<th>Deviation</th>
<th>Skewness</th>
<th>kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer expectations</td>
<td>384</td>
<td>3.769</td>
<td>0.911</td>
<td>0.831</td>
<td>-0.501</td>
<td>0.096</td>
<td>-4.022</td>
<td>0.386</td>
<td></td>
</tr>
<tr>
<td>Perceived quality</td>
<td>384</td>
<td>3.287</td>
<td>0.946</td>
<td>0.894</td>
<td>-0.562</td>
<td>0.135</td>
<td>-4.516</td>
<td>0.545</td>
<td></td>
</tr>
<tr>
<td>Perceived expectations</td>
<td>384</td>
<td>2.865</td>
<td>1.033</td>
<td>1.068</td>
<td>0.07</td>
<td>-0.285</td>
<td>0.565</td>
<td>-1.146</td>
<td></td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>384</td>
<td>2.909</td>
<td>0.925</td>
<td>0.855</td>
<td>-0.088</td>
<td>-0.069</td>
<td>-0.705</td>
<td>-0.279</td>
<td></td>
</tr>
<tr>
<td>Repurchase likelihood</td>
<td>384</td>
<td>3.003</td>
<td>1.098</td>
<td>1.206</td>
<td>-0.163</td>
<td>-0.724</td>
<td>-1.306</td>
<td>-2.915</td>
<td></td>
</tr>
<tr>
<td>Customer complaints</td>
<td>384</td>
<td>2.294</td>
<td>1.189</td>
<td>1.414</td>
<td>0.651</td>
<td>-0.394</td>
<td>5.224</td>
<td>-1.586</td>
<td></td>
</tr>
<tr>
<td>Price tolerance</td>
<td>384</td>
<td>2.853</td>
<td>1.392</td>
<td>1.937</td>
<td>0.461</td>
<td>-0.668</td>
<td>3.703</td>
<td>-2.687</td>
<td></td>
</tr>
</tbody>
</table>

In addition, Table 4 demonstrates the summary of our validation survey on all questionnaires.

<table>
<thead>
<tr>
<th>Cronbach alpha</th>
<th>Dillon-Goldstein's rho</th>
<th>Correlation ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE</td>
<td>0.972</td>
<td></td>
</tr>
<tr>
<td>PQ</td>
<td>0.96</td>
<td></td>
</tr>
<tr>
<td>PV</td>
<td>0.941</td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>0.958</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>0.986</td>
<td></td>
</tr>
<tr>
<td>RL</td>
<td>0.979</td>
<td></td>
</tr>
</tbody>
</table>

The results of Table 4 clearly confirm the overall survey in terms of validation. In addition, there are positive and meaningful correlations among different components of the survey, which validates the overall questionnaire.

3. The results

In this section, we present the results of our survey on testing various hypotheses of the survey. Fig. 1 demonstrates the results.
3.1 The first hypothesis: The effect of PE on PQ

The first hypothesis of this survey examines the effect of perceived expectation on perceived quality. The results of regression analysis yield a positive value of 0.931 with t-value=49.710>19.6. Since the result of t-student is statistically significant (α=5%) we can confirm the first hypothesis and conclude that PE positively influences PQ.

3.2 The second hypothesis: The effect of PE on PV

The second hypothesis of this survey examines the effect of perceived expectation on perceived value. The results of regression analysis yield a positive value of 0.187 with t-value=4.575>1.96. Since the result of t-student is statistically significant (α=5%) we can confirm the second hypothesis and conclude that PE positively influences PV.

3.3 The third hypothesis: The effect of PQ on PV

The third hypothesis of this survey examines the effect of perceived quality on perceived value. The results of regression analysis yield a positive value of 0.78 with t-value=19.43>1.96. Since the result of t-student is statistically significant (α=5%) we can confirm the third hypothesis and conclude that PQ positively influences PV.

3.4 The fourth hypothesis: The effect of PE on CS

The fourth hypothesis of this survey examines the effect of perceived expectation on customer satisfaction. The results of regression analysis yield a positive value of 0.25 with t-value=7.660>1.96. Since the result of t-student is statistically significant (α=5%) we can confirm the fourth hypothesis and conclude that PE positively influences CS.

3.5 The fifth hypothesis: The effect of PQ on CS

The fifth hypothesis of this survey examines the effect of perceived quality on customer satisfaction. The results of regression analysis yield a positive value of 0.208 with t-value=4.691>1.96. Since the result of t-student is statistically significant (α=5%) we can confirm the fifth hypothesis and conclude that PQ positively influences CS.

3.6 The sixth hypothesis: The effect of PV on CS

The sixth hypothesis of this survey examines the effect of perceived value on customer satisfaction. The results of regression analysis yield a positive value of 0.537 with t-value=13.494>1.96. Since the result of t-student is statistically significant (α=5%) we can confirm the sixth hypothesis and conclude that PV positively influences CS.
3.7 The seventh hypothesis: The effect of CS on RL

The seventh hypothesis of this survey examines the effect of customer satisfaction on repurchase likelihood. The results of regression analysis yields a positive value of 0.593 with t-value=18.424>1.96. Since the result of t-student is statistically significance (α=5%) we can confirm the seventh hypothesis and conclude that CS positively influences RL.

3.8 The eighth hypothesis: The effect of CS on PT

The eighth hypothesis of this survey examines the effect of customer satisfaction on price tolerance. The results of regression analysis yields a positive value of 0.710 with t-value=16.391>1.96. Since the result of t-student is statistically significance (α=5%) we can confirm the eighth hypothesis and conclude that CS positively influences PT.

3.9 The ninth hypothesis: The effect of CS on CC

The ninth hypothesis of this survey examines the effect of customer satisfaction on customer complaints. The results of regression analysis yields a negative value of -0.911 with t-value=|43.133|>1.96. Since the result of t-student is statistically significance (α=5%) we can confirm the ninth hypothesis and conclude that CS negatively influences CC.

3.10 The tenth hypothesis: The effect of CC on RL

The tenth hypothesis of this survey examines the effect of customer complaints on repurchase likelihood. The results of regression analysis yields a negative value of -0.393 with t-value=|12.241|>1.96. Since the result of t-student is statistically significance (α=5%) we can confirm the tenth hypothesis and conclude that CS negatively influences RL.

3.11 The eleventh hypothesis: The effect of CC on PT

The eleventh hypothesis of this survey examines the effect of customer complaints on price tolerance. The results of regression analysis yields a negative value of -0.244 with t-value=|5.642|>1.96. Since the result of t-student is statistically significance (α=5%) we can confirm the tenth hypothesis and conclude that CC negatively influences PT.

4. Conclusion

In this paper, we have examined the relationship between different components of quality using structural equation modeling. The proposed model of this survey has considered the relationship between perceived quality, perceived expectation, perceived value, customer satisfaction, price tolerance, repurchase likelihood and customer complaints. The results of our study have disclosed that perceived expectation positively influences perceived quality and perceived value. Perceived quality, in turns, influences perceived value, positively. In addition, perceived value influences customer satisfaction and customer satisfaction influences repurchase likelihood and price tolerance, positively. Finally, customer satisfaction negatively influences customer complaints, customer complaints, in turn; influences repurchase likelihood and customer complaints influences price tolerance, negatively.

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References


