Identification of effective factors on customer loyalty with mobile industry

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CHRONICLE	ABSTRACT
	Customers or clients are counted to be reasons for existence and continuation of life of every organization and, therefore, it is essential to review various aspects of customer satisfaction. Many customers may seem to be satisfied but they may switch to competitor companies for various reasons. Loyal customers constitute a major factor for organizational successes and there are many attempts to create loyal customers. The customer loyalty was defined as commitment of customers to deal with a particular organization or buy given goods repeatedly. During the present research, the researcher engages in the evaluation of factors effective on satisfaction and loyalty of customers and in the study of their interactions, using the famous American Model of Customer Satisfaction. Major variables of such pattern are as follows: customer expectations, perceived quality, perceived value, customer satisfaction, Repurchase Likelihood, Price Tolerance changes and customer complaint. In this study, 384 cell-phone users were randomly selected from different departments of North Tehran Branch of Islamic Azad University. Valuable data were gathered by closed response questionnaire. Afterward we derived eleven correlations between different parameters by using structural equation modeling. Finally, all of suppositions were confirmed by confidence level up to 95%. In addition, the SPSS and XLSTAT PLS software packages are utilized in the process and analysis of data and investigation of study's hypotheses and necessary analyses have been done.

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. Su

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(2004) concentrated on hotel guest comment cards (GCCs) and customer satisfaction management schemes in Taiwan by implementing content analysis to detect the extent in which each hotel's comment card design corresponded to the identified best practice criteria. Su reported that no single hotel analyzed within the survey sample of the study met all identified best practice criteria for their GCCs. Su recommended that the hotel industry in Taiwan re-examine its approach to evaluat customer satisfaction, with the objective of achieving conformity to all critical best practice criteria identified. Anderson et al. (1994) used a method originally suggested by Carman (1970) to empiricaly investigat customer satisfaction, market share, and profitability in Sweden. Andreassen and Lindestad (1998) performed a survey on customer loyalty and complex services by looking into the impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. Aydin and & Özer (2005) investigated national customer satisfaction indices in the Turkish mobile telephone market. Ball et al. (2004) studied the role of communication and trust in explaining customer loyalty. Beerli et al. (2004) reported that satisfaction together with personal switching costs were antecedents leading directly to customer loyalty, with the former exerting the greatest influence; and perceived quality was a consequence of satisfaction in banking industry. Biggs and Swailes (2006) investigated the relationships, commitment and satisfaction in agency workers and permanent workers. They reported that there were significant correlations within the sample between organizational commitment, being valued and job satisfaction further supported by a hierarchical multiple linear regression. Boulding et al. (1993) presented a dynamic process model of service quality: from expectations to behavioral intentions. Bruhn and Grund (2000) developed theory, development and implementation of national customer satisfaction indices in the Swiss Index of Customer Satisfaction (SWICS). Caruana (2002) considered service loyalty by looking into the effects of service quality and the mediating role of customer satisfaction. Cater and Cater (2009) investigated the relationship-value-based antecedents of customer satisfaction and loyalty in manufacturing. Gerpott et al. (2001) studied the relationship among customer retention, loyalty, and satisfaction in the German mobile cellular telecommunications market. Guo et al. (2004) investigated the relationship between customer loyalty and profitability. Karjaluoto et al. (2002) studied different factors underlying attitude formation towards online banking in Finland. Kristensen et al. (2000) measured customer satisfaction as a key dimension of business performance. They stated that customer satisfaction is an increasingly powerful dimension of business performance and explained empirical evidence that customer satisfaction measures had an impact on business.

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,

$$n = \frac{N \times z_{\alpha/2}^2 \times p \times q}{\varepsilon^2 \times (N-1) + z_{\alpha/2}^2 \times p \times q}, \tag{1}$$

where N is the population size, $p = 1 - q$ represents the yes/no categories, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. Since we have $p = 0.5, z_{\alpha/2} = 1.96$ 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

Component	# of questions	Cronbach alpha	Dillon-Goldstein's rho	Eigenvalues	Result
Customer expectation	3	0.972	0.983	2.497	Acceptable
				0.071	
				0.056	
Perceived quality	3	0.96	0.975	2.682	Acceptable
				0.127	
				0.082	
Expected values	2	0.941	0.972	2.13	Acceptable
				0.124	
Customer satisfaction	3	0.958	0.973	2.565	Acceptable
				0.146	
				0.065	
Price tolerance	2	0.986	0.993	3.865	Acceptable
				0.052	
Repurchase likelihood	2	0.979	0.99	2.407	Acceptable
				0.05	

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

Component	Symbol	Different component validation results							Factor	Validation Error	Critical
		PE	PQ	PV	CS	PT	RL	CC			
Perceived expectations	PE1	**0.973**	0.884	0.876	0.902	0.878	0.867	-0.896	0.973	0.005	202.223
	PE2	**0.973**	0.916	0.885	0.919	0.849	0.906	-0.897	0.973	0.004	233.494
	PE3	**0.98**	0.918	0.905	0.911	0.863	0.918	-0.922	0.98	0.002	494.5
Perceived quality	PQ1	0.878	**0.968**	0.917	0.905	0.86	0.871	-0.882	0.968	0.003	285.796
	PQ2	0.904	**0.959**	0.889	0.899	0.816	0.891	-0.894	0.959	0.004	243.242
	PQ3	0.908	**0.962**	0.943	0.944	0.914	0.953	-0.892	0.962	0.003	293.653
Perceived value	PV1	0.882	0.92	**0.973**	0.943	0.962	0.91	-0.867	0.973	0.002	474.012
	PV2	0.893	0.935	**0.971**	0.93	0.912	0.965	-0.91	0.971	0.003	384.425
Customer satisfaction	CS1	0.892	0.918	0.922	**0.968**	0.876	0.912	-0.841	0.968	0.004	238.513
	CS2	0.894	0.911	0.909	**0.954**	0.878	0.927	-0.906	0.954	0.004	250.235
	CS3	0.904	0.918	0.946	**0.964**	0.929	0.905	-0.872	0.964	0.004	260.207
Price tolerance	PT1	0.875	0.894	0.961	0.923	**0.994**	0.919	-0.875	0.994	0.001	1038.698
	Pt2	0.883	0.896	0.955	0.928	**0.993**	0.929	-0.894	0.993	0.001	938.45
Repurchase likelihood	RL1	0.915	0.932	0.95	0.935	0.922	**0.991**	-0.933	0.991	0.001	899.962
	RL2	0.911	0.932	0.959	0.95	0.919	**0.989**	-0.915	0.989	0.002	655.972
Customer	CC1	-0.929	-0.923	-0.914	-0.911	-0.89	-0.934	**1**	1	0	-
Reliability		0.951	0.927	0.945	0.925	0.987	0.98	-	Result: confirmed		

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 expectation (PE) influences on customer satisfaction (CS), positively.
5. Perceived quality (PQ) 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).
9. Customer satisfaction (CS) influences on customer complaints (CC) (Woodruff et al., 1983).
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.
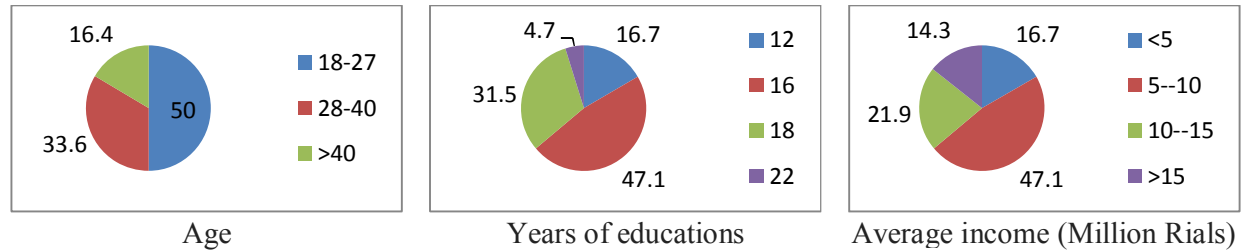

Fig. 1. Personal characteristics in terms of percentage

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 3
The summary of some basic statsitsics

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

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

Table 4
The summary of validating the questionnaire of our survey

	Cronbach alpha	Dillon-Goldstein's rho	λ	PE	PQ	PV	CS	CC	PT	RL
PE	0.972	0.983	2.497	1	0.866	0.833	0.871	0.864	0.783	0.85
PQ	0.96	0.975	2.682	0.866	1	0.91	0.908	0.851	0.811	0.887
PV	0.941	0.972	2.13	0.833	0.91	1	0.928	0.835	0.93	0.929
CS	0.958	0.973	2.565	0.871	0.908	0.928	1	0.83	0.868	0.906
CC	-	-	-	0.864	0.851	0.835	0.83	1	0.792	0.873
PT	0.986	0.993	3.865	0.783	0.811	0.93	0.868	0.792	1	0.865
RL	0.979	0.99	2.407	0.85	0.887	0.929	0.906	0.873	0.865	1

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.
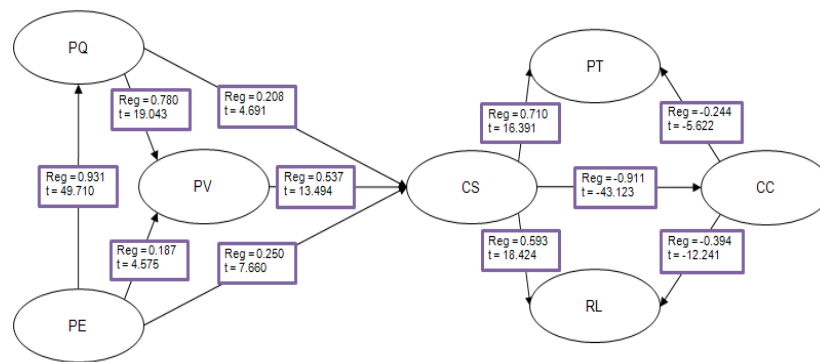
Fig. 1. The summary of the results of our survey

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 yields a positive value of 0.931 with t-value=49.710>19.6. Since the result of t-student is statistically significance (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 yields a positive value of 0.187 with t-value=4.575>1.96. Since the result of t-student is statistically significance (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 yields a positive value of 0.78 with t-value=19.43>1.96. Since the result of t-student is statistically significance (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 yields a positive value of 0.25 with t-value=7.660>1.96. Since the result of t-student is statistically significance (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 yields a positive value of 0.208 with t-value=4.691>1.96. Since the result of t-student is statistically significance (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 yields a positive value of 0.537 with t-value=13.494>1.96. Since the result of t-student is statistically significance (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 ninth 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 ninth 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 complains, in turn; influences repurchase likelihood and customer complaints influences price tolerance, negatively.

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