

Quality as Determinant Factor of Customer Satisfaction: Case Study of Zain-Kuwait*

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ABSTRACT

The potential of mobile communications market in Kuwait is enormous. Therefore, I test customer satisfaction in the Kuwaiti mobile market by examining the quality construct. In our study, quality is measured through the dimensions: interaction quality, environment quality, and outcome quality. Our results show that outcome quality is the most influential construct over satisfaction. Also, the results find that interaction quality is not significant and carries no important association with customer satisfaction.

Keywords: Quality; Satisfaction; Structured Equation Modeling

1. Introduction

Kuwait is one of the countries that scores highly in applications of communication technologies and mobile phones market. This market and its services are flourishing exponentially. This is not only the case in Kuwait, but, instead, this is true in the whole region as well.

In accordance with new devices and new communication technologies such as smart phones and 4G technologies, the competition is increases and becomes more intense in this field. For this reason, companies are competing aggressively to keep and increase customer satisfaction.

The goal of this research is to highlight the test and measure the importance of association between the quality construct and customer satisfaction in Kuwaiti mobile market. Specifically, my aim is to present a theoretical research model to explore the degree of satisfaction with a specific mobile service provider (MSP).

The paper is divided into the following sections: communication in the next section. Section 3 presents the theoretical background. Section 4 presents data reduction. Section 5 builds the first model. Section 6 discusses fitness of the conceptual model. Sections 7 and 8 comprise a discussion and limitations respectively.

2. The Global and Kuwaiti Communication Markets

International reports continuously state that worldwide

income of communication sector scored over than a trillion and a half dollars in year 2010. This indicator means that an increase of 3.4% over the year before (2009). Also reports show that an increase of 9% in marketing and mobile advertisements has been reached compared to years before recession[31].

Latest report by International Telecommunication Union (ITU) in 2012 emphasizes the fact that worldwide mobile subscriptions has reached level of 6 billion,(80% of those from developed countries, 660 million new members were added in 2011)[21].The situation is similar in Kuwait. Based on scientific figures by ITU, mobile subscribers passed landline users by 5.1% [20] (see **Table 1** for Gulf Cooperation Council penetration rates for 2009. Source: [20], [22]).

Table 1. GCC penetration rates for 2009 (per 100 inhabitants).

| | Mobile | Fixed Line | Internet | Broadband |
|----------------------|--------|------------|----------|-----------|
| Bahrain | 177.1 | 30.1 | 53.0 | 13.0 |
| Kuwait | 129.9 | 18.5 | 36.9 | 03.4 |
| Oman | 139.5 | 10.5 | 51.5 | 44.0 |
| Qatar | 175.4 | 20.2 | 40.0 | 29.8 |
| Saudi Arabia | 174.4 | 16.2 | 38.0 | 10.8 |
| United Arab Emirates | 232.1 | 33.9 | 75.0 | 14.1 |

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Even though Kuwait has lower penetration than some GCC countries, it still considered as one of the highest globally and indicates vast space for potential increase. ITU says that Kuwait stands as one of the highest penetration rates worldwide exceeding 150% [22]. “Kuwait, in 62nd position, is the laggard in the region in terms of embracing ICT (Information and Communications Technology). Despite a fairly good ICT-related infrastructure development, the high costs of accessing it and the population’s relatively low level of skills are affecting the ICT readiness of the country. As a result, Kuwait depicts fairly poor rates of ICT usage (67th) that, coupled with a less business friendly environment for entrepreneurship (56th) than other Gulf Cooperation Council states, result in low levels of ICT impacts (93rd).” [14, p. 26].

This is why the investment in Kuwait in this sector is encouraging due to the fact that it has solid market in addition to very complicated and advanced infrastructure, which not utilized fully yet. The three major main players in mobile sector in Kuwait are Zain, Wataniya, and Viva. Furthermore, there is a very good chance to add fourth competitor if constitutionally passed.

3. Literature Review and Study Constructs

3.1. Satisfaction

One of most critical and strategic goals for any firm is to keep customer satisfaction to its highest levels. Thus, all firms invest great deal of effort and money and to clarify and to continuously modify their strategies to reach this goal. According to the literature, satisfaction is needed for two reasons: because of its close association and effect over customer retention and market share incremental, and, two, because of its ability to increase a firm’s revenue and profits [15], [16].

What is found in the literature is that all firms in the communications market face almost similar challenges and is competing in a standard market. The services continue to become similar and close to each other. This is why firms fight to distinguish themselves through adopting different marketing programs and to compete over value-added services [43].

The research and development departments in those firms continuously try hard to figure out and clarify vagueness among their market. They always aim to uncover constructs that effect mostly on customer satisfaction. Marketing research strongly insists on the positive relation between customer satisfaction and the future behavior and intentions to repurchase the service [8], [11].

According to study by [17], customer satisfaction is not static but instead dynamic, very complicated, and highly reflective of environment. Studies such as [7] and [10] mention that satisfaction can be divided to be trans-

action-specific satisfaction and cumulative satisfaction. First type of satisfaction is related to degree of satisfaction that customer feels pertaining a specific transaction.

The second type of satisfaction is more general. Cumulative satisfaction is customer’s overall satisfaction feelings towards general reaction after experiencing many transactions. According to [24], both types of satisfaction (transaction-specific and cumulative) are complimentary, which means that they do not contradict each other and the purposes for each type is different [43]. Oliver [34] claims that customer satisfaction has cognitive roots and effected by the emotions of the customer (both positive and negative), which are developed from experience and contact with the firm [40], [33], [43], [29].

[29] also [43] define customer satisfaction as “an effective state representing an emotional response”. Different researches [32], [7], [11], [28], [30], and [42] studied satisfaction before and after experience of transaction with firms and reached to a widely acceptance that consumer’s expectation and satisfaction are closely related.

Efforts by [12] and [13] prove that groups of constructs are directly responsible and positively determine customer satisfaction, those constructs are: system quality, information quality, and service quality. Other studies explored satisfaction and found that satisfaction can also be affected and determined through justice, which is also another important construct [41], [1]. Because of rare research and publications that discuss the associations between satisfaction and quality [43] and in Arab world, this research addresses this side and fills the gap by examining a moderate Arabian culture such as Kuwait.

Satisfaction is known to be the final product and the critical strategic *good* of any firm. Thus, what strategic look of those firms are continuously following is to keep customer continuation and incremental satisfaction with the firm. All though literature views and clearly concentrates over the critical relation that relates continuing relationship to customer satisfaction [32], [11], [5] our research do not test the relationships between customer satisfaction and continuing relationship, hoping it will be covered through our future research projects.

3.2. Service Quality

Service quality has been studied intensively in the literature and research departments of many sectors. Study by the authors [6] defines service quality as “consumers’ overall impression of the relative inferiority or superiority of the organization and its services” [6, p. 77]. It is important to highlight the point that service quality is not a one-dimensional construct. Instead, group of studies emphasizes the opposite and proofed that service quality is a multidimensional. In other terms, service quality,

according to this group of studies, is hard to be measured in its standalone status [18], [36]. For example, [18] splits service quality and divides it into two main dimensions: technical quality and functional quality. Furthermore, [36] introduces his own model and expands service quality into five perspectives as his research framework (reliability, responsiveness, assurance, empathy, and tangibility). Their project shows a 22-item instrument called SERVQUAL, result that widely used commercially and scientifically worldwide.

SERVQUAL model is been validated through many projects [9], [27], [43]. This validation emphasized the importance of the multidimensionality of service quality in mobile services. In different terms, this group of studies proposed that service quality of mobile sector contains three primary dimensions: interaction quality, outcome quality, and environment quality.

Interaction quality is defined by [27, p. 232] as the “quality of customer’s interaction with the mobile service provider during the service delivery”, which comprises enough and trustful expertise, professional problem solving, and show information richness. Second, Zhao and his colleagues define environment quality as “the consumer’s evaluation of the quality of equipment that is used, the extent to which the interface is well designed, and the extent to which the service is delivered under proper contexts” [43, p. 3]. Finally, [18, p. 38] defines outcome quality as “what the customer is left with when the production process is finished.”

According to previous discussion, study research model is depicted in **Figure 1**.

4. Sampling and Data Reduction through Factor Analysis

A special instrument was designed specifically for this study. We asked population to give us their opinion regarding their mobile service usage. The study instrument measures research constructs: interaction quality, environment quality, outcome quality, and satisfaction.

Before initiating the data collection stage, a small sample is used to examine the validity of the study questionnaire. After that a random sample size of 512 mobile users are collected. The initial results of reliability coefficient for the Cronbach’s alpha show acceptance consistency in the instrument. Among study population, 41.6% male (frequency = 213) and 58.4% (frequency = 299) female. The marital status is divided between 46.9% (frequency = 240) married and 53.1% (frequency = 272) single. **Table 2** shows the demographics of the sample.

Data reduction through factor analysis test is followed in studies to “remove redundancy that might exist between questions within dimension; and third to reveal any patterns that might exist between questions” [2]. **Table 3** shows study factor loadings

Table 2. Demographic distribution of study sample.

| Demographics | | Frequency | Percentage |
|----------------------------|-------------------|------------|------------|
| Gender | Male | 213 | 41.6 |
| | Female | 299 | 58.4 |
| | TOTAL | 512 | 100 |
| Marital Status | Married | 240 | 46.9 |
| | Single | 272 | 53.1 |
| | TOTAL | 512 | 100 |
| Age | Less than 20 | 70 | 13.7 |
| | Less than 30 | 255 | 49.8 |
| | Less than 40 | 109 | 21.3 |
| | Less than 50 | 49 | 9.6 |
| | Over 50 | 29 | 5.7 |
| | TOTAL | 513 | 100 |
| Academic Background | Secondary or less | 12 | 2.3 |
| | High school | 94 | 18.4 |
| | Two years | 97 | 18.9 |
| | Bachelor | 273 | 53.3 |
| | Master | 29 | 5.7 |
| | Missing | 7 | 1.4 |
| | TOTAL | 512 | 100 |
| Income | Less than 200 | 19 | 3.7 |
| | Less than 500 | 35 | 6.8 |
| | Less than 1000 | 121 | 23.6 |
| | Less than 1500 | 108 | 21.1 |
| | Less than 2000 | 78 | 15.2 |
| | Less than 2500 | 53 | 10.4 |
| | Less than 3000 | 42 | 8.2 |
| | More | 51 | 10.0 |
| | Missing | 5 | 1.0 |
| TOTAL | 512 | 100 | |
| Nationality | Kuwaiti | 424 | 82.8 |
| | Arab | 48 | 9.4 |
| | Other | 40 | 7.8 |
| | TOTAL | 512 | 100 |

5. Conceptual Model

Figure 1 shows study research model followed by the three hypotheses.

The following are research hypotheses:

H1: Interaction quality (INQ) is positively associated with customer satisfaction (SAT).

H2: Environment quality (ENQ) is positively asso-

ciated with customer satisfaction (SAT).

H3: Outcome quality (OUQ) is positively associated with customer satisfaction (SAT).

Table 4 shows the reliability and explained variance. It is clear from Table 4 that all reliabilities of the study’s measurements above 70%. Also all variances are above 60%. This means that these percentages are acceptable scientifically and conforms to the literature (see for details [19]).

Table 3. Factor loadings of study constructs.

| | Component | | | | | | | |
|-------|-----------|------|---|---|------|---|------|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| INQ1 | | .794 | | | | | | |
| INQ2 | | .848 | | | | | | |
| INQ3 | | .843 | | | | | | |
| INQ4 | | .762 | | | | | | |
| INQ5 | | .654 | | | | | | |
| INQ6 | | .553 | | | | | | |
| ENQ1 | | | | | .756 | | | |
| ENQ2 | | | | | .821 | | | |
| ENQ3 | | | | | .797 | | | |
| ENQ4 | | | | | .753 | | | |
| OUQ1 | | | | | | | .705 | |
| OUQ2 | | | | | | | .760 | |
| OUQ3 | | | | | | | .726 | |
| OUQ4 | | | | | | | .671 | |
| SAT1 | .702 | | | | | | | |
| SAT2 | .692 | | | | | | | |
| SAT3 | .705 | | | | | | | |
| SAT4 | .739 | | | | | | | |
| SAT5 | .656 | | | | | | | |
| SAT6 | .710 | | | | | | | |
| SAT7 | .645 | | | | | | | |
| SAT8 | .693 | | | | | | | |
| SAT9 | .692 | | | | | | | |
| SAT10 | .683 | | | | | | | |

6. Fitness of Conceptual Model and Latent Constructs Validation

I use the Lisrel 8.54 software to test the goodness of fit of the conceptual model. **Table 5** shows the results.

To ensure fitness of our model, Further testing is followed. According to [19], since Cronbach reliability test expects unidimensionality, “this is why further analysis through construct composite reliability is needed to ensure that the existence of the internal consistency in the measurements per each construct. The composite reliability can be calculated as follows:” [1, p. 12] Variance extracted is another reliability test. “The variance ex-

tracted is used to evaluate the overall amount of explained variations accounted for by the construct” [3]. The composite reliability and variance extracted can be computed as follows:

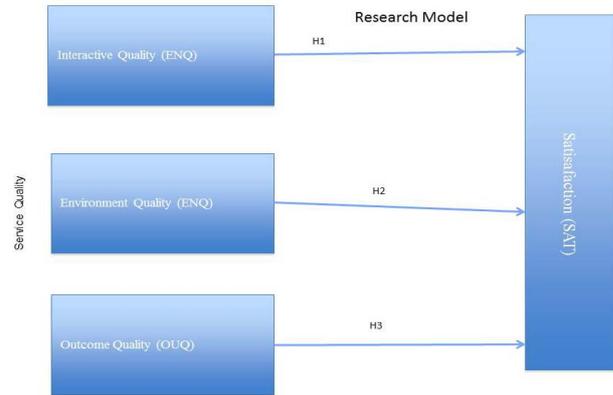


Figure 1. Research model

Table 4. Explained variance and reliability.

| | Measurements | Cronbach Reliability Coefficient | Explained Variance |
|----------|------------------|----------------------------------|--------------------|
| 1 | INQ (1, 2, 3) | 88.6% | 81.551% |
| 2 | ENQ (2, 3, 4) | 86.2% | 78.417% |
| 3 | OUQ (2, 3, 4) | 90.6% | 84.260% |
| 4 | SAT (1, 2, 3, 4) | 94.4% | 85.588% |

Table 5. Goodness of fit.

| | |
|---------------------------------------|---------|
| Normed Fit Index (NFI) | 0.980 |
| Non-Normed Fit Index (NNFI) | 0.980 |
| Incremental Fit Index (IFI) | 0.990 |
| Relative Fit Index (RFI) | 0.970 |
| Critical N (CN) | 192.850 |
| Root Mean Square Residual (RMR) | 0.033 |
| Standardized RMR | 0.033 |
| Goodness of Fit Index (GFI) | 0.900 |
| Adjusted Goodness of Fit Index (AGFI) | 0.870 |
| Parsimony Normed Fit Index (PNFI) | 0.800 |
| Comparative Fit Index (CFI) | 0.990 |

$$\text{Composite Reliability} = \frac{(\sum \text{Standardized loadings})^2}{(\sum \text{Standardized loadings})^2 + \sum |\text{error}|} \tag{1}$$

$$\text{Variance extracted} = \frac{\sum (\text{Standardized loadings})^2}{\sum (\text{Standardized loadings})^2 + \sum |\text{error}|} \tag{2}$$

Table 6 presents these two tests as well as the coefficient for the determination of the R².

One last test is important to validate the research model that is a discriminant validity test. This test is needed to ensure no appearance of overlapping among mea-

surements. “In other words, the questions that are used in the survey should not be overlapped where one question can measure two or more items. The discriminant validity test is acceptable as long as the result is less than or equal to 0.85” [1, p. 12]. It is computed as follows:

$$DV_{xy} = \frac{Corr(x, y)}{\sqrt{rel_x * rel_y}} \quad (3)$$

Table 7 shows the discriminant validity test results of the research model.

Path Analysis and Verification of Proposed Research Model

After verifying the goodness of fit of the research model, the study’s hypotheses need to be tested for the significance of the paths between the study’s constructs in the research model.

It is clear from Table 8 and Figure 2 that two out of three of the study hypotheses are verified and found to be significant. An exception is the case of interaction quality. The association between interaction quality and satisfaction found to be non-significant.

7. Discussion

Contrary to study of [43], our study does not find any difference between two types of satisfaction (transaction and cumulative). Our study treated both as one satisfaction. This non-difference treatment of satisfaction is supported by many studies [42], [23], [4], [25], [26]. Moreover, our study shows difference from studies of [43] and [18] in the quality (different from our study, those two studies measure quality and justice over satisfaction). Except for interaction quality that was not significant, all other constructs are found to be significant and have positive effects on satisfaction.

8. Conclusions and Limitations

Although different studies show the important association between satisfaction and continuing relationships (see [35] for more references), our aim here is not to focus on continuation but instead to study the effect of quality factor over customer satisfaction. Quality factor is successfully divided into three dimensions and in accordance to the literature, the three dimensions are: interaction quality, environment quality, and outcome quality. Although customer satisfaction is discussed in the literature as two types (transaction and cumulative), we here treated it as a one dimension.

Table 6. Construct composite reliability, variance extracted, and coefficient for the determination of R².

| Construct | Construct Composite Reliability | Variance Extracted | R ² |
|-----------------------|---------------------------------|--------------------|----------------|
| Interaction Quality | 91.82% | 78.95% | -- |
| Environmental Quality | 89.31% | 73.61% | -- |
| Output Quality | 93.87% | 83.63% | -- |
| Satisfaction | 96.11% | 86.07% | 70% |

Table 7. Discriminant validity test results of the research model.

| Construct | INQ | ENQ | OUQ | SAT |
|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| INQ | 0.789551 ^a | | | |
| ENQ | 0.386476 ^b | 0.736183 ^a | | |
| OUQ | 0.560085 ^b | 0.589734 ^b | 0.836361 ^a | |
| SAT | 0.521593 ^b | 0.539656 ^b | 0.758012 ^b | 0.860731 ^a |

Table 8. Path analysis.

| Path | Hypotheses | Path Coefficient | Standard Error | t-value | p-value | Significant or not significant |
|--|----------------|------------------|----------------|---------|---------|--------------------------------|
| Interaction Quality (INQ) → Satisfaction (SAT) | H ₁ | 0.03 | 0.04 | 0.91 | 0.181 | NS |
| Environment Quality (ENQ) → Satisfaction (SAT) | H ₂ | 0.06 | 0.04 | 1.75 | 0.04 | S |
| Output Quality (OUQ) → Satisfaction (SAT) | H ₃ | 0.28 | 0.05 | 5.87 | 0.00 | S |

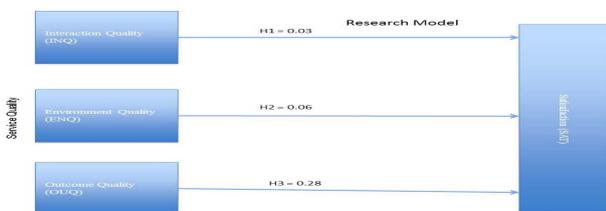


Figure 2. Path coefficients of research model.

The study was able to verify two hypotheses out of three. The interaction quality was found to be non-significant.

However, customer satisfaction lacks to include many other factors such as social norm, image, privacy, and security, which found to be important by other studies [39], [38], [37].

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