

Measuring Service Quality of Public Organizations in Israel Using the SERVQUAL Model: A Case Study

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Measuring service quality is complex and not simple issue at all. The most deeply model that developed up to date to measure service quality is SERVQUAL, that introduced by Parasuraman, Zeithaml & Berry in 1988. This tool based on the approach seen service quality as result of the gap between customer expectations and perceptions. The theoretical base for this model anchored in Expectancy Disconfirmation Theory that argue the customers formats theirs jurisdiction towards products and services based on early expectations. The SERVQUAL is now a leading tool for measuring service quality after his validity and reliability were tested successfully in many empirical studies. The goal of this study is to exam by using SERVQUAL, first time in the state of Israel, the service quality provide by central public service organization. The finding of the current research contributes to the expansion and strengthening of using SERVQUAL model as a tool for measuring service quality among organizations in the public sector. The findings will enable future comparisons between public organizations in Israel and similar organizations in the globe.

Keywords: Service Quality, SERVQUAL, Measure, Public Organizations, Customer

Introduction:

Previous studies indicate that service quality is a central factor for evaluating customer satisfaction. For this reason, the interest of researchers and market players regarding service quality has raised (Bei & Shang, 2006; Spreng & Mackoy, 1996; Wisniewski, 2001). In the existing research there is disagreement regarding definition and measuring Service Quality (Asubonteng et al., 1996; Lewis & Mitchell, 1990; Parasuraman et al., 1985). The service quality definition that attains broad support is that defines the service quality as the gap between customers expectations and perceptions toward the service they received (Bei & Shang, 2006; Jannadi, 2000; Parasuraman et al., 1985; Parasuraman et al., 1988; Rowley, 1998 ; Wisniewski, 2001;). The research of Van Ryzin (Van Ryzin, 2004) provides empirical support for "Expectancy Disconfirmation" model through the use of this formulation to describe the satisfaction developing toward local government services. The SERVQUAL tool is based on this approach, see the gap between service quality level that the customer expect and the actual level he received.

SERVQUAL measurement tool was used extensively and also examined in previous studies that deal with quality of services in different fields (Caruana et al., 2000; Brysland & Curry, 2001; Curry & Sinclair, 2002; Hughey et al., 2003). Despite this, this tool not yet used in the studies refers to organizations in Israel. Therefore, the current research can contribute to the study of organization service quality in Israel and other similar states. The

findings of the research will enable future comparisons between public organizations in Israel and similar organizations in the globe.

This article opens with presenting the definition of "service quality" and detailed explanation about the index SERVQUAL. Then, showing the research method including specification of the research sample, research tools and the research process. The explanation for this process including details of all stages of calculating the service quality accordingly the SERVQUAL approach. The article ends with the findings of the research and discussion.

Service quality:

The term "service" can express different activities in different organizations, but in all he has the same purpose. In the business sector, its means increasing profits and in the public service is a process to improve citizens' satisfaction from a service that has no competition and the state finances it through taxes. In addition, improving service in the public sector has an economic meaning: Reduced public service costs (Shnider & Bohan, 1996). The importance of measuring service quality is that it allows comparison between the situation prior to the change and the situation after the change in order to construct clear criteria for supply service. The raising interest of researchers and market players in the term "service quality" as a component of customer satisfaction emphasize the debate regarding defining and measuring this factor (Asubonteng et al., 1996; Parasuraman et al., 1985). The main reason for this dispute is the many dimensions of this term (Shnider & Bohan, 1996; Parker, 1999; Hodge, 1999). This characteristic makes it difficult to establish an appropriate measurement tool that relate to whole dimensions and the weight of each dimension. Berry & Parasuraman (1991) argue that the difficulty of measuring service quality caused by three features: the lack of tangible, variety and difficulty of separating him from other variables.

When decision-making in service organizations asked what is quality service to their customers, the answer is not clearly defined and varies from one agent to another. This is another reason that the measurement, control and improve the quality of these organizations is complex and difficult task (Mangold & Babakus, 1990). Previous studies indicate a different view regarding the distinction between the terms satisfaction and service quality (Nicholls et al., 1998; Zeithaml & Bitner, 1996). There is who see them as separate concepts and others see them as overlap elements (Nicholls et al., 1998).

Although there are common elements between the two, one can identify a growing recognition that we talking about different concepts. The service quality focuses on the evaluation which reflects the gap between customer service expectations and his service performance perceptions (Parasuraman et al., 1985; Janndi, 2000; Wisniewski, 2001). Contradictorily, service satisfaction seems to be generally a broad concept affected primarily from perceptions regarding service quality, product quality and price (Bei & Shang, 2006; Parasuraman et al., 1988; Parasuraman et al., 1994; Zeithaml & Bitner, 1996). According to this view, service quality is an element of satisfaction. Another distinction between these two terms is that perceptions about the quality can be form with no actual experience with the organization in question. In contrast satisfaction must be based on actual experience with the organization (Zeithaml & Bitner, 1996).

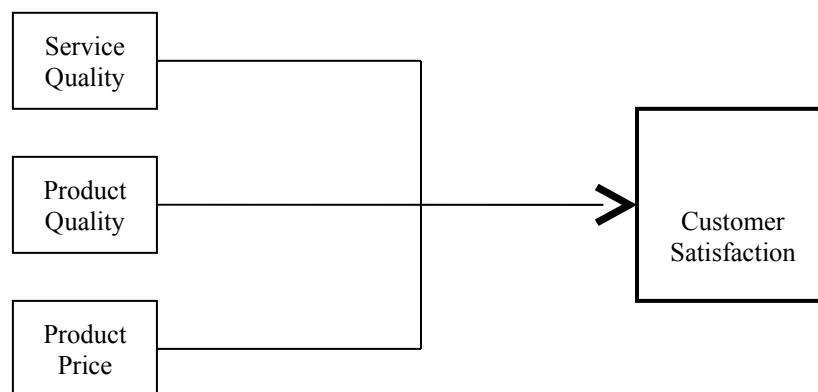


Chart 1: Service Quality and Customer Satisfaction

It is difficult to reach agreement regarding to definition of service quality, however, reviewing the definitions of different researchers can be concluded that we spoken about providing intangible matter that bring pleasure to the customer and give him certain value (Bryslan & Curry, 2001). The service quality definition that attains broad support is that defines the service quality as the gap between customer's expectations and perceptions regarding the service they received (Bei & Shang, 2006; Jannadi, 2000; Parasuraman et al., 1985; Parasuraman et al., 1988; Rowley, 1998 ; Wisniewski, 2001). The theoretical support for this approach is the "Expectancy Disconfirmation Theory". According to this theory, customers are developing their Jurisdiction about products or services using earlier expectations. These expectations relate to the benefits from the product or service. The gap

between the anticipated quality of the product or service and the received quality called "Disconfirmation" (Oliver, 1980). The definition of the quality component in the research dealing with service focused in "perceived quality" (Bei & Shang, 2006). Perceived quality of customer defined as jurisdiction of a very good (excellent) reality compared to objective quality. It mean, the opinion obtained by comparing perceptions and expectations of performance (Bei & Shang, 2006; Parasuraman, Zeithaml & Berry, 1985; Parasuraman et al., 1988; Rowley, 1998). Despite his importance as index of performance and ensuring customer satisfaction, service quality not received the appropriate attention in the existing research (Al-Alawi, 1998; Bei & Shang, 2006; Bacon & Besant-Jones, 2001; Hodge, 1999). The model for examining service quality shown in the current research – SERVQUAL, based on the definition of service quality as the gap between expectations and perceptions of the customer toward the service he received. In the next chapter we brought up broadening of this measurement tool.

SERVQUAL Model

Satisfaction surveys typically examine the current level of satisfaction while focusing on customer perceptions. These approaches ignore measuring customer expectations, they are as central to improving performance. Without sufficient information about the expectations from the quality of services provided and the perceptions from the service received, feedback from customer surveys can be very misleading from the perspective of both policy and operation (Wisniewski, 2001). It means, in order to measure correctly the satisfaction aspect you can not take on account only the perceptions aspect, but must also address the expectations aspect.

The last two decades the SERVQUAL approach to measure service quality became the most acceptable (Caruana et al., 2000). The SERVQUAL consists double scale for measuring customer expectations and perceptions towards the service quality (Hughey et al., 2003; Parasuraman et al., 1988). The scales include 22 items for measuring the perceptions and 22 items for measuring expectations. Measurement scale is the Likert scale between 1 (not at all agree) to - 7 (agree very much). For each pair items parallel, is calculated gap between Perceptions and Expectation (Perceptions-Expectation). Developers' intention was to create a reliable measurement tool that will allow comparisons between different services. The first version of the tool that includes 10 dimensions limited to 5: (1) Tangibles (2) Reliability (3) Responsiveness (4) Assurance (5)

Empathy (Hughey et al., 2003; Lien-Ti & Cian-Fong, 2006; Bei & Shang, 2006). This division allows the presentation of separate results for each one of the service dimensions and theoretically allows comparison of performance between surveys (Hughey et al., 2003). In addition, calculating the overall service quality involves giving the importance weight to each of these dimensions from survey participants view. Earlier studies pointed that Reliability dimension has the highest level of importance and Tangibles dimension has the lowest level of importance (Bryceland & Curry, 2001; Parasuraman et al., 1991). The SERVQUAL used in earlier studies for measuring service quality (Parasuraman et al., 1991) and also examined his reliability and validity (Carman, 1990; Parasuraman et al., 1991; Babakus & Boller, 1992; Orwig et al., 1997). Critics of the SERVQUAL tool have argued that his definition and his application is misleading and failed in the distinction between service quality, satisfaction and attitude (Cronin & Taylor, 1992).

Despite certain criticism of both the theoretical level and practical level, the tool attains broad support in the research that dealing with customer service quality (Wisniewski, 2001).

The case study – Israel Electricity Company - IEC

In 29.3.1923 Pinhas Rotenberg succeeded to realize the concession given to him in 1921 and established the IEC. In 1954 the company nationalized by the Israeli government, following economic crisis in electricity industry which stemmed from financing difficulties. In 1996, with the end franchise of IEC, the electric system - 1996 law was legislated for arranging the company's activities as part of a license permitting the first time the entry of private production elements to the market. As part of this law also defined the role of the "public utilities authority" – PUA, as regulator of electricity prices, services quality and licenses provider for private electricity producers. Since the IEC operates as regulate monopoly in all electricity segments - production, transmission, distribution and supply, deals in manufacturing electricity and providing it to approximately 2.3 million customers. The electricity produced by about 61 power stations with capacity of about 10,000 MW, in approximately 17 sites throughout the state of Israel and provided by approximately 160 transmission stations, hundreds transformers and 4,500 km of lines of different voltage levels (very high voltage, high voltage and low voltage). The number of workers employed by the electricity company is about 13,000 employees (Israel Electricity Company, 2006).

Many surveys that examined the satisfaction of the Israeli public from the service provided by IEC show relatively positive results. Between the years 2001 to 2007 - satisfaction index stand on average values between 3.03 in 2005 to 3.65 in 2001, on a likert scale between 1 (very unsatisfied) to 5 (very satisfied). In 2007 it was on average 3.39 (Vigoda-Gadot & Mizrahi, 2007).

Method

Sample

The current research included a survey among the general public Israel on issues of opinion toward reform in the IEC, service satisfaction and IEC image among the Israeli public. The survey was carried out by telephone (Random-Digit Dial - RDD telephone survey) and included 500 interviews nationally representative sample of the adult Jewish population in Israel (of 18 or higher) on the various sectors (including orthodox and immigrants). Sampling was performed by computerized system for managing the sampling. Primary Sampling Unit: district and secondary sampling units: Gender Age. The survey were carried out by reviewers that guidance respectively. The reviewers were briefed by the researcher on the study objectives, importance, the structure of the questionnaire and strictness for answering all the questions. The average time to fill in the questionnaire was approximately 15 minutes and the response rate was 36.7%. Among the 500 respondents 260 (52%) were women, and 240 (48%) men. Close to the three Quartet respondents (73%) were married, and 30.7% work in the public sector. The average age of respondents was 43.93 (standard deviation of 16.74) and ages range from 18 years to 87 years. The average study years of the respondents was 13.53 (standard deviation of 2.72). Regarding the level of income: 26.9% earning up to 4,000 shekel per month, 15.4% earning between 4,001 to 5,000 shekel, 16.5% earning between 5,001 to 6,000 shekel, 12.3% earning between 6,001 to 7,000 shekel, 5% earning between 7001 to 8,000 shekel and 23.8% earning more than 8,001 shekel per month. 22.6% of respondents declared last contact with IEC was for the period between one day to two months from the date of the survey, 18.5% contacted during the period between two months to six months, 17.4% contacted between six months and one year and 41.5% contacted more than year.

Tools

The research included a questionnaire measuring five dimensions of service quality according to the SERVQUAL approach. These dimensions are measured using 22 items that referred to public perceptions toward service quality of service provided by the examined organization and 22 parallel items referred expectations from this service. In addition, the questionnaire included several demographics variables: education, income, gender and age.

Service Quality – service quality level is measured by using Service Quality-SERVQUAL tool (Parasuraman, Zeithaml & Berry, 1988; Bei & Shang, 2006). The tool includes five dimensions: (1) Tangibles (2) Reliability, (3) Responsiveness (4) Assurance (5) Empathy (Bei & Shang, 2006). The five dimensions include 22 items for measuring customer expectations from the service and 22 matching items for measuring customer perceptions. The measurement scale was based on 1 to 7 Likert scale (1 = not agree at all; 7 = agree very much). For example, reliability dimension include the item: "Excellent electricity supplier provide its services on schedule to which he committed" for measuring expectation and the matching item for measuring the perception was: "IEC provides its services on schedule it is undertaken". The gaps that measured between the perceptions and expectations were used for weighting the IEC service quality.

Reliability testing of each of the dimensions separately and altogether was made using Cronbach α index and the result received was good - the most value received was ($\alpha > 0.8$).

Procedure

A pilot research was designed to resolve problems related to the measuring tool and the introducing way to the respondents. Accordingly, the reliability of the measuring tools were made using Cronbach Alpha (Nunnally, 1967). In the pilot Research approximately 50 questionnaires were distributed among students in a master's degree at the University of Haifa. Analysis of the pilot research results not pointed on problems regarding the items wording and introducing. The reliability of all the research measures was quite good – the most of measures Cronbach Alpha were above the value of $\alpha = 0.8$. The variable service quality was calculated according the methodology proposed by Zeithaml et al., 1990.

For each item, the gaps between perceptions and expectations were calculated. In the next step, the average gaps for each of the dimensions of the service quality were calculated (Parasuraman et al., 1988). To do so, the variable "Gap (Dimension)" for each dimension was defined. For example, for dimension dim1:

$$\text{Gap (dim1)} = \sum (\text{Perceptions} - \text{Expectations}) \setminus n$$

n- Number of items include in the dimension

Negative result means, perceived quality of the dimension is lower than the expectation from this dimension. A positive result means, the perceived quality of the dimension is higher than the expectation from this dimension. For calculating the overall score, the SERVQUAL approach indicates the need for given an importance weight to each of the dimensions of the service quality, depending on the priority given by the customers (Bryslund & Curry, 2001). The existing literature indicate that the reliability dimension score usually the higher importance weight among the customers. In contrast, the tangibles dimension reach the lowest score (Curry & Sinclair, 2002).

As part of this study, the importance weight is according to Parasuraman et al., (1991). The values are given in percent relative to - 100%:

Tangibles – 11%
Reliability – 32%
Responsiveness – 23%
Assurance – 19%
Empathy – 17%
Total: *100%

***Due to rounding off numbers the results slightly exceeds the total percentage of - 100%.**

According to this approach, the weighted Service Quality Score (Total) calculated by summing the weighted gaps of the five dimensions - G (Dimension) according to the level of importance:

$$\text{Score (Total)} = \sum \text{Weighted G}$$

For calculating the specific satisfaction the SPECSATIS variable was defined. This variable calculated based on product (PRODUCTQUAL), electricity price (ELECTCOST) and service quality (SCORETOTAL). Weight of each variable is according to results of the survey participants.

Findings

Table 1 show the weighted gaps results (Gap) for the five dimensions of service quality and, overall average weighted SERVQUAL score. The results in Table 1 indicate that all gaps results are in negative direction. The overall score indicate also the same direction: the average of -1.07. The meaning of the negative direction of the results is that in all five dimensions of service quality there is a gap between customer expectations and perceived service levels. In other words, there is no fully meeting of customer service expectations.

Table 1: SERVQUAL results for IEC services

Weighted average	Weight (%)	Calculated Gaps	Cronbach α	Perceptions	Cronbach α	Expectations	Dimensions
-0.04	11	-0.4	0.77	4.89	0.72	5.29	Tangibles
-0.36	32	-1.14	0.87	5.05	0.86	6.19	Reliability
-0.27	23	-1.21	0.83	4.86	0.83	6.07	Responsiveness
-0.19	19	-1.01	0.84	5.14	0.83	6.15	Assurance
-0.21	17	-1.28	0.87	4.57	0.82	5.85	Empathy

Overall average weighted SERVQUAL score = -1.07

As Table 1 reflects, the dimensions reach the highest gaps between perceptions and expectations were Empathy and Responsiveness. After giving the importance weight to each dimension, the dimensions Reliability and Responsiveness reach the highest gaps. These findings indicate the need for targeted effort to improve these dimensions. The gap recorded for Tangibles dimension was the lowest one.

The highest customer expectations regarding service quality were Reliability and Assurance dimensions. In general the expectations level recorded for all dimensions is relatively not high. The expectations score for the Tangible dimension was relatively low. The expectations about the Reliability dimension indicate viewing him as very important factor. As we can learn from the results, customers (the public) expect high reliability of service provided to them. If the service is not provided on time and consistently, that this may damage the all service rationality. The dimensions reach the highest perceptions level were Assurance and Tangibles. The Empathy dimension reaches the lowest level of perceptions. These findings of the current research provide the starting reference point for improving the service.

As we can learn from Table 1, reliability level of the five dimensions of service quality - the index of Cronbach α , were found in a good level when the most of the value were in range of ($\alpha > 0.8$).

Discussion

The total score of service quality provided by the organization tested in this research and measured by using SERVQUAL was -1.07. This result indicates a medium to high level of service quality when customer expectations from the service are slightly up compared to the actual level of service. This finding can indicate about the need to improve the overall level of service and to reduce as much as possible the measured gap between customer expectations and actual service provided to them.

Average customer expectations in the current research were found relatively high and moving between 5.29 (scale of 1-7) for Tangible dimension to 6.19 for Reliability dimension. Hence can be concluded that the reliability level of service provider is the most important in the eyes of customers to evaluate the service quality. In fact, the expectations toward reliability and Assurance dimensions reach the highest values.

This finding is compatible with the findings of previous studies that examined service quality by using the SERVQUAL (Curry & Stark, 2000; Curry & Sinclair, 2002). On the other hand, the average perceptions range in the current research was found between 4.57 (scale 1-7) for Empathy dimension to 5.14 for Assurance dimension. The largest gap between expectations and perceptions recorded for Empathy dimension (-1.28). The second largest gap between customer expectations and perceptions recorded for Responsiveness dimension (-1.21).

The current research makes one more forward step to promote the possibility of implementing the tool SERVQUAL for measuring service quality in the public sector. The research demonstrates that the current approach of measuring the gap between expectations and perceptions of the public's is a good way to evaluate the current service quality level of various services providing by the public sector. The gap results received in the current research can serve as a basis for the development of future service quality levels in the field which the current research deals with while determining appropriate priorities. The results obtained for each of the dimensions individually allows focused attention for each of them and determining priorities in accordance with the weight the public gave to each one of them. As a result, it is possible to determine the optimal allocation of resources

to improve the service quality. Understanding customer perceptions and expectations over time allows comparison analysis as part of future diagnostic and improvement process. Also, implementation of this tool for measuring service quality in the public sector enables comparison between different services in specific countries and between those services in other countries.

The most problematic rising from the experience of using the model concerns to understanding the difference between perceptions and expectation while answering the questionnaire (See also: Curry & Sinclair, 2002). In addition, the using of 1-7 points Likert scale makes it difficult for respondents to express their opinion clearly. Despite all, the tool found as appropriate to examine the service quality of public service organizations. The tool allows understanding clearly and focused the level of service quality provided by organizations from perceptions and expectations aspects while making the distinction between the five service dimensions under exam. The current research shows that it is possible to use the model SERVQUAL for improving service and as a result, increase customer satisfaction.

To summarize, the findings and the conclusions from this research should examine while considering the objective limitations and offering more directions for future researches in the filed of service quality measuring. For the generalization question of the findings, the research focused on one public service organization that providing central infrastructure service to all citizens of Israel. The findings may be relevant for these type organizations, with similar size and services. The research reinforces the need for examining this measurement tool in variety service fields to strengthen the empirical basis for his reliability and validity.

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