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## Measuring citizen satisfaction using the SERVQUAL approach: the case of the ‘Hellenic post’

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### Abstract

In a global environment of intense competition and continuous change, companies need to focus on improving the level of their services and enhance the satisfaction of their customers in order to stay competitive and achieve long-term survival. This necessity underlines the need for developing measures that can estimate the current level of services provision, since measurement is the first step towards improvement. Measuring the existing level of services provided can help managers make better decisions for improving customer satisfaction. The purpose of the present study is to (a) measure the level of services provided by the Hellenic Post and (b) evaluate the satisfaction of its customers (citizens). The evaluation was made using an enhanced approach, incorporating both customers and managers in the sample of the study. Moreover, the present study investigated the gap between customer expectations and customer perceptions with regard to the level of the services offered by the Hellenic Post. The empirical study was undertaken using two structured questionnaires; the first was targeted to customers (SERVQUAL modified instrument) and the second to managers of Hellenic Post branches. In total, 406 questionnaires were collected from customers (citizens) and 86 questionnaires from the managers of a corresponding number of Hellenic Post branches. Results showed that customers have a negative perception about the services offered by the Hellenic Post (in comparison with their expectations) and that there is a significant difference between the actual perceptions of customers and those of managers.

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## 1. Introduction

The literature (e.g Chang et al., 2009; Cho et al., 2013; Chowdhary and Prakash, 2007) suggests that the key to creating and maintaining competitive advantage in today's highly diverse environment lies in the delivery of high-quality services that will, in turn, result in customer satisfaction. Therefore, organizations are extremely interested in achieving the highest level of service provision and excel against their competition.

Bolton and Drew (1991) argued that service quality is a critical success factor that ensures the long-term continuity of an organization. This is because quality leads to higher levels of customer satisfaction, something that has a positive effect on customer loyalty, buying intention and word of mouth (Gremler and Gwinner, 2000). Developing tools to measure the level of services has been a fruitful research field (Al-Borie and Damanhour, 2013; Altuntas et al., 2012; Qiao and Feng, 2013) - as service quality measurement is a necessity for the survival, the growth and the diversification of an organization - with SERVQUAL (Parasuraman et al., 1985; Parasuraman et al., 1988) being one of the most widely utilized.

The purpose of the present paper is to measure the level of service quality of the 'Hellenic Post' using the SERVQUAL approach. The 'Hellenic Post' is a public-owned organization founded in 1828, with the mission to provide postal services, financial, banking/insurance services, retail products, courier services and mobile phone services. Sixty (60) of the seven hundred and seventy eight (778) 'Hellenic Post' branches were included in the empirical research. The final sample included 406 questionnaires from customers and 86 questionnaires from managers.

The present study takes under consideration the current financial crisis and the subsequent need for cost reduction initiatives. It, moreover, proposes that such initiatives should be the direct result of an analytical evaluation procedure (both internal and external). Hence, it encourages the use of the methodological approach utilized for this research as a means to evaluate the level of services provided and argues that this (external) evaluation should be taken under serious consideration when making decisions about the restructuring of organizations.

## 2. Research methodology

### 2.1. Population

Customers and branch managers of the Hellenic Post comprise the population of this study. According to official data provided by the organization itself<sup>1</sup>, its branches are more than 1.500, located all over the country. Therefore, achieving maximum representation was a main objective of the research methodology.

### 2.2. Measurement

An extended version of the SERVQUAL instrument was used for collecting most of the primary data needed. The original SERVQUAL instrument (Parasuraman et al., 1988) includes 22 paired questions for measuring expectations and actual perceptions about service quality. The modifications implemented in this study are in line with those proposed by previous studies in the field (Barabino et al., 2012; Kumar et al., 2010); all questionnaire items are presented in Table 9.

More specifically, the measurement instrument included the five "typical" SERVQUAL dimensions, extensively used in the literature (tangibles, reliability, responsiveness, assurance and empathy) (Abili et al., 2011; El-Bassiouni et al., 2012) and three additional dimension, namely effectiveness, access and scope of services (Ibrahim et al., 2006; Tsoukatos and Rand, 2006). The final questionnaire included 62 items for measuring expectations and perceptions (31 each), using a seven point Likert scale (1= strongly disagree, 7= strongly agree).

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<sup>1</sup><http://www.elta.gr/en-us/company.aspx>

Furthermore, an additional section, comprising seven items (see Table 9), was added to the questionnaire to measure overall satisfaction from the services provided by the Hellenic Post. This addition was based on suggestions in relevant literature (Anand and Selvaraj, 2012; Culiberg and Rojšek, 2010; El-Bassiouni et al., 2012; Ibrahim et al., 2006; Ismail et al., 2006; Tsoukatos and Rand, 2006), with the aim of gathering more information, to enhance the statistical analysis and improve our understanding of the issue under investigation. The final part of the questionnaire was used to collect general information about the customers of the Hellenic Post.

Moreover, an additional questionnaire concerning managers was designed so as to collect general information about Hellenic Post branches. The managers were asked, among others, to specify the level of customer satisfaction (according to their perceptions) and specify areas of improvement.

### 2.3. Data collection

Data were collected using random sampling techniques. More specifically, cluster sampling, simple random sampling and systematic sampling techniques were used so as to achieve satisfactory representation.

Initially, the research team hypothesized that since all Hellenic Post branches offer the exact same services, it would not be a problem if only certain administrative regions of the country were chosen. Therefore, six (6) out of the thirteen (13) regions of Greece were randomly chosen.

Secondly, ten (10) branches from each region were randomly chosen for data collection. The researchers personally visited these branches and collected the appropriate data from customers. Questionnaires were distributed randomly, using systematic sampling (n=4). The first part of the questionnaire (expectations) was filled in by customers before entering the Hellenic Post, while the second part (perceptions/ actual service evaluation) was filled in after respondents exited the branch. The response rate was, approximately, 20%. The study was conducted between March and June 2012.

Data concerning the second questionnaire of the present study (aimed at managers of Hellenic Post branches) were collected in two phases. Firstly, the researchers personally contacted the Director of each branch they visited (achieving to obtain data from almost all managers of the final sample). Secondly, an e-mail survey was conducted in order to collect additional data from managers whose branch was not personally visited by a member of the research team. The response rate via e-mail was approximately 15%.

In total, 406 Hellenic Post customers and 86 Hellenic Post managers were included in the study.

## 3. Results

### 3.1. Descriptive statistics

The main characteristics of the respondents (customers) are presented in Table 1. It is evident that the customers of the Hellenic Post are young, educated and mostly employed in the public and private sector.

Table 1. Respondents profile / Customers (n = 406).

Genre	Male	50,2 %	Age	Mean / SD	36,3 (13,1)
	Female	49,8 %		Min / Max	12,0/82,0
Education	Illiterate	0,7 %	Occupation	Employee (public sector)	28,9 %
	Secondary school	8,57 %		Employee (private sector)	28,3 %
	High school	31,9 %		Self-employed	11,7 %
	University degree	45,3 %		Unemployed	10,4 %
	Master degree	13,7 %		Student	14,0 %
			Other (not in labor force)	6,5 %	

When it comes to the services most frequently used, the customers replied that they use the Hellenic Post for sending and receiving mail (86,3%), paying bills (Electricity, Water, Telephone) (37,5%), having access to speed mail services (28,7%), transferring money (both in Greece and abroad) (18%), and buying stamps, envelopes and other mail-related material (16,4%).

Table 2 presents quantitative information concerning the Hellenic Post offices included in the sample (these data were collected from branch managers). In short, their main characteristics can be summarized below:

- The majority of employees remains inside the branch servicing customers (due to the increased workload), while only a small proportion of the staff has duties outside the office.
- Smaller branches are located in areas with low visit rates, while bigger branches are located in major cities (due to increased population).
- The location of most Hellenic Post offices is at the center of each town / city.
- The average number of visitors (customers) per day is 432, from which 394 are successfully served (93.4%). Branches in highly populated areas serve up to 900 customers in a daily basis.
- Training does not seem to be a main management objective. Less than half of the employees are trained via educational seminars.
- Despite the fact that employee cost is a small percentage of total revenues (8%), the profits of Hellenic Post branches are quite limited (11.4% of the total revenues).

Table 2. Hellenic Post branches / Data provided by managers (n = 86).

	Mean	Standard Deviation	Min	Max
Number of permanent employees	10	4,6	2	18
Number of non-permanent employees	1,55	1,2	0	4
Number of employees working inside the branch	6	3,8	1	14
Size of facility (in m <sup>2</sup> )	272,75	188,3	100	739
Residents in the area of responsibility	44,075	41,510	2,000	180,000
Distance from town center (in km)	40,1825	118,7	0	500
Average waiting time (in min)	7,7	4,0	2	15
Average number of citizen visits (per day)	432	234,2	105	900
Average number of citizens being serviced (per day)	394	221,6	125	880
Monthly revenues (€)	320,000	708,179,5	21,000	2,200,000
Monthly profit (€)	36,375	25,183,9	2,500	60,000
Monthly employee cost (€)	25,542	19,516,3	2,000	70,000
Number of employees that attend seminars	2	2,0	0	7
Hours of service (per day)	7,4	2,2	6,5	12,5

Table 3 presents data collected from managers of Hellenic Post branches concerning the level of customer satisfaction (using a seven point Likert scale, where 1= strongly disagree, and 7= strongly agree). These data are very interesting for making comparisons (between manager perceptions and customers actual service evaluation). According to the statistical analysis, managers perceive that customers are quite satisfied by the services provided. The mean scores in all questions (items) is way above average, thus, indicating that managers believe that their branches are very capable of satisfying their customers. The behaviour of employees, the scope of the services provided and the average transaction time are considered to be among the main advantages of the Hellenic Post branches, according to their managers.

Table 3. Perceptions about customer satisfaction/ Managers (n = 86).

Item / Question	Mean
Customers are very satisfied from the behavior of employees.	5.7
The average transaction time is very satisfactory.	5.7
Customers are very satisfied with the scope of the provided services of the Hellenic Post.	5.6
Customers are very satisfied with the operating hours of the Hellenic Post.	5.3
The average number of customer complaints (on a monthly basis) is quite low.	5.3
Customers are very satisfied with the speed of service delivery.	5.1
Customers are very satisfied with the services provided by the Hellenic Post.	5.0
The ratio of employees dedicated to servicing customer to the back office employees is very satisfactory.	4.6
Employees attend educational seminars (training).	4.5

Additionally, Table 4 presents the suggestions of Hellenic Post branch directors considering the areas of possible improvement (a seven point Likert scale was used, where 1= strongly disagree, and 7= strongly agree); these are mainly associated with the human and the technological resources available to their branches. More specifically, managers believe that the quality of services can be significantly improved through providing training to the existing employees, hiring additional staff and acquiring better equipment. On the other hand, Hellenic Post managers do not believe that improving branch location and extending working hours would have a positive impact on service provision.

Table 4. Suggestions for improvement: Managers (n = 86).

Item / Question	Mean
Hellenic Post services could be considerably improved if...	
Better equipment was available.	6,2
Employees had better training.	6,1
The number of employees was increased.	5,8
Customers were better informed about the services provided by the Hellenic Post.	5,6
Automated services were available (e.g. automatic stamp seller).	5,6
The building infrastructure was more appropriate.	4,3
Working hours were extended.	3,2
The location of the Hellenic Post branch was more appropriate.	3,1

The results presented in Table 5 are quite interesting for making comparisons and general observations. A first conclusion is that the perceptions of managers and the evaluation of customers are in line with respect to the strong and weak points of the Hellenic Post. In general, the scope of the services provided and the courtesy of the employees seem to be among the strong points, while the lack of personnel and all its subsequent effects (long waiting time, insufficient operating hours) seem to be among the problematic areas of the Hellenic Post branches.

Table 5. Advantages and disadvantages of Hellenic Post branches: Customers (n = 406).

Advantages	%	Disadvantages	%
Scope of services	35,8%	Waiting time	59,9%
Low Prices	34,2%	Lack of personnel	32,8%
Helpful employees	22,9%	Working hours	5,9%
Number of available branches	7,1%	Lack of parking space	1,4%

### 3.2. Reliability and validity

Before analyzing the empirical data that were collected with the use of the SERVQUAL instrument, its content and construct validity were analytically tested.

The test for the content validity was conducted with the use of the pilot testing technique. Academics, practitioners and Hellenic Post customers were involved in that procedure.

Construct validity was analytically tested in two steps. More specifically, each of the eight dimensions of the SERVQUAL instrument (tangibles, reliability, responsiveness, assurance, empathy, effectiveness, access, scope of services) and the additional section measuring the factor “customer satisfaction” were evaluated (a) for their unidimensionality and reliability, and (b) for the goodness of fit to the proposed theoretical model.

Unidimensionality was tested using Explanatory Factor Analysis (EFA) and reliability using the statistical measure “Cronbach Alpha”. All tests concluded that all scales used, after minor amendments (extraction of items), are valid and reliable (see Table 6 for more details).

Table 6. Construct validity and reliability.

	Construct / Factor	Items*	Cronbach Alpha	K.M.O.	Bartlett's Test Sig.	TVE
Perceived Service Quality	Tangibles	5 (5)	0.850	0.762	0.000	69,234
	Reliability	5 (6)	0.859	0.820	0.000	70,463
	Responsiveness	4 (4)	0.668	0.694	0.000	65,260
	Assurance	4 (4)	0.850	0.801	0.000	69,179
	Empathy	5 (5)	0.912	0.841	0.000	80,538
	Effectiveness	2 (2)	0.753	0.500	0.000	67,019
	Access	3 (3)	0.771	0.658	0.000	70,585
	Scope of Services	2 (2)	0.897	0.500	0.000	64,149
Customer satisfaction		7 (8)	0,822	0.905	0.000	66.400

\* Initial number of items inside the parenthesis

The evaluation of the goodness of fit of each of the nine above factors was conducted using Confirmatory Factor Analysis (CFA). All tests performed produced satisfactory results (Table 7).

Table 7. Estimation of the goodness of fit.

	Construct / Factor	$\chi^2$	C.R.	V.E.	RMSEA	CFI	GFI
Perceived Service Quality	Tangibles	17.459*	0.85	66%	0.041	0.92	0.91
	Reliability	25.677*	0.74	74%	0.013	0.97	0.99
	Responsiveness	36.941*	0.69	63%	0.093	0.99	0.94
	Assurance	66.159*	0.76	84%	0.095	0.96	0.94
	Empathy	24.226*	0.81	74%	0.096	0.94	0.94
	Effectiveness	14.951*	0.82	69%	0.099	0.95	0.98
	Access	35.569*	0.66	71%	0.099	0.97	0.97
	Scope of Services	22.174*	0.75	76%	0.091	0.93	0.99
Customer satisfaction		16.454*	0.89	84%	0.092	0.96	0.97

\*  $p > 0.05$

Both Explanatory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were performed using the second part of the SERVQUAL instrument (i.e. the one measuring perceptions, also called SERVPERF) (Anand and Selvaraj, 2012; El-Bassiouni et al., 2012). Both analyses indicated the omission of some of the questionnaire items, which were also excluded from the rest of the statistical analysis.

### 3.3. SERVQUAL analysis

The gap scores across the eight dimensions of the modified SERVQUAL instrument are shown in Table 8. Additionally, Table 9 analytically presents all SERVQUAL items, along with the mean score of expectations, perceptions and their gap. Both Tables include the factor ‘customer satisfaction’ that was used in order to further enhance the statistical analysis of the paper, utilising the Structural Equation Modelling (SEM) technique (see paragraph 3.5).

Table 8. Gap scores per dimension.

Construct / Factor	Expectations		Perceptions		Gap
	Mean	Standard Deviation	Mean	Standard Deviation	
Tangibles	6.20	0.92	4.52	1.34	-1,68
Reliability	6.51	0.69	4.50	1.43	-2,01
Responsiveness	4.15	1.88	4.05	1.36	-0,10
Assurance	6.42	0.79	4.55	1.40	-1,87
Empathy	5.50	1.04	3.86	1.59	-1,64
Effectiveness	6.40	0.82	4.00	1.45	-2,40
Access	6.43	0.83	4.13	1.32	-2,30
Scope of Services	6.22	1.05	4.50	1.49	-1,72
Customer satisfaction	-	-	4.51	1.21	-

As seen on Table 8, gap scores are negative for all eight SERVQUAL dimensions. The higher negative gap is depicted in the effectiveness dimension (-2.40) and the lowest in the responsiveness dimension (-0.0). Overall, it seems that customers expect more than they actually receive.

Taking into consideration that the developers of SERVQUAL and other authors of the same stream of research (Parasuraman et al., 1985; Parasuraman et al., 1988; McCollin et al., 2011; Rha, 2012) argue that service quality is defined as the difference between expectations and perceptions, it is concluded that the Hellenic Post offers services of insufficient quality, since gap scores are negative for items all and dimensions of the SERVQUAL instrument (with the exception of only one item) (see Tables 8 and 9).

Moreover, when only the actual perceptions of customers are taken under consideration (i.e. the SERVPERF section of the SERVQUAL instrument) (Rodrigues et al., 2011), the results (and, hence, the conclusions) do not dramatically change. In more detail, one dimension of the instrument is just below average (empathy / mean=3.86), while all other dimensions have values between 4 and 5 (on a 7-point Likert scale, where 1 stands for “low service quality” and 7 for “high service quality”).

Additionally, “customer satisfaction” (see Table 9 for the measurement and the results of this factor) has a mean value of 4.51, indicating that the overall satisfaction from the services of the Hellenic Post branches is just above average. That result is in line with the results of the SERVQUAL instrument, since the mean score of the perceptions for all dimensions is 4.26.

The overview of Tables 8 and 9 gives room for the following observations:

- In general, it is obvious that the customers of the Hellenic Post have high expectations about the level of the provided services, since the mean score in most dimensions is above 6. Mostly, customers expect the Hellenic Post branches to be reliable (“reliability”), easily accessible, in terms of waiting time (“access”), effective (“effectiveness”) and safe (“assurance”).

Table 9. SERVQUAL scores /‘Customer satisfaction’ scores.

	Item	Expectations (mean)	Perceptions (mean)	Gap Scores
Tangibles	1 The Hellenic Post uses of state-of-the-art hardware and software.	6.5	4.4	-2.1
	2 The physical facilities are visually appealing.	5.9	4.3	-1.5
	3 The physical facilities are clean.	6.5	4.8	-1.8
	4 Employees are well dressed.	5.9	4.6	-1.3
	5 The appearance of the physical facilities is in line with the kind of services provided.	6.2	4.5	-1.7
Reliability	6 When the Hellenic Post promises to do something by a certain time, it does so.	6.6	4.5	-2.1
	7 When citizens have a problem, the Hellenic Post shows a sincere interest in solving it.	6.5	4.3	-2.2
	8 The Hellenic Post is an institution you can depend on.	6.8	5.1	-1.7
	9 The Hellenic Post provides its services at the time it promises to do so.	6.6	4.5	-2.1
	10 The Hellenic Post insists on error-free records.	6.0	4.2	-2.4
	11 The Hellenic Post provides mailing services without mistakes.	6.6	4.4	-1.6
Responsiveness	12 The Hellenic Post tells citizens exactly when services will be performed.	4.5	3.9	-0.6
	13 Hellenic Post employees give prompt service to citizens.	4.8	4.2	-0.6
	14 Hellenic Post employees are always willing to help citizens.	3.0	4.1	1.2
	15 Hellenic Post employees are never too busy to respond to citizens’ request.	4.3	4.0	-0.3
Assurance	16 The behavior of Hellenic Post employees instills confidence in citizens.	6.3	4.8	-1.5
	17 Citizens feel safe in their transaction with Hellenic Post employees.	6.5	4.7	-1.7
	18 Hellenic Post employees are consistently courteous with citizens.	6.6	4.5	-2.1
	19 Hellenic Post employees have the knowledge to do their job well.	6.3	4.2	-2.1
Empathy	20 The Hellenic Post gives citizens individual attention.	6.1	4.0	-2.1
	21 Hellenic Post employees understand the specific needs of citizens.	5.2	4.0	-1.9
	22 The Hellenic Post has employees who provide personal attention to each citizen.	5.8	3.9	-1.4
	23 The Hellenic Post has the citizens’ best interest at heart.	6.1	4.0	-2.1
	24 The Hellenic Post has operating hours convenient to all citizens.	4.3	3.4	-0.9
Effectiveness	25 Hellenic Post employees are fully trained.	6.4	4.0	-2.4
	26 The service provision is constant and without any disruptions.	6.4	4.0	-2.4
Access	27 The number of available front desks is satisfactory.	6.4	3.7	-2.7
	28 Waiting time is satisfactory.	6.5	5.0	-1.5
	29 Queues move fast.	6.4	3.7	-2.7
Scope of services	30 The scope of services provided by the Hellenic Post is wide.	6.1	4.7	-1.4
	31 The services provided by the Hellenic Post are always being updated according to the latest innovations.	6.3	4.3	-2.0
Customer satisfaction	1 The comments I make about the Hellenic Post services when talking with other people are positive.	-	4.4	-
	2 I intend to use the Hellenic Post services in the future.	-	5.2	-
	3 I encourage my friends and relatives to use the Hellenic Post services.	-	4.4	-
	4 I never have thought to stop having transaction with the Hellenic Post.	-	4.6	-
	5 For me, the Hellenic Post is exactly what I expect what I need to do my job.	-	4.1	-
	6 I try to use the Hellenic Post whenever I need such services.	-	4.5	-
	7 The Hellenic Post is my first choice because of the services they offer.	-	4.4	-



- Examining the mean of every single item of the SERVQUAL questionnaire (Table 9), it can be concluded that customers expect the Hellenic Post to be an organization someone can depend upon (mean=6.8), keep its promises considering time related restrictions (mean=6.6), provide services without mistakes (mean=6.6) and employ courteous personnel (mean= 6.6).
- Despite the high expectations of customers in the four aforementioned areas, their actual evaluation (perceptions) is quite unpleasant for the Hellenic Post, as, the average mean difference (average gap score) between expectations and evaluations (items 8, 6, 11 and 18) is -2.04.
- The lowest perception scores (below 4) are found in the following areas: (a) operating hours (mean=3.4), (b) number of available front desks (mean=3.7), (c) movement of queues (mean=3.7), (d) information about the exact execution of services (mean=3.9), (e) personal attention to each citizen (mean=3.9). More or less, some of these disadvantages have, also, been pointed out by the descriptive analysis (see section 3.1 for more details).
- The higher perception scores (above 5) are found in the two following items: (a) waiting time is satisfactory (mean=5), (b) the Hellenic Post is an institution you can depend on (mean=5.1). The relative high evaluation of the item measuring “waiting time” seems to be an oxymoron, since the same customers (respondents) stated that waiting time is the main disadvantage of the Hellenic Post (see Table 5). The same observation has been made in a similar study conducted in Greece (Chatzoglou et al., 2013). A possible explanation of that oxymoron lies in the corresponding literature (van Ackere et al., 2013; Almehdawe et al., 2013; Shone et al., 2013) that concludes that different people will be more or less patient, according to various endogenous criteria.
- The higher (negative) gap scores are found in the “access” dimension. More specifically, the items measuring the number of available front desks (item 27) and how fast queues move (item 29) have the same negative gap score (-2.7). Moreover, customers are negatively surprised by the effort of the Hellenic Post to keep error-free records (gap score= -2.4), the degree of employee training (gap score= -2.4) and the frequency in the disruptions during the service provision (gap score= -2.4).
- The only item with a positive gap score (indicating that the actual perception of customers is higher than their expectation) is item 14: “Hellenic Post employees are always willing to help citizens” (gap score= +1.2).
- The lower (negative) gap scores are found in the “responsiveness” dimension (items 12, 13, 15). The negative gap scores are -0.6, -0.6 and -0.3, respectively.

### 3.4. Comparison between the perceptions of customers and managers

A significant problem for the pursuit of higher service quality in the Hellenic Post is the divergence between the perceptions of customers and managers. An analytical review of the results reveals that managers over-evaluate the level of their service provision, while customers do not seem to share their same opinion. Table 10 demonstrates that exact problem. The data for the managers are drawn from Table 3, while the data for the customers are drawn from the results of the analysis of the SERVQUAL instrument (Table 9). For example, managers believe that the average transaction time is satisfactory (mean=5.7), while customers rate the same variable way below the average (mean=3.7). These observations give raise for the reevaluation of the level of services from the managers of the Hellenic Post branches.

Table 10. Mean comparison between customers and managers.

Item / Question	Mean (Managers)	Mean (Customers)		
Customers are very satisfied from the behavior of employees.	5.7	4.6	?	Items 16, 18
The average transaction time is very satisfactory.	5.7	3.7	?	Item 29
Customers are very satisfied from the scope of the provided services of the Hellenic Post.	5.6	4.5	?	Items 30, 31
Customers are very satisfied from the operating hours of the Hellenic Post.	5.3	3.4	?	Item 24
Customers are very satisfied from the speed of service delivery.	5.1	5.0	?	Item 28

### 3.5. Structural Equation Modeling

To further support and enhance the results provided from the gap analysis, the “Structural Equation Modeling” (SEM) technique was also used. The model examined included eight exogenous constructs (the eight dimensions of the SERVQUAL instrument) and one endogenous construct, i.e. “customer satisfaction”. The aim of this analysis was to understand which of the SERVQUAL dimensions have the strongest impact on overall customer satisfaction.

The estimation of the structural model was conducted with the Maximum Likelihood Estimation method. The Covariance Matrix was used as the table of entry and the extraction of the Standardized Completely Solution was requested (Kelloway, 1998).

In more detail, the structural model (after all necessary modifications) fitted the data well, while the (remaining) independent factors that were, finally, included explained 57% of the variance of the dependent factor, i.e. customer satisfaction. The modifications (extraction of independent factors with insignificant impact on the dependent factor) resulted in a structural model with improved fit and explanatory power.

More analytically, in order to evaluate the fit of the overall model the chi-square value ( $X^2 = 67.469$  with 24 degrees of freedom) and the p-value ( $p = 0.043$ ) were estimated. These values indicate a good fit of the data to the overall model. However, the sensitivity of the  $X^2$  statistic to the sample size enforces to control other supplementary measures of evaluating the overall model, such as the “Normed- $X^2$ ” index (2.811), the RSMEA index (0.086) the CFI (0.945) and the GFI (0.912), that all indicate a very good fit. Additional tests of the significance of the measurement model, such as Factor Loadings, Construct Reliability and Variance Extracted were also estimated. Results indicate that all loadings are significant at the  $p < 0.05$  level. Additionally, Construct Reliability and Variance Extracted measures for all constructs are satisfactory.

Figure 1 illustrates the results of the analysis (modified structural model).

From the eight SERVQUAL dimensions that were examined, only four (reliability, assurance, effectiveness, scope of services) had a statistical significant effect on customer satisfaction, explaining 57% of the variance of the endogenous construct. More specifically, the dimension of reliability was found to have the highest effect on customer satisfaction ( $r = 0.36$ ), followed by assurance ( $r = 0.26$ ), effectiveness ( $r = 0.16$ ) and scope of services ( $r = 0.11$ ).

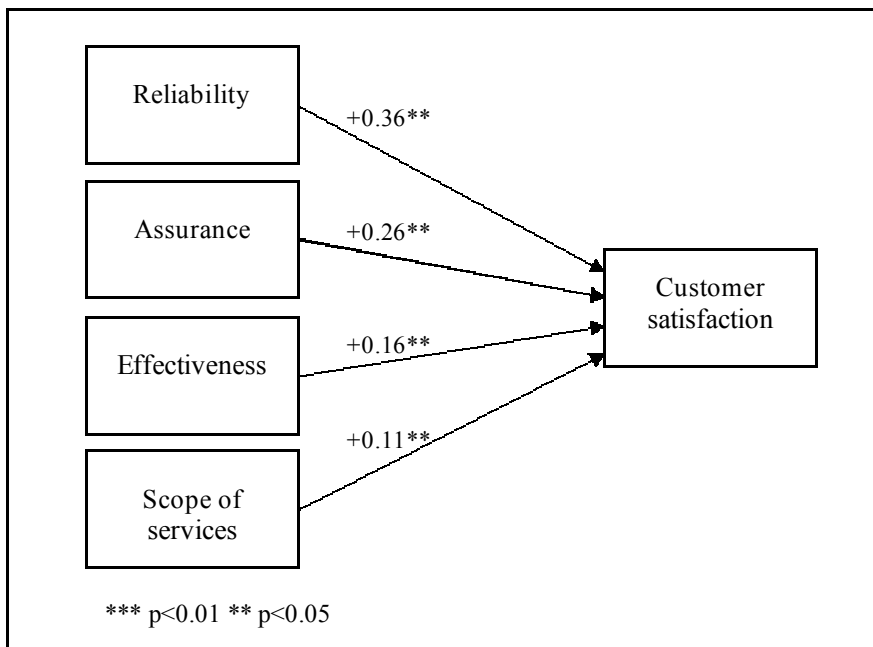


Fig. 1. The modified structural model.

#### 4. Conclusions

In summary, SERVQUAL analysis revealed that the Hellenic Post underperforms in all service quality dimensions (tangibles, reliability, responsiveness, assurance, empathy, effectiveness, access, scope of services). The classification (ranking) of these dimensions revealed that most are just above average, while one is below average. Hence, presenting a formal classification (from the better to the worse) seems redundant, since the highest score is obtained in the “assurance” dimension (mean score=4.55), which is actually quite low. As it is suggested by the empirical data, customers are not very satisfied with the services that are provided by Hellenic Post branches. On the other hand, managers seem to be unaware of the problematic areas in service provision and, as plain logic dictates, do nothing to improve them. That was evident from the comparison between customer and manager opinions.

Most of the Hellenic Post managers that participated in the present survey have never heard about the possibility of gathering information on customer expectations and measuring service quality gaps. Hence, the present empirical approach (SERVQUAL methodology) may direct managers towards the path of ensuring that provided services are focused on citizens (and not on their personal evaluations). Such an approach will enhance the general knowledge about citizens’ expectations and, therefore, allow policy makers to take necessary measures towards meeting their actual needs.

#### 5. Managerial implications

Based on the empirical findings of the present study, it is apparent that priority should be given to certain areas with respect to the improvement of service quality. More specifically, the following observations can be made:

- The divergence between customer evaluation and manager perceptions suggests that the latter are not fully aware of the weak and strong points of their branches. Hence, evaluation via collecting empirical data from customers should be among the first actions of the management team.
- Given that the “empathy” dimension, which is strongly associated with human resources, has the lowest perception score (see Table 9), this should be the first area targeted for improvement. Conducting educational seminars (training), setting of specific goals for every employee and making the most of the potential of the existing personnel are strongly suggested. Of course, hiring more personnel in order to service customers more efficiently would be a successful solution, but this is not a measure that can easily be proposed and adopted in the midst of the current economic crisis.
- The “reliability” dimension has the highest perception score and a significant negative gap, indicating that services should be provided with more accuracy and consistency. The update of the Information System of the Hellenic Post is among the first measures that should be taken, while at the same time, the existing personnel should be better trained in order to be able to comply with the new standards.
- The “access” dimension also has a large negative gap score and an overall low evaluation from customers. Therefore, management should consider branch restructuring should be undertaken, so as more employees are available to service customers. Additionally, the extension of the working hours would help solving this problem, since customers will stop overcrowding each branch over a short period of time (causing huge queues and raising the average waiting time).
- The descriptive statistics revealed that very few customers visit the Hellenic Post branches for buying mobile phone products/ services. Better advertising could raise the sales for these products, coupled providing adequate training to employees, to be able to handle the raise in demand.

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