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Does the patient perception of service quality differ in the recession period? Evidence from Greek hospital care

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Abstract—The objective of this paper is to identify the determinants of the perceived quality of hospital care in Greece before and during the recession era and explore the potential differences in the client's perceptions in the downward and upward phases of the economic cycle. The findings from a representative sample of 2224 patients discharged from Greek public and private hospitals show that the satisfaction of patients of Greek hospitals with service quality over the period 2006-2016 is 70.2 points on a scale of 1–100. According to our results, in the period of growth and recession, inpatients form their perceptions about service quality based more on process quality than on the outcome of care and the quality of the facilities. Regardless of the economic cycle phases, understanding patients' needs plays the most crucial role in judging process quality. At the same time, competence is a critical factor influencing their satisfaction with technical care. As a result, initiatives that boost personnel empathy and knowledge can improve overall perceived hospital care quality in Greece.

Keywords: Perceived Service Quality, Economic Cycle, Hospitals, Greece.

Jel Classification: I1, L3, L5, L8, M2 .

1. Introduction

The quality of the provided health care and the optimum making of medical facilities the most productive resources are some of the factors on which the health of a society depends. Unfortunately, healthcare providers lack sufficient healthcare quality indicators for strategic planning. As a result of this deficiency, a significant corpus of research is devoted to developing ways of healthcare quality measurement.

Despite growing interest in this field for many years and the fact that improving hospital care quality has been a high priority for almost all governments worldwide, there is a lack of systematic information about the perceptions of hospital care quality in certain countries such as Greece. Besides, our current state of knowledge also has limitations, as several issues related to the definition of perceived service quality have not been fully addressed. One theoretical question that is not fully clarified is if perceived service quality is a consequence of the client's image of the service result, the service delivery process and the facilities, or other dimensions of service, as proposed by Grönroos (1988) and the Nordic school. Or is the proposition of Parasuraman et al. (1985), of the so-called American school, that customers evaluate service quality by rating their experiences based on specific criteria such as tangibility, reliability, responsiveness, and so on, valid? Lastly, another issue that has

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not been adequately considered is whether economic fluctuations influence how consumers perceive service quality and their preferences.

The current study aims to contribute to the existing literature in several ways. First, it develops and tests a new perceived service quality model, bridging the divide between the Nordic and American perspectives. Most empirical research in this field has used different instruments based on the methodological principles of either the American or the Nordic inspiration. However, given that these tools were tested and appeared vigorous, it is essential to examine whether combining them could better comprehend the determinants of perceived service quality.

In addition, we conducted a survey and analyzed the opinions of a representative sample of 2224 patients discharged from public and private hospitals in all regions of Greece. By analyzing these primary data with a partial least squares path equation modelling (PLS-SEM) approach, the determinants of hospital care quality, as seen by inpatients in Greece in the pre-and post-crisis era, were identified. This knowledge is valuable for Greek managers and policy-makers, as research in this field in Greece is rare and non-systematic.

Lastly, a multi-path analysis (MPA) is effectuated. Our goal was to identify whether the determinants of the perceived quality of hospital care in Greece were different before and during the recession. In the framework of this aim, we compared the opinions of two sub-samples of responders: (i) patients discharged from Greek hospitals over the pre-crisis period (2006-2008) and (ii) those discharged during the recession era (2009-2014). The insight into how patients in Greece perceive existing hospital services under different macroeconomic circumstances is essential for developing theory and the design of policy alternatives. The Greek context is appropriate for this analysis because Greece, since 2009, has been facing an economic downturn that intensified in 2011 and 2012, when its GDP declined by over 9.13% and 7.3 %, respectively, resulting in an increase in the unemployment rate to 24.5 in 2012, and 27.5% 2013, from 8.4 % in 2007 (Eurostat, 2016).

2. Conceptual framework

The epistemological tradition in conceptualizing perceived service quality provides valuable tools to identify one or more perceived service quality determinant factors. In much of the literature, a Nordic perspective was used. Consumers appear to form their beliefs regarding service quality by rating their experience according to specific critical dimensions of service, such as technical service, interpersonal processes, and physical aspects of service. One of the leaders in this research stream is Grönroos (1988). Alternatively, Parasuraman et al. (1985), the founders of the American perspective, defined perceived service quality as the result of an evaluation process where customers judge quality by deciding if they were satisfied with certain fundamental aspects of service and the skills of providers, such as tangibility, reliability, responsiveness, accessibility, understanding, communication, competence, courtesy, credibility, and security. Over the last few decades, efforts have also been made to bridge these two approaches' divide. However, despite this progress, the interrelations of service quality dimensions remain a challenging scientific question yet to be fully resolved. Hence it is necessary to undertake further investigation to clarify the potential relationships between the various dimensions of service and the providers' skills.

With these considerations in mind, a new hierarchical structure was developed, which incorporates the assumption that the attributes of the excellent quality of the American school derived from and correspond to positive perceptions of technical,

functional, and facility quality emphasized in the Nordic perspective. In particular, it was suggested that two types of factors emerged in the literature to measure service quality, which is essentially two sides of the same coin. The SERVQUAL attributes of high service quality proposed by Parasuraman et al. (1985) were captured at a higher level of abstraction than the service quality dimensions suggested by the Nordic stream of research. Between these levels, explanatory relationships may be understood in a classical way. Higher-level factors (e.g. competence) may explain the dimensions of service quality at a lower level of abstraction (e.g. technical care quality).

From this point of view, perceived service quality reflects the opinion of the customer related to the superiority or global excellence of a delivered service (Zeithaml, 1988), which is formed, through a process of the evaluation of the facility quality, the outcome of service and the service delivery processes (see Fig.1, hypotheses H1, H2, H3). These assumptions are consistent with the methodological proposition of the Nordic school (Grönroos, 1988; Brady and Cronin, 2001; Rust and Oliver, 1993).

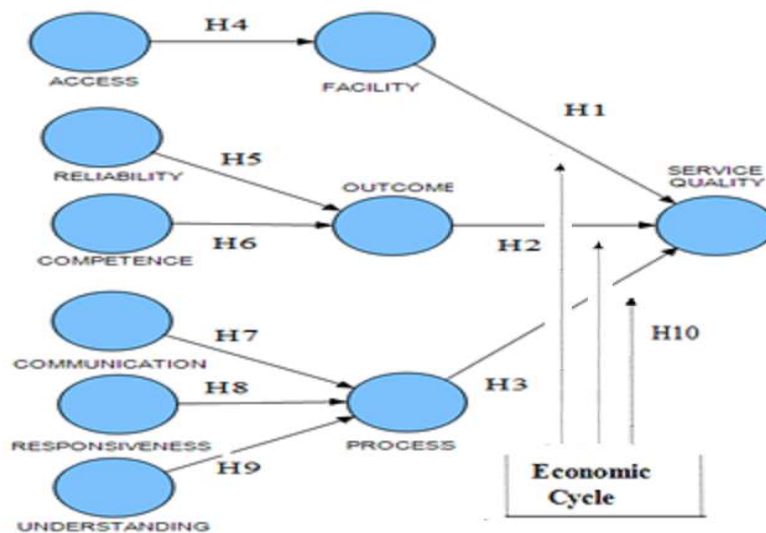


Fig.1. Conceptual model and hypotheses

As shown in Fig. 1, the attributes described by Parasuraman et al. (1985) were included in our model as the factors representing the socially desirable skills necessary for providing the socially desirable technical, functional and facility quality. This conceptualization assumes that accessibility strongly impacts perceived facility quality (hypotheses H4). Perceptions of competence and reliability are positively related to perceived outcome quality (H5 and H6). At the same time, providers' interpersonal capabilities in communication, understanding, and responsibility were expected to influence the image of functional quality (H7, H8, H9). We use only six of the original ten SERVQUAL attributes because these attributes have almost the same essential meaning with the factors proposed by Grönroos (1988) as contributors to high technical and process quality. Lastly, recognizing the importance of the dynamic nature of the consumers' perceptions, we examine the last hypothesis: whether the factors influencing the perceptions of service quality may differ significantly in the different periods of the economic cycle (H10).

3. Methods

3.1 Data collection and the sample

Patients discharged from Greek public and private hospitals were targeted to identify the determinants of perceived service quality and to explore the potential differences in patient perceptions between the two phases of the economic cycle.

The study participants were recruited through a list-assisted random digit dialling (RDD) telephone survey carried out by seventy-five specially trained interviewers between January 2015 and May 2016. From an initial RDD frame consisting of all residential exchanges, 2,466 area code prefixes from all the administrative health regions of Greece were selected using systematic sampling with a random start. In these areas, there were 57,049 working 100-banks, which had at least one household number. Based on this information, 14,140 telephone numbers were randomly selected. Thus, the RDD survey yielded 6,451 household numbers (i.e. excluding disconnected and business numbers). Our target population was those who had stayed at least two days in a Greek hospital and one year or more had passed since their discharge from the hospital. Using these criteria, 2224 patients were eligible and consented to participate in the survey. Utilizing the American Association for Public Opinion Research (AAPOR) formula RR2, the overall response rate was 39.7 %, an acceptable response rate according to the Council of American Survey Research Organizations (CASRO).

The participants in this study were discharged from 88.7% of Greek public hospitals (110 out 124), which provided 97.5% of the overall public hospital care of the country and from 49 % of the private hospitals (76 out 156). There was no information on 80 small private clinics, which mainly serve as centres of primary health care providers and are staffed by a few physicians and nurses.

3.2 Data analysis and measures

A structural equation modelling (SEM) was estimated to determine the dimensions of service quality that impact perceived hospital service quality in a statistically significant way. This paper chose to use a PLS-SEM approach which has the advantage of estimating very complex models with many latent and manifest variables without leading to estimation problems (Chin, 1998). This estimation was performed using SmartPLS software developed by Ringle et al. (2022).

The latent constructs and measures used in the model were derived from the variables proposed by the Nordic and American schools (see Appendix). The scale to measure overall service quality, the outcome of service, the service delivery processes, and the facility quality, accessibility, competency, reliability, understanding, responsiveness, and communication was developed by modifying the items that several authors used for this purpose (Brady and Cronin; 2001; Dabholkar et al., 1996; Dagger et al., 2007; Donabedian et al., 1982; Grönroos, 1988; Parasuraman et al., 1985; Raposo et al., 2009; Richard and Allaway, 1993; Rocco et al., 2009; Zineldin, 2006).

Perceived service quality is conceived here as an enlarged process including a series of activities and continuous reactions over time (Wilton and Nicosia, 1986, Raposo et al., 2009). Based on this principle, the authors applied the methodology described in the American Customer Satisfaction Index (Fornell et al. 1996) to measure the global perceived quality in Greek hospitals from 2006-2016. This method, as Johnson et al. 1995 note, avoids some of the problems related to traditional analysis and reduces the measurement error of the main variables related to

the perceptions of consumers (Fornell 1992; Andersen et al. 1994). The index of global perceived service quality was calculated according to the following formulation:

$$PSQ = \frac{\sum_{i=1}^n w_i \bar{x}_i - \sum_{i=1}^n w_i}{n \sum_{i=1}^n w_i} \times 100 \quad (1)$$

where w_i are the unstandardized weights, x_i are the measurement variables, and n is the number of measurement variables (Fornell 1992; Andersen et al. 1994).

Lastly, whether changes were significant over time was investigated using a multi-group analysis (MGA) approach (Sarstedt et al., 2011). Thus, two separate PLS path models were created for two different samples. These two samples comprise patients discharged from a Greek hospital during the pre-crisis period (2006-2008); and those discharged during the recession era (2009-2014). Next, applying the PLS path modelling bootstrapping algorithm with 5,000 subsamples was performed, and the perceived service quality determinants for each participant group were identified. Based on these estimates, we examined whether the requirement of measurement invariance is satisfied. The usual method for testing measurement invariance is a comparison of the path coefficients of the separate models from one point in time to the next to identify whether the path coefficient at t_0 is significantly different from that at t_1 . In the PLS-SEM framework, the most appropriate way for testing the differences between path coefficients is the non-parametric bootstrap confidence set approach (Sarstedt et al., 2011). No significant difference between the path coefficients existed when the path coefficient at time t_0 fell within the confidence interval of the path coefficient at time t_1 . Conversely, there is a significant difference between the path coefficients if the path coefficient at time t_0 is outside the confidence interval of the path coefficient at time t_1 (Sarstedt et al., 2011).

4. Results

4.1 Measurement Model

As shown in Table 1, our measurement model is reliable and internally consistent. Therefore the latent variables used in this study can be considered appropriate for PLS-SEM analyses. Testing the reliability of individual items, we found that all of the manifested variables reach the level of acceptable indicator reliability since all the loadings are well above the threshold of 0.7, meaning that there is more shared variance between latent variables and their indicators than error variance (Table 1, and Fig. 2).

On the other hand, Cronbach's alpha and the composite reliability values of each latent variable are more significant than the minimum acceptable value of 0.7, confirming that all the latent variables in the model possess adequate internal reliability. Furthermore, the average variance extracted (AVE) for all the latent variables in the model is above 0.5 (between 0.67 and 0.94), which confirms that all latent variables in our model possess adequate convergent validity. The Fornell-Larcker criterion is also satisfied since the square root of the AVE of all reflectively measured latent variables is larger than the correlation with other latent variables. Therefore, discriminant validity is established by evidence, showing that the measures of interest are not inappropriately related to measures of completely distinct constructs.

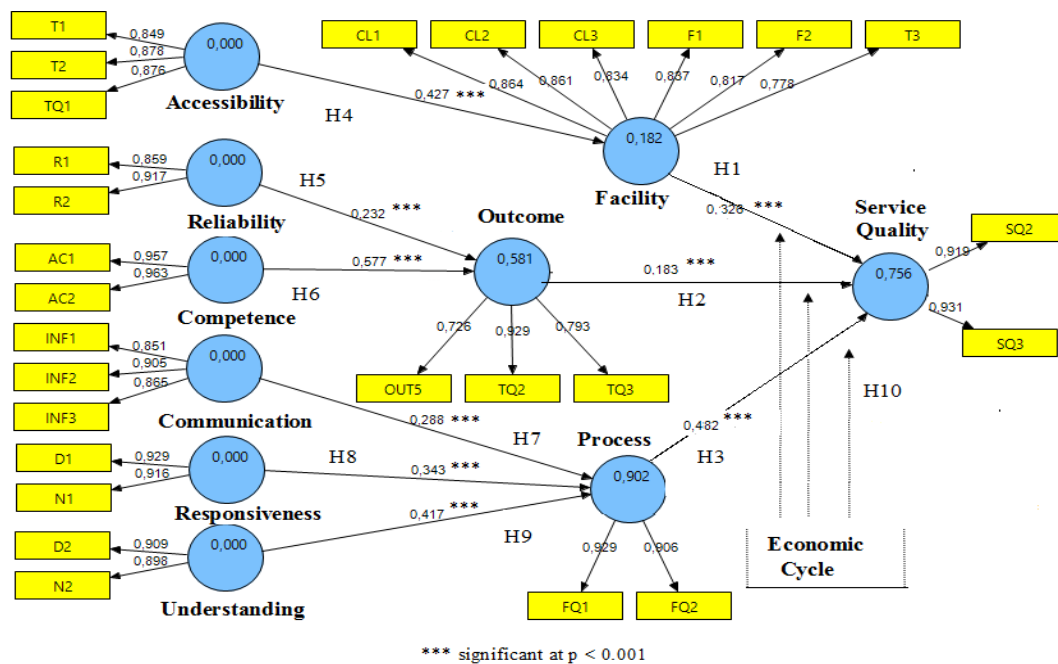


Fig.2. The results of PLS path modelling.

4.2 Structural Model Assessment and PLS multi-group analysis

A bootstrapped correlation analysis with 5000 resamples reveals that the proposed model has an R^2 of 0.756 for all periods (see Figure 2). The latent variables explained 75.6 % of global perceived service quality variance. A clear conclusion is that our model has a high explanatory power as, according to Chin (1998), R^2 values of 0.15, 0.35, and 0.67 signify weak, moderate and substantial explanatory power, respectively.

From the exact figure and the t-statistic shown in Table 2, the facility hypothesis (H1), the care output (H2), and the care process hypotheses (H3) were found to be supported at $p < 0.001$ since their standardized coefficients are statistically significant, with H1 ($\beta = 0.326$, $t = 18.792$, $p < 0.001$), H2 ($\beta = 0.183$, $t = 10.943$, $p < 0.001$), and H3 ($\beta = 0.482$, $t = 23.830$, $p < 0.001$). The perceived quality of the outcome, the facilities and the service delivery process contributed to overall perceived quality by 18.3%, 32.6%, and 48.2%, respectively. Process care was the most robust direct antecedent of perceived service quality (hypotheses H3). This result was consistent across both groups – with β values of 0.482 for the whole sample, 0.498 for the group of patients hospitalized over the expansion period, and 0.483 for those hospitalized during the recession period.

Moreover, the results showed that consumers form an image of process quality based on communication, responsiveness, and understanding. The combination of these attributes has a high predictive ability of 90.2% for perceived process quality. By taking into account the more statistically significant relationships, we observe that the effort made by physicians and nurses to understand patients' needs appears to be the most important factor that positively affects their perceptions of process quality. Therefore, hypothesis H9 was accepted ($\beta = 0.417$, $t = 27.005$, $p < 0.001$). From this empirical investigation, it was also clear that the willingness of physicians and nurses to provide service (responsiveness) is the second most crucial factor for perceived functional quality ($\beta = 0.343$, $t = 24.997$, $p < 0.001$), and therefore H8 is accepted too.

Table 1: Quality criteria for accuracy of the measurement model

	Whole Sample (n=2224)					Expansion t ₀ (n=356)					Recession t ₁ (n=1868)				
	AVE	CR*	R ²	Cr-A**	Fornell-Larcker	AVE	CR	R ²	Cr-A**	Fornell-Larcker	AVE	CR*	R ²	Cr-A**	Fornell-Larcker
Access	0.75	0.90		0.84	✓	0.76	0.91		0.85	✓	0.75	0.90		0.84	✓
Facility	0.69	0.93	0.18	0.91	✓	0.70	0.93	0.19	0.91	✓	0.69	0.93	0.18	0.91	✓
Reliability	0.79	0.88		0.74	✓	0.79	0.88		0.74	✓	0.79	0.88		0.74	✓
Competence	0.92	0.96		0.91	✓	0.94	0.97		0.93	✓	0.92	0.96		0.91	✓
Outcome	0.67	0.86	0.58	0.76	✓	0.67	0.86	0.56	0.76	✓	0.67	0.86	0.59	0.77	✓
Communication	0.76	0.91		0.84	✓	0.76	0.90		0.84	✓	0.76	0.91		0.85	✓
Responsiveness	0.85	0.92		0.83	✓	0.85	0.92		0.82	✓	0.85	0.92		0.83	✓
Understanding	0.82	0.90		0.78	✓	0.84	0.91		0.80	✓	0.81	0.90		0.77	✓
Process	0.84	0.91	0.90	0.81	✓	0.81	0.90	0.89	0.77	✓	0.85	0.92	0.90	0.82	✓
Service Quality	0.86	0.92	0.76	0.83	✓	0.88	0.94	0.76	0.87	✓	0.85	0.92	0.76	0.82	✓

*Composite Reliability, **Cronbach's Alpha

Table 2: PLS analysis

Hypotheses	Whole Sample (n=2224)		Expansion t ₀ (n=356)		Recession t ₁ (n=1868)	
	β	<i>t</i> -value	β	<i>t</i> -value	β	<i>t</i> -value
H1 Facility ->Service Quality	0.326	18.792	0.319	6.452	0.328	17.711
H2 Outcome ->Service Quality	0.183	10.943	0.167	3.617	0.186	10.221
H3 Process ->Service Quality	0.482	23.830	0.498	8.980	0.483	22.284
H4 Access -> Facility	0.427	22.287	0.444	10.020	0.427	20.174
H5 Reliability ->Outcome	0.232	9.504	0.226	3.529	0.237	8.970
H6 Competence-> Outcome	0.577	25.433	0.562	9.797	0.577	24.068
H7 Communication-> Process	0.288	23.543	0.294	8.908	0.282	22.199
H8 Responsiveness -> Process	0.343	24.997	0.337	7.712	0.348	24.195
H9 Understanding -> Process	0.417	27.005	0.403	8.667	0.422	25.282

A statistically significant positive influence of communication on perceived functional quality ($\beta=0.288$, $t=23.543$, $p<0.001$) is also signalled, leading us to accept hypothesis H7 (see Table 2). Patients' judgements about the hospital's facilities were the second most crucial dimension influencing perceptions of global service. For patients over the expansion period, there was a moderate positive relationship between perceived facility quality and overall service quality (0.319). This former was also relevant for those discharged from Greek hospitals during the recession (0.328).

Looking at the determinants of perceived facility quality, we notice that hypothesis H4, which referred to the proposed direct influence of accessibility on perceptions of the facility ($\beta=0.427$, $t=22.287$, $p<0.001$), was also supported. Perceptions of access and waiting time influenced facility quality perceptions: the β value for this relationship was 0.427 for the whole sample, 0.444 and 0.427 for the patients over the expansion and recession periods, respectively. Therefore accessibility is an essential sub-dimension of facility quality in different economic situations. In addition, our findings reveal that patients link their satisfaction with overall quality from their perception of output care (for the whole sample, $\beta=0.183$). However, it is interesting to note that the perceived service outcome appears to be the weakest predictor of patient satisfaction with the global quality of hospital care in Greece over the two periods of the study. Moreover, outcome quality appears to have a moderate ability to be explained by this model ($R^2 = 58.1\%$, for the whole sample) and in particular by two factors, competence ($\beta=0.577$, $t=25.433$, $p<0.001$) and reliability ($\beta=0.232$, $t=9.504$, $p<0.001$). These latent variables are significant at the 0.001 level of significance for both the periods under consideration and the whole sample (see Table 2). Hence, hypotheses H5 and H6, which referred to the predictive validity of the reliability and competence beliefs about care outcomes, were confirmed.

As seen in Table 3, the Goodness of Fit (GoF) index, namely the geometric mean of the average communality and the average R^2 , for the structural model for the whole sample, the expansion and recession periods were 0.77, 0.76, and 0.77, respectively. Since these values exceed the cut-off value of 0.36 for large effect sizes of R^2 (Cohen, 1988), they validate a compromise between the performance of the measurements and our structural model.

Table 3: Communality and GoF

Construct	Whole Sample (n=2224)		Expansion t ₀ (n=356)		Recession t ₁ (n=1868)	
	Communality	R Square	Communality	R Square	Communality	R Square
Facility	0.69	0.18	0.70	0.19	0.69	0.18
Access	0.75		0.76		0.75	
Outcome	0.67	0.58	0.67	0.56	0.67	0.59
Reliability	0.79		0.79		0.79	
Competence	0.92		0.94		0.92	
Process	0.84	0.90	0.81	0.89	0.85	0.90
Communication	0.76		0.76		0.76	
Responsiveness	0.85		0.85		0.85	
Understanding	0.82		0.84		0.81	
Service Quality	0.86	0.76	0.88	0.76	0.85	0.76
Average	0.796	0.74	0.80	0.72	0.795	0.75
GoF		0.77		0.76		0.77

The results for all groups failed to show any significant moderating effect of the economic cycle on the relationships under consideration (see Table 4). For these latent variables and for the two groups of data, at times t_0 and t_1 , the measurement invariance was not established (Ringle *et al.*, 2011), and therefore economic fluctuations do not lead to significant changes in patients' opinions of the dimensions of service quality between pre-and post-crisis periods. Hence, hypothesis H10 was not confirmed.

Table 4: Bias-corrected 95% Confidence Intervals and multi-group comparison

Relationship	PC	L-CI	U-CI	PC	L-CI	U-CI	Comparison
	t_0			t_1			
H1 Facility ->Service Quality	0.32	0.22	0.42	0.33	0.29	0.37	N.Sig
H2 Outcome ->Service Quality	0.17	0.08	0.26	0.19	0.15	0.22	N.Sig
H3 Process ->Service Quality	0.50	0.39	0.61	0.48	0.44	0.52	N.Sig.
H4 Access -> Facility	0.44	0.36	0.53	0.43	0.38	0.47	N.Sig.
H5 Reliability ->Outcome Competence-> Outcome	0.22	0.10	0.35	0.24	0.18	0.29	N.Sig
H6 Communication-> Process	0.56	0.45	0.68	0.58	0.53	0.62	N.Sig
H7 Responsiveness -> Process	0.29	0.23	0.36	0.28	0.26	0.31	N.Sig.
H8 Understanding -> Process	0.34	0.25	0.42	0.35	0.32	0.38	N.Sig.
H9 Process	0.40	0.32	0.49	0.42	0.39	0.46	N.Sig

4.3 Measuring a perceived service quality index for hospital care in Greece

Having estimated and analyzed the PLS path model, we determine whether patients are becoming more or less satisfied with the service quality provided by Greek over the period under consideration. For this purpose, a perceived service quality index (PSQI) for our sample's hospitals was calculated using the methodology proposed for measuring the Customer Satisfaction Index (Fornell 1992; Fornell *et al.* 1996). The perceived service quality index (PSQI) estimates are presented in Table 4.

Table 5: Perceived Service Quality Index estimates, 2006-2016

Period	Frequency (N=2224)	Perceived Service Quality Index (scale 0-100)
2006-2008	356	70.1
2009-2011	431	69.3
2012-2014	857	68.8
2015-2016	580	73.0
2006-2016	2224	70.2

As one can observe from these findings, the satisfaction of patients of Greek hospitals with service quality over the period 2006-2016 is 70.2 points on a scale of 1–100. It is interesting

to note the decline in PSQI at the sample's hospitals from 2009-2014, shown in Table 5. The PSQI from 70.1 in 2006-2008 decreased to 69.3 in 2009-2011, continued to fall to 68.8 in 2012-2014, and then increased to 73.0 in 2015-2016. The drop in satisfaction with hospital care quality over the period 2009-2014 in Greece should be seen as a warning signal about the effects of the reforms to reduce hospital care costs effectuated after 2010 in Greece.

5. Discussion

The new hierarchical model developed in this paper was found to be sufficiently robust to quantify patient perceptions of overall hospital care quality in Greece. The model exhibits a high explanatory power of 75.6%. This result validates the appropriateness of the suggested instrument for capturing consumer perceptions of service quality. Based on our findings, the proposed framework may be helpful for future research to identify the factors influencing consumer perceptions of service quality. The conclusion drawn from this empirical analysis is that the new multilevel model, which relates the SERVQUAL attributes to the technical, functional, and physical aspects of service, may provide a complete comprehension of the determinants of perceived service quality. This methodological proposition is consistent with Grönroos' conceptualization, while it questions the claims made in the recent literature that SERVQUAL neglected technical quality (Kang and James, 2004).

Based on the insight provided by this study, we reveal that the reforms in the hospital care industry effectuated after 2010, aiming to decrease the cost, were accompanied by a trend to fall in the perceived service quality over 2009-2014. Our evidence indicates that reducing expenses for health care may reduce the quality of health care. Similar conclusions have been induced from past research on public hospitals (Keramidou and Triantafyllopoulos, 2018).

Hospital administrators in Greece should also utilize the results from this survey to understand patients' needs and preferences. The Greek hospital managers must adapt their efforts to improve quality to the essential factors the Greek patients saw. There are two principal reasons why the wisdom gained in this paper is appropriate for decision-making to improve the quality of hospital care in Greece. The first is that while most of the prior empirical works were based on the data derived either from a single hospital or from a limited number of hospitals (Chandrinou et al., 2013; Labiris and Niakas, 2005; Matis et al., 2009; Mitropoulos et al., 2018; Pantouvakis and Bouranta, 2014; Papanikolaou and Ntani, 2008; Polyzos et al., 2005), our study analyzed the experiences of a representative sample of 2224 patients discharged from public and private hospitals in all regions in Greece, and therefore it is possible to conclude the whole population of Greek patients. The second reason is that the present survey was conducted after the outbreak of the financial crisis and the reforms in the National Healthcare System, which were put into effect after the year 2010. Therefore it elucidates whether they contributed to achieving the desired quality in the Greek hospital care setting.

Furthermore, one interesting finding of this study is that there were no significant differences in the processes by which consumers arrive at an overall service quality perception before and during the recession era. Sample patients hospitalized during economic expansion manifest similar relationships among the model variables with those hospitalized during the second phase of the economic recession. Since the factors influencing patient perceptions of hospital care quality in Greece remain the same both in the pre-crisis period and the second phase of the

recession, there is no need for policy alternatives in Greece to match the different preferences of inpatients shaped by different phases of the economic cycle.

Future quality improvement activities should focus on improving process quality, which is critical for overall quality. Primary emphasis should be placed on understanding patients' needs and enhancing personnel responsibility because these attributes play a significant role in perceived process quality. For managers, this investigation emphasizes the need to find ways to improve the availability and professional behaviour of the medical staff. Universities, the Ministry of Health, and professional organizations should initiate policies and encourage programs for the professional development of doctors and nurses. However, because the success of such programs depends heavily on the size of the healthcare workforce and its salaries, which have been reduced over the period 2010-2014, an effective plan to improve process quality, facility and outcome quality is linked to the availability of more significant resources for hospital care and to the establishment of the necessary conditions for higher productivity of medical staff. Among the measures that should be taken could be financial incentives for the workers to remain in the health sector and improve their job performance, as well as high levels of motivation, commitment, and participation on the part of individual workers (Babakus et al. 2004; Lee et al. 2012).

Although our results showed that the least important variables were facilities and output of care qualities, managers should search for ways to increase the satisfaction of patients in these areas. Primary emphasis should be placed on accessibility and competence, which inpatients in Greece rated as the most important factors influencing their perceptions of facility and outcome quality. Future interventions in improving accessibility must be supported by national and local policies to reduce waiting time for access to hospitals and waiting time for synergy. At the same time, increasing competence requires policies that enhance the ability of providers to offer the best possible results owing to the presence of qualified and reliable staff.

Despite its contribution, this research has several limitations. Firstly, although our sample size is relatively large (2224 patients) and our data covered all the health regions in Greece and hospital types, it is essential to conduct such surveys in Greece regularly, which will enhance the integrity of implications for each period of an economic cycle. The knowledge provided by such surveys in Greece should aid in elucidating the mechanisms of failure and thereby accelerate the implementation of more effective plans to improve hospital care quality. Furthermore, it would be helpful for future research to apply the proposed theoretical model of perceived service quality to other service sectors in Greece or other countries. Finally, from our results and the literature review, we think that, although the current constructs explain a large part of the satisfaction with process quality, further investigations should be performed to explore new variables to yield better technical and facility quality predictions. Such a theoretical reconstruction might allow a deeper understanding of the effects of the other attributes of high-service quality from the American perspective.

6. Conclusions

In general, the results support the literature concerning perceived service quality. The patient's image of facilities, the outcome of care, and the service delivery process are the primary determinant factors of service quality in periods of prosperity and depression. Increasing patient satisfaction with hospital care in Greece requires a combination of interventions in areas which patients consider more important for hospital service quality. For hospital managers in Greece, this investigation emphasizes the need to acquire adequate skills in interpersonal relationships and the required productive resources to improve the facility and process qualities further. Particular attention must be paid to accessibility, understanding patient needs, and the personnel's responsibility because these attributes were found to play a significant role in forming the perceptions of process and facility quality regardless of the economic conditions. The knowledge provided by this paper could contribute to the implementation of reforms in Greece to achieve a more effective response in meeting inpatient needs.

Appendix

Survey constructs & measurement items to identify the determinants of hospital care quality

Latent Variables and Measurement items		Source
	Facility	Parasuraman et al., 1985; Brady and Cronin, 2001
CL1	Room Cleanliness	Raposo et al., 2009; Rocco et al., 2009
CL2	Bathroom cleanliness	
CL3	Changing of towels and linen	
F1	Food Quality	
F2	Food Variety	
T3	Visiting hours	
	Process quality	Donabedian et al., 1982; Grönroos, 1988; Brady and Cronin, 2001; Dagger et al., 2007
FQ1	Relationships with personnel	Zineldin, 2006; Dagger et al., 2007
FQ2	Satisfaction with the information provided	Raposo et al., 2009; Rocco et al., 2009
	Communication	Parasuraman et al., 1985; Raposo, 2009;
INF1	Information on hospital services provided	Rocco et al., 2009
INF2	Information about health problems	
INF3	Medical advice on the behaviour at home	
	Understanding	Parasuraman et al., 1985; Grönroos, 1988
D2	Doctors' attitude - professionalism (courtesy, empathy, attention)	Parasuraman et al., 1985; Grönroos, 1988; Raposo, 2009
N2	Nurses' attitude- professionalism (courtesy, empathy, attention)	
	Responsiveness	Parasuraman et al., 1985
D1	Doctors' availability	Rocco et al., 2009
N1	Nurses' availability	
	Outcome quality	Richard and Allaway, 1993; Brady and Cronin, 2001; Grönroos, 1988; Dagger et al., 2007

TQ2	Best possible results owing to the existence of a qualified and reliable staff	Donabedian et al., 1982; Brady and Cronin, 2001; Dagger et al., 2007
TQ3	Hospitalization results in health	
OUT5	Readmissions to hospital	
	Accessibility	Parasuraman et al., 1985; Grönroos, 1988
T1	Waiting time for admission to the hospital	Brady and Cronin, 2001
T2	Waiting time for synergy	
TQ1	Satisfaction with waiting times	
	Competence	Parasuraman et al., 1985; Grönroos, 1988; Brady and Cronin, 2001
AC1	Skills required to provide medical treatments according to current scientific knowledge	Richard and Allaway, 1993; Dagger et al., 2007
AC2	Capabilities of providing medical intervention according to current scientific knowledge	
	Reliability	Parasuraman et al., 1985, Grönroos, 1988
R1	Avoiding medical errors - infections	Dabholkar et al., 1995; Dagger et al., 2007, Raposo et al., 2009
R2	Synergy without complications	
	Overall Service Quality	Parasuraman et al., 1985, Grönroos, 1988
SQ2	Services provided compared to previous admissions	Rocco et al., 2009
SQ3	Service quality	Parasuraman et al., 1985, Grönroos, 1988

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