
STUDY ON PERFORMANCE EVALUATION OF SERVICES PROVIDED IN A PUBLIC HOSPITAL

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Abstract

Patient perceptions of service performance have become a critical component for measuring work productivity and performance of healthcare professionals, using as mediator the performance of healthcare services. To measure the performance of hospital services at the Emergency County Hospital of Slatina, we used the SERVPERF model for patient perception analysis. The SERVPERF model allows to study the perceived level of patients concerning the quality of the services offered and the predictors analysis regarding the dimensions and elements of the SERVPERF model. The five dimensions considered were: tangible elements, reliability, responsiveness, empathy and assurance. The study is limited to the sample selected from a single public hospital in Romania. However, the results of this study provide a useful tool for government procedures to measure service performance in public hospitals.

Keywords

Service performance, SERVPERF model, public hospital, performance dimensions.

JEL Classification

O14, I11

Introduction

The Romanian healthcare system aims to provide patient-centered care and improve the quality of care, ensuring that health interventions are structured around the patient's requirements and expectations. The poor quality of services in public hospitals is usually due to lack of motivation and low employee morale, which affects work productivity and the effectiveness of medical care, compromising patient care and rising costs of operations due to the inefficiency of using non-human resources.

Over time, the quality concept has undergone changes, focusing moving from goods to services (Dobrzykowski et al., 2016). This change demonstrates the increasing importance of quality in the services sector, including in the area of healthcare services. As a result, the subject of customer service performance has become a significant issue for the performance of healthcare.

In the healthcare area, perceptions of service performance are closely related to the level of patient satisfaction (Williams and Calan, 1991; Cronin and Taylor, 1992, Brady et al., 2002, Akdere et al., 2018). However, there are a number of studies that suggest that patient

satisfaction has emerged before quality assurance has been assured (Bitner, 1990; Bolton and Drew, 1994; Kayral, 2014; Akdere et al., 2018). Although there is no full consensus on the relationship between service performance and patient satisfaction, it is widely accepted that the level of satisfaction is determined by the quality of services (Dabholkar, 1995; McAlexander and Kaldenberg, 1994; Kayral, 2014).

Evaluating the results the patient obtains from a healthcare service takes time. Evaluating patient outcomes can sometimes be difficult and even impossible. The elements that determine patients' perception of service performance are indirect criteria, such as the relationship between patient and hospital staff, facilities, hospital cleanliness, etc. (Bowers et al., 1994; Donabedian, 1996; Ettinger, 1998; Kayral, 2014; Akdere et al., 2018).

Using the SERVPERF model, we will examine patients' perceptions of service performance in a public hospital in Romania. The SERVPERF model has five generic dimensions that will be adapted for the case study of the hospital unit: tangible elements, reliability, empathy, responsiveness, assurance.

The structure of the paper consists of four sections. In the first section of the paper we made an introduction to the investigated issue. The second section sets out research methodology and research hypotheses. The third section presents the results of empirical research on a sample of patients about their perceptions of service performance, as well as interpretations of these results. The conclusions summarize the findings from the evaluation of the perceptions of the patients of the Emergency County Hospital of Slatina (ECHS) regarding the efficiency of the services.

Research methodology

In order to examine and explore the perceptions of a public hospital patients on the performance of healthcare services, we conducted a qualitative study of a sample of 100 patients hospitalized at the Emergency County Hospital of Slatina, who will participate in a questionnaire survey (based on SERVPERF model). In order to build the sample we used the proportional stratified sampling method as a selection process.

Starting from the study of the literature, we formulated the following hypotheses regarding the perceptions of patients on the productivity and performance of the employees and the hospital as a whole, which will be the object of the researches carried out within the Emergency County Hospital of Slatina (ECHS):

IP1. The ECHS patients consider that there is an average level of tangible element quality.

IP2. The ECHS patients consider that there is a good level of reliability of the services.

IP3. The ECHS patients consider that there is a good level of hospital staff empathy.

IP4. The ECHS patients consider that there is an average level of responsiveness dimension.

IP5. The ECHS patients consider that there is an average level of assurance dimension.

Hypotheses will be investigated for validation or invalidation, by studying the reliability of research items, frequency analysis and the study of correlations between research items.

Results and discussions

The SERVPERF model has five generic dimensions that will be adapted to the case study of the hospital unit, each dimension containing a series of items illustrating individual variables: the quality of the tangible elements (eight individual variables); reliability (six individual variables); empathy (eight individual variables); responsiveness (six individual variables); assurance (five individual variables). For each individual variable we have defined five levels with associated values: very weak (1), weak (2), medium (3), good (4), very good (5). Following patient questionnaires administration, we compute a series of indices for each individual variable and a series of aggregate indices related to the five dimensions of the services provided at the hospital.

Table no. 1 presents the descriptive statistics characterizing the selected sample on which the questionnaire on ECHS patients' perceptions was applied.

Table no. 1 Descriptive statistics of the selected sample

	Min	Max	Average	Standard deviation	Skewness	Kurtosis
Gender	1	2	1,72	0,451	-0,995	-1,031
Age	1	5	3,16	1,496	-0,169	-1,427
Level of studies	1	4	1,76	0,933	0,957	-0,175
Environment (urban or rural)	1	2	1,62	0,488	-0,502	-1,784
The place of origin	1	3	1,60	0,569	0,269	-0,792

Source: Developed by author

In the sample, the proportion of female patients is higher in line with the structure of the population that was hospitalized in the month in which we conducted the research. Analyzing the obtained statistical information, we have found that the average age among the respondents is approximately around the age of 38 years. The structure of patients on the level of studies is imbalanced, inclined to the left, illustrating the fact that a large proportion of patients have high school and post-secondary education, respecting the general structure of the patients.

In order to test reliability, we also performed a test, computing all values of Guttman's Lambda (λ). Of these, the λ_2 and λ_3 (Alpha Cronbach) values are the most used in performing statistical reliability tests. Both Gutmann coefficients (Alpha Cronbach, respectively λ_2) record the same high value (0.974), which shows excellent reliability of the variables, facilitating relevant and replicable results.

In order to increase the relevance and depth of the analyzes, we calculated the averages for all variables as well as a series of aggregates as the averages of the values assigned to each variable. These aggregate indices were calculated for each of the five service performance dimensions (IAIP1-IAIP5) (Table no. 2).

Table no. 2 Variable averages and aggregate indices related with formulated hypotheses

	Items	Content of variable	Index value		Items	Content of variable	Index value
Tangible elements	cet6.1	cleanliness	3.82	Responsiveness	resp9.1	physicians' response	4.14
	cet6.2	medical equipment	3.98		resp9.2	presence of physicians at night	3.71
	cet6.3	food quality	3.74		resp9.3	nurses' response	4.06
	cet6.4	salon facilities	3.64		resp9.4	medical care process	4.06
	cet6.5	procedures for payment	3.45		resp9.5	usefulness of administrative staff	3.90
	cet6.6	security	3.69		resp9.6	ambulance services	3.84
	cet6.7	visiting program	3.94	asig10.1	hospital building	3.62	
	cet6.8	waiting area	3.63	asig10.2	trust given by physicians	4.14	
Reliability	fiab7.1	effectiveness of treatment assessments	4.08	Assurance	asig10.3	confidentiality	4.04
	fiab7.2	relevance of medical tests	3.98		asig10.4	image and reputation	3.69
	fiab7.3	procedure for medical tests	3.96		asig10.5	trust given by all staff	4.12
	fiab7.4	clarity of physicians' explanations	4.01		IAIP1.cet	tangible elements quality dimension	3.74
	fiab7.5	clarity of nurses' instructions	4.22		IAIP2.fiab	reliability dimension	4.04
	fiab7.6	effectiveness in emergency cases	4.01	IAIP3.emp	empathy dimension	3.98	
Empathy	emp8.1	medical information	4.00	Aggregate indices	IAIP4.resp	responsiveness dimension	3.95
	emp8.2	hospitalization process	3.88		IAIP5.asig	assurance dimension	3.92
	emp8.3	prescription drugs	3.86				
	emp8.4	physician consultation	3.98				
	emp8.5	programming process for consultation	3.84				
	emp8.6	physicians' patience	4.00				
	emp8.7	nurses' patience	4.12				
	emp8.8	politeness of all staff	4.18				

Source: Developed by author

The search for the validity of the first hypothesis implies the analysis of the responses obtained for the individual variables cet6.1-cet6.8 (items related to the quality of the intangible elements dimension). Following the frequency analysis and taking into account the aggregate index calculated for the tangible element quality dimension (3.74) we can conclude that the IP1 hypothesis is validated. Patients of the Slatina County Emergency Hospital believe that there is a medium level of tangible elements quality.

The difference between the individual variables that form the tangible element quality dimension (cet6.1-cet6.8) and the influence on the aggregate index calculated for the tangible element quality dimension (IAIP1.cet) is illustrated in fig. no. 1.

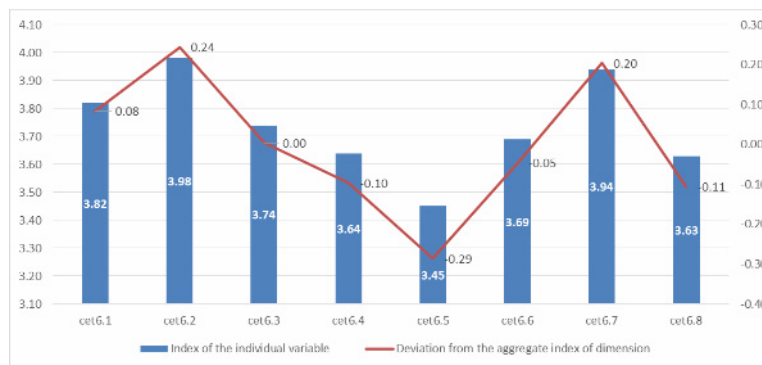


Fig. no. 1 Deviation of variables from the average of tangible elements quality dimension index

Source: Developed by author

The lowest value is registered by the individual variable cet6.5 (the perception of payment procedures for hospital services), due to the fact that the payment procedures are not clear, many services being included in the basic insurance package. The lack of information on tariffs, payment methods leads to a lower average variable value recorded by this variable. The highest value is recorded by the individual variable cet6.2 (the perception of patients regarding the quality of medical equipment), given that the patients are interested in the hospital facilities that can influence the quality of the medical act.

The performance of the medical act depends on the quality of the medical equipment, which is among the most visible resources during the medical act. The ECHS patients appreciate the quality of medical equipment, this variable having an average score that places it on a good level of the performance scale.

Although the average score (3.74) is relatively large, approaching the high level of the measurement scale, we must take into account patients' sensitivity to the opinion of doctors and hospital staff about their answers to statistical surveys on medical services. The in-depth analysis of this dimension indicates a more favorable perception of the quality of medical equipment as a result of investments made in recent years and an unfavorable perception of hospital service payment procedures, which remain cumbersome, often unknown to patients.

Exploring the validity of the second hypothesis involves analyzing the responses obtained with the individual variables fiab7.1-fiab7.6 (items related to the reliability dimension). After analyzing the frequencies and taking into account the aggregate index calculated for the reliability dimension (4.04), we can conclude that the IP2 hypothesis is validated. The ECHS patients believe that there is a good level of reliability of the services provided.

The difference between the individual variables that form the reliability dimension (fiab7.1-fiab7.6) and the influences on the aggregate index calculated for the reliability dimension (IAIP2.fiab) is illustrated in fig. no. 2.

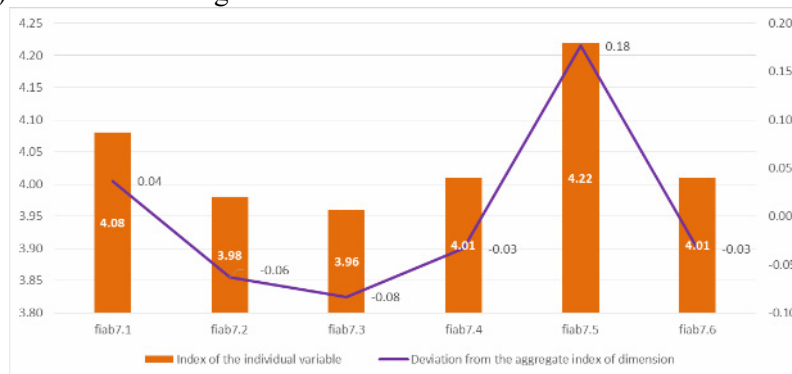


Fig. no. 2. Deviation of variables from the average of reliability dimension index

Source: Developed by author

The lowest value is the individual variable fiab7.3 (medical test procedure), due to the fact that the testing procedures are affected not only by the performance of human resources but also by the quality of the technical equipment. Although it is below the average for the reliability dimension, this individual variable records a fairly high average value (3.96), close to the good level. The highest value is the individual variable fiab7.5 (the clarity of instructions provided by nurses), as patients communicate better with nurses, their language being easier to understand than doctors.

The individual variable fiab7.4 (the clarity of the physicians' explanations given to patients about their condition) is below the average reliability dimension, which reveals a better communication of nurses to patients than physicians.

The average recorded score of size (4.04) is at the high level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception of the individual variables that characterize the performance of human resources and a more unfavorable perception of the individual variables that characterize the performance of non-human resources.

Investigating the validity of the third hypothesis involves studying the responses obtained for the individual variables emp8.1-emp8.8 (items related to the empathy dimension). After analyzing the frequencies and taking into account the aggregate index calculated for the empathy dimension (3.98), we can conclude that the IP3 hypothesis is invalidated. The patients of the Slatina County Emergency Hospital believe that there is an average level of hospital staff empathy.

The differentiation between the individual variables that make up the dimension of empathy (emp8.1-emp8.8), as well as the influences on the aggregate index calculated for the empathy dimension (IAIP3.emp) is illustrated in fig. no. 3.

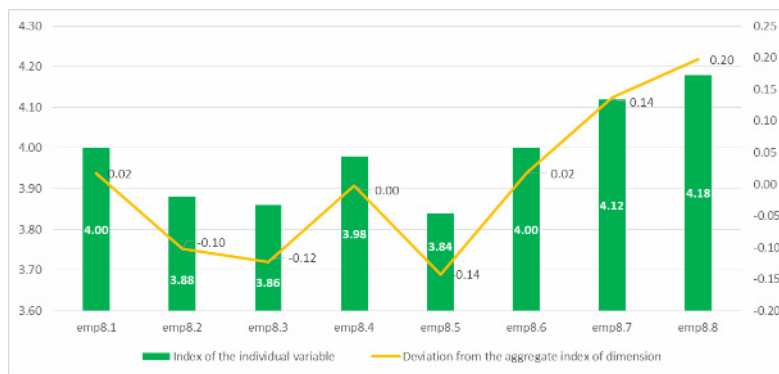


Fig. no. 3. Deviation of variables from the average of empathy dimension index
Source: Developed by author

The lowest value is registered by the individual variable emp8.5 (the perception of the programming process for consultation). This result correlates with the result of the tangible quality elements dimension (the lowest value is the individual variable cet6.5 related with hospital service payment procedures), indicating that hospital procedures are cumbersome, sometimes ineffective, and discontent with patients.

The highest value is registered by the emp8.8 individual variable (patient perception of the politeness of all staff), since patients often come in contact with non-medical staff and their behavior is important for the appreciation of medical services in their completeness.

The average recorded score of dimension (3.98) is relatively high being practically close to the good level of the measuring scale. The in-depth analysis of this dimension indicates a more favorable perception of the patience of physicians and nurses, the politeness of all staff as a result of increased rewards and an unfavorable perception of programming, registration, hospitalization and waiting procedures, which remain cumbersome, inefficient, time-consuming, which dislikes patients.

Exploring the validity of the fourth hypothesis involves analyzing the responses obtained in the case of individual variables resp9.1- resp.9.6 (items related to the responsiveness dimension). Following the frequency analysis and taking into account the aggregate index calculated for the responsiveness dimension (3.95) we can conclude that the IP4 hypothesis is validated. ECHS patients believe that there is an average level of responsiveness of the services provided.

The differentiation between the individual variables that form the responsiveness dimension (resp.9.1- resp.9.6), as well as the influences on the aggregate index calculated for the responsiveness dimension (IAIP4.resp) is illustrated in fig. no. 4.

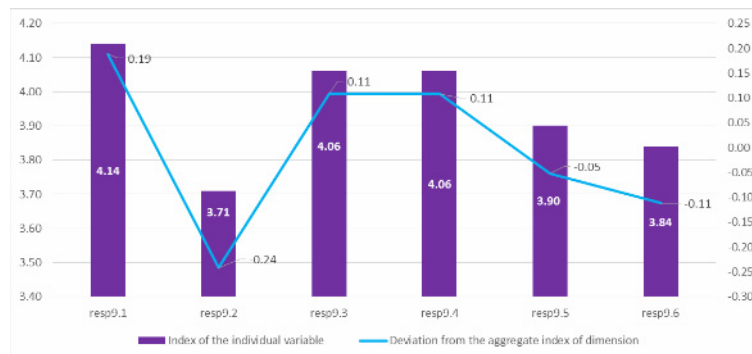


Fig. no. 4. Deviation of variables from the average of responsiveness dimension index
Source: Developed by author

The lowest value is recorded by the individual variable resp.2.2 (presence of physicians at night), because fewer doctors are interested in making guards, and those who make guards are overworked, which makes their presence is not felt by patients. The highest value is recorded by the individual variable resp.9.1 (the physician's response to patients' requests), which indicates that physicians have a high level of responsiveness.

The average recorded score of dimension (3.95) is relatively high, being very close to the good level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception of the individual variables that characterize the response of physicians and nurses to patients' demands.

Investigating the validity of the fifth hypothesis involves studying the responses obtained for the individual variables asig10.1-asig10.8 (items related to assurance dimension). Following the frequency analysis and taking into account the aggregate index calculated for the assurance dimension (3.92) we can conclude that the IP3 hypothesis is validated. ECHS patients believe that there is an average level of insurance provided at the hospital.

The difference between the individual variables that form the assurance dimension (asig10.1-asig10.5) and the influences on the aggregate index calculated for the assurance dimension (IAIP5.asig) is illustrated in fig. no. 5.

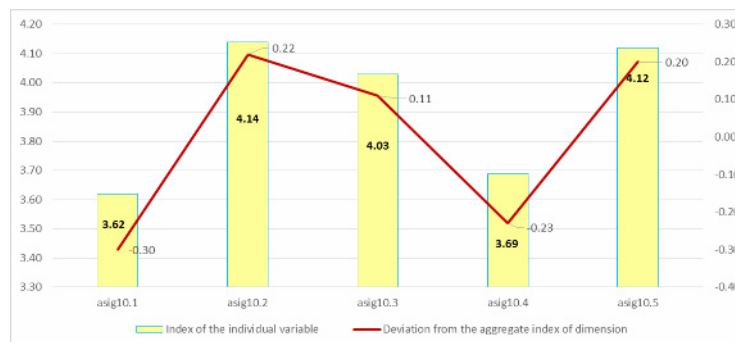


Fig. no. 5. Deviation of variables from the average of assurance dimension index

Source: Developed by author

The lowest value is recorded by the individual variable asig10.1 (patient perception of the hospital building design). This variable expresses the performance of non-human resources, indicating that patients have no confidence in the way it was built a public hospital in the communist era, desiring new modern facilities that provide everything needed for health care. The highest value is registered by the individual variable asig10.2 (patient perception on trust in physicians), as patients are satisfied with the involvement, empathy and responsiveness shown by doctors at the hospital.

The average recorded score of dimension (3.92) is relatively high being practically very close to the good level of the measurement scale. The in-depth analysis of this dimension indicates a more favorable perception on the trust in physicians and hospital staff and an unfavorable perception on the safety and comfort offered by the hospital building and the hospital's image and reputation, which still suffers from the lack of material and financial resources and negative high-impact of publicity cases.

Conclusions

Health managers need to identify key determinants of service performance to ensure high quality services at a reasonable cost. Patient performance perception leads to a substantial effect on operational performance (labor productivity, efficiency and effectiveness of human and non-human resource use). Research conducted in the Romanian health system suggests that the services offered by public hospitals are not entirely reliable and do not only partially

meet the needs of the clients. It is imperative for public hospitals to determine the quality aspects of critical services for patient satisfaction and their relationship with operational performance in order to improve efficiency, labor productivity and meet the needs of their clients.

In this paper we aim to investigate the perception of patients' on service performance adapting the SERPERF model to the specifics of a public hospital. The SERPERF model is tested in the Emergency County Hospital of Slatina. The only dimension that exceeded level 4 (good) was reliability, the other four ranging between levels 3 and 4. These results show that the performance of the services offered within the Slatina County Emergency Hospital is at the limit between the average level and the good level. Our research provides a useful tool for public hospitality managers that can be used to assess the performance of the services provided.

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