

Nursing Personnel as a Must-be Quality Characteristic in a Public Hospital

E. Krassadaki, E. Grigoroudis

Technical University of Crete, Department of Production Engineering and Management,
Decision Support Systems Laboratory
University Campus, 73100 Chania

Abstract

Nursing care covers the whole range of hospital services. In many surveys, patient satisfaction from nurse care has been identified as the most important factor influencing overall patient satisfaction. This paper refers to a part of a wider survey aiming to categorize services provided by a public hospital on the three levels of quality, according to Kano's model. Based on the model, the quality characteristics are grouped on three distinctive levels: expected quality (characteristics deemed as given/basic), desired quality (characteristics whose performance affects satisfaction) and attractive quality (characteristics which create added value and can bring high levels of satisfaction). The paper analyzes the results of the survey on citizen satisfaction from the local public hospital and categorizes the characteristics on the three aforementioned quality levels. One of the parameters examined was personnel, further analyzed in medical and nursing personnel as well as other supporting personnel. The results show that the personnel in general and the nursing personnel in particular is a must-be quality characteristic, and thus it constitutes a major component of the services provided by a public hospital.

Keywords: quality in health services, nursing personnel, Kano's model

I. Introduction

The significant cost of health services and the increased needs of patients have resulted in laying more emphasis on measuring the quality of health services and patient satisfaction (Bond and Thomas, 1992; Fitzpatrick, 1991). In many countries, mainly USA and Great Britain, both quality measurement of health services and participation of patients in improving the quality of health care are regulated by law.

Although patient satisfaction from health services is a concept easily understood by common sense, no generally accepted conceptual definition may be found (Bond and Thomas, 1992). The concepts of patient satisfaction and patient perceptions on quality are often used alternatively, while according to Oberst (1984) there is a difference between the two terms. Petersen (1988) claimed that satisfaction is the patient's general perception of how healthcare is provided, where patient is not totally aware of the results or appropriateness of healthcare. According to Smith (1992), patient satisfaction is a combination of perceived needs, expectations and experience from healthcare.

Within the framework of investigating patient satisfaction from the public hospital of the town of Chania, a survey was carried out aiming to measure the satisfaction of citizens (year 2003). The presented research is based on the satisfaction data collected in the aforementioned survey in order to classify the hospital characteristics in connection with the three levels of quality proposed by Kano (Kano, 1984). A special questionnaire is developed for the purpose of this survey, while the assessment of the satisfaction criteria is based on the principles of multicriteria analysis forming a consistent family of decision criteria (Jacquet-Lagrèze & Siskos, 2001). Moreover, the management of the hospital have been also involved in this assessment process. It should be noted that the survey aims to determine the opinion of citizens for the public hospital which was moved in a new building in September 2000.

The survey questionnaire includes questions targeting the personal opinion of participants either as in-patients or out-patients or finally as visitors/persons accompanying patients. In

particular, the survey was carried out with a simple yet properly structured questionnaire, which includes six criteria: hospital location, facilities and infrastructure, hygiene, personnel, service and additional services. Each dimension of the satisfaction survey was analyzed into a number of subcriteria. In particular, the personnel criterion included three dimensions: medical and nursing personnel and other supporting personnel. International bibliography extensively refers to the correlation of patient satisfaction, particularly in regard of hospital medical and nursing personnel.

It follows from the demographical characteristics of the sample (N=177) that 59% are men and 41% women. Also, 99% of the sample has formed an opinion on the new hospital either as in-patients (20%), or as out-patients, or finally as

2. Kano's model

Customer satisfaction in most cases is related to perceived quality. The higher the quality, the higher the customer satisfaction and vice versa. However, fulfilling the individual product/service requirements to a great extent does not necessarily imply a high level of customer satisfaction. For example, when a pen writes the user is not highly satisfied but when it doesn't the user is completely dissatisfied (Vavra, 1997).

On the other hand, when somebody usually waits in a bank queue for ten minutes if on any given day he/she is served earlier, this unexpected event becomes a satisfaction situation. Kano's model proposes three types of product/service requirements (Fig. 1), which, when met, affect customer satisfaction in different ways.

Based on this model, customer satisfaction is not a one-dimensional concept. The three types of product/service requirements in Kano's model are:

1. Must-be requirements. These are basic characteristics of a product/service. If these requirements are not fulfilled, the customer is completely dissatisfied while on the contrary if they are fulfilled they do not affect satisfaction. The customer regards these characteristics of a product/service as prerequisites and does not ask for them. Usually, these requirements are obvious, not-expressed, implied or self-evident. For example, when a customer buys a pen it is implied that it can write. The 'must-be', as they are called, attributes constitute the 'expected quality' of a product/service.

2. One-dimensional requirements. The one-dimensional requirements, when fulfilled, affect satisfaction in an analogous way. The higher the level of fulfilment the higher

visitors/persons accompanying patients. The age distribution of the sample is: 27% up to 25 years old, 20% from 26-35, 20% from 36-45, 12% from 46-55 and 21% over 55 years old.

The MUSA, multicriteria satisfaction analysis, method (Grigoroudis et al., 2002) is used to analyze the survey data, while the satisfaction or non-satisfaction expressed by citizens was used to classify the criteria and subcriteria according to Kano's model.

In section 2 there is a brief presentation of the Kano's model. The methodological framework is presented briefly in section 3, which includes the derived importance assessment through the MUSA method and the Dual-Importance diagram. The application is presented in section 4, focusing on the results concerning the personnel.

the satisfaction level and vice versa. Usually, these attributes of a product/service are explicitly demanded by the customer and constitute what is called as 'desired quality'.

3. Attractive requirements. The attractive requirements have the greatest influence on satisfaction. They are neither explicitly expressed nor expected by the customer. Fulfilling these requirements leads more than an analogous increase of satisfaction, as is the case of the unexpected earlier service than the usual time spent on a bank queue. On the contrary, if these requirements are not met, they do not imply dissatisfaction. The characteristics of a product/service which cause delight to customers represent the 'attractive quality'.

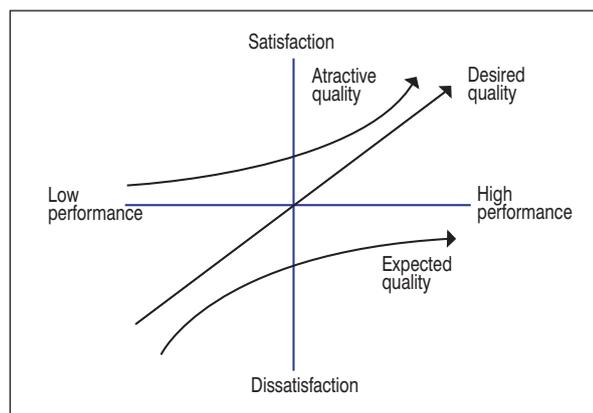


Figure 1. The three quality levels of Kano's model

3. Methodological framework

The presented methodological framework is based on the comparative examination of the relationship between the derived importance of two target groups: satisfied and non-satisfied customers. The main idea of the approach is based on the fact that the importance level of a quality characteristic is not fixed, yet it depends on its performance, as expressed by the customer satisfaction level. Accordingly, we examine separately the opinions of satisfied and dissatisfied citizens.

In the first stage we collect data regarding the opinions of citizens, as expressed on the specially formulated

questionnaire of the satisfaction survey. With this questionnaire, the citizens are asked to express their satisfaction using questions such as: 'How satisfied are you from ...?'. The answers were given on a 5-point qualitative scale ranging from 'completely satisfied' to 'completely dissatisfied'. In the second stage, we separate the answers of satisfied and dissatisfied citizens for each criterion/subcriterion of the survey and we apply the MUSA multicriteria methodology to estimate the importance of each characteristic per group of citizens. MUSA is used to estimate the weights for both

satisfied and dissatisfied citizens, and the dual importance diagram is plotted accordingly (Fig. 3), which categorizes the characteristics of the hospital on the three quality levels of Kano's model. For the methodological framework see Fig 2.

Quadrants I and III include the characteristics which are of the same importance for either satisfied or dissatisfied citizens (see Fig. 3). The coincidence of views between satisfied and dissatisfied customers highlights attributes for which customers do not attach high importance when satisfied, while on the contrary they consider them to be important when not satisfied. According to Kano's model, desired quality is related to the characteristics of a product/service whose low performance creates dissatisfaction while high performance creates satisfaction, therefore we could say that quadrants I and III include the one-dimensional characteristics. An improvement in the quality of these characteristics will apparently result in the proportional increase of satisfaction in both groups of satisfied and dissatisfied citizens, taking into consideration that satisfaction is associated with importance.

In quadrants II and IV the derived importance between satisfied and dissatisfied citizens is diversified. In particular, quadrant II contains the characteristics for which dissatisfied citizens attach higher importance compared to satisfied citizens. In this case, these characteristics seem to affect dissatisfaction to a higher degree compared to satisfaction. When the importance of a characteristic is connected to satisfaction we get the must-be characteristics of expected quality: if their performance is high citizens are satisfied yet they do not express such satisfaction, but if their performance is low citizens express clear dissatisfaction. In quadrant IV it's the exact opposite. Dissatisfied citizens attach lower importance to these characteristics and it appears that their dissatisfaction is not due to their possibly low performance. It is true that if a characteristic is of a given low performance and this does not affect satisfaction, then any sudden

improvement in its performance would cause unexpected satisfaction. In this sense, the characteristics of quadrant IV are those of attractive quality.

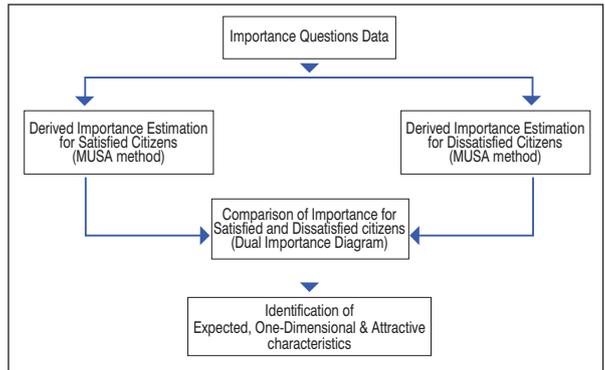


Figure 2. Methodological framework

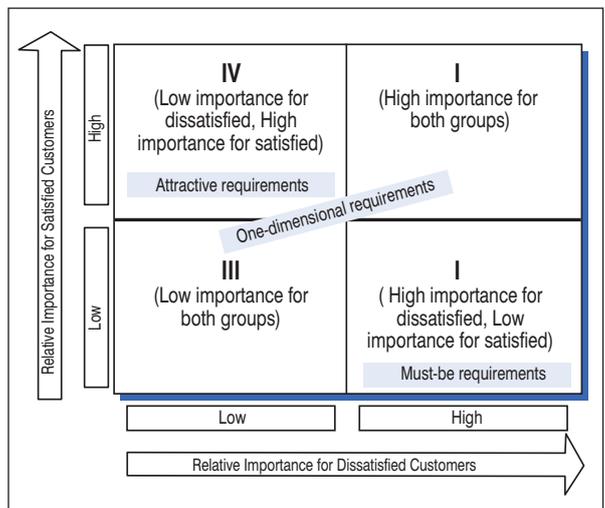


Figure 3. Dual-Importance Diagram (Better-Worse Diagram)

4. Results for personnel

It follows from the results of the proposed approach that personnel belongs to domain II of the must-be quality characteristics. Therefore, personnel as a satisfaction measurement criterion has high importance for dissatisfied citizens and of low importance for satisfied citizens, respectively. Namely, it appears that the personnel criterion affects to a higher degree dissatisfied citizens which, partly, justifies the dissatisfaction expressed.

The question is why. The analysis on the three separate parameters of personnel (physicians, nurses, other personnel) showed that nurses belong to the same quadrant II of the satisfaction-dissatisfaction diagram. Therefore, citizens consider personnel as a must-be quality characteristic, which is directly linked to nurses. Namely, the nursing personnel as a must-be characteristic of expected quality generally explains the citizens' opinion of the hospital personnel. The citizens' opinion of personnel is linked to nursing care which, when sufficient, does not cause satisfaction, yet when insufficient causes high

dissatisfaction. Within this meaning, citizens consider the performance of nursing care as granted, therefore it is not demanded yet implied. It is deemed to be given, existent and available. Therefore, it should be stressed that the nursing personnel as a key quality factor of the hospital is expected to be available, while at the same time it determines certain levels of acceptance on the part of citizens. The high performance of the nursing care does not bring satisfaction but it simply eliminates the dissatisfaction of citizens.

This approach showed that particular importance must be attached to the nursing personnel in a public hospital, in the sense that it affects to a higher degree the dissatisfaction of citizens and it is identified with the people's view of personnel in general. This practically means that the nurses' shortcomings or any other relevant inadequacies affect dissatisfaction to a high degree.

With regard to the other two subcriteria of personnel, physicians were included in quadrant IV of the attractive

characteristics while the other personnel, as expected, was included in quadrant III of the one-dimensional quality characteristics, respectively. The inclusion of physicians in quadrant IV means that if, for some unexpected reason, citizens have a better opinion of the medical personnel, this can dramatically affect their satisfaction. Namely, the citizens' opinion for the medical personnel does not create dissatisfaction or does not affect their satisfaction. If, however,

citizens have a better opinion of the medical personnel, then this will unexpectedly result in high satisfaction. In practice, this can result from an increase in the number of the medical personnel, the coverage of vacant specialties, the operation of units which were not operative or fully operative, etc. In respect of the hospital's personnel of remaining specialties, it appears that the improved performance relatively affects citizen satisfaction.

References

- Bond, S. and Thomas, L.H. (1992). Measuring patient's satisfaction with nursing care. *Journal of Advanced Nursing*, 17, 52-63.
- Fitzpatrick, R. (1991). Surveys on patient satisfaction: Important general considerations. *British Medical Journal*, 302, 887-889.
- Grigoroudis, E., Siskos, Y. (2002). Preference disaggregation for measuring and analyzing customer satisfaction: The MUSA method. *European Journal of Operational Research* 143, (1), 148-170.
- Jacquet-Lagrèze, E. and Siskos, Y. (2001). Preference disaggregation: 20 years of MCDA experience. *European Journal of Operational Research*, 130, 233-245.
- Kano N. (1984). Attractive quality and must-be quality. *The Journal of the Japanese Society for Quality Control*, vol. April, 39-48.
- Oberst, M.T. (1984). Patient's perceptions of care: Measurement of quality and satisfaction. *Cancer*, 53, 2366-2373.
- Petersen, M.B. (1988). Measuring patient satisfaction: collecting useful data. *Journal of Nursing Quality Assurance*, 2(3), 25-35.
- Smith, C. (1992). Validation of patient satisfaction system in the United Kingdom. *Quality Assurance in Health Care*, 4(3), 171-177.
- Vavra T.G. (1997). *Improving your measurement of customer satisfaction*. ASQC Quality Press, Milwaukee.