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Working Paper Series

Conceptualising the Perceived Performance in Hospital Services: A Patient's Perspective

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**Conceptualising the Perceived Performance in Hospital Services:
A Patient's Perspective**

By

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A CONCEPTUALISATION OF HOSPITAL SERVICE PERFORMANCE FROM PATIENT PERSPECTIVE

ABSTRACT

Purpose: Primary purpose is to develop and test a model of hospital service performance (SERVHOSP) in the context of a major private hospital in Romania.

Design/methodology: First stage qualitative interviews were used for construct elicitation purposes. This stage of the research sought to elicit the attributes that are important for patients in evaluating SERVHOSP. To gather data on these issues, a qualitative study include interviews with 30 patients and eight health professionals. The results from the qualitative stage and the review of the literature of services marketing led to the development of a hospital service performance (SERVHOSP) model. The quantitative stage consisted of 384 interviews with patients, which were recruited from Euroclinic, a leading private hospital in Romania.

Findings: Study validates dimensions of service performance contextualised to the hospital care sector namely tangibles; empathy of personnel; responsiveness to patient needs; and reliability. The model developed in this study validates an additional dimension, namely the hospital ambiance. In addition to these four factors, a risk management dimension was identified.

Research limitations/implications: Private hospitals with integrated healthcare services represent an important and novel development in the New Member States (NMS). This paper reports on patients' evaluations of private healthcare in Romania, and provides guidance for future studies. The model has only been tested in one population sample and further replications in different hospital settings are required to prove its reliability.

Originality/Value: The validation of the proposed instrument SERVHOSP generates scope for understanding the specificity of consumer evaluation of services in the growing and increasingly influential NMS environment.

Keywords: *SERVHOSP, SERVQUAL, perceptions, service performance, risk management, informal payments*

Classification: *Research paper*

Introduction

The dynamic structural changes taking place in Central and Eastern European Countries (CEEC) (Stare, 2005) affect the service sector and foster the need for reforms in healthcare delivery systems. The demand for reforms is fed by the dissatisfaction of population with current health systems. For instance in Romania, according to a survey conducted by the Centre for Health Policy and Services (CHPS) and Gallup Organization (CHPS, 2007), 37% of population believe changes in the hospital sector are needed to improve the quality and accessibility of public services.

Lower life expectancy (Hertzman *et al.*, 1996) together with health conditions associated with the higher pace of economic transition (Petrovici and Ritson, 2006), as well as the failures of the public health systems (Normand, 2006), generates a strong interest in understanding drivers of hospital service performance.

A variety of indicators can measure hospital service performance such as: length of hospitalisation; mortality rates; or number of post-treatment complications. Gathering data on such indicators is a very sensitive issue in Romania, and given that such indicators are not officially reported, the investigation of patient perceptions has become more important than ever before.

The need to improve population access to healthcare together with the recent accelerated economic growth and income differentiation has led to an increased availability of and demand for private medical care in the New EU Member States (Ministry of Health, 2007). Romania joined the Single European Market in January 2007 and is the second largest New Member State among CEEC. An increase penetration of the private sector is already apparent (National Institute for Statistics, 2005).

In Romania, similarly to UK where the debts of health organisations were accumulated (BBC, 2006), the mismanagement of resources in public health organisations and associated financial deficits of hospitals enhances the importance of performance measurement (Presidential Commission, 2008). The service quality and healthcare management literature points out that there is little research on service performance in CEEC (Lynn *et al.*, 2000). The service marketing literature continues to postulate that service quality is a critical determinant of business performance (Carrillat *et al.*, 2007). Yet, the original 'gap score' approach of SERVQUAL (Parasuraman *et al.*, 1985) has several theoretical and empirical criticisms (Ladhari, 2008). Perception scores make better predictors of overall evaluation of service (Cronin and Taylor, 1992).

This paucity of systematic studies on health care performance in CEECs creates a significant gap in the literature. The primary contribution of this article is to develop and test a model of hospital service performance (SERVHOSP) in the context of CEEC. A major private hospital in Romania is used to develop the model.

The remainder of this paper is organized as follows. First, the conceptual background is discussed. Then, SERVQUAL shortcomings are considered. Next, the research methodology is outlined, followed by the conceptual model, and presentation of the results. Finally, major themes are discussed; conclusion and managerial implications are drawn.

Conceptual background

The service quality and service performance literatures are sometimes used interchangeably. The conventional view is to regard perceived quality as an antecedent of customer satisfaction (Cronin and Taylor, 1992; Cronin *et al.*, 2002; Rust and Oliver, 1994). Yet other authors hypothesise reverse links between satisfaction and service quality (Carman, 1990).

The concept of service quality is elusive and multi-faceted (Carman, 1990). Patients' evaluation of healthcare is a multi-attribute and multidimensional construct (Gabbott and Hogg, 1996) and little is known about its dimensionality in the NHS notwithstanding the specificity of assessing hospital care (Tomes and Peng, 1995). In the healthcare domain, service delivery relies on the interaction between doctors, nurses and support staff and the multitude of interactions in this high-contact service requires specific attention.

Two approaches of measuring service quality (SERVQUAL) can be distinguished in the literature. The Nordic school approach, which views SERVQUAL as combination of functional and technical quality. The American school (Parasuraman *et al.* 1988) which proposed that RATER (Reliability, Empathy, Assurance, Tangibles and Responsiveness) scale in evaluating SERVQUAL as a gap between expected and perceived service. Rust and Oliver (1994) propose a three-component model: service product; service delivery; and service environment without providing an empirical testing of the model. McAlexander *et al.* (1994) found support for similar models in the context of dental care. As Brady and Cronin (2001) points out, there is little integration between these epistemological perspectives on service quality. This paper adopts Parasuraman's model of service quality and extends it to include a service environment dimension. This extended model is thus concerned with a broader view of hospital performance as perceived from a patient perspective and is thus referred as SERVHOSP. Parasuraman's model represents a well established instrument of measuring service quality. The majority of the dimensions of the model are well suited for the healthcare sector and provide an opportunity for contextualisation.

The literature on SERVQUAL and service satisfaction is largely underlined by the disconfirmation model. Consumers' compare the perception of actual services to a normative standard, leading to feelings of satisfaction (intention to recommend the service or increase patronage) or dissatisfaction (complaint) (Parasuraman *et al.*, 1985; Parasuraman *et al.*, 1988; Weingart *et al.*, 2006).

Despite being criticised (Buttle, 1996; Smith, 1995) the SERVQUAL model is subject to numerous replications studies. Notwithstanding the large number of studies, there remains disagreement over the dimensionality of service quality, and discriminate validity (Rapert and Babakus, 1996). A large variability in SERVQUAL dimensions is noticeable in the extant literature. Parasuraman's seminal work (1985) proposed ten components of SERVQUAL as follows: reliability; responsiveness; competence; access; courtesy; communication; credibility; security; understanding the customer and tangibles aspects of services. They were later grouped (Parasuraman *et al.*, 1988) as five dimensions also known as RATER scale: reliability; assurance; tangibles; empathy; and responsiveness.

There remains disagreement over the dimensionality of service quality in healthcare applications (Pakdill and Harwood, 2005). While Lam (1997) found evidence of a single factor, Bowers *et al.* (1994) propose two new dimensions in addition to Parasuraman's model, namely caring and patient outcome.

The discriminant validity of the dimensions of service quality can be problematic. The multi-facet nature of the "assurance" construct can create problems relating to the discriminant validity in the structural models. The assurance construct amalgamate dimensions such as: security; staff competence; communication; courtesy; and credibility. This merging procedure can create problems related to convergent validity or increase the probability of poor discrimination between assurance and other constructs. This point is demonstrated by studies (De Man *et al.*, 2002), where the assurance dimension was merged with the dimensions tangibles.

Despite the accumulation of a large body of literature on SERVQUAL application, there is no satisfactory solution as to the dimensionality of SERVQUAL model (Reimer and Kuehn, 2005) including the healthcare sector (Carman, 1990; Lam, 1997). The current study disentangles the original set of dimensions proposed by Parasuraman et al. (1985) and seeks to conduct a series of validity and reliability tests in order to establish the dimensionality of SERVHOSP.

Addressing SERVQUAL shortcomings: alternative models

Alternative models to delve into the consumer perceptions of services have been proposed. Differences in service quality performance are expected in addition to inter-country differences due to the nature and dynamics of each service, managerial attitudes, employee training or market structures (Yoo and Park, 2007). Hence, there is an opportunity for future studies to tease out these differences. Cronin and Taylor (1994) found that perceptions-only measures of services may provide a better predictive power relative to the conventional SERVQUAL approach. Perception-based measures of SERVQUAL can provide a higher predictive power with respect to outcomes (Carman, 1990; Cronin and Taylor, 1992). Brady *et al.* (2002) found evidence of superiority of performance-only measures (SERVPERF) relative to gap-based SERVQUAL scales across five service sectors.

The debate over the superiority of SERPERF over SERVQUAL is still open. Notwithstanding Brady *et al.* (2002) claims, Carrillat *et al.* (2007) findings suggest that both are valid tools. SERVQUAL was regarded more useful for practitioners given its diagnostic value (Parasuraman *et al.* 1994). Its adapted version improved the predictive validity, while the validity of SERPERF was not improved by context adjustments. Nevertheless, McAlexander *et al.* (1994) provide evidence of the superiority of the SERPERF model relative to the conventional SERVQUAL model which was supported by other studies (Cronin and Taylor, 1992; Teas, 1993).

Against this background of debate, there are still calls for the development of accurate measures of service quality (Koerner, 2000) and standardisation of measures of service perceptions. The literature indicates a need to develop a valid SERVQUAL scale for healthcare (Rosenthal and Shannon, 1997) and systematic methodologies to evaluate performance across healthcare organisations (Li and Benton, 1996), and beyond the UK and USA. Calls for suitable adaptations of SERVQUAL scales were made by Lee et al. (2000).

This study makes a contribution to the literature by: i) developing SERVHOSP by extending Parasurman's model and examining in addition to functional quality the service environment quality; ii) measuring facets of experience, search (expertise of personnel) and credence attributes of services (credibility) adapted to the healthcare sector; iii) contextualising the model to include specific aspects of service delivery in the post socialist transition economies (eg "incentives"). Informal payments or incentives represent a widespread phenomenon in CEEC, with the dominant share registered in healthcare system in Romania (Rughinis, 2004). Finally in addition to exploring an under researched area (healthcare in CEEC), it examines a recent development, namely the private integrated hospital care.

Methodology

Study 1

The paper is based on a combined approach of qualitative and quantitative research. The stages of scale development adopted in the study are described in Figure 1.

Insert Figure 1

The first qualitative stage involve performing 30 in-depth interviews with patients for construct elicitation purposes. Patients were recruited in order to capture a wide range of age groups, with different levels of exposure to service quality (patients of public and private hospitals).

Following Churchill (1979) paradigm of scale development, interviews were used to elicit items corresponding to the domain of study: defining quality of hospital care in CEEC. Several new items were generated during the in-depth interviews, such as empathy, respectively reliability (items 2.2, 6.3, Table III) and two relate to courtesy (items 7.2 and 7.3), respectively credibility (items 8.1 and 8.2, Table III in subsequent sections of the paper).

Interviews with health professionals (four doctors and four nurses) were conducted in order to elicit their views on attributes importance for patients in evaluating hospital healthcare. Two items related to responsiveness (item 3.4, Table III) and communication (item 7.2, Table III) were generated at this stage.

The items generated from the literature coupled with the new items generated during the interviews, were included in a pilot study of 40 patients. The objectives of the piloting were to test whether items were fully understood and improve the layout. The internal reliability of the constructs was analysed (Churchill, 1979). Items with a low correlation to the total score (below 0.4, Wang et al., 2001) and those which lowered the reliability of the scale were eliminated (e.g. doctors who are involved, coordination between doctors and nurses). This stage of the research sought to elicit the attributes that are important for patients in evaluating SERVHOSP.

The results from the qualitative stage and the review of the literature of services marketing led to the development of a model of patient perspective on hospital service performance (SERVHOSP) which is adapted to the specificity of the healthcare environment in CEEC.

Study 2

The second quantitative stage was informed by a sample of 384 patients, which were recruited from Euroclinic (part of Eureka group) a leading private hospital in Romania. This relationship represents a new model of integrating medical services and also the first private –public partnership in Romania. The hospital patients have private medical insurance which provides various levels of coverage according to the premium paid. A second category of patients have only public insurance and make direct payments for appointments and treatment at Euroclinic. The hospital employs full-time health professionals, but also doctors from the public sector, required for their specific expertise on a part-time basis. Though completely private in terms of ownership (Law of Hospitals, Monitorul Oficial, 2003), the hospital has a partnership with the largest emergency hospital located in the vicinity of Euroclinic, which allows some medical tests to be conducted in the public hospital premises.

The sample size is regarded as a satisfactory in healthcare research (Curry and Sinclair 2002; Reidenbach and Sandifer-Smallwood, 1990) and exceeds the threshold in terms of the ratio of number of observations per item recommended in the literature (Hair et al., 1998). The fieldwork was conducted during four weeks in December 2006-January 2007 and involve face-

to-face administrated questionnaires. This method was preferred due to the complexity of the questionnaires leading to the minimisation of missing values.

Patients were selected on a stratified random method. In a first stage strata, patients from major specialties provided by Euroclinic (except dentistry) were selected from the hospital database. Respondents in each stratum were then selected based on a systematic random sampling. The piloting of the questionnaire and careful research design enhanced the response rate (to over 80%). Trained interviewers with knowledge of the local healthcare sector were employed. The breakdown of the sample by key demographics can be found in Table I.

Table I. Sample’s socio-demographic profile (n=384)

	%
Age	
<35	54.8
36-45	22
>45	23.1
Education	
Elementary, ten-year cycle	1.3
High school, technical	19.6
College/University	79.1
Net Monthly Household Income	
<600 EURO	25.8
600-1000 EURO	22.3
Over 1000 EURO	52.1

The sample had of an affluent and well educated profile which reflect the profile of Euroclinic’s patients.

Conceptual model

The model to be tested (Figure 2) is grounded in the services marketing literature. It is elaborated along the main dimensions of service quality measured by Brady and Cronin (2001) and expands the seminal work of Parasuraman *et al.* (1985) with new items generated from the qualitative stage. The model is adjusted for healthcare services by including items such as the communication with health staff, security, location of hospital and further tailoring the dimensions to the context of hospital healthcare provision.

Insert Figure 2

It also includes specific items to CEEC. For example, the “incentives” (informal, “under-the-counter (UTC) payments” given by patients for accessing services which were officially free of charge, Delcheva *et al.*, 1997) need to be included into models measuring service performance. The SERVQUAL model has been subject to substantial criticism in respect of several theoretical and operational grounds (Buttle, 1996; Cronin and Taylor, 1994). The proposed SERVHOSP model addresses these concerns.

It incorporates dimensions of physical environment (Brady and Cronin, 2001) and conceptualises facets relevant to CEEC (informal payments). It reports on the dimensionality of perceptions of performance rather than the Perceptions-Expectations (P-E) gaps; as even the promoters of SERVQUAL later admit (Parasuraman *et al.*, 2001) that perception scores can be

more reliable than P-E indices. The study provides scope for testing the dimensionality of SERVHOSP in a new context of a New Member State by expanding the items conventionally known as RATER and contextualising the constructs. This adaptation and enhancement of the model is expected to consolidate its validity. Modified SERVQUAL scales produced higher levels of variance extracted (Babakus and Boller 1992; Carman 1990) in health studies. The instrument incorporates a patient as well as health professional perspective on dimensions of healthcare service quality responding to the calls made in the literature for the integration of supplier and beneficiary perspectives (Healey and McKee, 2002).

Table II below provides a definition of the constructs in the proposed SERVHOSP model.

Table II. Definitions of proposed constructs of SERVHOSP model

Construct	Definition
1. Tangibles	Physical evidence of the service.
2. Empathy	Making effort to understand patient's needs
3. Responsiveness	The willingness or readiness of employees to provide the service
4. Ambiance	The physical environment in which service is delivered (attractiveness and comfort)
5. Risk Management	Risk perceived from danger, or doubt such as risk of infections and lack of skills and knowledge required to perform a service.
6. Reliability	Consistency of delivery and dependability
7. Communication	Respect, consideration of contact personnel as well as ability to keep customers informed in a language they can understand.
8. Credibility	Trustworthiness, believability and honesty.

Source: adapted from Brady and Cronin (2001); Parasumaran et al (1988)

The original questionnaire used was written in English. It was translated into Romanian and back-translated into English to increase instrumentation equivalence (Nasif *et al.*, 1991). The first part includes 31 statements relating to patient evaluations of various facets of Euroclinic service quality relative to their expectations. The second part includes demographics and other patient's characteristics.

Results

Measurement model

All SERVHOSP items (see Table III) were subject to an Exploratory Factor Analysis (EFA), Principal Component Analysis (PCA) method, in order to identify underlying dimensions on which patients assess services.

Table III. Full list of dimensions and items

Dimension	Source
1. Tangibles	
1.1. Physical appearance of my room	new item adapted from Parasuraman et al (1988)
1.2. Comfortable bed	adapted from physically attractive facilities Parasuraman et al (1988)
1.3. Hospital's food	item adapted from Parasuraman et al (1988) to the hospital context
1.4. Up to date equipment	Parasuraman et al (1988)
1.5. Employees that are well dressed and appear neat	Parasuraman et al (1988)
1.6. Adequate consumables	new item generated from the in-depth interviews conducted with patients
2. Empathy	
2.1. Employees that are available	Parasuraman et al (1988)
2.2. Feel comfortable in the relationships with employees	new item generated from the in-depth interviews conducted with patients
2.3. Employees that are sympathetic towards patients needs	adapted from understand specific needs Parasuraman et al (1988)
3. Responsiveness	
3.1. To be received quickly	Parasuraman et al (1988)
3.2. Convenient hours available for visiting doctors	adapted from the item has best interests at heart, Parasuraman et al (1988)
3.3. To receive promptly the medical tests results	adapted from prompt services to the healthcare context, Parasuraman et al (1988)
3.4. Coordination between doctors and nurses	new item generated from the in-depth interviews conducted with patients and health professionals
4. Ambiance	
4.1. The have a modern reception/waiting area	adapted from the item appealing layout, Brady and Cronin (2001) to the hospital context
4.2. Ambiance of the hospital	Brady and Cronin (2001)
4.3. Attractive building	Adapted from physical facilities that are visually appealing (Serviscape construct), Zeithaml et al. (1996)
5. Risk Management	
5.1. Clean hospital	in-depth interviews, adapted from Parasuraman et al (1985) to the hospital context
5.2. Employees that are competent	in-depth interviews, adapted from Parasuraman et al (1985) to the hospital context
5.3. To feel safe from risks that can be experienced in hospital	in-depth interviews, adapted from Parasuraman et al (1985) to the hospital context
6. Reliability	
6.1. Appointments that are delivered as promised	adapted from provide services as promised, Parasuraman et al (1988)
6.2. To be no delays in serving the food	adapted from prompt services to the healthcare context, Parasuraman et al (1988)
6.3. To receive a good service even I don't give informal incentives	new item generated from the in-depth interviews conducted with patients
7. Communication	
7.1. Employees that are polite	Parasuraman et al (1985)
7.2. To receive encouragement from doctors	new item generated from the in-depth interviews conducted with patients and health professionals
7.3. Employees that explain in details the treatment options and costs	item generated from the in-depth interviews conducted with patients
8. Credibility	
8.1. Hospital location	new item generated from the in-depth interviews conducted with patients
8.2. To be a prestigious hospital	adapted from the item company reputation , Parasuraman et al (1985)
8.3. Well-known doctors	new item generated from the in-depth interviews conducted with patients
8.4. Trustworthy personnel	adapted in line with Parasuraman et al (1985)

The rationale for this approach is two fold: i) There is little agreement on the dimensionality of SERVQUAL in healthcare studies. Considerable variation in the number of reported dimensions is noticeable (Carman 1990; Lam, 1997). Factor analysis is a suitable technique to identify the number of dimensions of SERVHOSP. ii) The paucity of research on service perceptions performance in CEEC requires knowledge of the specificity of consumers' perception in both contexts.

After disregarding all factors having Eigenvalues of less than 1 (latent root criterion), a seven factor solution, namely: tangibles; empathy; responsiveness; ambiance; security; reliability; and courtesy/credibility became apparent. The interpretation of the factors was enhanced by an orthogonal rotation (VARIMAX method) to safeguard against multi-collinearity (De Man *et al.*, 2005). The full list of items and the corresponding factors are displayed in Table III.

Loadings greater than 0.50 were used for interpreting factors, which was in agreement with previous standards in service quality applications (Koerner, 2000; Nunnally, 1978). Following repetitive model specification searches based on theoretical and empirical issues (double loadings, Hair *et al.*, 1998) led to a simple factor structure, which maximised the amount of information extracted (Saporta, 2006).

The first factor is concerned with *tangibles*. This represents an adaptation of the original dimension from SERVQUAL and reflects issues generated from the qualitative research conducted with patients in Romania. These relate to experience attributes that can be evaluated mainly through the process of service encounter.

The second factor is related to *empathy*, which relates to patients' needs. Arguably, patient trust in health professionals and, through inference, is embedded in the perceived empathy of staff: ability to understand patients' needs and communicate with them by fostering identification.

The third factor combines items used for measuring responsiveness of hospital staff to patient needs. It is therefore labelled *responsiveness*, as most items will lead to improved customer response.

The fourth factor describes *ambiance* and relates to the conditions and design factors of the hospital. The importance of the first impression is illustrated by the inclusion of items relating to the reception and the attractiveness of the building.

The fifth factor describes perceived aspects that Parasuraman *et al.* (1988) regard as security (perceived risk from physical, psychological harm). It will be labelled *risk management*. Patients' perception of risk includes facets such as cross contamination or malpractice due to inadequate expertise. The piloting stage highlighted that confidentiality of medical records was not a strong concern and was eliminated. The construct of risk management resembles Parasuraman *et al.*'s (1995) concept of assurance, but incorporates only security and competence.

The sixth factor describes reliability, viewed as the capacity of service providers to keep their promises. The seventh factor is positively associated with communication and the credibility of the service provider. A prevalent concern of patients (particularly from lower educational groups) is the technicality of the jargon of medical professionals.

As a result of the EFA items with unsatisfactory loadings (<0.5) or double loadings (prestigious hospital, trustworthy staff, encouraged by doctors) were eliminated (Hair *et al.*, 1998).

The items highlighted have been retained for the second stage in the Confirmatory Factor Analysis (CFA). The construct of courtesy and credibility did not discriminate well from the other constructs in the model. Six dimensions out of the hypothesised eight dimensions

discriminated well against each other in terms of loadings in EFA and were retained in the subsequent CFA. Overall, the six-factor solution explains a satisfactory amount of variance (71%) (Hair *et al.*, 1998). The explained variance can be regarded as satisfactory both in terms of market research practice and previous healthcare applications (Gabott and Hogg, 1993; De Man *et al.*, 2002; Vinagre and Moves, 2008). The construct validity and unidimensionality of the multi-item concepts were tested through confirmatory factor analyses CFA in LISREL, as advised by Jöreskog *et al.* (2001) and Bagozzi *et al.* (1991).

Patient evaluations of services

Several authors (Buttle, 1996; Smith, 1999) point out the weak reliability of expectations-perceptions scores in SERVQUAL. An increasing number of studies report that perception based measures of service delivery can provide a superior fit of the model (Cronin and Taylor, 1992, 1994). Brady *et al.* (2002) found evidence of the superiority of performance-only measures relative to gap-based SERVQUAL scales across five service sectors. The approach adopted in this paper to identify the main dimensions of service performance in the context of hospital healthcare delivery is informed by patient perception of performance.

Table IV summaries Lisrel results of maximum likelihood estimates obtained in the CFA.

Table IV. Measurement quality of items: patient evaluations of services

Dimension	Standardised loading	T value	Correl item-total score
1. Tangibles (CR=0.747)			
Well dressed and neat appearance of personnel	0.688	11.813	0.679
Appealing medical equipment	0.657	11.096	0.796
Adequate consumables (gloves, syringes)	0.723	12.565	0.861
2. Empathy (CR=0.740)			
Employees that are available for customers	0.696	12.357	0.822
Feel comfortable with employees	0.705	12.548	0.795
Employees that are sympathetic towards patients needs	0.674	18.846	0.843
3. Responsiveness (CR=0.691)			
To be convenient hours for visiting doctors	0.560	9.140	0.816
To be received quickly	0.668	11.314	0.825
To receive promptly the medical tests results	0.662	11.191	0.701
4. Ambiance (CR=0.700)			
Physical facilities that are visually appealing	0.554	8.975	0.823
Attractive reception	0.636	10.782	0.858
Ambiance of the hospital	0.732	12.741	0.754
5. Risk Management (CR=0.763)			
Clean hospital	0.682	12.132	0.784
Doctors that are competent	0.755	13.857	0.715
To feel safe from risks that can be experienced in hospital	0.687	12.265	0.849
6. Reliability (CR=0.726)			
Keep promises regarding appointments	0.572	9.634	0.860
Good coordination between physicians and nurses	0.656	11.463	0.813
To receive a good service even I don't give informal incentives	0.767	13.914	0.717

Note: CR = Cronbach's composite reliability coefficients.

Fit statistics: Chi square= 445.1; df=120; RMR =0.026; NFI = 0.937; CFI = 0.953; IFI = 0.953

All coefficients of correlation between the individual items and the total score were significant ($p < 0.01$). The six-factor model shows acceptable levels of reliability as indicated by composite reliability in excess of the minimum recommended level of 0.60 (Bagozzi and Yi, 1988) with values above 0.7 for most constructs conventional (tangibles, empathy, risk management, reliability) or additional constructs proposed (ambiance) and approaching 0.7 or above for responsiveness. The significant pattern coefficients ($p < 0.01$), the meaning of the factors validated by the CFA and their consistency with the constructs of interest, as highlighted by previous studies (see Parasuraman *et al.*, 1988), provides supportive evidence of construct and convergent validity (Anderson and Gerbing, 1988).

The differences between chi-square of baseline and unconstrained models (which fixed at 1.0 phi matrix for each pair of dimensions) were significant ($p < 0.01$) indicating that values for the unconstrained model were significantly lower than values of the constrained model. Thus there is evidence of discriminant validity between model constructs (Anderson and Gerbing, 1988). The goodness-of-fit indices of all six individual measurement models have adequate fit indices ($GFI > 0.90$) pointing out unidimensionality of the identified dimensions.

Discussion

The study used a multi-method approach, which includes qualitative in-depth interviews with patients followed by a survey seeking to validate a model of hospital service performance in Romania.

The initial set of dimensions of Parasuraman *et al.*'s model were specified in a first stage: tangibles; empathy towards patient needs; responsiveness; risk management which include security and competence; reliability; communications (including courtesy aspects) and credibility. The EFA reveal that the factors communications and credibility did not discriminate from the other factors.

Series of CFA led to the validation of six dimensions of the proposed instrument SERVHOSP. Five of these dimensions correspond to the established RATER model: Reliability; Risk Management (which includes aspects aimed at reassuring patients about the safety and quality of medical interventions); Tangibles; Empathy; and Responsiveness. Unlike other healthcare applications concerned with service quality (De Man *et al.*, 1992) the constructs discriminate well, and includes tangibles and assurance. Moreover, an additional dimension concerned with ambient conditions of hospital was validated.

Thus, the study adds support to the notion that SERVHOSP represents a valid and reliable instrument in a hospital environment. It provides an opportunity to develop a model of perceived service performance tailored for the first time for a private hospital care in NMS with communist legacy.

Extensions of SERVQUAL models in the hospital environment represent an under-research area. The validity of SERVQUAL (Babakus and Mangold, 1992) was contested. This paper is in line with the few attempts made in the literature to expand conventional SERVQUAL instrument. For instance, Bowers *et al.*'s extension of the model with caring and patient outcomes (Bowers *et al.*, 1994).

In addition to the well-established dimensions of Parasuraman's RATER scale, the study identifies and validates an additional dimension concerned with service environment, namely hospital ambiance. Thus the proposed SERVHOSP model is underlined by a more comprehensive perspective on service perceptions among patients, which takes into account service product (tangibles), service delivery (empathy, responsiveness, reliability) and the environment in which

the service is delivered (ambiance, risk management). The study adds support to the notion that perceptions-only measures of quality and performance of a service provider can satisfy convergent and predictive validity (Kilbourne *et al.*, 2004).

In sharp contrast with Lam (1997), it is argued that service quality in a hospital environment represents a multidimensional construct. Hospital managers ought to focus holistically on improving all aspects of perceived performance if patient satisfaction is to be achieved. We corroborate the results of Tomes and Peng (1995), arguing the multidimensional nature of service performance in a healthcare setting, consisting of tangible and intangible facets. Yet, unlike their study, the physical environment factor does not amalgamate aesthetic aspects and security.

From the set of components of assurance, only competence of staff and security (risk of contamination) merged in the form of a proposed construct of risk management. The other components of customer assurance, namely communication and credibility, did not discriminate well.

Of particular interest is the item of UTC payments which is regarded as a facet of reliability specific to the CEEC healthcare environment. The UTC payments have important implications not only for the accessibility of health services, but also the transparency of the medical interventions. It makes difficult to evaluate costs and map them against benefits and it also dilutes the responsibility as no official record of payments are kept. There is a variability of informal payments associated with certain medical procedures, against a background of a generally inflationary environment during the period of transition to a free market system (Niculescu, 1993). Given the strong patients concerns over infections in public hospitals in CEE, it is unsurprising that the way the hospitals manage the risk to which patients are exposed during their visits forms a distinctive dimension/set of concerns. Risk of malpractice or infections were highly debated in the media which mirror concerns over MRSA prevalence in Romania as being one of the highest in Europe (www.paharmafocus.com, 2007). It is argued that this dimension represents a critical benchmark for patients in NMS in assessing the performance of hospitals and making decisions about hospitalisation.

Overall, unlike findings from Carman (1990) and Cronin and Taylor (1992), there is evidence of multidimensionality of service performance in a healthcare setting.

Conclusions and research implications

The study identified six dimensions of service performance evaluations in a private setting. In addition to the conventional RATER dimensions the study validated the construct of hospital ambience which discriminates well from the remaining five dimensions. Three RATER dimensions (tangibles, empathy and responsiveness) contain new items emerged during the quantitative study.

Our findings provide a platform to the healthcare professionals in Romania by helping them to understand how their patients assess service performance. Essentially, we consider and address two basic issues: (i) what defines service performance perceptions in a private healthcare hospital, (ii) how service performance perceptions are affected by market liberation in a NMS.

The findings have specific value for several groups.

i) For policy-makers and consumer associations. The factors provide evidence for health policy makers to better appreciate some of the initiatives required to improve the delivery of, and accessibility to, healthcare for the population.

The results from this research represent a central theme of an international workshop on healthcare performance organised at Euroclinic in March 2007. The workshop was targeted at hospital managers, health analysts and policy makers. The feedback from the participants was positive and reiterated the contributed to the debate over the development of performance

measurement systems and mechanisms concerned with healthcare quality in Romanian hospitals (Presidential Commission, 2008).

The results were also integrated into a presentation at Romania Cultural Centre in London in 2008. Feedback from this presentation pointed the impact of UTC payments on healthcare delivery, according to both health professionals and consultants who worked in CEEC.

ii) For academic researchers - The paper identified six valid and reliable dimensions used by patients to evaluate healthcare services. It contributes to the theoretical debate on the stability of SERVQUAL dimensions across different service settings, providing a first conceptualisation of health service quality in private settings in the NMS.

The study investigated dimensions of SERVQUAL contextualised to the hospital care sector, namely tangibles, empathy of personnel, responsiveness to patient needs and reliability. In addition to these four factors, perceived security emerges as the main component of patient assurance. It is interesting to observe that facets of medical personnel expertise are also perceived as part of security from risks (e.g. malpractice). This concept dovetails neatly with the growing concerns over risk management, which is gaining increasing media coverage.

Against this background it is unsurprising that a third of patients selected the Euroclinic hospital due to lack of trust in public hospitals. The model developed in this study included an additional dimension, namely the ambiance or physical environment. Stemming from Brady and Cronin's (2001) concept of ambiance and social factors, this dimension was conceptualised in the context of hospital healthcare can be regarded as a distinctive concept from tangibles.

It is argued that the construct of hospital ambiance has a strategic importance in the architecture of service delivery, especially in the context of private healthcare. The quality expectations in this sector may be higher than in the public sector, given the fees paid for each service. The ambiance can fulfil a therapeutic role for patients, being able to contribute to a relaxed atmosphere, ease the anxiety of patients or least reassure them.

Apart from validating the construct of ambiance in the healthcare setting, the model brings an additional contribution to the service marketing literature. It proposes that the construct of reliability, well established in the SERVQUAL literature, is enhanced with aspects specific to the CEEC environment. Namely, the practice of providing informal incentives (under the table payments) in order to receive quicker or improved service. Estimates of such informal payments suggest that these are a widespread phenomenon in CEEC. According to a survey conducted in Bulgaria, whereby 42.9% of respondents claimed to have paid for services that were officially free (Delcheva *et al.*, 1997). A World Bank study conducted in Romania pointed out that up to two thirds of recently hospitalised patients provided UTC payments to medical staff in order to get quality treatment in real time (45% of motivations), because they felt it was expected (21%) or as a sign of gratification (11%) (Farcasanu, 2006).

It is argued that this practice represents a legacy of the socialist era, when gifts were given by patients to physicians or nurses. The practice was encouraged during the transition period, nurtured by the low wages and growing expectations of medical professionals (i.e. to receive earnings comparable to western counterparts). Although, the policy in the observed private hospital forbids this practice, a substantial proportion of patients reported giving incentives during treatment in other hospitals: 66.9% on a frequent basis and a further 21% occasionally. We argue that in the context of such practices in the relationships between medical professionals and patients, the capacity to deliver an adequate level of service regardless of whether incentives are given is regarded by patients as an element of the reliability of the service provider. This aspect emerged during the in-depth interviews conducted with patients and was validated by the CFA.

Limitations and future research

Certain limitations related to the sample and data analysis need to be acknowledged. The model has only been tested in one population sample and further replications in different hospital settings are required to prove its reliability.

Another fruitful avenue would be the exploration of differences between private and public hospitals, given the mixed results regarding expectations vis-à-vis the providers ability to match these expectations in public versus public settings (Camilleri and O'Callaghan, 1998).

Figure 1. Stages of the Research Design

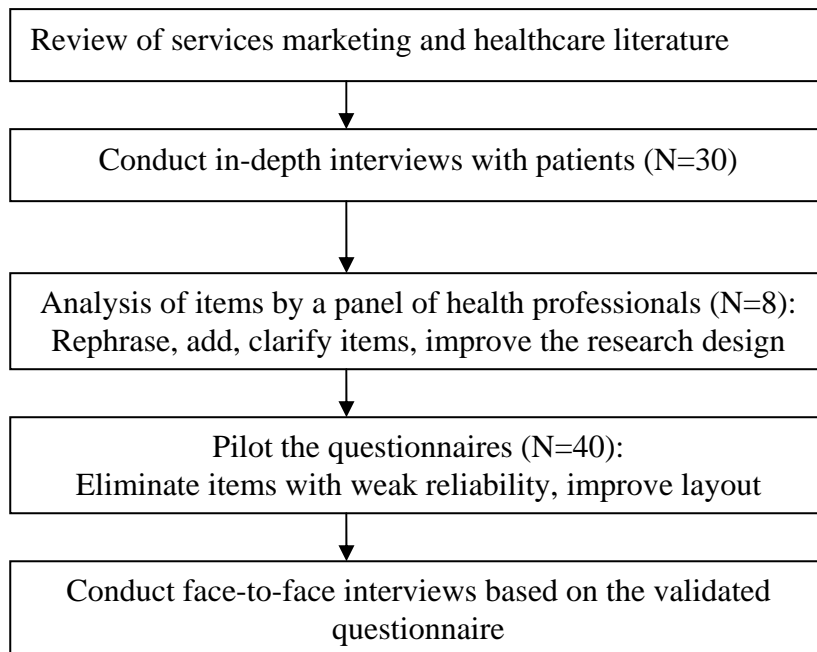
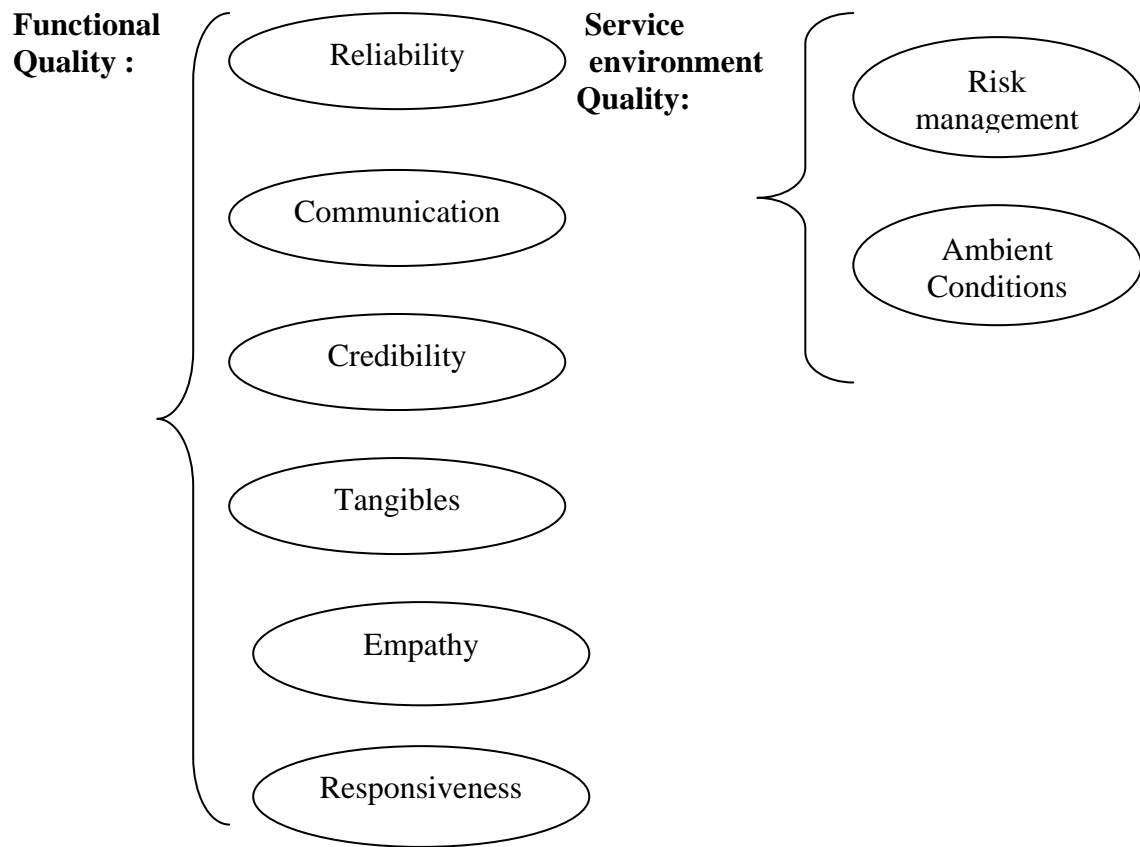


Figure 2. A Multidimensional Multilevel SERVHOSP Model of Hospital Healthcare Service Performance



Source: Adapted from Brady and Cronin (2001); Parasuraman *et al.* (1988, 1994); Zeithaml *et al.* (1996); in-depth interviews with patients and health professionals conducted in Romania.

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