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THESIS SUMMARY

PERCEIVED QUALITY OF MEDICAL SERVICES IN OPHTHALMOLOGY - A MULTIDIMENSIONAL APPROACH

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INTRODUCTION

In the context of a society in continuous evolution, medical services have become significantly important, especially in regard to aspects like the quality of the services provided and consumer satisfaction. Thus, this doctoral thesis aims to explore how perceived quality of ophthalmological medical services is formed and to deeply analyze the connection between the underlying factors.

I have decided to address this topic due to the identified need, in the market of medical (ophthalmological) services in Romania, to study the phenomenon of service quality, within the context of continuous dynamics of supply and demand in the medical sector in Romania, that is due to different levels of accessibility to medical services, various levels and systems of financing, and purchasing power of different market segments (Panait, 2011). Additionally, the implementation of well-defined marketing guidelines becomes an important objective, both for private and public medical facilities. This is especially important considering that the accreditation of all healthcare facilities, both inpatient and outpatient, by the National Authority for Quality Management in Healthcare (ANMCS), in order to ensure a standard of quality for medical services, becomes legally mandatory.

Ophthalmological medical services have become extremely important, especially considering the medical connection between ocular conditions and other conditions or states that may exist in the human body (diabetes, ulcers, viral diseases, pregnancy etc.) (Jones, 1949). Additionally, age-related macular degeneration is a common and frequently encountered condition among the aging population, which is why the demand for ophthalmological medical services is higher within this market segment (Horton & Guly, 2017). Furthermore, it is known that ocular conditions are also linked to the use of computers or other screen devices (Sheedy & Shaw-McMinn, 2003), as well as prolonged learning and study activities (Scheiman et al., 1995). Therefore, it can be concluded that ophthalmological medical services address all market segments, at least from the perspective of age criteria.

Thus, considering the importance of ophthalmological medical services for the health status of the population in Romania and the overall well-being of society, in a context characterized by technological and informational progress where the demand for personalized, efficient, and

patient-centered healthcare services is continuously increasing, and also considering that the specialized literature, although extensive in the field of service quality and consumer satisfaction, does not provide a complete picture of the field of perceived quality and patient satisfaction in ophthalmology, I believe that this research is topical and can provide an opportunity to identify effective guidelines and strategies for medical facilities. Moreover, it can contribute to improving provider quality and overall management in this medical sector.

The first part of the thesis explores medical services marketing in general, by analyzing the specific characteristics of these services and their market. Chapter 1 focuses on the particularities of the medical services market and its framework, as well as the distinct features of these services, through the lens of the marketing mix, applied in this area of medical services.

Chapter 2 delves into the theme of perceived service quality and consumer satisfaction, especially in medical services, by examining measurement models for these parameters that were identified in the specialized literature. This part of the thesis provides a comprehensive perspective on theoretical approaches regarding these concepts, highlighting how they are formed and influenced by certain factors.

Chapter 3 presents a qualitative research regarding the attitude of specialists in the medical field towards the implementation of technology, aimed at improving the quality of medical services and patient satisfaction. The results of this research served as the foundation for the quantitative research revealed in Chapter 4.

Chapter 4 thus exposes a quantitative research regarding the factors that determine the perceived quality of ophthalmological medical services, focusing on presenting a proposed conceptual model that reveals the factors contributing to the perception of quality. This section highlights the study's results and aims to provide a comprehensive view of the relationships between certain aspects encountered in the process of providing of ophthalmological medical services.

Overall, this doctoral thesis aims to highlight how the perception of quality is formed in medical services, especially in ophthalmology, by offering a deep understanding and a basic framework for adopting effective strategies to improve service quality and increase patient satisfaction in a domain of utmost significance in today's society.

CHAPTER 1. MEDICAL SERVICES MARKETING

According to Kotler and Keller (2007), services are intangible activities or benefits that one party can offer to another, and they do not result in the ownership of anything by anyone. The production of services may or may not be linked to a physical product. There are four characteristics of services: intangibility (services are intangible and cannot be experienced before purchase, making their production and delivery more complex than physical products), inseparability (consumption occurs simultaneously with production), variability (services vary from one delivery to another in terms of when, where, and how the service is provided by the provider), and perishability (services cannot be stored or reused) (Kotler & Keller, 2007).

In services marketing, emphasis is placed on the elements of the marketing mix, which must be coherent, coordinated, integrated, and consistent with each other to produce their synergistic effect (Lovelock et al., 2001). The marketing mix in services gained a new wide acceptance in marketing literature when Booms and Bitner added three new elements to the marketing mix in addition to product, price, place, and promotion, which are relevant in services as opposed to the retail sector, namely physical evidence (tangible/ facilities/ environment/ ambiance), people, and processes (Booms & Bitner, 1981).

1.1. MEDICAL SERVICES

There are four dimensions of healthcare services that contribute to the complexity of their delivery: the medical dimension (medical problem - symptoms and diagnosis), the social dimension (social interactions contributing to the collective attitude towards health), the cognitive dimension (consumer's prior knowledge about the medical problem), and the emotional dimension (consumer's emotional state during delivery, as well as aspects related to patient rights) (Hult & Lukas, 1995).

While previously, the interest in consumer satisfaction and ensuring service quality took the back seat, in the public sector of healthcare, focusing more on monitoring and cost coverage issues and budget compliance (Catană, 2009; Barbu & Dimian, 2012), ensuring the quality of medical services becomes now a legal obligation in the public medical sector. This is due to the legal obligation of obtaining accreditation for medical facilities by ANMCS, shifting the focus of

public healthcare providers towards meeting the standards imposed by this institution, regarding quality assurance in the providing of public medical services. The standardization of medical services, as set by ANMCS, is achieved through medical facilities fulfilling certain criteria and requirements, related to strategic and organizational management, clinical management, medical ethics and patient rights, thus ensuring a level of performance that is achievable, measurable, agreed upon by professionals, and also observable by the population it serves (ANMCS Accreditation Standards).

The use of marketing in medical services presents certain specificities determined by market characteristics, medical organizations, personnel, products in the healthcare sector and consumers. It is of paramount importance for medical organizations to make efforts to serve customers as best as possible and ensure ongoing communication with them. Providers of medical services need to understand and respond to customers' desires and needs, this being achievable through studying and understanding the targeted market segments (Nănescu, 2013).

1.2. MARKETING MIX IN MEDICAL SERVICES

The marketing mix is both a package of strategic tools and a source of strategic inspiration. The concept is sometimes simplistically interpreted as a set of tools, but in fact, the marketing mix once represented an intellectual revolution, being defined as a list of marketing variable categories ("The Four Ps" - product, price, place, and promotion). Mary Jo Bitner (1990) emphasizes that the only indication consumers have regarding the provider's capabilities (in services) is the space where the service is performed and the personnel involved. Based on these considerations, Booms and Bitner (1982) proposed extending the marketing mix in services with three additional elements alongside the four established ones: physical evidence (the service environment, location, and other physical and spatial indicators), service participants (all individuals involved in service delivery, from employed personnel to other customers), and processes (mechanisms, procedures, and activity cycles) (Bitner, 1990).

Physical evidence in which medical service delivery takes place is another aspect that provides tangibility to medical services. Locations, their design, equipment provision, as well as other facilities available to patients (waiting rooms, parking lots, areas for document reception/processing, stairs, elevators, ramps), orderliness, and cleanliness (Ahmad et al., 2013), are tangible aspects that support medical service delivery and contribute to shaping consumers'

perceptions of service quality and provider performance (Palmer, 1998). Personnel, as an element of the marketing mix in medical services, consists of all employees directly or indirectly involved in service delivery, including medical staff (doctors and assistants), as well as auxiliary staff providing support in all processes (Nitin et al., 2016). Processes are medical or administrative activities carried out to complete service deliveries. Processes are essential in service delivery, being designed and dimensioned at the managerial level, and they should facilitate workflow within the medical facility, an aspect that should be felt not only by consumers but also by medical staff (Sreenivas et al., 2013).

CHAPTER 2. THEORETICAL APPROACHES REGARDING PERCEIVED QUALITY OF MEDICAL SERVICES AND CONSUMER SATISFACTION

2.1. MEDICAL SERVICES QUALITY

Quality of services, unlike product quality, is much more difficult to conceptualize, evaluate, and standardize due to the intangibility, inseparability, and variability traits of services (Parasuraman et al., 1985; Tsoukatos & Rand, 2006).

Numerous studies examine service quality from two different perspectives: consumers' perceived service quality and provider-defined quality, specifically the provider's perception (both management of medical facilities and direct providers - medical and auxiliary personnel within medical facilities) regarding consumer expectations and satisfaction with service quality (Parasuraman et al., 1985; Mangold & Babakus, 1991). Thus, to ensure and improve quality, a management approach oriented towards executive management aspects, organizational culture, organizational process structure, personnel stimulation procedures, and information management within the organization is needed (Glickman et al., 2007).

Service quality, especially in services where consumer participation and involvement in the service delivery are not only necessary but extensive, such as medical services, is even more difficult to standardize and control by the management, as the consumer’s input can influence service quality (Parasuraman et al., 1985). From the consumer perspective, perceived quality is

closely linked to their satisfaction. If the service delivery meets or exceeds the consumer's expectations, then the perceived quality is satisfactory or even more than satisfactory (Parasuraman et al., 1985). However, this discrepancy between actual perceptions and expectations needs to be viewed through the multidimensionality of the satisfaction concept, and its measurement requires considering not only the performance regarding certain quality-related aspects, but also their importance, from the consumers' perspective (Sixma et al., 1998).

Naturally, the diversity of studies regarding the expectations, perceived quality, and satisfaction of patients as consumers of medical services reveals a multitude of variables that can influence these three aspects and how they can be considered in the development of processes to improve the quality of medical services in ophthalmological facilities.

In the specialized literature, numerous measurement models of perceived service quality have been identified, among the most important being Parasuraman et al.'s (1988) SERVQUAL model, Cronin and Taylor's (1992) SERVPERF model, Brady and Cronin's (2001) hierarchical model, and Dagger et al.'s (2007) hierarchical model adapted from SERVQUAL for medical services. Additionally, there are models like Don Hee Lee's (2017) HEALTHQUAL model and Kim et al.'s (2017) model, all of which employ similar or entirely different constructs and measurement scales. The choice of model for evaluating perceived service quality depends entirely on the research objectives. The literature review on the subject of perceived service quality indicates that it can be determined and influenced by all aspects or details that the consumer comes into contact with and perceives during the medical visit. These aspects include interactions with primary medical staff (physicians or technicians) or secondary medical staff (nurses), as well as auxiliary staff (call-center personnel, receptionists, sales or technical support, cleaning staff, security, administrative personnel), and the medical facility itself (tangible aspects, as well as organizational or procedural aspects related to the medical facility). Particularly in the medical field, there is also a reference to treatment efficiency or medical outcomes as dimensions of quality that may (Kim et al., 2017) or may not (Chahal & Kumari, 2010) influence perceived service quality or consumer satisfaction (Chahal & Kumari, 2010).

The distinction between perceived quality and satisfaction is indeed a nuanced one, and scholars have debated the relationship between these two concepts. Some argue that perceived quality and satisfaction are closely related because they both stem from the correlation between needs, expectations, and the perceived experience of the consumer (Oliva et al., 1992; Sixma et

al., 1998). In cases of frequent service provision, it can be challenging to distinguish between the two (Bolton & Drew, 1991). On the other hand, other researchers suggest that perceived quality and satisfaction are entirely different concepts, although there is still a relationship between them. For instance, consumer satisfaction can be influenced by the perceived quality of the service (Cronin. Jr & Taylor, 1992; Dagger et al., 2007; Hjortdahl & Laerum, 1992; Pantouvakis & Bouranta, 2013; Parasuraman et al., 1988; W.Krowinski & S.Steiber, 1996; Zeithaml et al., 1993). , but also perceived quality can also be influenced by consumer satisfaction (Bitner, 1990; Bolton & Drew, 1993, 1991). Ultimately, the relationship between perceived quality and satisfaction is complex and may vary depending on various factors such as the nature of the service, consumer expectations and the context in which the service is provided.

2.2. PATIENT SATISFACTION

Patient satisfaction is an important indicator of perceived quality of medical services due to its relevance in patient compliance with medical recommendations, as well as in health recovery. Patient satisfaction is complex, involving a range of factors such as physician knowledge, clinical and communication skills, personal attributes, accessibility, usefulness, and convenience of location, equipment utility, service delivery over an extended period, effectiveness, healthcare insurance utility or other financial arrangements, and other factors (Krowinski & Stieber, 1996).

In addition to the effects of service delivery on patient health, some authors argue that there are various "beyond health" outcomes and different processes involved in healthcare that patients are not indifferent to (Mooney, 1998). Therefore, in measuring consumer satisfaction with medical services, the focus is not only on the technical capacity used by the provider, namely the medical staff's ability to achieve results in restoring patients' health, but also on how the performance is conducted, namely on other functional aspects.

The literature review also reveals several studies suggesting that satisfaction is induced by the quality of performance rather than perceived service quality and that satisfaction largely influences perceived quality rather than the other way around. From this perspective, perceived quality is influenced by customer satisfaction, which is modeled as an antecedent of quality perception. Perceived quality is primarily built on the basis of previous experiences of (dis)satisfaction (Bitner, 1990; Bolton & Drew, 1993, 1991) and satisfaction is considered to be an emotional response resulting from an intrapersonal comparison of customer expectations with

the evaluation of a single product or service. This state of emotional satisfaction leads to an overall attitude towards perceived quality. Thus, multiple satisfaction assessments can contribute to an overall assessment of perceived quality, leading to the conclusion that customer satisfaction is an antecedent of perceived quality (Lei & Jolibert, 2012; Oliva et al., 1992) and perceived quality mediates the relationship between satisfaction and loyalty (Hennig-Thurau & Klee, 1997). Abioye-Kuteyi et al. (2010) also argue, based on their study, that satisfaction is an outcome of healthcare services and is a useful indicator for the perceived quality of medical services (Abioye-Kuteyi et al., 2010).

The clear and comprehensive determination of all factors influencing consumer satisfaction is difficult, especially since the results of different studies conducted by researchers in the past cannot be interpreted comparatively due to the multitude of chosen measurement methods and quality dimensions (Wolf et al., 1978; Sitzia & Wood, 1998; Gill & White, 2009).

2.3. LITERATURE REVIEW CONCLUSION

Specialized literature reveals that satisfaction is a distinct concept from the perceived quality of medical services, as both are based on identifying discrepancies between patients' actual perceptions and their needs or expectations. The multidimensionality of these concepts, as well as their importance in the consumers' view, can influence the relationship between them, resulting in a bidirectional or reciprocal influence between the perceived quality of medical services and patient satisfaction.

CHAPTER 3. QUALITATIVE RESEARCH ON THE ATTITUDES OF MEDICAL SPECIALISTS TOWARDS THE IMPLEMENTATION OF TECHNOLOGY TO IMPROVE THE QUALITY OF MEDICAL SERVICES AND PATIENT SATISFACTION

3.1 RESEARCH METHODOLOGY

In order to identify how the improvement of quality in medical services is pursued in the field's practice, through various interventions regarding the entire experience of the medical visit, including all of its components related to interaction with the staff, the medical facility, support services, communication and conveyed trust, I considered it relevant to explore the opinions of healthcare specialists on these aspects, especially in the context of the increasingly widespread implementation of technology in medical facilities and the overall digitization expansion in this sector.

Thus, I employed a qualitative research method due to its exploratory nature to obtain in-depth, non-quantifiable information regarding the attitudes, motivations, and behaviors of consumers (Wilson, 2006). The applied research technique was the semi-structured and semi-directive individual in-depth interview as a data collection method, which relies on an interview guide containing the topics to be addressed during the discussion. The research problem arises from the interest in obtaining the perspective of healthcare specialists on the implementation of technology within medical facilities with the purpose of improving processes and activity management, especially taking into account the fact that ophthalmology is a medical specialty in which technology is essential.

The objectives defined within this research are as follows:

- Identify the purpose of technology implementation and the extent to which it is used in medical facilities.
- Assess the impact of technology implementation on processes, workflows, and organizational culture.
- Examine the effects of technology implementation on management within medical facilities and on overall performance.

- Evaluate the effects of technology implementation on the service marketing mix, on consumers' perceptions, satisfaction, behavior and on competitive advantage.

The target population was established to include specialists from the private medical sector, entrepreneurs, managers, and medical directors— the actors in the healthcare sector generally involved in the managing of processes and activities within a medical business, as well as in the financial nature of activities and operations conducted. The sample of respondents consisted of 18 participants from various medical specialties.

The items within the interview guide (used as the research tool) were inspired by topics identified in the specialized literature and used in other studies addressing the impact of technology implementation in medical facilities. The items were structured according to the research objectives, serving as the main topics of discussion.Data collection involved conducting interviews both face-to-face and online via video conference, from July to November 2022. Although the collected responses were not automatically structured, the reconciliation of the obtained information was carried out using the interpretative thematic analysis technique, used to interpret and analyze relevant concepts.

3.2. DATA ANALYSIS AND INTERPRETATION OF RESULTS

Within the first topic addressed, the most representative responses indicate that technology is generally used for processes related to managing appointments and electronic health records, the use of medical equipment, to collaboration with the National Healthcare Insurance House and private healthcare insurance providers, to managing consumable materials and medications, billing, accounting, project management and task management. Additionally, the majority of respondents managed to identify the advantages of technology within their medical organizations, acknowledging the extent to which all activities are facilitated by its use. The main purpose is to improve the quality of services by achieving effectiveness and efficiency not only in medical activities, but also in administrative processes and other organizational aspects of the entire operation.

The most significant responses regarding the impact of technology implementation on organizational culture, staff receptivity, and change resistance highlight that the best results were obtained within tightly-knit teams with good cohesion and with younger employees. In these

contexts, their feedback was positive due to their preference for digitalization and their general predisposition to change.

The most relevant responses regarding the impact of technology implementation on the management of the medical facility highlight that the implementation of information technology has had positive effects on streamlining appointments and schedules, providing tools for better management of clinic occupancy rates, for efficient configuration of resources, for forecasting revenues and activity planning. These tools are used both in operational management and general management to rationalize resources, maximize profitability, improve quality, and develop the company to its full potential.

The most significant responses regarding the impact on the marketing mix have focused on the fact that in most of the medical facilities studied, the use of new technologies has a positive impact on the interaction with patients. This impact is not only through adequate documentation of medical information, but also through providing patients with unrestricted access to their health information using technology, thereby creating a new form of sustained relationship with them. Communication with the patient is thus one of the characteristics that have been improved through the use of technology (for example, through the possibility of notifications or reminders automation). On the other hand, managers have felt that the implementation of technology has led to an improvement in the quality of work and all processes, which can contribute to the improvement of the perceived quality of medical services by patients through better time management, streamlining processes and easy provision of information.

3.3. CONCLUSION AND RECOMMENDATIONS

The practical implications of this research focus on the importance of conducting an efficient and successful process of technology implementation in healthcare organizations, translating into general lessons for other specialists in the field. Based on the feedback provided by respondents who have experienced one or more processes of new technology implementation, the following conclusions have been drawn: the best technologies to be selected and introduced into medical organizations are those that support high levels of integration with other technologies and equipment, those that fit perfectly with the organization's particularities, and those that allow the meeting of a wide range of documentation, reporting and traceability needs.

Furthermore, the results of this research have highlighted several aspects that later served as the basis for the subsequent quantitative research, especially in the context of ophthalmology as a medical specialty in which technology is indispensable (most medical procedures are performed using some sort of equipment) and the patient is directly and consciously involved (actively and subjectively participating in the obtaining results). Thus, several conceptual aspects were identified that served in the operationalizing of the dimensions of quality, especially regarding the medical facility and processes, such as: the use of integrated electronic health records and ensuring access to them, automation of notifications, scheduling system, billing and invoicing procedures, waiting time and operational efficiency.

CHAPTER 4. QUANTITATIVE RESEARCH ON THE DETERMINING FACTORS OF PERCEIVED QUALITY OF OPHTHALMOLOGICAL MEDICAL SERVICES

4.1. RESEARCH METHODOLOGY

The perceived quality of ophthalmological medical services is a subject with limited coverage in international literature and without any coverage in national specialized literature. However, improving the perceived quality of ophthalmological medical services is an aspect that is beginning to receive attention in the field's practice. The aspects that pertain to the additional elements of the service marketing mix, such as personnel, processes, and physical evidence, along with all their components identified in specialized literature, form, in my opinion, a solid foundation for conducting a quantitative research. The results of such research can contribute with valuable information to the understanding of the composition and formation of the perceived quality of ophthalmological medical services.

The initially obtained data underwent exploratory factor analysis to verify the construct validity and reliability of the measurement instrument, as well as to refine the data collection tool and accurately operationalize the dimensions by identifying the factors influencing patients' perception of the quality of ophthalmological medical services. Subsequent regression analysis,

conducted after collecting an extended database, investigates the causal relationships between the identified influencing factors as independent variables and perceived quality as the dependent variable. The ultimate goal is to identify a conceptual model for the formation of ophthalmological service quality as perceived by consumers. This sequence of multivariate statistical analyses has not been discovered in the literature sources reviewed, making this research a unique contribution to the specialized literature, particularly because its focus on the medical services of a distinct medical specialty - ophthalmology.

The purpose of the study is to discover and provide valuable information and solutions for practical problems, as the results obtained from the research ca be used for a better understanding of the composition of consumers' perception of service quality in ophthalmology and can be applied in developing concrete proposals to enhance performance and improve activities for providers.

The objectives of this research are categorized into two levels based on their importance in relation to the research purpose: main objectives and secondary objectives. The main objectives are those that are prioritized, directly contributing to achieving the proposed goal and aimed at identifying the factors and their direction of influence on the perceived quality of ophthalmological services:

- Main Objective 1: Studying the effect of interaction with principal medical staff on the perceived quality of ophthalmological services.
- Main Objective 2: Studying the effect of interaction with secondary medical staff on the perceived quality of ophthalmological services.
- Main Objective 3: Studying the effect of interaction with auxiliary medical staff on the perceived quality of ophthalmological services.
- Main Objective 4: Studying the effect of the medical facility as a whole on the perceived quality of ophthalmological services.
- Main Objective 5: Studying the effect of support services on the perceived quality of ophthalmological services.

Given the main objectives, I have formulated a series of hypotheses regarding the influences of overall quality as perceived by patients on the ophthalmological services they received.

H1. Interaction with the ophthalmologist significantly and positively influences the perceived quality of ophthalmological service.

H2. Interaction with the nurse significantly and positively influences the perceived quality of ophthalmological service.

H3. Interaction with the auxiliary staff significantly and positively influences the perceived quality of ophthalmological service.

H4. Perception on the medical facility significantly and positively influences the perceived quality of ophthalmological service.

H5. Support services significantly and positively influence the perceived quality of ophthalmological service.

Secondary objectives, with reduced importance, are those that undirectly contribute to achieving the objective under which they are subordinated, as well as to achieving the proposed research goal. They aim at intermediate steps of the research, such as exploring correlations between factors, identifying factors and the direction of influence for the perceived quality components of ophthalmological services, often addressed individually in specialized literature:

- Secondary Objective 1: Identifying correlations between the identified factors.
- Secondary Objective 2: Studying the effect of the identified factors on improving the ophthalmological health status of patients.
- Secondary Objective 3: Studying the effect of the identified factors on the quality-price ratio of ophthalmological medical services.
- Secondary Objective 4: Studying the effect of the identified factors on the expressed quality of ophthalmological services.
- Secondary Objective 5: Studying the effect of the identified factors on the intention to return to the same provider of ophthalmological medical services.
- Secondary Objective 6: Studying the effect of the identified factors on patient satisfaction.
- Secondary Objective 7: Identifying specific consumer characteristics based on the criteria of the identified factors, in order to obtain valuable information that can predict certain consumer behaviors.

4.2. THE PROPOSED CONCEPTUAL MODEL

Considering that in most studies regarding perceived quality of medical services and patient satisfaction, the emphasis has been on the dimension of quality related to interpersonal relationships, I considered it relevant for the evaluation of ophthalmological medical services quality to be even more detailed within the analysis, as follows: interaction with the main medical staff, namely the direct provider - the ophthalmologist, interaction with the secondary medical staff, namely the nurse, interaction with the auxiliary staff as separate dimensions along the medical facility as a whole and support services, all of these being identified as potential factors influencing the concept of perceived quality.

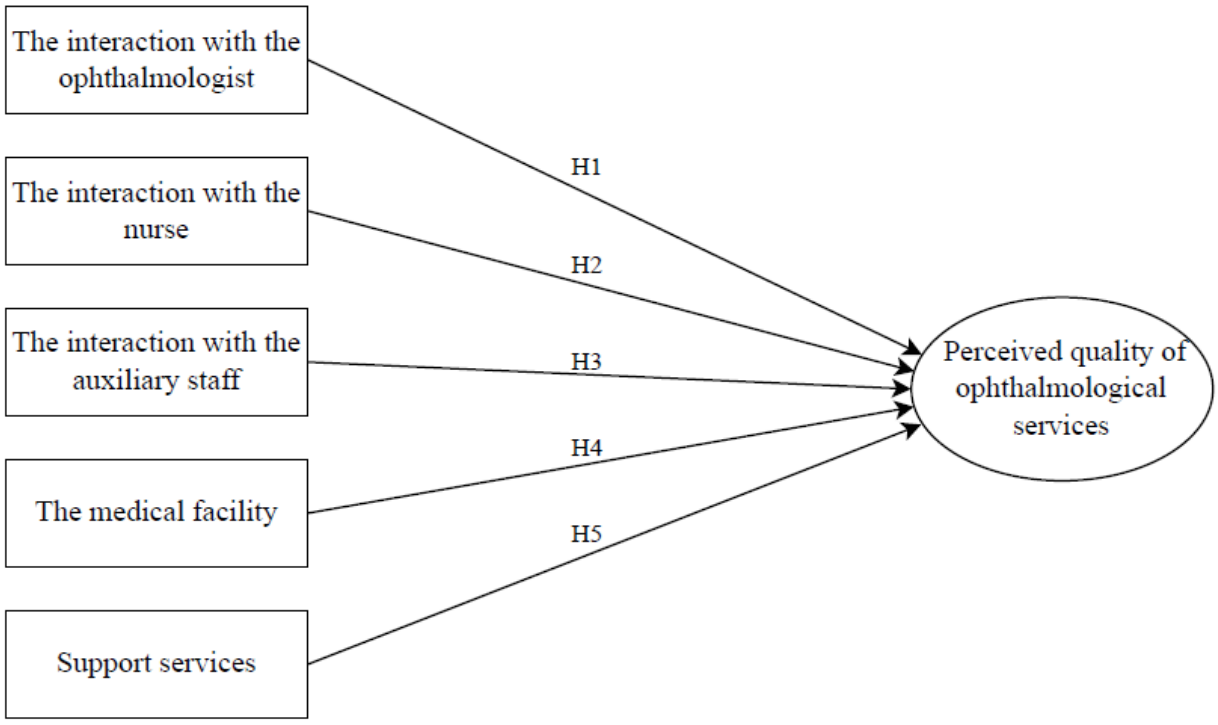

Figure 1. The proposed conceptual model *(Source: own processing)*

For collecting the necessary data in this research, the survey method is pressed into service, with the primary research instrument - a questionnaire. The population under study consists of all individuals who have received ophthalmological medical services at least once in their lifetime. Regarding the sampling method, for the conduct of the study, the initial stage involves identifying potential respondents from the target population through non-probabilistic (non-random) or

convenience sampling. The preliminary dissemination of the questionnaire was conducted online using dedicated platforms through social media networks.

Given the complex structure of this research, the developed questionnaire was highly structured, mainly consisting of closed-ended questions with fixed response options, most of which are Likert scale questions (5-point Likert scale), but also some open-ended questions and socio-demographic items. The questions (items) are grouped into 6 sections, each section comprising a different number of items and describes each dimension configured in the research design: the three types of interactions with personnel, the medical facility, the support services and the perceived quality. A combination of items that are used in the specialized literature, both in generalized and highly versatile instruments developed in the literature such as SERVPERF (Cronin and Taylor, 1994) and in instruments adapted in various studies focusing on measuring the quality of medical services specifically, taking into account the particularities of this field, such as HEALTHQUAL (Lee, 2017) or PEES-50 (Tian et al., 2014) is employed in the research design.

The questionnaire was initially disseminated online to a sample of 31 individuals to collect a small-sized database, aiming to subject it to an exploratory factor analysis, which could yield useful results for further refinement of the instrument. This stage, commonly referred to as pilot testing, simulates the implementation of the survey on a small scale among members of the target population. The purpose of pilot testing is to improve various elements of the survey, such as questions, the textual or graphic appearance of the questionnaire, and even the survey administration process based on the questionnaire. Based on the results of the pilot testing, improvements are made to the questionnaire (Balog et al., 2019).

The statistical analysis of the data was conducted using IBM SPSS Statistics, version 20, for performing exploratory factor analysis, aiming to identify variables that may pose issues and to determine the number and nature of factors underlying the observed variables (Sârbescu, 2019). The method of factor extraction used is principal component analysis (PCA), as the goal is to identify a limited number of principal components (factors) to explain the variability of the observed variables (Sârbescu, 2019).

Considering the limitations encountered in obtaining adequate factors for two dimensions, *Medical Facility* and *Support Services*, due to the small sample size used for processing, it was decided to retain all identified items according to the initial structure of the instrument for two main reasons:

1. testing the reliability of the dimensions through Cronbach's Alpha coefficients indicated a high reliability of the measurement scales (the relationship intensity between the scale items was high), and strong correlations existed between items for the dimensions: *Interaction with the ophthalmologist, Interaction with the nurse, Interaction with the auxiliary staff, The medical facility, Perceived quality of the ophthalmological service.*
2. to achieve an acceptable reliability for the *Support Services* dimension, it is necessary to introduce new items rather than eliminate existing ones. This is because principal component analysis, which aims to identify a limited number of components, cannot be performed on a restricted number of items.

A new review of the specialized literature has revealed a series of new items that have been included in the *Support Services* dimension. Additionally, considering satisfaction as an antecedent and influential factor of perceived quality, a new item has been introduced within each section, for the expression of the level of overall satisfaction with each dimension.

The final form of the data collection instrument (Appendix 1), in terms of its structure (section structure and composition), is unique compared to those used in similar research. Thus, this research manages to bring new contributions to the specialized literature. Once the data collection instrument has been refined, an extensive dissemination of it has been conducted. Data processing will involve a new statistical analysis that will reveal the validity and reliability of the measurement scales, as well as results regarding the confirmation or rejection of the research hypotheses.

4.3. EXTENSIVE DATA COLLECTION

For the collection of the extended database to be furtherly subjected to a regression analysis, the data were gathered from January to November 2023 through the Interdisciplinary Center for Data Science, a research facility within Babeș-Bolyai University in Cluj-Napoca. The coverage area was national and consisted of interviewed individuals domiciled in all counties of the country. The selection base consisted of adult Romanian citizens domiciled in Romania. The non-probabilistic sampling method, was still applied at this point also. The obtained database was

then filtered, resulting in a final sample of 631 individuals with complete responses, representing a questionnaire completion rate of 70.11%.

4.4. STATISTICAL DATA ANALYSIS

The statistical analysis of the data was conducted using the STATA/BE statistical processing software, which was used for most of the statistical processing tasks. Initially, a descriptive analysis of the explanatory variables was performed for the interaction with the ophthalmologist, interaction with the nurse, interaction with the auxiliary staff, medical facility, and support services. This analysis involved examining the relationships between the items of each variable using the Pearson correlation coefficient. The Pearson correlation coefficient is one of the most commonly used tools for measuring linear correlations, as it is a statistical indicator that describes the strength and direction of a linear relationship between two quantitative variables.

I analyzed the distribution of values for the items corresponding to each explanatory variable to verify that the variability of each variable is suitable for econometric use in regressions. In the case of each explanatory variable, all correlation coefficients between items were positive, with moderate values (<0.5), indicating that they truly measure different aspects of each dimension and thus facilitating their aggregation into a single composite explanatory variable for each dimension. This contributes to measuring the construct validity. Supporting this finding are the results of the measurement analysis of aggregating items into composite variables, conducted using the calculated Cronbach's Alpha coefficient for each composite variable. The values of Cronbach's Alpha ranged between 0.7 and 0.9, which are considered statistically correct and indicate the reliability of the measurement scale.

Next, a descriptive analysis of the dependent variable, namely perceived quality, was conducted. The distribution of the values of the items ensure sufficient variability for each item to be used in regressions, especially individually as dependent variables, according to the secondary objectives of the research. Although all items are positively correlated, the diversity of correlation coefficients is very high, which is an expected result given the relatively different aspects of the items of the perceived quality dimension. Nevertheless, the Cronbach's Alpha coefficient for this composite variable is still within the statistically acceptable range. Consequently, the aggregation

of items within the perceived quality dimension could be performed into a single composite dependent variable.

Before conducting the regression analysis for the validation of the hypotheses supporting the research objectives, I conducted multivariate descriptive analyses of the explanatory variables, as they can create or support premises for studying causal relationships. Additionally, studying the correlations between the explanatory variables can warn against potential issues such as multicollinearity (a statistical phenomenon that occurs when two or more independent variables in a regression model are strongly correlated with each other, indicating a strong linear relationship between them, when they should be independent of each other). For this reason, Pearson correlations were analyzed for the composite independent (explanatory) variables, which were all positive and had small to moderate values, indicating that the questionnaire successfully captured distinct aspects of quality. Furthermore, from a statistical perspective, due to the low to moderate correlations, all factors can be simultaneously introduced into regressions without significant multicollinearity issues that could have affected the statistical significance of the results.

I then conducted regression analyses, which are a type of statistical analyses with a high informational content. Regression analysis is a statistical method used to identify and quantify the relationship between a dependent variable and one or more independent variables. It reveals how changes in a dependent variable are influenced by changes in one or more independent variables.

According to the secondary objectives of the research, the aim of this part of the study is to explore and identify the influencing factors on the items of the perceived quality dimension, addressed in other specialized studies, as standalone dependent variables. In this regard, the ordinal dependent variables corresponding to the items have been defined: improvement of health status, quality-price ratio, expressed quality of ophthalmological service, intention to return, overall satisfaction. These items are ordinal variables with 5 possible values, which require for econometric estimation, a logistic regression, specifically an Ordered Logit Model (OLM).

The results of the Ordered Logit Model (OLM) regression revealed the following:

- regarding the improvement of health status, significant and positive coefficients were obtained in relation to the interaction with the ophthalmologist, the medical facility, support services, age, type of medical facility (private), frequency of visits to the ophthalmologist and non-use of an optical correction device.

- concerning the quality-price ratio, significant and positive coefficients were obtained in relation to the medical facility, support services, urban residency, education level, income, non-use of an optical correction device, and significant but negative coefficients were obtained in relation to age, being a student/retiree/unemployed and the type of medical facility (private).
- in terms of the expressed quality of ophthalmological service, significant and positive coefficients were obtained in relation to the interaction with the ophthalmologist, interaction with the nurse, interaction with auxiliary staff, the medical facility, education level, income, frequency of visits to the ophthalmologist and non-use of an optical correction device. Significant, but negative coefficients were obtained in relation to age and type of medical facility (private).
- regarding the intention to return, significant and positive coefficients were obtained in relation to the interaction with the ophthalmologist, interaction with the nurse, income level, frequency of visits to the ophthalmologist, and non-use of an optical correction device. Significant, but negative coefficients were obtained in relation to age and type of medical facility (private).
- concerning overall satisfaction, significant and positive coefficients were obtained in relation to the interaction with the ophthalmologist, support services, education level, income, frequency of visits to the ophthalmologist, and non-use of an optical correction device. Significant, but negative coefficients were obtained in relation to the type of medical facility (private).

According to the main objectives and hypotheses of the research, a composite variable has been defined, aggregated from these items, as their mean, namely the dependent composite variable related to perceived quality, a variable associable with a continuous variable, thus being suitable for estimating linear regression using an Ordinary Least Squares (OLS) model.

The results of the OLS regression revealed the following:

- Significant and positive coefficients are recorded in relation to all explanatory/independent composite variables (interaction with the ophthalmologist, interaction with the nurse, interaction with the auxiliary staff, the medical facility and support services).

- Significant and positive coefficients are recorded in relation to urban residence, education level, income, frequency of visits to the ophthalmologist, and non-use of optical correction devices.
- Significant, but negative coefficients are recorded in relation to age and the type of medical facility (private).

The strongest effects observed (p-value is 0.000, indicating extreme significance) are recorded in the case of interaction with the ophthalmologist, the medical facility, and support services. All these variables are confirmed in the analysed literature to have a certain influence on perceived quality, and all of these results have been encountered in various similar studies focusing on perceived quality and satisfaction in medical services.

Another exploratory analysis undertaken was a hierarchical clustering analysis, carried out to create classes or typologies called clusters based on the analysis of similarities and differences between the objects of a dataset (Rencher, 2002). Hierarchical clustering allows grouping individuals in the sample based on their proximity with the variables used. As a result, 4 main groups emerged (the choice of the number of groups was made by testing robustness, through analysis of variance ANOVA (Antonenko, Toy & Niederhauser, 2012)), the principle being to minimize variance within groups and maximize variance between groups.

The cluster with the most particular characteristics is the one where all individuals reside in rural areas. The proportion of those who do not use any medical device is significantly higher than in the entire sample. However, it is interesting that incomes are above the sample average. The most likely explanation is that in urban areas, individuals with various income levels seek ophthalmological services, whereas in rural areas, only those with higher incomes make the trip to urban centers for that purpose. A similar phenomenon is observed regarding education, which is explainable both by the fact that more educated individuals are more inclined to travel from their smaller communities to an ophthalmologist's office and also by the correlation between education level and income. Perhaps for this reason, in this group, the frequency of visits to the ophthalmologist is on average the highest, although this group includes the fewest users of optical correction devices, a correlation also identified in the previous regression analyses.

The cluster consisting only of respondents who have received ophthalmological services exclusively in private medical facilities also exhibits particular characteristics, with the aggregate variables mean values being much higher than the sample average and the average of the other

clusters. This aspect is also discovered in the specialized literature, which highlights that patients are generally more satisfied with private medical services than those provided in public medical facilities. It is predominantly composed of respondents living in urban areas, with higher education levels and high incomes. Although it is the group with the lowest frequency of visits to the ophthalmologist, it is the group with the highest average quality score (>4). This can be explained by the fact that the evaluated service performance was satisfactory for patients, given that their expectations were not extensively formed through multiple visits to the ophthalmologist. In the literature, this aspect, where repeated experiences and the accumulation of knowledge about that service contribute to the formation of a certain level of expectations regarding their quality and the perceived level of satisfaction, is discussed. This often influences expectations upwards and satisfaction downwards.

Another cluster with specific characteristics is one where respondents have predominantly received ophthalmologic services in public medical facilities. This group comprises mostly female respondents, this result being explained by the other criteria for which this group was formed: it has the lowest levels of income and education, well below the sample average, and predominantly resides in rural areas. Although the frequency of visits to the ophthalmologist in this group is approximately at the same level as the sample average, this group registers a slightly above-average level of perceived quality and ranks second in terms of the average value of the quality variable across groups. This result was also discovered and explained by other studies showing that women are generally more satisfied with the quality of medical services (Alrubaiee & Feras, 2011).

The last cluster stands out by having the highest level of respondents wearing glasses or contact lenses, significantly higher than the sample average. It is predominantly composed of male respondents, almost entirely residing in urban areas, with a relatively high frequency of visits to the ophthalmologist and average levels of education and income. However, this group records the lowest average values of the aggregated variables and a significantly lower average perceived quality score compared to the sample average. These aspects can be explained primarily by the fact that individuals wearing glasses, with multiple visits to the ophthalmologist, have extensive knowledge and experience regarding this aspect of their health. This has made them more demanding and have refined expectations regarding the dimensions of services related to

interactions with staff, medical facilities, and support services, leading to lower levels of perceived quality, contrary to the clustering pattern of the previously described group.

The hierarchical clustering performed, which helps group individuals in the sample based on proximity according to the variables used, has led to interesting results from a managerial perspective. Studying how patients cluster on certain socio-demographic criteria and explaining the characteristics of these groups can reveal aspects related to demand characteristics and provide a basis for understanding consumer behaviors, which can be useful in guiding marketing strategies that ophthalmological medical facilities may want to adopt. Drawing conclusions regarding patients living in rural areas and their proportion of glasses wearers or their frequency of visits to the ophthalmologist can contribute to the geographic expansion strategy of a network of ophthalmological clinics and optical shops or the fact that women predominantly prefer public medical facilities can be an opportunity to attract this segment to private ophthalmic medical facilities through targeted campaigns. These are just a few examples of the managerial implications that ophthalmological medical facilities can adopt to improve services, increase accessibility, and consequently achieve economic development.

4.5. RESEARCH HYPOTHESES VALIDATION

Regression analyses, such as those used in this research, OLS and OLM, are often employed in economic sciences to validate hypotheses of causality, as they provide information that establishes relationships between independent and dependent variables, as well as whether these relationships are statistically significant (Anghel et al., 2020; Dahiru, 2008). As discussed, the results of the regression analyses conducted support the proposed conceptual model and fully validate the research hypotheses.

Table 1. Research hypotheses validation

Hypothesis	Coeficient	p-value	Validation
H1. The interaction with the ophthalmologist significantly and positively influences the perceived quality of ophthalmologic services.	.1675636	0.000	YES

H2. The interaction with the nurse significantly and positively influences the perceived quality of ophthalmologic services.	.1090343	0.003	YES
H3. The interaction with auxiliary staff significantly and positively influences the perceived quality of ophthalmologic services.	.1118328	0.009	YES
H4. Perception of the medical facility significantly and positively influences the perceived quality of ophthalmologic services.	.1442686	0.000	YES
H5. Support services significantly and positively influence the perceived quality of ophthalmologic services.	.1616889	0.000	YES

Source: own processing

As a result of the regression analysis conducted, the independent composite variables used as dimensions in the proposed conceptual model: interaction with the ophthalmologist, interaction with the nurse, interaction with the auxiliary staff, medical facility, and support services significantly and positively influence the perceived quality of ophthalmological medical services (Table 1).

CONCLUSION

1. CONCLUSION ON RESEARCH RESULTS

Through the research conducted in this thesis, a significant contribution is made to the development of knowledge about the perceived quality of medical services, especially ophthalmological services.

The theoretical framework used to identify and understand the formation of satisfaction and consumer perception of service quality stems from the specialized resources analyzed in the first part of the thesis. This not only provided an extensive conceptual framework, but also revealed a research gap that highlighted the potential for research on the perceived quality of ophthalmological medical services, particularly when the perceive quality or patient satisfaction

measurement models that were discovered within the specialized literature may have limitations regarding the areas in which they can be applied.

The qualitative research conducted among medical specialists served as a solid scientific foundation for the entire research endeavor, managing to uncover dimensions that can influence the improvement of medical services from a practical perspective. According to the results obtained in the qualitative research, the use of technology in the development of medical facilities has significant and generally positive effects on the efficiency of processes and the delivery of medical services, both from the perspective of users (medical and administrative staff) and consumers. Improving the flow of information and access to it contributes to the adequacy of how medical data is managed within medical facilities.

The quantitative research conducted in this thesis regarding the modeling of perceived quality of medical services focused on ophthalmology was carried out among consumers of ophthalmological medical services, with the main objective of determining the dimensions that influence the perceived quality of these services. Starting from the research hypotheses, which considered that interaction with the doctor, interaction with the nurse, interaction with auxiliary staff, medical facility, and support services significantly and positively influence the perceived quality of ophthalmological medical services, I designed a proposed conceptual model. I operationalized its dimensions, transposing them into statistical analysis that reveals the relationships and influences between these dimensions, as well as between other component elements.

The results of the statistical analysis conducted revealed that the independent composite variables used as dimensions in the proposed conceptual model have shown a significant and positive influence on the dependent composite variable (perceived quality), fully validating the research hypotheses.

Understanding the factors that influence perception of the quality of ophthalmological medical services, as well as how they are formed, described through the proposed conceptual model, represents important practical aspects in providing guidelines for ophthalmological medical facilities to adopt certain marketing strategies that can help maximize performance and achieve pozitive effects from a social, medical, and economic points of view. The results of this research carry significant informational value, both in terms of the managerial implications derived from them and in terms of contribution to the specialized literature, with a substantial input to

research on perceived quality of ophthalmological medical services, especially when the ophthalmological medical services sector is rarely addressed in marketing research. However, the applicability of these results should be approached with caution, considering the research limitations.

2. RESEARCH LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

One evident limitation of the research is the relatively low number of responses analyzed compared to the extended population of consumers of ophthalmological medical services. In Romania, in the year 2020, there were 3,388,479 individuals with documented vision impairment, according to data from the National Institute of Public Health. Therefore, the statistical representativeness of the research is reduced. This limitation may affect the representativeness and generalizability of the results, but this situation can be remedied in future research by aiming the expansion of the sample used in research.

Another limitation of the research could be identified as the fact that the collected responses are limited to the national context of Romania, which means they may be influenced by the cultural characteristics of the population. This aspect may limit the applicability of the results in contexts with different cultural or social characteristics, but this situation can be addressed in future research applied in other countries or regions, with the possibility of comparing the results.

Regarding the qualitative research conducted through an exploratory method on the perspective of specialists in the field regarding the implementation of technology to improve service quality, one of the identified limitations is the subjectivity of the responses.

Considering the high complexity of the subject of perceived quality of ophthalmological medical services and the exploratory nature of these analyses, it is deemed suitable to continue efforts to complete the research by further developing the proposed conceptual model. This would allow for the study of perceived quality of medical services within other medical specialties such as dentistry, cardiology, dermatology etc. Such an approach would enhance knowledge in the field, contributing to the development of comparable bases between medical specialties, upon which medical facilities, especially those with multi-specialty practices, could apply specific and also integrated strategies to improve medical care and overall activities.

BIBLIOGRAPHY

Ahmad, A.M.K., Al-Qarni, A.A., Alsharqi, O.Z., Qalai, D.A., Kadi, N., 2013. The Impact of Marketing Mix Strategy on Hospitals Performance Measured by Patient Satisfaction: An Empirical Investigation on Jeddah Private Sector Hospital Senior Managers Perspective. Int. J. Mark. Stud. https://doi.org/10.5539/ijms.v5n6p210

Alrubaiee, L., Feras, ida, 2011. The Mediating Effect of Patient Satisfaction in the Patients' Perceptions of Healthcare Quality – Patient Trust Relationship. Int. J. Mark. Stud. 3. https://doi.org/10.5539/ijms.v3n1p103

Anghel, M., Grigorescu, D., Dumbrava, S., 2020. Aspecte teoretice privind utilizarea regresiei liniare în studiul corelaiilor economice. Rev. Română Stat. Supliment.

Balog, A., Bajenaru, L., Cristescu, I., 2019. Aspecte metodologice privind dezvoltarea și validarea scalelor de măsurare în domeniul sănătății. Rev. Română Informatică şi Autom. 29. https://doi.org/10.33436/v29i2y201907

Barbu, A., Dimian, G., 2012. Quality of Public Services in the Context of Regional Competitiveness. Int. J. Econ. Pract. Theor. 2, 205–216.

Bitner, M.J., 1990. Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses. J. Mark. 54, 69. https://doi.org/10.2307/1251871

Bolton, R., Drew, J., 1993. Linking Customer Satisfaction to Service Operations and Outcomes. pp. 173–200. https://doi.org/10.4135/9781452229102.n8

Bolton, R., Drew, J., 1991. A Multistage Model of Customers' Assessments of Service Quality And Value. J. Consum. Res. 17, 375–384. https://doi.org/10.1086/208564

Bolton, R., H. Drew, J., 1991. A Longitudinal Analysis of the Impact of Service Changes on Customer Attitudes. J. Mark. 55, 1.

Booms, B.H., Bitner, M.J., 1981. Marketing Strategies and Organizational Structures for Service Firms.

Catană, G.A., 2009. Marketingul serviciilor de ocrotire a sănătății. editura Alma Mater Cluj-

Napoca.

Chahal, H., Kumari, N., 2010. Development of multidimensional scale for healthcare service quality (HCSQ) in Indian context. J. Indian Bus. Res. https://doi.org/10.1108/17554191011084157

Cronin. Jr, J., Taylor, S., 1992. Measuring Service Quality - A Reexamination And Extension. J. Mark. 56, 55–68. https://doi.org/10.2307/1252296

Cronin, J.J., Taylor, S.A., 1994. SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality. J. Mark. https://doi.org/10.2307/1252256

Dagger, T.S., Sweeney, J.C., Johnson, L.W., 2007. A hierarchical model of health service quality: Scale development and investigation of an integrated model. J. Serv. Res. https://doi.org/10.1177/1094670507309594

Dahiru, T., 2008. P - value, a true test of statistical significance? A cautionary note. Ann. Ibadan Postgrad. Med. 6, 21–26. https://doi.org/10.4314/aipm.v6i1.64038

Fitzsimmons, J.A., Fitzsimmons, M.J., 2011. Service Management: Operations, Strategy, Information Technology, McBraw-Hill/Irwin series : operations management. McGraw-Hill.

Gill, L., White, L., 2009. A critical review of patient satisfaction. Leadersh. Heal. Serv. 22, 8–19.

Glickman, S.W., Baggett, K.A., Krubert, C.G., Peterson, E.D., Schulman, K.A., 2007. Promoting quality: the health-care organization from a management perspective. Int. J. Qual. Health Care 19, 341–348. https://doi.org/10.1093/intqhc/mzm047

Hjortdahl, P., Laerum, E., 1992. Continuity of care in general practice: effect on patient satisfaction. BMJ. https://doi.org/10.1136/bmj.304.6837.1287

Horton, S., Guly, C., 2017. Prevention and treatment of age-related macular degeneration. Prescriber 28, 37–41.

Hult, G.T.M., Lukas, B., 1995. Classifying health care offerings to gain strategic marketing

insights. J. Serv. Mark. 9, 36–48. https://doi.org/10.1108/08876049510086008

Jones, J.C., 1949. The Importance of Ophthalmology in Internal Medicine. J. Natl. Med. Assoc. 41, 256–258.

Kim, C.E., Shin, J.S., Lee, J., Lee, Y.J., Kim, M. riong, Choi, A., Park, K.B., Lee, H.J., Ha, I.H., 2017. Quality of medical service, patient satisfaction and loyalty with a focus on interpersonal-based medical service encounters and treatment effectiveness: A cross-sectional multicenter study of complementary and alternative medicine (CAM) hospitals. BMC Complement. Altern. Med. https://doi.org/10.1186/s12906-017-1s691-6

Kotler, P., Keller, K.L., 2007. A Framework for Marketing Management. Pearson Education Canada.

Krowinski, W., Steiber, S., 1996. Measuring and managing patient satisfaction. Am. Hosp. Publ. Inc.

Lee, D.H., 2017. HEALTHQUAL: a multi-item scale for assessing healthcare service quality. Serv. Bus. https://doi.org/10.1007/s11628-016-0317-2

Lovelock, C., Patterson, P., Walker, R., 2001. Services Marketing–An Asia-Pacific Perspective, Prentice Hall, Australia.

Mangold, W.G., Babakus, E., 1991. Service Quality: The Front-Stage vs. The Back-Stage Perspective. J. Serv. Mark. 5, 59–70. https://doi.org/10.1108/08876049110035675

Mano, H., Oliver, R.L., 1993. Assessing the Dimensionality and Structure of the Consumption Experience: Evaluation, Feeling, and Satisfaction. J. Consum. Res. 20, 451–466. https://doi.org/10.1086/209361

Mooney, G., 1998. Beyond health outcomes: The benefits of health care. Heal. Care Anal. 6, 99–105. https://doi.org/10.1002/(SICI)1099-1042(199806)6:2<99::AID-HCA250>3.0.CO;2-U

Năneşcu, A.G., 2013. Particularităţi ale aplicării marketingului în serviciile medicale. ECOSTUDENT - Rev. Cercet. ştiinţifică a studenţilor Econ. 4–8.

Nitin, R., V., N., Devakumar G., 2016. An empirical study on marketing mix strategies on

healthcare services in a tertiary care hospital. Int. J. Manag. Appl. Sci. 2, 19–24.

Oliva, T.A., Oliver, R.L., MacMillan, I.C., 1992. A Catastrophe Model for Developing Service Satisfaction Strategies. J. Mark. https://doi.org/10.2307/1252298

Oliver, R.L., 1980. A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. J. Mark. Res. 17, 460–469.

Owusu-Frimpong, N., Nwankwo, S., Dason, B., 2010. Measuring service quality and patient satisfaction with access to public and private healthcare delivery. Int. J. Public Sect. Manag. 23, 203–220. https://doi.org/10.1108/09513551011032455

Owusu Kwateng, K., Lumor, R., Acheampong, F., 2017. Service quality in public and private hospitals: A comparative study on patient satisfaction. Int. J. Healthc. Manag. 12, 1–8. https://doi.org/10.1080/20479700.2017.1390183

Palmer, A., 1998. Principles of Services Marketing, 2nd ed, Higher education. McGraw-Hill.

Panait, C.L., 2011. Supply vs. Demand of health services in the actual demographic context of Romania. Manag. Heal. XV, 11–18.

Pantouvakis, A., Bouranta, N., 2013. The interrelationship between service features, job satisfaction and customer satisfaction: Evidence from the transport sector. TQM J. 25, 186–201. https://doi.org/10.1108/17542731311299618

Parasuraman, A., Zeithaml, V. a, Berry, L.L., 1988. SERQUAL: A Multiple-Item scale for Measuring Consumer Perceptions of Service Quality. J. Retail. https://doi.org/10.1016/S0148-2963(99)00084-3

Parasuraman, A., Zeithaml, V.A., Berry, L.L., 1985. A Conceptual Model of Service Quality and Its Implications for Future Research. J. Mark. https://doi.org/10.2307/1251430

Pinna, M., Del Chiappa, G., Atzeni, M., 2018. Emotions and satisfaction at the hospital. Int. J. Pharm. Healthc. Mark. 12, 126–145. https://doi.org/10.1108/IJPHM-07-2016-0037

Rencher, A.C., 2002. Methods of Multivariate Analysis. John Wiley & Sons, Inc. https://doi.org/DOI:10.1002/0471271357

Sârbescu, P., 2019. Using exploratory factor analysis for items: Specific issues and recommendations. Psihol. Resur. Um. 10, 102–115.

Scheiman, M.M., Rouse, M.W., Leslie, S., 1995. Optometric Management of Learning-Related Vision Problems. Clin. Exp. Optom. https://doi.org/10.1111/j.1444-0938.1995.tb00802.x

Sheedy, J.E., Shaw-McMinn, P.G., 2003. Diagnosing and Treating Computer-Related Vision Problems, Diagnosing and Treating Computer-Related Vision Problems. https://doi.org/10.1016/B978-0-7506-7404-1.X5001-1

Sitzia, J., Wood, N., 1998. Response rate in patient satisfaction research: an analysis of 210 published studies. Int. J. Qual. Heal. care J. Int. Soc. Qual. Heal. Care 10, 311–317.

Sixma, H.J., Kerssens, J.J., Campen, C. Van, Peters, L., 1998. Quality of care from the patients' perspective: from theoretical concept to a new measuring instrument. Health Expect. 82–95. https://doi.org/10.1046/j.1369-6513.1998.00004.x

Spreng, R., Harrell, G., Mackoy, R., 1995. Service Recovery: Impact on Satisfaction and Intentions. J. Serv. Mark. 9, 15–23. https://doi.org/10.1108/08876049510079853

Sreenivas, T., Srinivasarao, B., Srinivasa Rao, U., 2013. An analysis on marketing mix in hospitals. nternational J. Adv. Res. Manag. Soc. Sci. 2, 187–207.

Tian, C., Tian, Y., Zhang, L., 2014. An evaluation scale of medical services quality based on "patients' experience". J. Huazhong Univ. Sci. Technol. [Medical Sci. 34, 289–297. https://doi.org/10.1007/s11596-014-1273-5

Tsoukatos, E., Rand, G.K., 2006. Path analysis of perceived service quality, satisfaction and loyalty in Greek insurance. Manag. Serv. Qual. 16, 501–519. https://doi.org/10.1108/09604520610686746

Wilson, A., 2006. Marketing research: an integrated approach, 2nd ed. FT Prentice Hall, United Kingdom.

Wirtz, J., Lovelock, C., 2022. Services Marketing: People, Technology, Strategy, 9th edition. https://doi.org/10.1142/y0024

Wolf, M.H., Putnam, S.M., James, S. a, Stiles, W.B., 1978. The Medical Interview Satisfaction Scale: development of a scale to measure patient perceptions of physician behavior. J. Behav. Med. https://doi.org/10.1007/BF00846695

Zeithaml, V.A., Berry, L.L., Parasuraman, A., 1996. The Behavioral Consequences of Service Quality. J. Mark. 60, 31–46.

Zeithaml, V.A., Berry, L.L., Parasuraman, A., 1993. The nature and determinants of customer expectations of service. J. Acad. Mark. Sci. https://doi.org/10.1177/0092070393211001