

# The Difference in the Perception of the Performed Medical Treatment in a Public Institution and a Private Contractor – A Cross-Sectional Study – A Comparative Quantitative Analysis

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## Abstract

**Introduction:** With our research we wanted to find out if differences exist, and if they do, what they are regarding the comprehension of treatment at the health service providers, who belong either to the purely public sector or to the private contractor (concessionaires).

**Methods:** We prepared a pilot questionnaire, which was amended by using an Exploratory (EFA) and a Conformal Analysis (CFA) into a final questionnaire. We used the final questionnaire on 400 patients in an institution that belongs to the purely public sector and 400 patients at the concessionaire.

**Results:** Thus, there were 800 patients involved in the research. In general, it bears mentioning that the evaluations given by these health services users were very high, regardless of their place of treatment. In all categories which we used for defining the comprehension of the health service, except for the comprehension of price, the answers at the concessionaire were statistically of more significant value.

**Conclusion:** We can establish that, regardless of the provider, the general preception of healthcare services is very high. However, our study, which was limited by the number, as well as by the type of provider, confirmed that the patients who also visit the concessionaire gave us a significantly higher grade except in the price category. In our opinion, the methodology and the questionnaire are a good basis for similar studies in the future.

## Introduction

In Slovenia, health service providers are divided into public health service providers and purely private contractors. Public providers represent the vast majority of all providers. In the public sector, regarding the finance mechanism, health providers are further divided into purely public providers and concessionaires (private providers financed by a contract with the national healthcare insurance system). In many elements of their work, the concessionaires resemble the private contractors, and they are, thus, generally regarded by patients as very similar. It is evident from the yearly report on average health service

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users in Slovenia [1] that 86 percent of financial means goes to the purely public health providers, and the other 14 percent belongs to the concessionaires. Specialist clinics in Slovenia are located in hospitals, some community healthcare centres, or in private healthcare institutions. Private specialist clinics can have a concession. In that case their services are covered partially by the compulsory health insurance or completely if the patient has complementary health insurance. Concessionaires are subject to the companies act. This means that they can offer employees better working conditions, they have better workplaces and can potentially choose patients based on the difficulty level.

Despite the relatively low share of financial means that belongs to the concessionaires, discussions about the rationale behind their involvement in the network of health service providers still endure.

## Background

Health services are an important part of the service industry. In the service industry, there is a rather well-established concept of perceived value [2-4]. *Perceived value* is considered to be a multi-dimensional concept, defined by the concepts such as *quality of service* [5], *satisfaction* [6], *price* [7], *reputation* [8], and *loyalty* [9]. The concept of perceived value can be transmitted to the field of Health Services [10], and serve as a way of describing patients' views about the provision of various health services. **The customer's perceived value of a product or service** is one of the basic determinants of customer satisfaction, as well as the tendency of the customer to repeat the purchase [11]. Moliner [12] found a positive effect of perceived value on patient satisfaction. Loyalty can be defined as the consumer's commitment, and post purchase perceived value may affect the patient's commitment in the healthcare services [13]. The perceived value–satisfaction–loyalty construct may be a strategic cue for executives in healthcare services in order to plan and implement marketing strategies besides handling the competition among hospitals [14]. Higher reputation and higher perceived service quality can contribute to perceived service value, and therefore to more satisfied patients [4].

On the other hand, patient views refers to the cumulative impression made on patients during their medical visit, and it is often siloed within health system organisational charts and considered separately from quality and safety initiatives, instead of being seen predominantly as a »customer service« initiative [15].

Some European studies provided evidence that patients who were consulted at private hospitals were happier and satisfied in almost all domains of health-care services than those patients who were given health-care services at public hospitals [16]. It is proposed by the researchers that private hospitals are more profit-oriented, and to maintain and grow business they work on understanding the needs and requirements of the patients, and develop carefully adequate policies to meet the expectations of the patients [17].

Our research was set to find out what differences and of what kind, if there are any, exist in customers' perceptions of the health services offered by different types of providers, belonging either to the purely public sector or private contractors included in our research.

## Methods

A comparative quantitative case study analysis was employed. We followed the guidelines published by Esser and Vlietgerthart [18].

### Measurement instrument development

The measurement instrument for the empirical study was developed by researchers. The development of the questionnaire was described in the previous article [19]. The final questionnaire had 29 questions that covered all six categories: Perceived value, quality of service, satisfaction, price, reputation, and loyalty. We included in the price construct questions concerning both the monetary and non-monetary elements of the price. The items in the questionnaire were measured on a

7-point Likert scale (from 1 = "strongly disagree", 2,3,4,5,6, to 7="strongly agree").

For the questionnaire's reliability we used Cronbach's alpha, and for validity an Exploratory Factor Analysis (EFA). The final factor analyses met the criteria enumerated below [20]:

- The Kaiser-Meyer-Olkin (KMO) measure of ratio adequacy between the number of variables and the size of the sample shows an adequate result, i.e., higher than 0.5.
- The Bartlett's test of sphericity shows an association between variables that is statistically significant, with a risk level of less than 5% (sig.<=0.05).
- All the commonalities of the variables included in the final factor analyses are adequate, i.e., higher than 0.40.
- All the variables included in the final model do not correlate with multiple factors, i.e., the factor weights (abs.) of one factor are higher than 0.40, and the weights (abs.) of other factors (when there are more of them) are lower than 0.40 (not relevant).

Cronbach coefficients for constructs indicate exemplary reliability. After the EFA (principal component and Varimax rotation) we got one factor which explained the variance at 72.2%, for reputation we got one factor which explained the variance at 76.8%, for perceived value we got one factor which explained the variance at 67.7%, for price we got one factor which explained the variance at 65%, for satisfaction we got one factor which explained the variance at 76.1% and for loyalty we also got one factor which explained the variance at 77.4%.

Unlike a CFA, an EFA does not test unidimensionality explicitly [21], **which means it has to be followed by a CFA**. Furthermore, a CFA makes it possible to estimate the reliability of the constructs of a measuring instrument, based on the value of  $R^2$  [22].

In addition, the CFA was also used for estimating the discriminant validity of constructs, which can be estimated in the following two ways: By using the Fornell-Larcker criterion [23] and by using the Chi-square difference test [21,24].

### Sampling and data collection

We enrolled 800 patients (400 patients in each institution) who were 18 years of age or older, and who were intellectually capable of filling out the questionnaire after finishing their treatment. The questionnaire was given to all the patients in the ward. The response rate was 100%. The time period in which data collection took place was 4 months – the same period for both institutions (Jan-Apr, 2016). The patients in both institutions had comparable surgery health problems. The patients received instructions on how to complete the questionnaire, which was anonymous, and it was answered with a pen on a paper form.

### Data analysis

For complete data processing, the SPSS statistical package and corresponding AMOS software were used, together with the LISREL software package. We used a paired simple t test to compare our results, and we set the significance level to 0.05. We then used linear regression, where we used, the type of institution, gender and age of patients as independent variables, and as dependent, individual answers to questions.

**Table 1:** Statistical parameters of the final questionnaire (EFA, CFA).

	Quality	Reputation	Perceived Value	Price	Satis-Faction	Loyalty
Cronbach Coefficient	0.87	0.96	0.83	0.88	0.89	0.90
Kaiser – Meyer - Olkin	0.82	0.94	0.83	0.82	0.80	0.82
Barlett Test (P)	0.00	0.00	0.00	0.00	0.00	0.00
Explained Variance (%)	72.2	76.8	67.7	65	76.1	77.4
AVE	0.72	0.69	0.80	0.68	0.72	0.78
CR	0.88	0.87	0.94	0.86	0.88	0.91
Mean Factor Value (SD)	6.1(0.9)	5.9(1.2)	5.9(1)	3.3(1.8)	5.9(1)	5.9 (1.1)
N (Number Of Questions For The Factor)	3	4	3	3	3	3

**Table 2:** Demographic data on patients involved in the study.

	A Concessionaire	A Public Institution	Total
<b>Gender</b>			
Male	150(37%)	215(54%)	365(45%)
Female	250(63%)	185(46)	435(55%)
<b>Age</b>			
Average age	51.9	45.1	48.5
Standard age deviation	15.5	16.1	16.1
<b>Visits to other institutions</b>			
Yes	228(57%)	269(67%)	497(62%)
<b>Number of visits per year</b>			
Equal, or more than three	353(88%)	271(67%)	624(71%)

**Table 3:** Average values and standard deviation of individual answers and the statistical significance of differences between the institutions.

	A concessionaire m (SD)	A public M (SD)	Sign. Diff. (2 – tailed) P
<b>Quality</b>			
The personnel of this institution make me feel safe during a treatment.	6.37(0.99)	5.97(1.15)	<0,001
The personnel of this institution help in an adequate and quick way.	6.20(1.12)	5.91(1.18)	<0,001
The personnel of this institution are familiar with its area of work.	6.34(1.03)	6.01(1.11)	<0,001
<b>Reputation</b>			
This institution has a good status in the surrounding area.	6.38(0.95)	5.50(1.39)	<0,001
The employees of this institution are very respected by the public.	6.32(0.97)	5.44(1.41)	<0,001
The management of this institution is very respected by the public.	6.30(0.98)	5.35(1.56)	<0,001
Media usually report positively on this institution.	6.32(0.89)	5.37(1.52)	<0,001
<b>Perceived value</b>			
I perceive more good than bad things in this institution.	6.12(1.05)	5.81(1.20)	<0,001
All in all, this is the institution with a high value of services.	6.14(1.06)	5.85(1.25)	<0,001
This institution has a good ratio between all the received benefits and all losses that I have at the same time.	6.04(1.11)	5.72(1.35)	<0,001
<b>Price</b>			
A visit to this institution ruins my other plans, which leads to inconvenient situations.	3.92(2.29)	2.91(1.76)	<0,001
A treatment in this institution represents a great deal of expense to me.	3.56(2.26)	2.68(1.69)	<0,001
A visit to this institution is connected with material expenses (travel expenses, a parking fee, a loss of earnings, payment for the service).	3.77(2.16)	2.87(1.81)	<0,001

Satisfaction			
The decision to visit this institution was a smart decision.	6.23(1.00)	5.67(1.36)	<0,001
I have had mostly good experience with this institution.	6.22(1.04)	5.83(1.25)	<0,001
It came to my notice that other people have good experience with this institution.	6.19(1.01)	5.71(1.29)	<0,001
Loyalty			
I will choose this institution again in the future in case I should need it.	6.05(1.19)	5.89(1.22)	,061
I would be happy to recommend this institution to other people.	6.25(1.05)	5.73(1.36)	<0,001
I always speak positively about this health institution.	6.19(1.09)	5.74(1.34)	<0,001

M – mean value, SD – Standard Deviation, p value.

### Ethical consideration

Permission to conduct the Study in both hospitals was obtained from the Hospital Ethical Commission in September 2015 (No. 2/2015).

### Results

800 patients (400 from each health institution) participated in the study. Basic demographic data, such as gender, age, frequency of visits, and visits to other health institutions, are shown in Table 2.

After statistical clearing of the questionnaire, we used the answers to 19 questions. Table 3 shows the average results for individual questions and the statistical significance of the existing differences.

Almost all questions - except for the question of re-selecting the institution in the event of a visit - have significant differences in average response values, the biggest difference being in the evaluation of the reputation of the institutions. In most questions, except for some price questions, the answers of patients who visited the concessionaire were higher. Scores were high, so the highest average score for patients at the concessionaire was 6.38 (in the reputation construct) and at public institutions 6.01 (in the quality construct).

We can see that the concessionaire had a higher proportion of female patients and a higher proportion of patients who were more likely to attend. After statistical clearing of the questionnaire, we used the answers to 19 questions. Table 3 shows the average results for individual questions and the statistical significance of the existing differences.

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### Discussion

This study was carried out to find out what differences and of what kind, if there are any, exist in patients' perceptions of the health services offered by different types of providers, belonging either to the purely public sector or concessionaires.

The patients gave significantly better evaluations to concessionaires across all categories, except for the category of price,

which we had defined through a non-monetary and monetary aspect. It is not entirely clear why the patients gave higher estimations of the prices. There is a possibility that they wanted to express their satisfaction with the health service they had received by estimating it to have a higher value. Services from the private sector were also paid for by the insurance company and not out of the patient's pocket. However, concomitantly that resulted in a more negative evaluation in the price category. The concessionaire in our research, also had a higher proportion of women patients. However, when we investigated the influence of gender on patient satisfaction with hospitalisation care, we found Woods et al. [25], who wrote that women expressed significantly less satisfaction compared to men. The question of private or public health service provision is, to a great extent, artificial. In 2013, the Medical Chamber of Slovenia [26] published the results of a public opinion research on patients' satisfaction with the services provided by concessionaires. The research was carried out on a sample of just over one hundred inhabitants of Slovenia older than 18 by using the method of an online survey. The share of respondents who were satisfied with their health services was higher among those who visited concessionaires or private medical contractors. 30 percent of the interviewees would change a doctor from a public institution for a doctor who works as a concessionaire. Khattak et al. [27] compared the satisfaction of patients in Pakistan regarding the health institution type. On a sample of 200 patients (100 from public and 100 from private institutions), they found much higher satisfaction levels in the group of patients from private institutions. One possible explanation is the much better material status of those private institutions. Do Odebiyi et al. [28] compared the satisfaction of patients (639) regarding the type of physiotherapy they received. The patients who received physiotherapy in private institutions expressed a higher level of satisfaction than those who received it in public institutions. Zamil [29] compared the satisfaction of patients with the public and private hospitals in Jordan. On a sample of 450 patients he found out that the patients were significantly more satisfied in private institutions. The findings of other authors [30] show the same. It is likely that the findings would be similar in all the places where the amount of money allocated to private providers differs significantly from the amount allocated to public providers.

### Implication on health care policy and management

In numerous countries, a question is raised about the proper ratio between the public and private health service providers, or, in other words, about the size of the role privatisation can play in the area of healthcare. It is important to be aware that "real private contractors" represent only a small share of Slovenia's health system. The services of the concessionaires are paid



from the national health care insurance system, but the health-care institution providing these services is registered as a private institution. Public institutions and concessionaires are paid out of the same bag, but under different legislation. Nevertheless, a concessionaire can, due to certain advantages which are a privilege of operating in smaller systems, make use of some features that are typical for the so-called private sector (such as shorter waiting times for an examination, easier motivation of employees and, consequently, more friendly personnel, newer work spaces, etc.). This is why patients mostly mistake the concessionaire for the private contractor. Therefore, if the majority of patients regard concessionaires as "private contractors", they perceive their services differently from those provided in the purely public sector.

The question of private or public health service provision is, to a great extent, artificial. For instance, the OECD Report on Healthcare for the year 2021 [31] does not even deal with this division: It deals with the dilemma about funding sources (public or private), but not with the type of service provider. Unfortunately, we did not find comparable studies in comparable OECD countries.

### Limitations

We used the abundant knowledge about the concept of perceived value from the marketing literature and applied it to the field of health services. Thus, we formed the first questionnaire, which was then refined in a methodologically adequate manner to obtain the final version. At the time, there were no other questionnaires that examined patients' healthcare experiences in such a comprehensive way. Our questionnaire included questions about the quality of service, hospital's reputation, perceived value, satisfaction, price and recommendations.

Research methodology can also influence participants' responses: If there are too many questions, interviewees want to avoid expressing negative opinions, because they fear further explanations will be required of them, which would take even more of their time.

The main disadvantage of our research is the fact that it was conducted on only one healthcare provider, both in the public and private sectors. For this reason, we do not want to generalise the results for the whole country.

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