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PERCEPTUAL MAPS: AN EMPIRICAL RESEARCH ON HOSPITALS

Abstract:

Competition has increased among all health care providers in the provision of health care services in Turkey with the increasing role of the private sector. Perception management of health care consumers has gained importance. In order to be preferred by health care consumers, it is necessary for managers to determine how the perception of health care organizations. This study aims to determine the perception of health care consumers related to public, university and private hospitals. For this purpose, survey was applied to 283 patients who got health care services in outpatient services in a public hospital in Giresun in Turkey. The study shows that there is a statistically significant relationship between hospital preference of consumers and gender, age, income, health insurance and number of hospital visit last one year. The research demonstrates that consumers perceive private hospitals operating in the city center of Giresun on the first rank at the five dimensions (staff behavior, service quality, physical facilities, reputation and cost to consumer).

Keywords:

Health Care Marketing, Consumer, Perceptual Maps, Hospitals

JEL Classification: M00, I11

Introduction

Organizations have become forced to maintain their financial success in an economic environment that does not accept any mistakes. Marketing has begun to be vital in this challenging environment (Kotler and Keller 2012). Since 1970s, marketing in the health sector has begun to be seen later in contrast to other sectors. Initially, health professionals did not like the merger of the concepts of marketing and health care organizations. Generally advertising mixed with marketing and consequently advertising is considered inappropriate in health care (Kumar et al. 2014).

In an health care organization, the purpose of marketing is to improve the satisfaction level of target market and achieve the business objectives by providing better services quality that meet the expectations of consumers (Akkilic, 2002; Thomas, 2008). One of the most difficult tasks of managers is to decide how to make the product attractive and plan how to create competitive advantage. In this context, when considered in terms of product quality and consumer attitudes, perceptual maps offer a useful visual (Bagozzi et al., 1998).

Perceptual maps help in the development of market positioning strategy for a product or service and defining of positioning strategy of the organization. Marketing managers prepare maps showing the consumer perception in terms of significant purchasing dimensions of their own brand, often compared to competing brands (Schuh, 2014). According to Shocker, the purpose of perceptual map is to model how the competing products are seen in the cognitive perception of individuals. Because consumers commit pictures faster than text format, it is understood faster and easily than the figures in the table when relationships presented graphically.

Analytical methods can be divided into two categories including compositional and decompositional in developing perceptual maps. Compositional methods assume that consumers can separate the brand perception according to the different attributes and assess each brand based on these attributes. Multivariate techniques used in these compositional approaches are generally factor, discriminant and correspondence analysis. Decompositional methods assume that people impartibly affect on products. In this case, it is required perceptual maps based on the overall comparison among the competitive bids. Therefore, researchers do not specify a set of attributes. The purpose is to define relative position, similarities and differences of competitive bidding based on consumer perception (Monteiro et al. 2009). Multidimensional scaling is the multi-dimensional analysis of relative image of various elements by marketing managers. The data used for this analysis consists of similar evaluations of respondents. The multiple discriminant analysis is generally used in the comparison of items or image ratings with multiattribute and the ratings of elements (Teas and Grapentine, 2004).

Perceptual maps are widely used in marketing. This is a powerful technique that helps managers especially in the design of new products, advertisements, determination of the position of sales and other marketing practices. When a perceptual map is used properly, it identifies opportunities, develops creativity and establishes direct

marketing strategies in studying attractive fields for consumers (Hauser and Koppelman, 1979). Perceptual maps are among the most effective tools that can be used in product positioning by managers and the process of strategic marketing planning. It provides the visualization of products in a market by comparing products of organizations (Bas et al, 2006). It is possible to talk about three major advantages of perceptual maps. First, a perceptual map shows the basic attitudes of consumer decision-making process. Second, it demonstrates the score of most conspicuous qualities of company brand and competing brands in the mind of consumer. Thirdly, it has the ability to offer potential opportunities in the market (Bagozza et al. 1998).

Figure 1 shows an example of perceptual maps for hospital preferences. The participants, involved in the circle 1, seem to prefer research and training hospitals providing tertiary care even if not getting responsive services. According to these participants, E, F and G, as local hospitals, will not be satisfactory. Consumers in the circle 3 prefer local hospitals. These participants believe that local hospitals offer sufficient acute care. They prefer hospitable services and hospital E will be the most appropriate choice. Participants in the circle 2 prefer the places providing tertiary care, but also they do not give up responsive care. While Hospital B is the best preference for them, hospital D will follow it. Comparing customer segmentation with location on the perceptual maps of various hospitals, it is seen that Hospitals C, F and G are required to reorganize their positions in the market in order to create attractiveness widely (Wolper, 2004).

Figure 1. An Example of Perceptual Map for Hospital Preferences
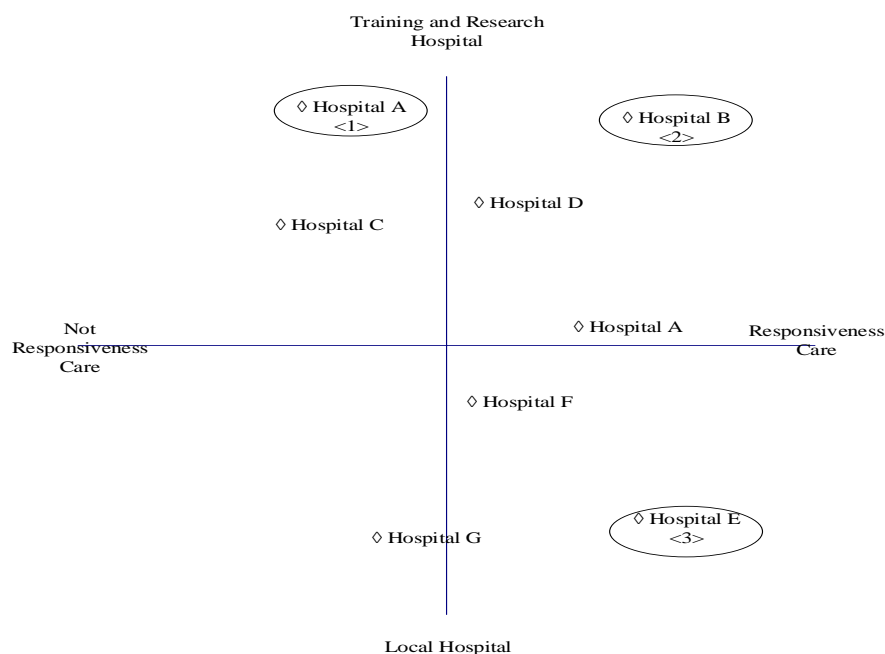
Reference: Wolper, (2004).

METHODS

This research aims to determine the perceived positions of public, university and private hospitals. With the study, perceptions of health care consumers are stated about health care organizations by the help of perceptual maps. In a competitive environment, it gives suggestions for managers of health care organizations having challenges in continuing its activities. Considering few studies relating to perceptual maps, it is thought that this study contributes to the literature and fills a gap in the health care sector in Turkey.

The population of the study includes all patients getting outpatient services in a public hospital in Giresun. It has not been used any sampling in the research. Data collection tool was applied to patients with face to face interviews between April 28 to May 5, 2014 and total 283 available survey is provided.

As data collection tool, it was used a questionnaire developed by Ciftci (2010), under the master's thesis called "Positioning Strategies in Healthcare Marketing: Example in Kirikkale". The questionnaire consists of three sections which include a total of 37 questions. There are 9 questions for measuring the personal and demographic information of participants in the first section. Second part includes 23 questions created to determine important factors for positioning of health care organizations. In the third part of the survey, there are 5 questions to determine the perception level of public, university and private hospitals in terms of various variables. In the questionnaire, factors that are important for positioning of health care organizations were measured by Likert-type scale, as 0=no importance, 1=unimportant, 2=do not matter, 3=important and 4=very important. Perceptions of public, university and private hospitals according to various variables were measured by Likert-type scale, as 0=very bad, 1=poor, 2=normal, 3=good and 4=very good. In the analysis of data obtained from the survey, Chi-square test was used by SPSS 20.0 software package.

FINDINGS

Table I shows the distribution of various socio-demographic attributes of participants within the scope of research. Accordingly, 53.4% of participants consists of men. 53% of participants are under the age of 35, 47% has bachelor and higher education level and monthly income of 52% is higher than 1250 TL. While 56.5% of respondents prefer public hospitals, the proportion of those who prefer private hospitals is 13.1%. The majority of interviewed people in the scope of research (91.9%) have health insurance. The rate of people having more than 5 hospital visits is 47.0%.

Table I. Descriptive Statistics of Participants

Variables	N	%
Gender		
Female	151	53.4
Male	132	46.6
Age (Year)		
≤35	152	53.7
≥36	131	46.3
Educational Level		
Primary School	64	22.6
High School	70	24.7
Bachelor and Higher	133	47.0
Monthly Income		
≤1250	131	46.3
≥1250 TL	149	52.7
Hospital Preference		
Public Hospital	160	56,5
Training and Research Hospital	86	30.4
Private Hospital	37	13.1
Health Insurance		
Yes	260	91.9
No	23	8.1
Number of Hospital Visit Last One Year		
1-4	150	53.0
5+	133	47.0
TOTAL	**283**	**100.0**

Table II demonstrates the results related to relationship between the various attributes and hospital preferences of participants. While public hospitals are preferred by men (51.2%), universities (54.7%) and private hospitals (70.3%) are preferred by women. There was a statistically significant effect of age on the hospital preferences. Participants under the age of 35 prefer public and private hospitals and those 36 and higher years of age prefer university hospitals. There was no statistically significant relationship between hospital preference and educational level of the participants. While participants having 1250 TL as monthly income prefer public hospitals, university and private hospitals are preferred by those having 1250 TL and higher income. Participants with no insurance prefer public and university hospitals. While the majority of those admitted to the university hospitals (58.1%) have 5 and more hospital visits in last one year, the majority of those admitted to private hospitals (62.2%) have hospital visits ranging in from 1 to 4.

Table II. The Relationship Between Various Attributes of Participants and Hospital Preferences

Variables	Public	University	Private	χ2-p
Gender				**χ2= 5.181 p=0.023**
Female	48.8	54.7	70.3	
Male	51.2	45.3	29.7	
Age (Year)				**χ2= 12.216 p=0.002**
≤35	53.1	44.2	78.4	
≥36	46.9	55.8	21.6	
Educational Level				χ2= 6.247 p=0.181
Primary School	25.9	27.7	8.1	
High School	25.2	26.5	29.7	
Bachelor and Higher	49.0	45.8	62.2	
Monthly Income				χ2= 17.250 **p=0.000**
≤1250	55.7	42.4	18.9	
≥1250 TL	44.3	57.6	81.1	
Health Insurance				χ2= 7.675 **p=0.022**
Yes	88.1	95.3	100.0	
No	11.9	4.7	0,0	
Number of Hospital Visit Last One Year				χ2= 6.495 p=0.039
1-4	56.9	41.9	62.2	
5+	43.1	58.1	37.8	

From the results obtained from participants, it is seen the mean scores for the perceived current position of public, university and private hospitals. In terms of mean scores of service quality, public hospitals got the lowest scores (2.62) and private hospitals got the highest (3.26) scores. University hospital ranked second in terms of perceived service quality with 3.17 mean score.

When examined the perceptions of hospitals in the dimension of reputation, private hospitals (3.12) are placed on the top, university hospitals (3.03) are in the second rank and public hospitals (2.67) take the third place. When analyzed the perceptions of hospitals in the dimension of physical facilities of hospitals, private hospitals (3.24) are in the first rank, university hospitals (3.03) are placed on the second rank and public hospitals (2.58) take the third rank.

When analyzed in terms of the perception of staff behavior, perception towards staff behavior has the highest score in private hospitals (3.43) and perception towards staff behavior in public hospitals has the lowest score (3.08). University hospitals come second with 3.08 mean score. When examined the perception of cost to consumers, private hospitals (2.99) comes first, university hospitals (2.80) are placed on second rank and public hospitals (1.53) are located in third rank.

**Table III. Perception Levels of Public, University and Private Hospitals**

Hospitals	Service Quality		Reputation		Physical Facilities		Staff Behavior		Cost to Consumer	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Public Hospitals	2,62	0,93	2,67	0,90	2,58	0,88	2,58	1,09	1,53	1,31
University Hospitals	3,17	0,74	3,03	0,74	3,03	0,79	3,08	0,78	2,80	0,97
Private Hospitals	3,26	0,79	3,12	0,78	3,24	0,80	3,43	0,82	2,99	1,01

Figure II shows the perception maps that demonstrate the perceptions of participants associated with public, university and private hospitals. Perceptual maps are created based on mean scores of the dimensions obtained in Table II.

When examined the first four perceptual maps comparing the cost to consumers and various variables, private hospitals are perceived as the most costly preference and public hospitals are perceived as the most cost-effective preference. While private hospitals are perceived as the best in service quality, staff behavior, reputation and physical facilities, university and public hospitals follow the private hospitals.

In analysis of perceptual maps in terms of staff behavior and reputation-service quality, private hospitals are placed on the top and public hospitals are located at the bottom. When examined perception levels of hospitals in terms of reputation and service quality-physical facilities, private hospitals seem to be perceived as the best in reputation, service quality and physical facilities. University and public hospitals follow the private hospitals. According to perceptual maps in terms of physical facilities and service quality, while private hospitals are the best at physical facilities and service quality, public hospitals are in the worst position.

Figure II. Perceptual Maps of Hospitals

■ Public Hospital   ◇ Private Hospital   ● University Hospital
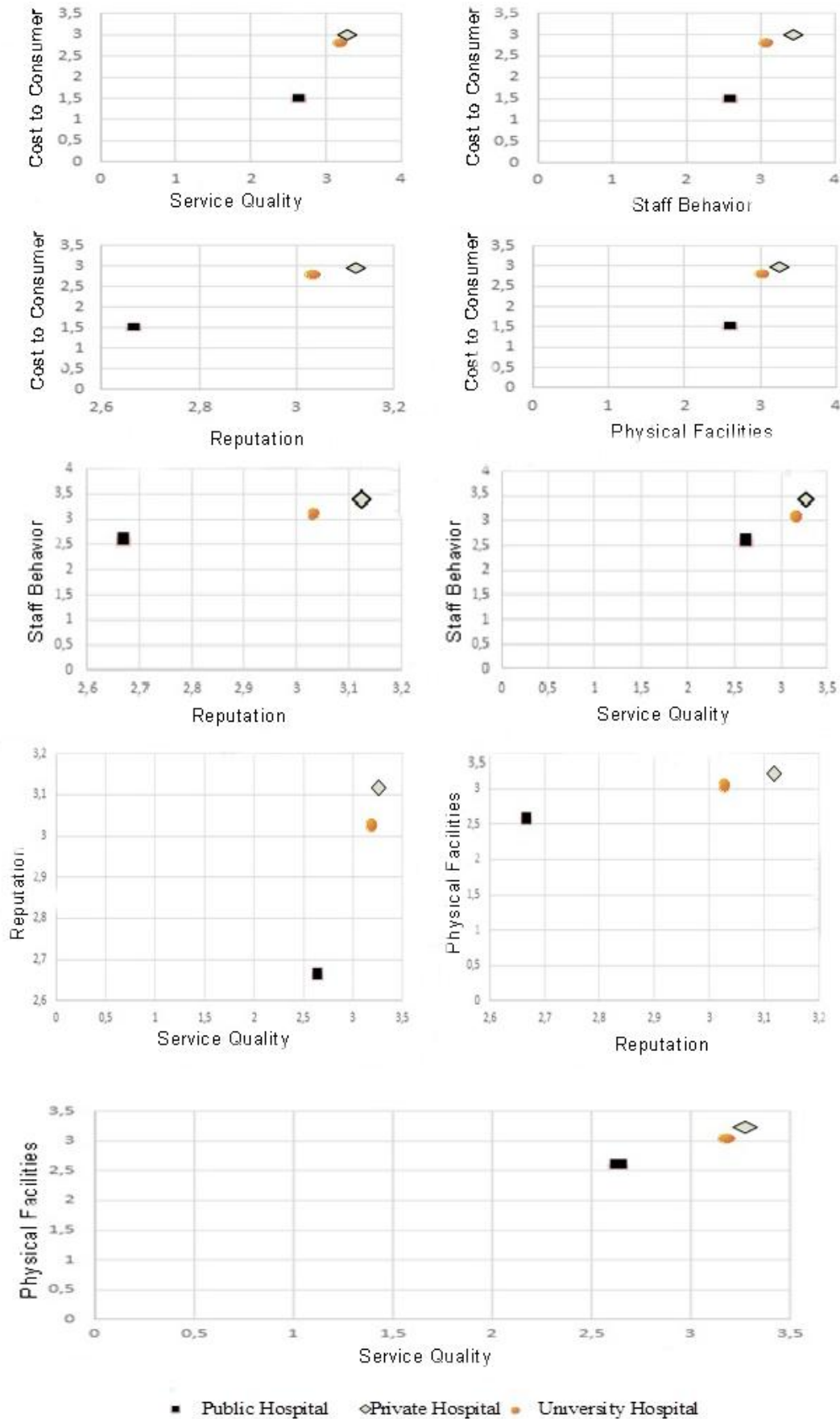
RESULTS AND DISCUSSION

Perceptual maps are used for different purposes in health sector. A study is conducted for investigating structural and psychological factors on patients who choose primary health care and emergency medical services. By measuring the patient perception of emergency services and primary health care, the results are shown as perceptual map (Lega and Mengoni, 2008). In another study with 16 hospitals, perceptual maps are used for positioning of hospitals by 13 attributes. The study aims to reveal which hospital is in the forefront of which attribute. For example, Cleveland Clinic is associated with "cancer treatment", "heart disease prevention and treatment" and "high-tech equipment" (Javalgi et al. 1992). Similarly, in another study, perceptual maps are created based on the perception of physicians about tertiary hospitals (Rajshekhar et al. 1995). In order to learn the evaluations of workers in emergency medical services towards risks and benefits of smallpox vaccination, perceptual maps are created from the answers to questionnaires by forming different risk scenarios. That study aims to visually reveal the most influential factors in the vaccination decision with this method (Bass et al. 2008). A study from Ciftci (2010) indicates that private hospitals are perceived as the best at some dimensions (service quality, physical facilities, reputation, staff behavior, etc.) and public hospitals are the worst.

This study, conducted in Giresun, intends to reveal the perceptions of participants related to public, university and private hospitals with the aid of perceptual maps. The study suggests that private hospitals operating in Giresun are perceived as the first rank for all 5 factors (staff behavior, service quality, physical facilities, reputation and cost to consumer). In the study, university and public hospitals follow the private hospitals in terms of level of perception. According to this, private hospitals are seen as best at staff behavior, service quality, physical facilities and reputation; public hospitals are seen as the worst. Cost to consumer is seen as highest in private hospitals and the lowest in public hospitals.

The study also suggests that gender, age, income, health insurance and number of hospital visit last one year have statistically significant effect on hospital preference. Private and university hospitals are more preferred by women and public hospitals are more preferred by men. Due to men' working life, it is believed that men prefer public hospitals that have the opportunity to more easily access.

Another factor associated with hospital preference is age. While participants who aged 36+ prefer university and private hospitals, those under age 35 prefer the public hospitals. Chronic diseases increases with increasing age and consumers direct to health care organizations offering more advanced treatment facilities. Consemers under age 35 generally face with simpler health problems and acute illnesses, so these people are turning to the public hospitals that are relatively easy to access.

Monthly income is associated with hospital preference and those with monthly income over 1250 TL prefer private and university hospitals. Due to out of pocket expenses for services from private and university hospitals, low income earners prefer public hospitals that requires out of pocket expenses less. All those who prefer private

hospitals and large portion of those who prefer the university and public hospitals have health insurance. Those without health insurance prefer the public hospitals. Since those without health insurance face the risk of higher health expenditures, they may prefer public hospitals in terms of lower costs.

While half of participants preferred public and private hospitals are those who visit hospitals 1-4 times in the last one year, 58.1% of those who prefer the university hospital has admitted to health care organizations 5 or more times in the last one year. Those, who visit hospitals 5 or more times in the last one year, may be comprised of people with chronic diseases. Since public and private hospitals provide outpatient service more and cases which require further treatment are referred to the university hospital, those visiting hospitals 5 or more times in the last one year may prefer university hospitals.

Technological changes are faster and expensive in health sector compared to other sectors. Health care prganizations in public has initiated more market-oriented operations, together with the obligation to meet the costs of their own revenues. In addition, the number of private hospitals has increased day by day, so competition has risen in the health sector. Therefore, correctly positioning of health organizations has become indispensable in the minds of consumers and health care managers face with challenges about attracting health care consumers for their organizations. In this regard, health care managers should determine the needs of population in near and distant surroundings and expectations from organizations with constantly researches and they must take the necessary steps. Staff should be equipped with up to date information with on-the-job training and various incentives should be provided to retain qualified personnel working in organizations. In addition, physical conditions of organizations should be improved. Public relations and marketing activities should be attached importance within legal and ethical framework. Besides, all staff should be provided with accurate communication with patients and perceiving hospitals in a negative way should be prevented.

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