Relationship marketing orientation in healthcare organisations with the AHP method. Internal and external customer perspective

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Abstract

Adopting the relationship marketing approach in health institutions and evaluating the weights of its dimensions will benefit the effectiveness of marketing strategies. This study aimed to determine the critical levels of relationship marketing orientation components in private health institutions using the analytical hierarchy process (AHP). In the study, relationship marketing orientation was evaluated according to six criteria in line with the opinions of five experts for employees and 20 people who previously benefited from health services for their customers. As a result, the criterion with the highest priority value was communication with 0.259, and the best health company A. Furthermore, the AHP method results were compared with TOPSIS, EDAS, and CODAS methods. In addition, the Spearman Correlation method was used to determine the correlation between the results.

Keywords: *healthcare organisation, relationship marketing orientation, AHP, TOPSIS, EDAS, CODAS*

1. Introduction

The health services sector, which makes significant contributions to the development of societies, is a vital sector with different dynamics. Developments in health institutions are in parallel with the welfare levels of communities. Especially today, the emergence of competition in this field and consumers' awareness increase the importance of marketing activities in health services daily. The intangibility of services, their simultaneous production and consumption, and the interaction between service providers and recipients require healthcare institutions to implement an effective marketing strategy. As in all businesses, marketing practices in health institutions are a subject that should be considered today. Public and private financing methods finance health services in Turkey. However, it can be said that the majority of this financing is from public sources. For this reason, the current research has been discussed only from

the perspective of the employee and the customer. Internal systems prepared to serve external customers are required to obtain sustainable external customer support in businesses. These interconnected internal systems add value to each other within the organisation [16]. Considering employees' opinions seen as internal customers in organisations [9] is necessary for organisations that want to provide customer value to understand their importance in creating customer satisfaction. In this context, relational marketing (RM), which is defined as marketing activities aimed at keeping and improving relationships [33], is expressed as the marketing effect of the service performances of the employees [17]. Unlike transactional marketing, which is a product exchange, RM considers the management of interaction processes. In this sense, RM is a concept that includes internal and external customers and suppliers [35]. Health services need service and customer-oriented employees who are conscious of establishing customer relationships. One of the roles of RM in healthcare organisations is to promote necessary behaviour for all employees, including clinicians and managers. It is stated that the second role is related to the relations between service providers and recipients [48]. It is possible to say that the RM approach is vitally important, especially because of the decisive role of the human factor in the provision of health services.

The dependencies between relationship marketing orientation (RMO) and business performance have already been examined [34, 42, 43, 51], however, it is stated that the effectiveness of RMO depends on the competitive environment in which the firm operates [41]. It is indicated that RMO is logically appropriate for service organisations given the close interactions with customers [43]. In the literature, RMO has been conceptualised with the components of trust, bonding, communication, shared value, empathy, and reciprocity [42]. In this context, trust, which expresses the desire to trust an exchange partner [33], is associated with positive results in many organisations, whether for profit or not, and is accepted as an essential variable for the success of relationships [30]. Trust is also defined as the level at which the parties believe in the truth of their words [49]. Common to the definition of trust in the literature is the belief that the other party is trustworthy [19]. Therefore, trust is that interest in the relationship between employees, as it is in every field [8]. The factor of trust, which plays a crucial role in relationship quality and relationship benefit approaches, has a solid relationship with satisfaction [20]. Bonding is social bonding, such as social interaction, intimacy, and friendship. The attachment dimension valid for RMO is defined as a bond that develops between the consumer, supplier, and product with the application of RM [42]. Engagement includes developing customer loyalty with a sense of love, belonging, and indirect concern for the organisation [43]. Trust, satisfaction and loyalty are evaluated from the marketing literature as the results of RM practice [32]. As a factor determining the relationship's quality [53], trust is essential to patient satisfaction [18]. In the context of medical tourism, it has a vital role in developing behavioural intentions related to medical care [45]. Another essential dimension of RMO is communication. Good communication in institutions creates a strong bond between staff managers and increments productivity [40]. Effective communication can eliminate conflicts and create a healthy perception [49]. In 2019, Sousa and Alves [45] stated that various communication strategies in health and medical tourism are the elements that strengthen RM. It is seen that the concept of shared value is conceptualised in the sense of trying to establish a long-term mutual relationship, communication, and close cooperation [34]. Empathy, which can be expressed as putting oneself in someone else shoes and experiencing their emotions, is an emotional response more appropriate to another person's situation than one's own [22]. Effective communication is critical in empathy to care for and understand the patient

regarding health care quality [7]. On the other hand, reciprocity can be explained in short by the equal utility between the parties [49]. It is stated that when the relationship benefits are experienced positively with RM investments, gratitude rather than satisfaction will trigger the psychological imperative for mutual benefits [29].

Very few studies determine the degree of impact of RM dimensions in various service sectors. In 2006, Sin et al. [43] found positive and significant relationships between the marketing and financial performance and the RMO components of the hotel business. It has been stated that the dimensions with the highest relationship with business performance are shared value, empathy, reciprocity, communication, bonding, and trust. In 2015, Yoganathan et al. [52] concluded in their study on the banking sector that RMO positively affects brand value development. It has been determined that RMO dimensions' trust, communication, shared value, and empathy significantly increase brand value. Studies use the AHP within the scope of marketing in the literature. For example, in 2022, Altay et al. [2] determined the weights of marketing mix elements (7P) for on-demand grocery delivery services using fuzzy logic and the AHP. They stated that many criteria have changed between the pre-COVID-19 and COVID-19 periods. In addition, few studies in the literature weigh service quality dimensions [7, 44] and RM tactics with the AHP [13] within the scope of health services. In 2011, Büyüközkan et al. [7], in their study with the AHP for private health institutions in Turkey, determined that the most important dimension in evaluating health service quality is empathy, professionalism, and reliability. The study stated that hospitals should focus more on empathy, professionalism, and reliability to provide satisfactory and quality service. In 2019, Singh and Prasher [44] found that reliability is the most critical dimension in measuring service quality in health services. In this context, it was stated that honesty and physician expertise in diagnosing and treating diseases are essential elements for patients. In 2018, Enyinda et al. [13] determined that the most crucial RM tactic in the pharmaceutical industry is customer engagement, followed by communication and trust. In this context, he stated that the pharmaceutical industry could establish and maintain relationships with consumers through social media. In this context, it is thought that knowing the weights of RMO components in health institutions will benefit practitioners and academics. Considering that accomplished internal relations are essential for accomplished customer relations [21], the current study weighs the RMO components in private health institutions with the AHP approach.

Multi-criteria decision-making (MCDM) methods are used in many areas in the literature [25]. The AHP is one of the widely used MCDM methods with many application areas [10, 46]. The current study aimed to evaluate three healthcare companies in Turkey in line with the opinions of 20 people who have received healthcare services and five experts. The remainder of the work is organised as follows. In the second part, the methodology part, the AHP is included. The third part of the study consists of the application and discussion stages, in which the criteria weights have been calculated, and the healthcare companies have been lined up. A general estimation of the study has been made in the last section.

2. Method

2.1. Analytical hierarchy process (AHP)

The analytical hierarchy process (AHP), developed by Saaty [11] in 1980, has become one of the widely used multicriteria decision-making problems [11, 38]. The AHP is one of the methodological approaches

for solving complex decision-making problems involving multiple alternatives and criteria [3, 12]. AHP is a multicriteria decision-making tool based on mathematical and psychological foundations for organising and analysing complicated decisions [23]. The AHP helps select the best alternative [24, 47]. The AHP consists of 4 stages [38, 39]. The decision problem, selection criteria and possible alternatives are determined in the first stage, and a hierarchical structure is created. In the second stage, a comparison matrix is made up. If there is more than one decision maker, the geometric mean of the matrices is taken [28, 39]. In the third place, the significance weights of the criteria have been calculated. To calculate the criterion weights, any element in the pairwise comparison matrix is disunited by the total of its column, and each row's arithmetic mean is taken. Then, the pairwise comparison is made between the alternatives and their importance weights are determined. The priority value of each alternative is calculated by multiplying the significance weights of the criteria and alternatives. Saaty's rating scale [36, 37] Table 1 and the hierarchical structure for the general AHP model [1, 47] can be seen in Figure 1.
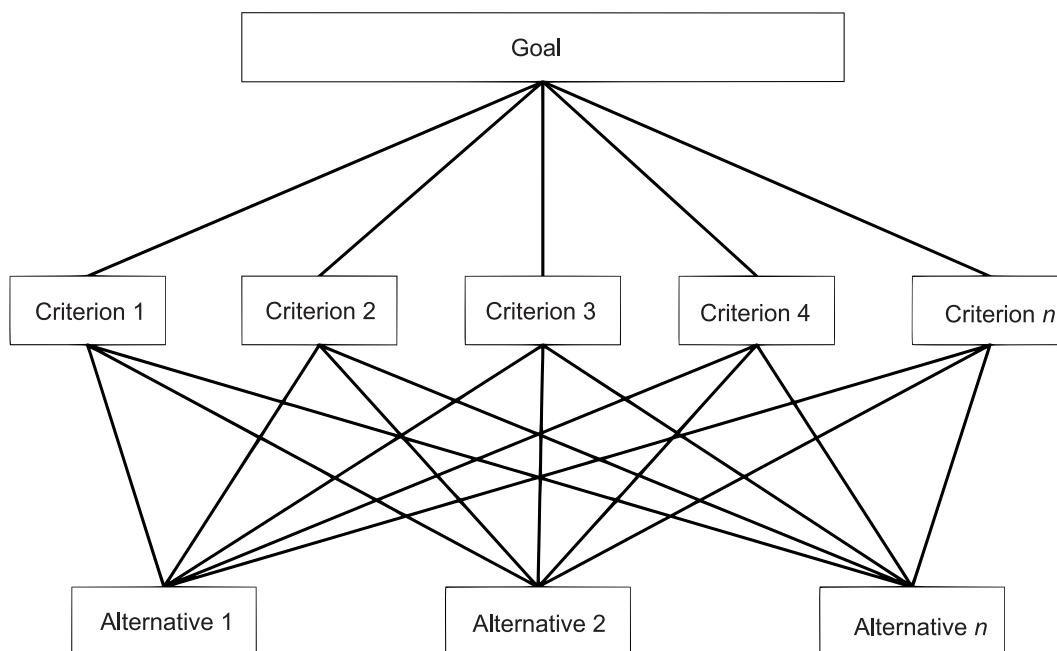

Figure 1. The AHP model

Table 1. Saaty's rating scale

Level	Definition	Explanation
1	equal importance	two activities contribute equally to the objective
3	moderate importance of one over another	experience and judgement strongly favour one activity over another
5	essential or strong importance	experience and judgement strongly favour one activity over another
7	very strong importance	activity is strongly favoured, its dominance demonstrated in practice
9	extreme importance	evidence favouring one activity over another is of the highest possible order of affirmation
2, 4, 6, 8	intermediate values	when compromise is needed

In the fourth stage, the consistency ratio was calculated. The largest eigenvalue must be equivalent to the matrix size for a comparison matrix to be consistent. Consistency Index (CI) and Ratio (CR) were

calculated from (1) and (2), respectively [5, 26, 37].

$$CI = \frac{\lambda_{\max} - n}{n - 1} \tag{1}$$

$$CR = \frac{CI}{RI} \tag{2}$$

The values of the random consistency index (RI) adapted from [37] are given in Table 2.

Table 2. Random consistency indices, RI

n	1	2	3	4	5	6	7	8	9	10
RI	0	0	0.52	0.89	1.11	1.25	1.35	1.40	1.45	1.49

The acceptable upper limit for the CR is 0.10. If the CR is greater than 0.10, decision-makers are asked to estimate again [15, 47].

3. Application

This study was carried out in three different healthcare companies in a city in Turkey. The research was carried out by including five experts in health management and 20 people (customers) who previously benefited from private health services. With the opinions of five experts and 20 people who have benefited from health services, three companies were evaluated according to six different criteria. During the dataset preparation, people who had previously benefited from health services in the region where the study was carried out were interviewed face-to-face. It was found that only 33 of the people interviewed received service from 3 different healthcare companies within the scope of the research. However, only 20 filled out the AHP scale appropriately.

For this reason, the names of 3 healthcare companies, five specialists, and 20 people who have previously benefited from private healthcare services seem to be confidential. Many studies on RMO by different methods in different sectors have been published. However, studies in which criteria weights are evaluated by MCDM methods on RMO in many other industries are scarce. Therefore, this study aimed to determine the most suitable one of the three companies operating in the field of private health services according to the six criteria. Based on the literature review and the expert's opinions, the weights of trust, empathy, shared value, reciprocity, communication, and bonding criteria have been determined. Microsoft Excel 2016 program was used to apply MCDM methods.

The hierarchical structure of the research is shown in Figure 2. Firms were defined as A, B, and C. Pairwise comparisons of the criteria according to Saaty's rating scale are given in Table 1 in line with the opinions of the experts and persons interviewed taken and shown in Table 3.

3.1. Calculation of the criterion weights and consistency ratio

In the normalisation process, whole column values were disunited by the total of each matrix column. Using this matrix, the average of each row value has been taken. Therefore, the priority value (PV) for each criterion, criterion weights, was obtained as indicated in Table 4.
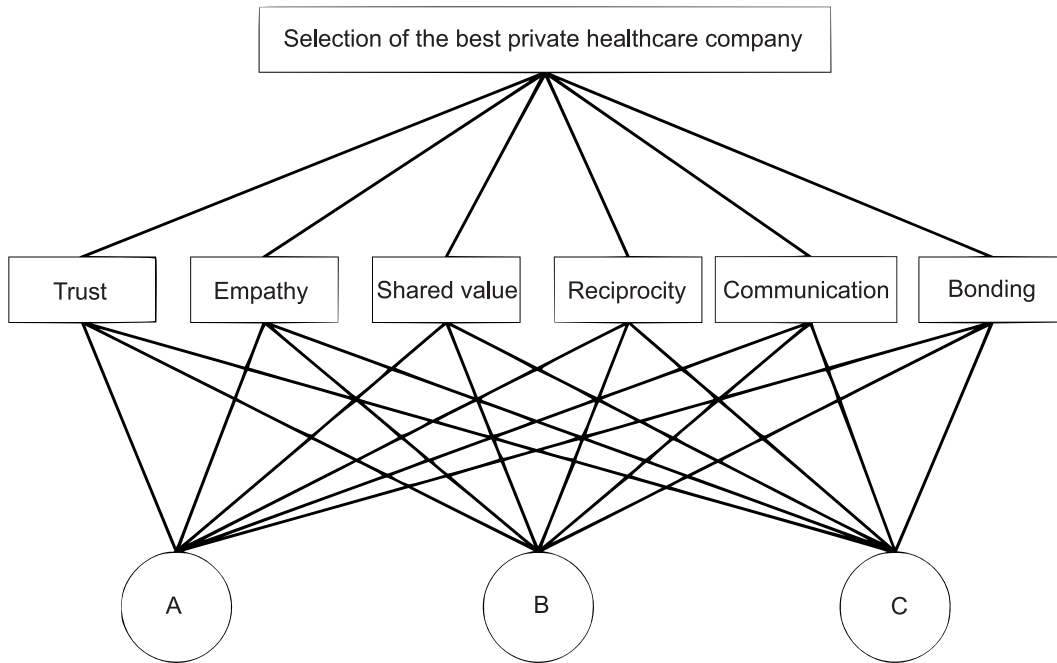
Figure 2. Research for the AHP model

Table 3. Pairwise comparison matrix for the criteria

Criterion	Trust	Empathy	Communication	Shared value	Bonding	Reciprocity
Trust	1.000	1.246	1.719	3.737	2.371	4.988
Empathy	0.803	1.000	1.000	1.380	3.000	3.000
Communication	0.582	1.000	1.000	5.000	1.000	5.000
Shared value	0.268	0.725	0.200	1.000	0.582	1.246
Bonding	0.422	0.333	1.000	1.719	1.000	1.246
Reciprocity	0.200	0.333	0.200	0.803	0.803	1.000
Total	3.27	4.64	5.12	13.64	8.76	16.48

Table 4. Criteria weights according to expert opinions (employee perspective)

Criterion	Trust	Empathy	Communication	Bonding	Shared value	Reciprocity	Priority value
Trust	0.305	0.269	0.336	0.274	0.271	0.303	0.293
Empathy	0.245	0.216	0.195	0.101	0.343	0.182	0.229
Communication	0.178	0.216	0.195	0.367	0.114	0.303	0.214
Bonding	0.082	0.156	0.039	0.073	0.066	0.076	0.082
Shared value	0.129	0.072	0.195	0.126	0.114	0.076	0.119
Reciprocity	0.061	0.072	0.039	0.059	0.092	0.061	0.064

Table 5. Criteria weights according to customer opinions

Criterion	Communication	Trust	Empathy	Shared value	Bonding	Reciprocity	Priority value
Communication	0.314	0.332	0.389	0.257	0.267	0.262	0.304
Trust	0.186	0.197	0.156	0.193	0.290	0.225	0.208
Empathy	0.126	0.197	0.156	0.241	0.097	0.222	0.173
Shared value	0.171	0.143	0.091	0.140	0.136	0.153	0.139
Bonding	0.114	0.066	0.156	0.100	0.097	0.064	0.099
Reciprocity	0.090	0.066	0.053	0.069	0.114	0.075	0.078

The criterion with the highest priority value is the criterion of trust, and the criterion with the lowest one is the criterion of reciprocity. Similarly, according to the opinions of the people who have benefited

from health services before, the criteria weights were calculated as in Table 5. Average criteria weights calculated based on experts' and customers' opinions (Tables 4 and 5) are given in Table 6.

Table 6. Average criterion weights

Criterion	Employee	Customer	Average criterion weight
Trust	0.293	0.208	0.250
Communication	0.214	0.304	0.259
Empathy	0.229	0.173	0.201
Bonding	0.082	0.099	0.091
Shared value	0.119	0.139	0.129
Reciprocity	0.064	0.078	0.071

According to the opinions of our experts, the CR has been calculated as follows

$$CI = \frac{6.318 - 6}{6 - 1} = 0.064, \qquad CR = \frac{0.064}{1.25} = 0.051$$

and, according to the opinions of the people who benefited from health services, the CR was

$$CR = \frac{0.036}{1.25} = 0.029$$

Therefore, CR was less than 0.10, the results obtained – acceptable, and the matrix was consistent.

3.2. Ranking of private health organisations

To rank private health organisations, the pairwise comparison of health institutions in terms of each criterion was done using the scale in Table 1. A single matrix has been formed for each criterion by taking the geometric averages of the comparison matrices done by different customers. Pairwise comparison matrices for the trust criterion are given in Table 7 ($\lambda_{\max} = 3.001, CI = 0.001, CR = 0.001$).

Table 7. Average criterion weights

Healthcare organisation	A	B	C	Priority value
A	1.000	0.873	1.322	0.346
B	1.145	1.000	1.373	0.384
C	0.756	0.728	1.000	0.270

As in Tables 4 and 5, the procedures to calculate the criterion weights were applied within the confidence criterion in Table 7. Healthcare companies' priorities were calculated according to each criterion using similar processes in the other 5 criteria. The priority values of the companies for each criterion can be seen in Figure 3 and Table 8. The results in Table 8 were obtained for each health institution by multiplying the average criterion weights in Table 6 with the priority values of the institutions.

Table 8. Final priority values of the healthcare companies

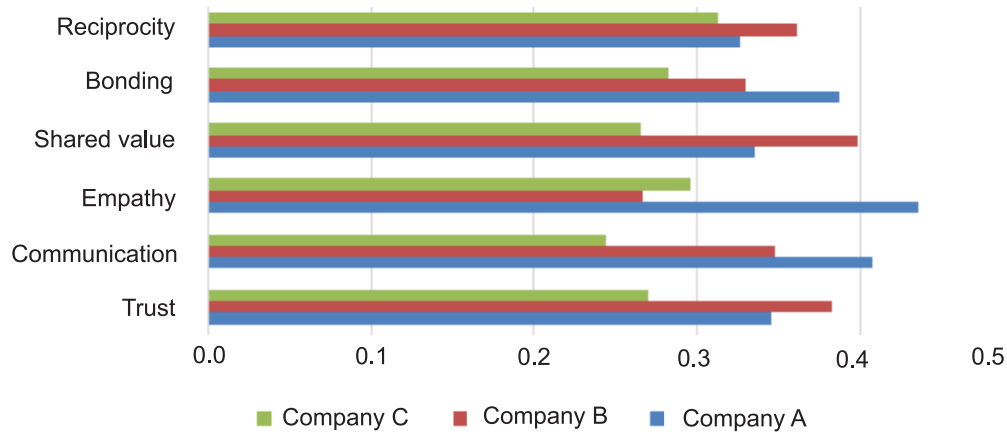| Company /Criterion	Trust (0.250)	Empathy (0.201)	Communication (0.259)	Shared value (0.129)	Bonding (0.091)	Reciprocity (0.071)	Priority value
A	0.346	0.436	0.408	0.335	0.387	0.326	0.381
B	0.384	0.267	0.348	0.399	0.330	0.361	0.347
C	0.270	0.297	0.244	0.266	0.283	0.313	0.272

Figure 3. Priority values of the healthcare companies for each criterion.

It is understood from Table 8 that the best company is A, with a priority value of 0.381. The priority order of private healthcare companies is A> B> C.

3.3. Discussion

TOPSIS, EDAS, and CODAS methods used to compare the results of the AHP are other commonly used MCDM methods [4, 6, 14, 27, 31, 50]. Using the same data, three healthcare companies were evaluated in this study according to TOPSIS, EDAS, and CODAS methods. Alternative A was first. According to the AHP, TOPSIS, EDAS and CODAS methods results, the ranking of the alternatives was A > B> C. The results are given in Table 9.

Table 9. Comparison of the ranking results

Alternative	AHP	TOPSIS	EDAS	CODAS	Rank
A	0.381	0.821	0.996	0.554	1
B	0.347	0.536	0.667	0.350	2
C	0.272	0.087	0.000	-0.224	3

The correlation between the results of all methods has been examined with the Spearman correlation approach. Significant at the 0.01 level (two-tailed) relationships are shown in Table 10. Therefore, it can be said that there is a strong positive relationship between the methods used and the results obtained.

Table 10. Results of the correlation analysis

Method	AHP	TOPSIS	EDAS	CODAS
AHP	1	1.000	1.000	1.000
TOPSIS		1	1.000	1.000
EDAS			1	1.000
CODAS				1

4. Conclusions

Since it is directly related to human life, health service is an essential sector with different dynamics from other services. However, the existence of private health institutions and the increased number in

recent years have brought competition. Therefore, health services, which are vitally important in the sustainable development and development of societies, are an area that should be carefully examined within the scope of marketing. Healthcare organisations need to consider consumer evaluations, especially considering today's healthcare consumers' knowledge and service evaluation ability. Therefore, healthcare organisations must understand their internal customers to adopt a customer-oriented approach and their external customer's satisfaction.

Choosing the appropriate service providers to receive an effective health service is essential. Therefore, to solve health problems and provide adequate health services, it is necessary to select companies that provide private health services that can respond to the needs accurately and appropriately. In this study, the AHP was used. In the study, three healthcare companies were evaluated according to trust, empathy, shared value, reciprocity, communication, and bonding criteria. In practice, pairwise comparisons of the criteria were made, and the criteria weights were calculated. According to the results, the criterion with the highest weight is the criterion of trust with 0.293, and the criterion with the lowest weight is the criterion of reciprocity with 0.064. After calculating the criteria weights, pairwise comparisons of healthcare companies were made for each criterion, and these companies' priority values were calculated. To rank, the companies, the criteria weights and the priority values of the companies were multiplied. According to the AHP results, the companies' final priority value was calculated as 0.381 for A, 0.347 for B, and 0.272 for C. The results of the AHP were compared with the TOPSIS, EDAS and CODAS methods. As a result of the study, A healthcare company was selected as the best company. This study can give managers a perspective on the private health sector to improve their customer relations and marketing strategies.

In this study, some limitations exist, similarly as in every other. One of them is that it was conducted only in 3 private healthcare companies in Turkey. Another one was that only 6 criteria and 3 alternatives were used. For this reason, other studies for public and private health institutions are required for the conceptualisation and operationalisation of the current study. Future studies can be carried out in different sectors with MCDM methods.

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