RESEARCH ARTICLE

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Assessment of Relationship between Hospital Resource Management Capacity and Characteristics of Hospitals and Managers

ABSTRACT

Objective: The purpose of the study is to investigate the relationship between hospital resource management capacity and hospital and manager characteristics.

Methods: The study was conducted on 41 hospitals affiliated to the Ministry of Health of Turkey in Istanbul and Ankara and 232 hospital managers working in these hospitals. Primary and secondary data sources were used as data collection methods. In the first part of the survey, which is used as the primary data source, the questions related to the duties of the managers, gender, total management time, the period of management in the hospital, formal management training, organizational and professional commitment and identification levels and hospital capacity management levels were included. As the secondary data source, hospital statistics were applied and data related to the characteristics of the hospitals.

Results: Exploratory factor analysis was performed to determine whether the questions used to evaluate the resource management capacity of the hospitals were structurally valid. As a result of exploratory analysis, a three-factor structure consisting of equipment, workforce and facility dimensions was reached, and the confirmatory factor analysis conducted to test the accuracy of this structure was found to be acceptable for goodness of fit values. As a result of the structural equation model used in the study, the type of hospitals and the number of medical specialties and the gender of the managers have significant effects on the resource management capacity of hospitals ($p < 0.05$). However, the hospital age and the number of medical specialties and the manager roles, total management time, duration of management in the hospital, formal management training and the managers' organizational commitment and organizational identification levels do not have a significant effect on the resource management capacity of hospitals ($p > 0.05$).

Conclusions: According to the findings, resource management capacities of specialty hospitals are at a better level than general hospitals. This result shows that the type of service and the scope of service in specialty hospitals are clearly defined. Even if the number of medical specialties becomes more complex in the findings, the resource management capacity of the hospitals is managed more successfully. In the last findings, it was concluded that female managers are more successful in evaluating resource management capacity.

Keywords: Hospital Resource Management Capacity, Hospital Characteristics, Manager Characteristics.

Hastanelerin Kaynak Yönetimi Kapasitesi İle Hastane Ve Yöneticilerin Özellikleri Arasindaki İlişkinin İncelenmesi

ÖZET

Amaç: Bu çalışmada, hastanelerin kaynak yönetimi kapasitesi ile hastane ve yönetici özellikleri arasındaki ilişkinin incelenmesi amaçlanmıştır.

Gereç ve Yöntem: Çalışma, İstanbul ve Ankara illerindeki Sağlık Bakanlığı'na bağlı 41 hastane ve bu hastanelerde görevli 232 hastane yöneticisi üzerinde yapılmıştır. Çalışmada veri toplama yöntemi olarak birincil ve ikincil veri kaynakları kullanılmıştır. Birincil veri kaynağı olarak kullanılan anketin birinci bölümünde yöneticilerin görevi, cinsiyeti, toplam yöneticilik süresi, çalışmış olduğu hastanedeki yöneticilik süresi, formal yönetim eğitimi alma durumu, örgütsel ve mesleki bağlılıkları ile özdeşleşme düzeylerini belirlemeye yönelik sorulara, ikinci bölümünde ise çalıştıkları hastanelerin kaynak yönetim kapasitesini belirlemeye yönelik sorulara yer verilmiştir. Çalışmada ikincil veri kaynağı olarak ise araştırma kapsamındaki hastanelerin istatistiklerine başvurularak faaliyet süresi, türü, hizmet verdiği tıp uzmanlığı sayısı gibi özelliklerine ilişkin veriler elde edilmiştir.

Bulgular: Hastanelerin kaynak yönetim kapasitesini değerlendirmek için kullanılan soruların yapısal olarak geçerli olup olmadığını belirlemek için yapılan açımlayıcı faktör analizi sonucunda; ekipman, işgücü ve tesis boyutlarından oluşan üç faktörlü bir yapıya ulaşılmış, bu yapının doğruluğunu test etmek için doğrulayıcı faktör analizi kullanılmıştır. Çalışmada hastanelerin ve yöneticilerin özelliklerinin hastanelerin kaynak yönetimi kapasitesi üzerindeki etkisini test etmek için kullanılan yapısal eşitlik modeli sonucunda; hastanelerin türü ve tıp uzmanlığı sayısı ile yöneticilerin cinsiyetinin hastanelerin kaynak yönetimi kapasitesi üzerinde anlamlı etkileri olduğu ($p<0,05$), buna karşın hastanelerin faaliyet süresi ve tıp uzmanlığı sayısı ile yöneticilerin görevi, yöneticilik süresi, hastanedeki yöneticilik süresi, formal yönetim eğitimi ve yöneticilerin örgütsel ve mesleki bağlılık ile örgütsel özdeşleşme düzeylerinin hastanelerin kaynak yönetimi kapasitesi üzerinde anlamlı etkisinin olmadığı ($p>0,05$) tespit edilmiştir.

Sonuç: Bulgulara göre özel dal hastanelerinin kaynak yönetim kapasiteleri genel hastanelere göre daha iyi seviyededir. Bu sonuç özel dal hastanelerinde hizmet verme şeklinin ve hizmet kapsamının net bir şekilde tanımlandığını göstermektedir. Elde edilen bulgularda tıp uzmanlığı sayısı arttıkça daha karmaşık hale gelse bile hastanelerin kaynak yönetimi kapasitesi daha başarılı bir şekilde yönetilmektedir. Son olarak elde edilen bulgularda kadın yöneticilerin kaynak yönetimi kapasitesini değerlendirmede daha başarılı olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Hastane Kaynak Yönetimi Kapasitesi, Hastane Özellikleri, Yönetici Özellikleri.

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INTRODUCTION

The fact that most of the resources allocated to the health sector are used in hospitals has increased the importance given to measuring and monitoring the resource management capacity of hospitals. In Turkey, the share of hospital expenditures in total health expenditures in 2019 was 48.2% and showed an increase of 21% compared to 2018 (1).

As a result of the increase in health expenditures since the early 1980s, controlling costs and making the right resource management have gained great importance in both health systems and hospitals. In 2030, it is predicted that the share of health expenditures in the gross national product in OECD countries will be 10.2%. In 2018, this rate was 8.8% (2). With these numerical increases, the demand for quality healthcare services has led to the development of an economic perspective that can be described as contradictory in the health sector and the formation of a public awareness in this direction (3). The constantly increasing trend of health expenditures, the high share of hospital expenditures in total health expenditures and the increase in the demand for quality health services make it necessary to manage the resources and the factors affecting the resource management capacity.

Hospitals are now under pressure to reduce costs and increase service quality. This situation raises the need for proper management of hospital capacities. Capacity is the ability to do business at the maximum level sustainable (4).

According to another definition, capacity is the maximum number of customers that can be served in a time frame (5). Capacity in enterprises such as hospitals where products and services differ widely; It depends on the mix of products and services requested over a period of time. Based on these definitions, the capacity in hospitals is determined by measuring resources such as beds, operating rooms and intensive care units in order to determine the complexity of the patient treatment process (6). From a broader perspective, health capacity; involves the allocation of key resources such as facilities, labor and equipment (7).

Resource management in hospitals; it is to use of common resources when and where they are needed such as operating rooms, hospital beds and intensive care units. Resource management is also a complex and dynamic situation due to the existence of departments that have to provide unplanned services such as Emergency Services (8). In order to manage this situation, determining the factors affecting the resource management capacity is very important.

When the studies on the factors affecting hospital resource management capacity are examined in the literature; It was stated that the decisions taken regarding facility and technology management strongly affect resource management. And it has been stated that the facility, workforce and equipment sub-dimensions of capacity affect the selection and timing of the services provided in hospitals, service quality, service cost, patient and employee satisfaction (9).

In addition, there are studies (10) stating that improvements in hospital processes positively affect workforce and technology resource management. There are also studies stating that workforce development is an important factor affecting the quality of health care (11). In a study conducted in private hospitals, it was concluded that hospitals provide quality service as a result of a good facility management and this increases patient satisfaction (12).

In a study examining the effects of hospital characteristics (hospital size, location, training feature) on resource management capacity, a positive significant relationship was found and it was revealed that hospitals with high resource management capacity also had high cost and quality management performance. In the same study, it was also stated that workforce development and equipment/technology decisions directly affect cost management performance and quality management performance has a strong causal relationship with equipment/technology decisions (13).

As can be seen, the factors affecting the resource management capacity in hospitals have been evaluated in scientific studies from different angles. Some of these are related to administrative decisions at the hospital level, while others are related to the characteristics of hospitals and employees. In this study, after considering the characteristics of hospital and hospital managers, the effects of managers' levels of organizational commitment, professional commitment and organizational identification on hospital resource management capacity were examined.

Resource Management in Hospitals: Capacity refers to the ability of both resource and resource to be used. Healthcare capacity consists of key resources such as facilities, equipment and workforce (7). Resource management and planning is critical to creating an effective business environment in sectors and organizations that produce goods and services. Effective resource management is realized by creating a structure that can respond to rapidly changing environmental conditions while keeping the input cost low (14).

Capacity planning in health institutions has more than one dimension. These are investment in existing services, investment in expensive hardware and technology (such as magnetic resonance imaging devices), service delivery, human resource and financial resource planning. Planning of health services differs from country to country. Planning of health services differs from country to country. Therefore, the importance attached to each dimension of planning varies by country.

Most of the countries plan the number of hospitals in order to provide healthcare services at the optimum level. On the other hand, there are differences between countries in terms of service delivery and service scope planning. Some health authorities outline their health plans based on existing infrastructure only in terms of number and location of services, while other plans detail the planning. Like the number and geographic distribution of the medical specialties (15). Classification of resources in healthcare can be done in the form of physicians, nurses, biologists, pharmacists, physiotherapists and other healthcare professionals, patient rooms, equipment, consumables, implantable devices and organs, and instruments and devices in accordance with a resource-based perspective (16).

Resource management has a variety of uses. One of the most common methods is the use of shared services. In this method, resources are used jointly and it is aimed to reduce the costs. In this application, back office operations used by multiple departments are centralized and costs are reduced.

Today, many organizations use a joint service model for finance, human resource management, and information technology. Another widely used model is resource pooling. Resource pooling is used in information technology terminology to describe a situation where providers serve multiple clients or "terminals" with ad hoc and scalable services. These services can be adjusted to suit each customer's needs (14). The aforementioned methods, which can be applied in different sectors, also have applications in the health sector. However, demographic structures should be taken into consideration in the resource management planning of hospitals. First of all, the main determining factors such as disease burden and average age should be determined at the location where the planning is made during the establishment phase of the hospital. According to these factors, different types of resources such as the number of beds, technological equipment, type of hospital, training and research hospital, number of personnel, number of physicians and nurses should be planned. Resource management can be done in the short, medium and long term. Healthcare capacity planning in many countries takes place at the national, regional or local level.

In a study, the capacity planning models of different countries were examined and it was determined that planning started to take place at the regional level. This often implies the transfer of responsibility for the regulation of health services from the center to local governments, as in Denmark and Finland. Local administrations in Denmark and Finland are important actors in healthcare capacity planning (15).

In resource management and capacity planning studies, three basic dimensions can be mentioned as facility, workforce and equipment management. These dimensions are explained as measured in the study under separate headings below.

Facility Management in Hospitals: Facility management can be defined as the internal planning, implementation and management of buildings and accommodation, services and resources that contribute to the effective and efficient realization of organizational goals (17). According to another definition, facility management can be defined as the management of non-core company assets to support and increase the effectiveness of the main business of the organization (18).

According to the British Institute of Facilities Management (BIFM) definition, facility management is the integration of multidisciplinary activities in the built environment and the management of their effects on people and workplaces (19). Facility management subheadings include facility maintenance management, facility performance management, facility risk management, facility supply management and facility demand management (20).

Workforce Management in Hospitals: Workforce management is one of the most dynamic and critical jobs in health service delivery. Since a hospital cannot exist without caregivers, it is important to recruit and retain staff. Recruiting a highly skilled and qualified workforce should be a top priority in hospitals to ensure safe patient care. Qualified personnel recruited should be managed in accordance with workforce development policies with continuous training and thus workforce continuity should be ensured.

Management policies should be developed by taking into account the developments within and outside the organization in labor management. Planning according to patient treatment needs can be given as an example to the developments experienced within the organization. All health professionals such as physicians, nurses, biologists are included in this staff planning. In addition, acuity of patients admitted to the hospital should be taken into account when dealing with internal developments in the hospital (21).

In workforce management, policies should be developed by considering internal and external organizational factors. Workforce planning of physicians, nurses and other health professionals can be given as an example to the developments in the organization, depending on the patient treatment needs. In addition, the acuity of patients admitted to the hospital should be taken into account when dealing with internal developments in the hospital (21).

As examples of non-organizational developments, national labor policies, migration movements, changes in society and technological developments can be given (22). Employees can be ignored when customers are considered only as external customers in labor management. The aim is to combine the needs of the external client with the skills of the employees. Thus, the benefit of both internal and external customers is optimized (9).

Equipment and Technology Management in Hospitals: With the increasing technology investments in health, the correct use of limited resources is becoming more and more important every day. Health technology-related costs are affected by technical, economic, financial, legal, social and political factors. Since the use of technology increases costs, there is a serious pressure on hospital managers to optimize costs without sacrificing efficiency and quality. Deciding on the use of the right technologies should be considered within the scope of health policy and should be planned according to the size of the hospital, hospital region, patient demographic characteristics, disease maps and the level of development in the region throughout the country.

Medical devices occupy an important place in technology management in hospitals. With the developing technology; The role of medical devices in diagnosis, treatment and rehabilitation of patients, their place and importance in health institutions are increasing day by day. In this direction, effective use of medical devices in healthcare facilities and optimum planning can increase the quality of service and increase the level of patient satisfaction (23). Until the 1970s, exploratory surgery was used to diagnose diseases - which is both costly and health hazardous - and imaging technologies such as computed tomography, MRI (magnetic resonance imaging) and PET Scan are now being used due to the developing medical technology has been started (24).

Today, technology management plans are considered as an important element of hospitals' strategic plans (3). Technology should be considered as a key factor in business strategies. Considering that the most important resources of an organization are workforce and knowledge, technology will play a key role, enabling the maximum use of these resources and creating added value (25).

Factors Affecting Hospitals' Resource Management Capacity: In different studies examining the factors affecting the resource management capacity of hospitals, it was stated that clinical engineering has a significant effect on the procurement process of institutional equipment and the implementation of new clinical equipment, and this has an impact on resource management decisions (26). In addition, there are studies (10) state state improvements in hospital processes positively affect workforce and technology resource management, and workforce development is an important factor affecting the quality of health care (11).

In a study conducted in private hospitals, it was concluded that patient satisfaction is high in hospitals where quality service is provided as a result of a good facility management (12). A positive significant relationship was found in a study examining the effects of hospital characteristics (hospital size, location, training feature) on resource management capacity, and it was revealed that hospitals with high resource management capacity also have high cost and quality performance. In the same study, it was also stated that workforce development and equipment / technology decisions directly affect cost performance and quality performance has a strong causal relationship with equipment / technology decisions (13).

MATERIAL AND METHODS

Purpose and Hypotheses of the Study: The purpose of this study is to measure the effects of the characteristics of hospitals (type, duration of activity, number of medical expertise they serve) and the characteristics of the managers (role, gender, total management time, duration of management in the hospital where they work), organizational and professional commitment and organizational identification levels of managers on the resource management capacity of the hospitals. The following hypotheses have been tested in order to achieve the study purpose.

H1: Resource management capacity of hospitals differs significantly according to a) characteristics of hospitals (type, age, number of medical specialty), b) characteristics of managers (role, gender, total management time, duration of management in the hospital where they work, whether they received formal training in management), c) managers' organizational commitment d) professional commitment and e) organizational identification levels.

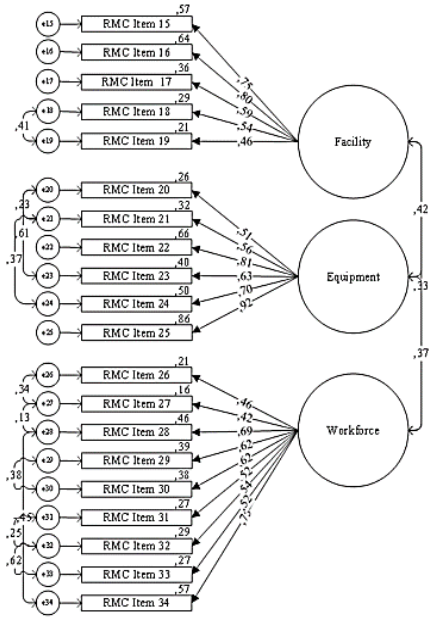
Population and Sample: The population of the study consists of the Ministry of Health of Turkey hospitals in Ankara and Istanbul. As of 2016, there are 37 Ministry of Health hospitals in Ankara and 56 hospitals in Istanbul, and permits have been obtained from a total of 41 hospitals, 23 hospitals in Ankara and 18 hospitals in Istanbul.

The sample was not selected in the study. An attempt was made to reach 437 managers (chief physicians and their deputies, administrative financial managers and their deputies, care services managers and their deputies) in 41 hospitals, however, 237 of them agreed to participate in the

study and 205 managers refused. The managers who worked in the hospital for at least 1 year were included in the scope of the study. 5 managers who did not meet this requirement were excluded and the study was completed with a total of 232 managers.

Data Collection Tool and Application: Questionnaire method was used as a data collection tool. In the first part of the questionnaire, questions related to the characteristics of the managers (role, gender, total management time, the duration of the management at the current hospital, formal education status in management) were included.

In the second part of the questionnaire, with 20 questions, managers were asked to evaluate the resource management capacity of the hospital where they work. These 20 questions are based on a 5-point Likert scale where 1 represents 'Significantly lower' and 5 represents 'Significantly higher'. For the questions in this section, Ling's (9) "Hospital Capacity Management System Survey" and Siferd's (21) study were used. 6 of the 20 questions in this section are about "equipment management capacity", 9 of them are about "workforce capacity" and 5 of them are about "facility management capacity". As a result of the exploratory factor analysis conducted to determine whether these 20 items reveal a meaningful factor structure or not, a three-factor structure has been reached in the form of equipment, workforce and facility management shown in Figure 1.



x2 (CMIN)	sd	x2/sd	TLI	CFI	NFI	RMSEA
359.456	157	2.290	0.879	0.900	0.838	0.075

Figure 1. Resource Management Capacity (RMC) Exploratory Factor Analysis Final Measurement Model and Fit Values

The data collection process in the study started in February 2017 and was completed at the end of July 2017. In the implementation of the questionnaire, the scatter and collect method was used and each hospital was visited at least three times to increase participation.

Data Analysis: SPSS 20 (IBM Statistical Package for the Social Sciences) and AMOS 23 statistical programs were used for data entry and analysis in the study. Descriptive and analytical analysis methods were used in the analysis of the research data.

The validity of the questionnaire was tested by factor analysis. Exploratory factor analysis was applied first to reach a small number of factors from the many items on the questionnaire. After reaching the reference intervals related to the exploratory factor analysis, the confirmatory factor analysis was performed to determine the accuracy of the established factors and the models were reviewed until the reference ranges were reached. After reaching the final model, reliability analysis based on Cronbach alpha coefficient was performed. The structural equation model was used to test the hypotheses of the study.

RESULTS

In this section, descriptive information about the characteristics of hospitals and managers within the scope of the study and analytical analysis about the factors affecting the resource management capacity of hospitals are included.

Table 1. Characteristics of the Hospitals within the Scope of the Research

Hospital Type	**Number**	**%**
General Hospital	27	65.9
Specialty Hospital	14	34.1
Hospital Age (Year)	**Number**	**%**
13 years and below	10	24.4
14–33 years	10	24.4
34–60 years	11	26.8
61 years and over	10	24.4
Number of Medical Speciaties (Sub-specialities are included)	**Number**	**%**
3-19	21	51.2
20 years and over	20	48.8

When the characteristics of the 41 hospitals included in the study are examined; 27 hospitals (65.9%) are general hospitals, 14 hospitals (34.1%) are private branch hospitals, the youngest hospital is 1.5 years old and the oldest hospital has been operating for 119 years. it was determined to be a hospital. In order to reveal the service diversity of the hospitals, it has been determined that the number of medical specialties served (including minor specialties) is between 3-19 in 21 of 41 hospitals, and between 20-51 in 20 hospitals.

Table 2 Characteristics of the Managers Participating in the Research

Role	**Number**	**%**
Hospital Chief Physician	20	8.6
Deputy Chief Physician	69	29.7
Administrative and Financial Services Manager	24	10.3
Administrative and Financial Services Deputy Manager	76	32.8
Health Care Services Manager	29	12.5
Health Care Services Deputy Manager	14	6.0
Gender	**Number**	**%**
Female	88	37.9
Male	138	59.5
No answer	6	2.6
Total Management Time	**Number**	**%**
Less than 5 years	136	58.6
5 years and above	84	36.2
No answer	12	5.2
Duration of management in the hospital where they work	**Number**	**%**
Less than 5 years	177	76.3
5 years and above	42	18.1
No answer	13	5.6
Formal Management Training Status	**Number**	**%**
Yes	159	68.5
No	63	27.2
No answer	10	4.3
Organizational Commitment	**Average**	**Ss**
Emotional Commitment	3.86	0.94
Continuance Commitment	2.57	0.79
Normative Commitment	3.29	0.71
Professional Commitment	**Average**	**Ss**
Emotional Commitment	3.87	0.63
Continuance Commitment	2.94	0.74
Normative Commitment	3.64	0.72
Organizational Identification	3.88	0.61

The characteristics of the managers who answered the questionnaire in the hospitals within the scope of the research are given in Table 2. Accordingly, 232 out of 437 managers in 41 hospitals agreed to participate in the study. 89 managers work in the group of chief physicians and their deputies, 100 people work in the administrative and financial services managers and deputies group, and 43 work in the positions of health care services managers and deputies.

It is observed that approximately 38% of the managers participating in the survey are women, 58.6% of them have been managers for less than 5 years, 76% of them have a management time in the hospital where they work is less than 5 years and 68.5% of them have received formal management training. 21% of the managers who received formal management training stated that they received courses and certificates, 3% associate degree, 26% undergraduate, and 49% post-graduate education.

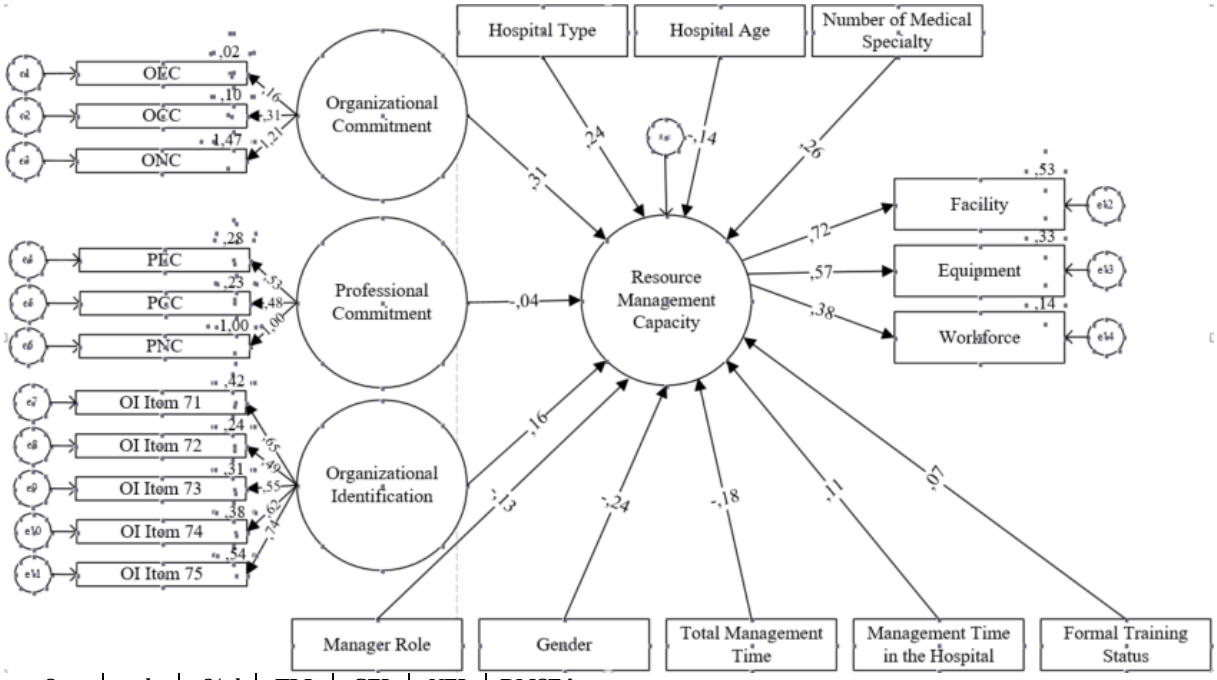
When the organizational and professional commitment and organizational identification levels of the hospital managers within the scope of the study are examined in Table 2, it is observed that their organizational emotional commitment and professional emotional commitment scores are very close to each other, professional continuance commitment levels are higher than organizational continuance commitment, and professional normative commitment levels are higher than organizational normative commitment levels.

When the organizational identification levels of the hospital managers who answered the questionnaire are examined, it is seen that the organizational identification scores (3.88 ± 0.61) are higher than the average value regarding the organizational and professional commitment levels. In a study conducted on healthcare professionals, the organizational identification level was calculated as 2.99 (27) according to the 5-point Likert scale, and in another study, the organizational identification level average of private sector employees was calculated as 3.76 (28). This situation shows that the organizational identification levels of the managers participating in the research are quite high.

In order to determine the factors affecting the resource management capacity of the hospitals

within the scope of the study, 2-stage structural equation models were created. In the initial structural model shown in Figure 2, in order to explain the resource management capacities of hospitals, the characteristics of the hospitals (type of hospital [being a general-specialty], hospital age and the number of medical specialties) and the characteristics of the managers (role, gender, total management time and duration of management in the hospital where they work and formal management training) and organizational commitment, professional commitment and organizational identification levels of managers are included as independent variables.

As seen in the initial model in Figure 2, it is seen that the goodness of fit values (x2/df = 3.665, TLI = 0.395, NFI = 0.460, CFI = 0.395, RMSEA = 0.112) are not within acceptable limits. Among the variables in the model, it is seen that the organizational commitment levels and gender of the managers, the type of the hospital and the number of medical specialties have a significant effect on the resource management capacity. On the other hand, it is observed that the professional commitment and organizational identification levels of the managers, the role of the managers, the total management time, duration of management in the hospital where they work, the formal management training status and the hospital age do not have a significant effect on the resource management capacity of the hospitals.

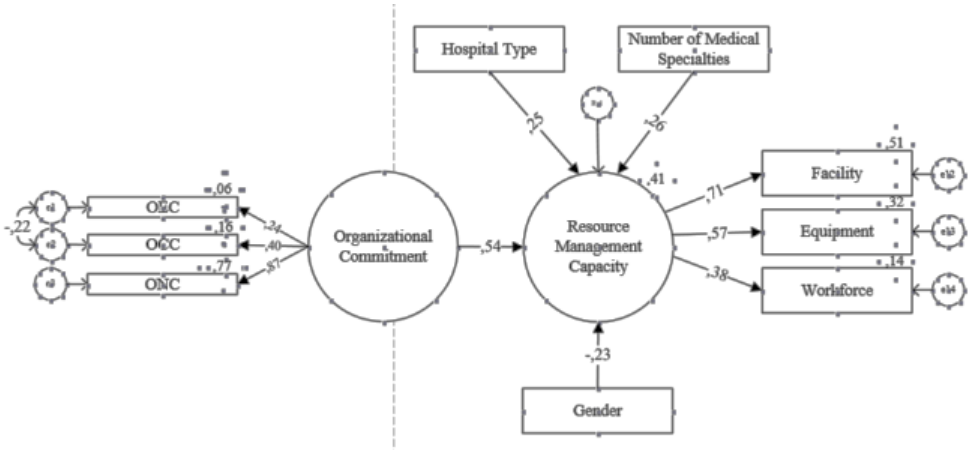


x2 (CMIN)	sd	x2/sd	TLI	CFI	NFI	RMSEA
755.055	206	3.665	0.395	0.460	0.395	0.112

Figure 2. Initial Structural Model Estimating the Resource Management Capacity of the Hospitals Under the Scope of the Research and the Fit Values

In order to obtain a model with higher fit values compared to the initial model and to increase the adaptation of the model to the data set, the second structural model in Figure 3 where the organizational commitment levels of the managers, the type of hospital, the number of medical specialties and the manager's gender were used as independent variables. The goodness of fit values of this model were calculated as x2/df = 1.364, TLI = 0.937, NFI = 0.866, CFI = 0.937, RMSEA = 0.041.

When the findings of the model were examined, it was seen that as the organizational commitment levels of the managers and the number of medical specialties of the hospitals increased, the resource management capacity of the hospitals increased/improved. It has been observed that the resource management capacity of specialty hospitals and the resource management capacity of hospitals with female managers are higher. According to this final structural model that predicts the resource management capacity of hospitals, H1a, H1b and H1c hypotheses were accepted, and H1d and H1e hypotheses were rejected.



x2 (CMIN)	sd	x2/sd	TLI	CFI	NFI	RMSEA
32.737	24	1.364	0.937	0.958	0.866	0.041

Figure 3. Final Structural Model Estimating the Resource Management Capacity of the Hospitals Under the Scope of the Research and the Fit Values

DISCUSSION

In this study, it was aimed to examine the effects of the hospital and manager characteristics and the organizational commitment, professional commitment and organizational identification levels of the managers on the resource management capacity of the hospitals.

The Organizational Commitment Scale developed by Meyer and Allen (29) was used to measure the organizational commitment of the hospital managers participating in the study, and the Professional Commitment Scale developed by Meyer, Allen and Smith (30) was used to measure the professional commitment levels. As a result of the validity and reliability analyzes, it was seen that the answers given to some questions did not conform to the original structures of the scales and were left out.

The organizational emotional commitment level of the managers participating in the study, measured with a total of three questions, was calculated as 3.86. Accordingly, it can be said that their level of commitment is above average. Organizational emotional commitment level is the positive attitude of individuals towards the organization they work with, and therefore it is desired to be at a high level. In a study conducted by Bedük and Yıldız on the mobbing and organizational commitment levels of hospital employees, the average level of organizational emotional commitment was found to be 2.89 according to the 5-point Likert scale (31). In a study conducted by Bayyurt and Kılıç, the organizational emotional commitment level of the hospital staff was determined as 2.91 according to the 5-point Likert scale (32). These results show that the organizational emotional commitment levels of managers within the scope of this study are higher than the results of similar studies.

The average level of organizational continuance commitment of the managers participating in the study was calculated as 2.57. Organizational continuance commitment refers to a negative situation and is expected to be low. In a study conducted on pharmaceutical industry managers, the organizational continuance commitment average was found to be 2.75 according to the 5-point Likert scale (33). These results show that the level of continuing commitment, which can be expressed as mandatory commitment, of hospital managers is more positive than the managers of the pharmaceutical sector. Unlike the original scale, the high level of normative commitment measured with five items in the study indicates the principal commitment of the manager to the organization she/he works with and is expected to be high.

In the research, the organizational normative commitment level of the administrators was found to be 3.29. In a study conducted on hospital staff, this average was 2.91 (32), while in another study on hospital staff, organizational normative commitment levels were found to be 2.95 according to the 5-point Likert scale (34). It is possible to interpret this difference as that managers have higher normative commitment levels compared to employees.

While 18 items were used in the original scale to measure the professional commitment levels of the managers participating in the study, it was found appropriate to use 14 items after the validity and reliability analysis of the research. The average professional emotional commitment level

of the managers participating in the study was calculated as 3.87. In a study conducted on nurses, the average of professional emotional commitment was found to be 3.5 according to the 5-point Likert scale (35). In another study conducted on hospital senior managers, the level of professional emotional commitment according to the 5-point Likert scale has an average value of 4.39 (36). These results show that the level of professional emotional commitment of the managers participating in the study is lower than the mentioned study.

The average occupational normative commitment dimension of the managers participating in the study was calculated as 3.64, in the study of Aktaş and Gürkan (35) it was 2.73 and in the study of Carlson (36) it was calculated as 2.63. These values show that the administrators participating in the research have a high level of normative commitment. The average level of professional continuance commitment, which is expected to be low, was found to be 2.94 in this study. In Carlson's (36) study, this value was calculated as 3.31. This situation shows that the managers participating in the research have a more positive value in compulsory continuation of their profession.

As a result of the validity and reliability analysis of the 5 items in the original scale in order to measure the organizational identification levels of the managers participating in the study, it was seen that the values were within the reference ranges. In the findings obtained, the organizational identification level average of the hospital managers participating in the study was calculated as 3.88. In a study conducted on healthcare professionals, the organizational identification level was calculated as 2.99 according to the 5-point Likert scale (27) and in another study, the organizational identification level of private sector employees was calculated as 3.76 (28). This situation shows that the organizational identification levels of the administrators participating in the research are quite high.

Another concept considered within the scope of the research is the hospital resource management capacity measured by the size of facility, equipment and workforce. The number of studies dealing with resource management capacity in hospitals with different dimensions is limited, as in this study. In general, human resources capacity measurements have been emphasized in studies (37) (38) (39).

In recent years, it has been observed that studies on the technological equipment dimension of resource management have been increasing due to the rapid development of health technologies on a global scale and the most important factor affecting health expenditures (40) (41).

According to the findings of the study, the type of hospital and the number of medical specialties that are among the characteristics of the hospitals significantly affect the resource management capacity of the hospital. It is thought that this result is due to the clear definition of the manner and scope of service in specialty hospitals and their better management of facilities, equipment and workforce capacities as they focus on a single area and provide services. In a study, it was stated that the type of hospital has a significant relationship with the technological level of hospitals, which is a dimension of resource management. According to this study, the use of technology is higher in specialty hospitals (42). In addition, it can be concluded that these results were reached in line with the importance given to the items of increasing the outpatient and surgery service capacity in the facility size with the highest factor load in the resource management capacity scale in specialty hospitals (0.71). Another hospital characteristic that significantly affects the resource management capacity of the hospitals covered by the research is the number of medical specialties. These findings show that as a result of the increase in the number of medical specialties served in general hospitals, the resource management capacity has also increased.

On the other hand, it has been revealed in the study that the resource management capacity of the hospitals does not differ according to their activity periods (hospital age). In the literature on the subject, there are various studies stating that the demographic characteristics of hospitals significantly affect the resource management capacity (43) (44) (13) as well as there are studies without such a relationship (9) (45). In Ling's study (9), the relationship between the training feature, one of the hospital demographic variables, and the resource management capacity was examined, but no meaningful results were obtained. Li and Benton (13) examined resource management capacity in three dimensions as facility, equipment and workforce as in this study and found that it showed significant relationships with hospital demographic characteristics (hospital size, hospital location, training feature). Li and Benton found a positive and significant relationship between the size of the hospital measured by the number of beds and the resource management capacity (13). The mentioned study stated that large hospitals manage demand changes better, they are more successful in managing workforce planning and service capacity, and that these results have a positive impact on resource management capacity. Li and Benton also stated that the most important variables affecting the resource management capacity in hospitals are the quality of outpatient services, workforce skills and information technologies (13).

According to the findings of the study, the gender of the manager, which is considered among the demographic variables of the managers, significantly affects the resource management capacity of the hospitals. According to these findings, the resource management capacity of the hospitals within the scope of the study was evaluated as more successful by female managers. There are other studies stating that female managers are more successful in evaluating resource management capacity (46) (47). In these studies conducted in different sectors, it was stated that female managers are more successful in sharing information and leadership, and they are more successful than men, especially in labor resource planning (48).

According to the findings obtained in the study, features such as the role of hospital managers, total and management time in the hospital they work, and whether they received formal training in management are not in a meaningful relationship with the resource management capacity of the hospitals they manage. The reason why managers participating in the study did not achieve success in resource management capacity, despite receiving formal management training, is thought to be due to the fact that the Ministry of Health hospitals operate under the central authority, not autonomous.

Different results have been reached in the literature regarding the effect of the management time in the organization where the manager works on the resource management capacity. In one study, it was stated that there are significant relationships between management time and resource management capacity (49), while no significant relationships were found in another study (50).

Alexander and Lee classified the time that a manager worked in the organization as short, medium and long, and stated that those in the medium-term working time were more successful in resource management capacity, attributing this to the adaptation process in short working time and the managers in the same position during long working time (49).

Alexander and Lee attributed these results to the fact that short-term managers are not able to make the right decisions about resource management capacity because they are involved in the adaptation process in their organizations. In long-term managers, he commented that if the manager stayed in the same position for a long time, this situation decreased the motivation of the employee and this negatively affected the resource management capacity decisions (49). It can be stated that the different findings of the studies are due to the fact that the resource management capacity is measured with different dimensions and methods in the mentioned studies. For example, in the study conducted by Alexander and Lee (49), it is seen that resource management capacity is measured only in terms of labor capacity. In addition, contrary to the findings obtained in this study, there are studies in the literature that found that the managerial position of hospital managers significantly affects the hospital resource management capacity (51). In their study, Currie and Procter stated that mid-level managers are more successful in human resources management than senior managers because of their decision-making power and partly involvement in operational affairs when they have an influence on strategic decisions (51).

Another important finding of the study is that there is a significant relationship between the resource management capacity of the hospitals within the scope of the study and the organizational commitment levels of the managers, whereas there is no significant relationship between the professional commitment and organizational identification levels of the managers and the resource management capacity of the hospitals. As the level of commitment of managers to the hospital they work in increases, it is observed that there are positive developments in the resource management capacity of the hospitals in terms of facility, equipment and workforce dimensions.

CONCLUSION

In this study; it is aimed to examine the relationship between hospital managers' organizational commitment, professional commitment and organizational identification levels on resource management capacity measured by manager's perceptions of workforce, facility and equipment dimensions. In addition, the institutional and managerial characteristics that may have an impact on the resource management capacities of the hospitals were also taken into consideration.

The study was conducted on 232 senior executives who have been administrators for at least one year and volunteered to participate in 41 hospitals affiliated to the Ministry of Health in Ankara and Istanbul provinces. From the findings of the study, it was concluded that the resource management capacities of the hospitals included in the study, measured by the dimensions of facilities, equipment and workforce, were significantly affected by the type of hospitals and the number of medical specialties.

The resource management capacity of specialty hospitals and hospitals with a higher number of medical specialties they serve is at a higher level. According to this result, the experience of specialty hospitals and hospitals with a higher number of medical specialties in resource management capacity can be used to improve resource management capacities. However, there is no significant relationship between the resource

management capacity of hospitals and their duration of activity (hospital age). On the other hand, while there is a significant relationship between the gender of the managers participating in the research and the resource management capacity of the hospitals, female managers better manage the equipment, work force and facility resources of the hospitals they work. The role of the managers, the total management time, the management time at the hospital where they work, and whether or not they have received formal training on management before do not have a significant effect on the resource management capacity of the hospitals. Considering that male employees do not want to take orders from female managers and that male employees' negative attitudes towards female managers have been expressed in different studies (52) (53) the success of female managers in resource management capacity should be taken into account despite these negativities. According to this result, it may be suggested that central authorities carry out studies to increase the number of female managers in hospitals.

The organizational commitment levels of the managers participating in the study, measured in terms of emotional, attendance and normative commitment dimensions, positively affect the resource management capacity of the hospitals. Managers with higher levels of commitment to their hospitals better manage equipment, labor and facility resources. Considering that the organizational commitment levels of managers positively affect the resource management capacities of hospitals, it may be beneficial to pay attention to the normative commitment dimension, which has the highest factor load among the dimensions that constitute the organizational commitment levels of managers. On the other hand, there were no significant relationships between managers' professional commitment and organizational identification levels and hospital resource management capacities.

The results of the study showed that the resource management capacity of the hospitals, measured in terms of facility, equipment and workforce dimensions, was positively affected by the type of hospitals and the number of medical specialties. According to this result, specialty hospitals perform facility management better, manage their equipment better and use human resources more efficiently than general hospitals. While providing services or focusing on a specific area enables resources to be planned, used and managed relatively more rationally, as the variety of services increases, the type and number of facilities, equipment and personnel required for each service will differ, so planning, using and managing the necessary inputs will become more difficult. Therefore, it should be noted that resource management in general hospitals is relatively more complex. On the other hand, the fact that the resource management capacity of the hospitals with a high number of medical specialties in the study seems to contradict the explanation made about the specialty and the general hospital, in fact, the increase in the number of medical specialties can be explained by the more professional management of the resource management of the hospitals.

37.9% of the managers participating in the research are women and women managers manage the resources of the hospitals they work in better. These results support the decisions regarding the need for more opportunities for female managers in public and private hospitals. Another variable that affects the resource management capacity of hospitals in the study is the organizational commitment levels of the managers. In parallel with many studies conducted on this subject (54) (55) it is observed that the level of commitment of managers to their hospitals has a positive effect on the resource management capacities of hospitals. Baird's study highlights the importance of providing adequate facilities and organizational commitment within hospitals and suggest that managers should try to enhance the provision of such resources in an attempt to elicit commitment within their hospitals (55). The finding that activities to increase the level of organizational commitment in hospitals will also affect the resource management capacities of hospitals positively should be taken into consideration especially by the central authorities.

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