

## The Effects of Lean Management Approach on Service Quality of Businesses: An Application in the Health Sector\*

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### Abstract

**Aim:** The aim of this study is to investigate the impact of the lean management approach in hospitals on health services. Lean management ensures the economical use of resources, prevention of waste, employee satisfaction and the provision of services in line with real demands.

**Method:** In writing the literature section of the study, the deductive method was followed and scientific articles, books, the internet, reports, and written sources on the subject were used. In the methodological part of the research, the quantitative cause-and-effect method was preferred. The universe of the study consists of employees working in dental hospitals of public and foundation universities operating within the borders of the European-sized metropolitan district of Istanbul.

**Results:** As a result of the analysis, it was determined that the “Manager and Employee Attitude” and “Job Satisfaction and Workload” dimensions of lean management affected the “Physical Features in Service Quality” dimension of service quality ( $p<0.05$ ) and did not affect the “Motion Waste and Stock Waste” dimension of lean management ( $p>0.05$ ).

**Conclusion:** After the analysis of the data obtained from the surveys, it was determined that lean management practices provided professional satisfaction, reduced workload, prevented movement waste and stock waste; in other words, the hospital staff was sufficient to respond to service demands, waste was prevented, and employees were satisfied with their work.

**Keywords:** Lean management, empathy, employee satisfaction, patient satisfaction, service quality.

### Yalın Yönetim Anlayışının, İşletmelerin Hizmet Kalitesine Etkileri: Sağlık Sektöründe Bir Uygulama

### Öz

**Amaç:** Bu çalışmanın amacı, hastanelerde sürdürülen yalın yönetim anlayışının, sağlık hizmetlerine olan etkisinin araştırılmasıdır. Yalın yönetim, kaynaklarının ekonomik kullanımını, israfın önlenmesini, çalışanların memnuniyetini ve gerçek taleplere uygun hizmetlerin sunumunu sağlamaktadır.

**Yöntem:** Çalışmanın literatür bölümünün yazımında tımdengelim yöntemi izlenmiş ve konuyla ilgili bilimsel makale, kitap, internet, rapor ve yazılı olan kaynaklardan yararlanılmıştır. Araştırmanın yöntemiyle ilgili kısmında ise niceliksel sebep-sonuç yöntemi tercih edilmiştir. Çalışmanın evrenini, İstanbul Avrupa

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yakasındaki Büyükşehir ilçe sınırları dahilinde faaliyetlerini sürdüren kamu ve vakıf üniversitelerinin dış hastanelerinde görev yapan çalışanlar oluşturmuştur.

**Bulgular:** Yapılan analizler sonucunda; yalın yönetim boyutlarından “Yönetici ve Çalışan Tutumu”, “Mesleki Tatmin ve İş Yükü” boyutlarının, hizmet kalitesi boyutlarından “Hizmet Kalitesindeki Fiziksel Özellikler” boyutunu etkilediği ( $p<0,05$ ) ve yalın yönetim boyutlarından “Hareket İsrafı ve Stok İsrafı” boyutunu etkilemediği ( $p>0,05$ ) tespit edilmiştir.

**Sonuç:** Anketlerden elde edilen veriler yapılan analizler sonrasında yalın yönetim uygulamalarının; mesleki tatmin sağladığı, iş yükünü azalttığı, hareket israfını ve stok israfını önlediği diğer bir ifadeyle, hastane personelinin hizmet taleplerine cevap verebilmede yeterli olduğu, israfların önlendiği ve çalışanların yaptıkları işten tatmin olduğu tespit edilmiştir.

**Anahtar Sözcükler:** Yalın yönetim, empati, çalışan memnuniyeti, hasta memnuniyeti, hizmet kalitesi.

## Introduction

This study aims to evaluate the healthcare services provided with a lean management approach in hospitals by the providers of these services. In this context, the problem statements are: Do lean management practices have an impact on the physical features and employee reliability of hospitals' service quality dimensions? In addition, the study investigates whether lean management practices influence employees' ability to meet patients' demands and foster trust in the hospital. The characteristics of lean management practices and the factors affecting service quality are examined within the scope of the literature review.

Healthcare is a rapidly growing sector that attracts significant attention from researchers and practitioners worldwide. Due to significant levels of increasing costs and competition, many hospitals are attempting to increase lean management practices to improve service operations. In this context, lean management practices are of vital importance in improving service quality<sup>1</sup>.

It is thought that scientific studies to be conducted on the effects of the lean management approach on the service quality of enterprises will contribute significantly to the service quality of healthcare institutions, patient satisfaction, increase of corporate reputation, provide competitive advantage, increase the efficiency of healthcare personnel, make new investments and the country's economy, and this study is planned to be conducted<sup>2</sup>.

In a globally competitive world, healthcare organizations that implement lean thinking tend to gain a significant competitive advantage. Improving the quality of health services, employee satisfaction, empathy among employees, to ensure patient satisfaction in diagnosis and treatment The technology-supported lean management approach must be used most effectively in healthcare institutions<sup>3</sup>.

Lean management means no unused elements, no workmanship, no errors, no waste, wastage, and customer dissatisfaction<sup>4</sup>. It is a structure where costs and stocks are reduced to a minimum level. In other words, lean thinking is providing higher quality service using fewer resources, efficiency, and aims to better respond to patients'

expectations<sup>5</sup>. Lean management philosophy contributes to the spread of a new, effective, versatile management approach to improve processes to identify problem areas and the systematic execution of services. For this reason, it is of great importance for healthcare businesses to gain a competitive advantage<sup>6</sup>.

Many international health organizations are working to eliminate waste in operational work in health services, transforming the organizational culture towards adequate professional development of staff<sup>7</sup>. Therefore, lean management is not limited to a specific activity but is limited to the design of a service. It covers all activities of a business, from treatment to post-treatment services<sup>8</sup>.

The biggest obstacle to the spread of lean management is that this management style is not sufficiently recognized, and its advantages are unknown<sup>9</sup>. Making changes in the education system and including lean management courses in education programs<sup>10</sup>. It is necessary to ensure multidisciplinary cooperation between specialties, to assign competent managers, and to introduce the lean approach on different platforms<sup>11</sup>. In this context, preventing errors in healthcare institutions, increasing patient safety and satisfaction<sup>12</sup>, and increasing the quality of health services for continuous improvement and lean management practices should be included<sup>13</sup>.

Therefore, successfully implemented lean management practices will help ensure patient safety<sup>14</sup>, improve service quality, enable staff to participate in decisions<sup>15</sup> to reduce costs to prevent delays<sup>16</sup>, shortens the diagnosis and treatment process<sup>17</sup>, increasing patient satisfaction, the efficiency of healthcare personnel by making significant contributions to the sustainability of healthcare enterprises and provides competitive advantage<sup>18</sup>.

## **Material and Methods**

In this study, the deductive method was followed in literature writing, and in the section about the method, the quantitative cause-and-effect method was taken as a basis in the analysis of the relationships between the variables. The survey used as a data collection tool in the study included questions on demographic structure, “Lean Management Approach Scale” and “Service Quality Scale”. Ethical permission was obtained for the survey application of this study from the İG University Ethics Committee on 17/07/2020 and at its meeting numbered 2020/19. For the analysis of the data, SPSS 21.00 program was used to perform “Reliability”, “Frequency”, “Correlation” and “Regression” analyses.

## ***Purpose of the Research***

This study aims to evaluate the quality of health services provided in hospitals by the providers of these services. Developing technologies in the global world market are changing the service processes, presentation methods, treatment, and diagnosis methods offered by businesses. In this context, hospitals need to ensure their sustainability, increase customer satisfaction, and improve the quality of their services. In this context, it is of great importance for the sector that the lean management philosophy offers suggestions through studies that will increase the service quality and customer satisfaction of hospitals.

### ***Universe, Sample Size, and Limitations of the Research***

The universe of the study consists of employees working in dental hospitals of public and foundation universities operating within the borders of the European-sized metropolitan district of Istanbul. Employees of dental treatment centers with fewer than 10 personnel were not included in the study. In this context, in the universe consisting of 15 964 people in total, 7 460 physicians, 3 870 nurses and oral and dental health practitioners and administrative staff, the "Table for Determining Sample Volumes According to Universe Sizes" was used to determine the scale of the research and it was determined that the universe value (appropriate to the universe number of 15 964 people) was 25 000 people and that a sample of 375 people would be sufficient with 95% confidence and 5% sampling error<sup>19</sup>. For this reason, a total of 550 questionnaires were distributed to the participants using the "Simple Random Sample Selection" method, and the incompletely filled questionnaires were canceled and the analysis of the research was completed with the data obtained from 518 valid questionnaires.

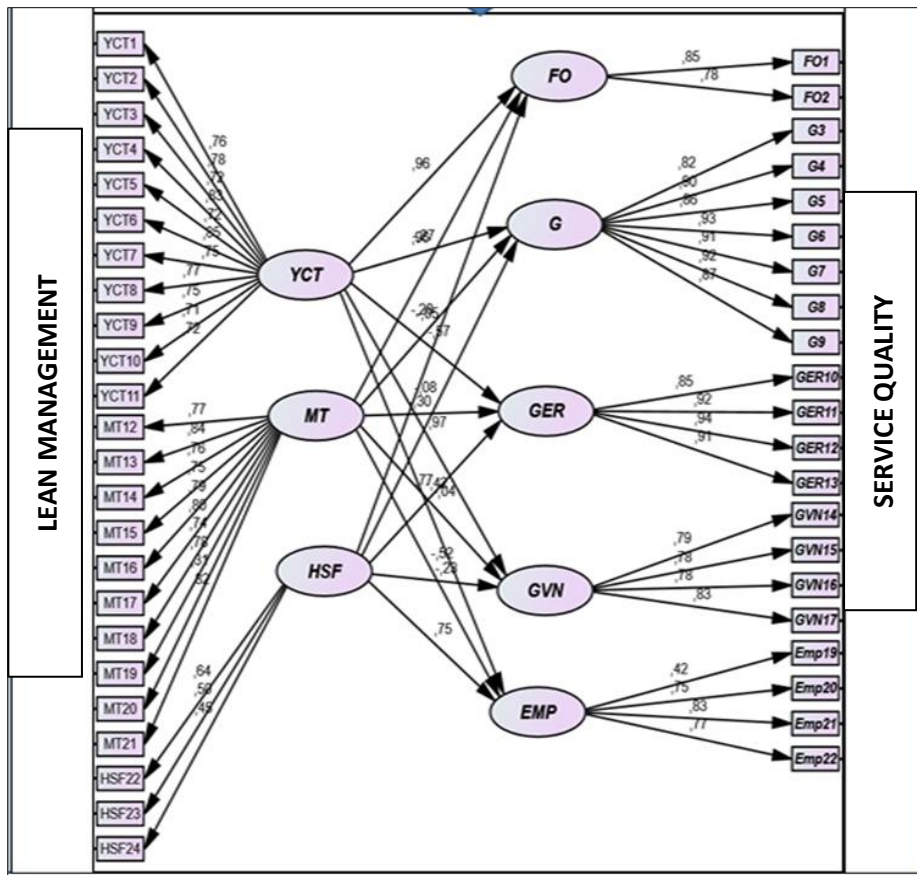
### ***Data Collection Tools***

The first part of the survey of this study included questions regarding demographic information of the participants, "Lean Management Scale" and "Service Quality Scale". In this context, to measure the perceptions towards lean management practices, Vidal developed by<sup>20</sup> and Deep the "Lean Management Scale" adapted into Turkish by<sup>21</sup>. The scale in question consists of a total of 24 questions and 3 dimensions. Participants were asked to answer the questions in the scale as "1 Completely Disagree", "2 Disagree", "3 Undecided", "4 Agree" and "5 Completely Agree". It was stated that the reliability coefficient of the 5-point Likert-type scale was calculated as 0.901, which is quite reliable. Additionally, in this study, Lu and Liu were used to determine the perceptions of service quality. Developed by<sup>22</sup> the "Service Quality Scale" was used by Beydoğan and Kalyoncuoğlu was used<sup>23</sup>. The scale in question consists of a total of 5 dimensions and 22 items. The reliability coefficient of the 5-point Likert-type scale was calculated as 0.81, which is quite reliable.

### ***Model of the Research***

Figure 1 shows the model for the relationship between the lean management YCT (Manager and Employee Attitude), MT (Job Satisfaction and Workload) and HSF (Motion Waste and Stock Waste) dimensions and the service quality dimensions FO (Physical Features), G (Trust), GER (Reality), GVN (Reliability) and EMP (Empathy).

**Figure 1 .** Model for the relationship between lean management and service quality



## Hypotheses of the Research

### Hypotheses

H1: Lean management practices have significant effects on the service quality of hospitals.

H1a: Lean management practices have a significant impact on the physical characteristics of hospitals' service quality.

H1b: Lean management practices have a significant impact on employees' trust in the hospital.

H1c: Lean management practices have a significant impact on employees' responsiveness to patients' service demands.

H1d: Lean management practices have a significant impact on employee reliability in terms of service quality.

H1e: Lean management approach has a significant impact on empathy with employees, which is one of the dimensions of service quality.

## Results

### *Reliability Analysis for Lean Management Scale and Service Quality Scale*

Reliability Analysis Results for Lean Management Scale and Service Quality Scale are given in Table 1.

**Table 1.** Reliability analysis results for Lean Management Scale and Service Quality Scale

Scales	Dimension	P value	$\alpha$	Total ( $\alpha$ )
Lean Management Scale	"Manager and Employee Attitude"	0.046	0.946	0.967
	"Job Satisfaction and Workload"	0.042	0.923	
	"Waste of Movement and Waste of Stock"	0.037	0.726	
Service Quality Scale	"Physical Properties"	0.029	0.755	0.771
	"Trust"	0.047	0.927	
	"Reality"	0.039	0.888	
	"Reliability"	0.032	0.730	
	"Empathy"	0.023	0.708	

It was stated that the dimensions of the lean management scale were significant because the values of  $p < 0.05$  were small and the reliability coefficient (Cronbach's Alpha) was found to be 0.967 and was quite reliable. In addition, it was stated that the dimensions of the service quality scale were significant because the values of  $p < 0.05$  were small and the reliability coefficient (Cronbach's Alpha) was found to be 0.771 and was reliable.

### *Demographic Analysis*

As a result of the frequency analysis, the results regarding demographic information such as "age", "gender", "marital status", "sector of employment", "educational status" and "working time" are given in Table 2.

**Table 2.** Frequency table of demographic variables

		Frequency	Percentage
Gender	Woman	268	51.7
	Male	250	48.3
Age	19-25 Years Old	107	20.7
	26-32 Years Old	132	25.5
	33-39 Years Old	110	21.2
	40-46 Years Old	78	15.1
	Above 47	91	17.6
Marital status	Married	315	60.8
	Single	191	36.9
	Divorced	12	2.3
Educational Status	Primary education	80	15.4
	Associate Degree	136	26.3
	Licence	109	21.0
	Graduate	193	37.3
The Sector You Work In	Private Sector	342	66.0
	Public Health Service Providing	153	29.5
	Training and Research Hospitals	10	1.9
	Other	13	2.5



<b>Working Hours</b>	1-3 Years	226	43.6
	4-6 Years	140	27.0
	7-9 Years	40	7.7
	10-12 Years	33	6.4
	13 Years and Above	79	15.3

The frequency table findings in Table 2 are examined, it is seen that 250 of the participants were male (48.3%) and 268 were female (51.7%); 107 people (20.7%) were between the ages of 19-25, 132 people (25.5%) were between the ages of 26-32, 110 (21.2%) were between the ages of 33-39, 78 (15.1%) were between the ages of 40-46, and 91 people (17.6%) were over the age of 47. It was also understood that 191 (36.9%) of the participants were single, 315 (60.8%) were married, and 12 (2.3%) were divorced. According to the table, it was observed that 80 individuals (15.4%) had a primary school education, 136 individuals (26.3%) had an associate degree, 109 individuals (21.0%) had undergraduate education, and 193 individuals (37.3%) had postgraduate education.

### **Correlation Analysis**

Correlation analysis provides information about the direction and intensity of the relationship between variables, and in this analysis, the correlation coefficient (r) takes values between  $-1 \leq r \leq 1$ . When the correlation coefficient is -1, it means that the variables are negatively strong, when it is +1, it means that the variables are positively strong and when it is 0 means that the variables are unrelated.

**Table 3.** Correlation analysis

DIMENSIONS	Manager and Employee Attitude	Job Satisfaction and Workload	Waste of Movement and Waste of Stock	Physical Properties	Trust	Reality	Reliability	Empathy
Manager and Employee Attitude	1	-	-	-	-	-	-	-
Job Satisfaction and Workload	0.897	1	-	-	-	-	-	-
Waste of Movement and Waste of Stock	0.793	0.782	1	-	-	-	-	-
Physical Properties	0.668	0.675	0.558	1	-	-	-	-
Trust	0.813	0.803	0.688	0.767	1	-	-	-
Reality/ Responsiveness to Service	0.231	0.266	0.266	0.190	0.235	1	-	-
Reliability	0.666	0.693	0.568	0.593	0.721	0.564	1	-
Empathy	-	-	-	-	-	0.419	-	1

According to the results of the correlation analysis in Table 3; the relationships between the variables are examined, the r value between job satisfaction and workload and the manager and employee is 0.897, indicating a high relationship, while the r value between empathy and "Reliability" is -0.181, indicating a low negative relationship. Observing that there was a relationship between the variables, regression analysis was performed to examine the degree of impact of the relationships between the variables.

## Regression Analysis

Regression analysis is a multivariate statistical method used to examine the effect of a dependent variable on one or more variables. In this method, the equation “ $Y = \beta_0 + \beta_i X_i + \epsilon_i$ ” is used for regression analysis. In this equation, “Y is the dependent variable”, “ $X_i$  is the independent variable”, “ $\beta_i$  is the coefficient of the independent variable”, “ $\epsilon_i$  is the error term” and “ $\beta_0$  is the constant coefficient”. In the research, the effects of lean management on service quality were examined. In the regression analyses, lean management dimensions were considered as independent variables and service quality dimensions were considered as dependent variables.

### *The Effect of Lean Management on Physical Characteristics of Hospitals' Service Quality*

The results of the regression analysis on the effect of lean management activities on the physical characteristics of hospitals are given in Table 4.

**Table 4.** Regression analysis table of the effect of lean management activities on the physical characteristics of hospitals

Lean Management (Independent Variable)	Dimensions	“Physical Features” in Service Quality of Hospitals (Dependent Variable)	
		$\beta$	P
	Still	1.430	0.000
	Manager and Employee Attitude	0.320	<b>0.000</b>
	Job Satisfaction and Workload	0.388	<b>0.000</b>
	Waste of Movement and Waste of Stock	0.003	0.957

H1a: As a result of regression analysis, it was determined that “Manager and Employee Attitude” and “Job Satisfaction and Workload” dimensions affect the “Physical Characteristics of Service Quality” dimension ( $p < 0.05$ ); while the “Motion Waste and Inventory Waste” dimension of lean management did not affect it ( $p > 0.05$ ). In this context, the relevant variables in Table 4 were placed in the regression equation “ $Y = \beta_0 + \beta_1 X_1 X_2$ ,” and as a result, the equation “Physical Characteristics” =  $1.430 + 0.320$  “Manager and Employee Attitude” +  $0.388$ , “Job Satisfaction and Workload” was obtained. Upon examining the obtained equation, it is observed that when “Manager and Employee Attitude” increases by 1 unit, “Physical Characteristics of Service Quality” is positively affected by 0.320 units. Additionally, it was determined that when “Job



Satisfaction and Workload” increases by 1 unit, “Physical Characteristics” increases positively by 0.388 units.

### ***The Effect of Lean Management on Trust***

The results of regression analysis on the effect of lean management practices on employees' trust in the hospital are given in Table 5.

**Table 5.** Regression analysis table for the effect of lean management practices on employees' trust in the hospital

<b>Lean Management (Independent Variable)</b>	<b>Dimensions</b>	<b>Employees' "Trust" in the</b>	
		<b>β</b>	<b>P</b>
	Still	1.107	0.000
	Manager and Employee	0.417	<b>0.000</b>
	Job Satisfaction and Workload	0.332	<b>0.000</b>
	Waste of Movement and	0.045	0.254
Regression Model Significance (Sig.)=0.000			

H1b: As a result of the regression analysis, it was determined that lean management affects the “Trust” dimension of the employees towards the hospital ( $p < 0.05$ ), while it does not affect the “Movement Waste and Stock Waste” dimension ( $p > 0.05$ ). In this context, the relevant variables in Table 5 were placed in the regression equation “ $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2$ ” and as a result; when the regression equation for “Trust” of the employees towards the hospital =  $1.107 + 0.417$  “Manager and Employee Attitude” +  $0.332$  “Job Satisfaction and Workload” is analysed, it is found that a 1-unit increase in “Manager and Employee Attitude” increases the “Trust” of the employees towards the hospital by 0.417 units; furthermore, it was determined that a 1-unit increase in “Job Satisfaction and Workload” increases employees' “Trust” in the hospital by 0.332 units in a positive direction.

### ***The Effect of Lean Management Practices on Responsiveness to Service Demands***

The results of regression analysis on the effect of lean management practices on responsiveness to service requests are given in Table 6.

**Table 6.** Regression analysis table for the effect of lean management practices on responsiveness to service requests

Lean Management (Independent Variable)	Dimensions	“Responsiveness to Service	
		$\beta$	P
	Still	2.546	0.000
	Manager and Employee	-0.056	0.236
	Job Satisfaction and	0.111	<b>0.018</b>
	Waste of Movement and	0.085	<b>0.015</b>
Regression Model Significance (Sig.)=0.000			

H1c: As a result of the regression analysis, it was determined that the dimensions of “Job Satisfaction and Workload” and “Movement Waste and Stock Waste” affect the dimension of “Responding to Service Demands” ( $p < 0.05$ ), whereas they do not affect the dimension of “Managerial and Employee Attitude” ( $p > 0.05$ ). In this context, the relevant variables in Table 6 were placed in the regression equation “ $Y = \beta_0 + \beta_1 X_1 X_2$ ” and as a result, it was determined that a 1-unit increase in “Job Satisfaction and Workload” positively increases the “Responding to Service Demands” dimension by 0.111 units, and a 1-unit increase in “Movement Waste and Stock Waste” positively increases the “Responding to Service Demands” dimension by 0.085 units.

### ***The Effect of Lean Management Practices on Employee Reliability***

The results of regression analysis on the effect of lean management practices on employee reliability is given in Table 7.

**Table 7.** Regression analysis table for the effect of lean management practices on employee reliability

Lean Management (Independent Variable)		Reliability	
		$\beta$	P
	Still	1.891	0.000
	Manager and Employee Attitude	0.164	<b>0.004</b>
	Job Satisfaction and Workload	0.365	<b>0.000</b>
	Waste of Movement and Waste of Stock	0.012	0.779
Regression Model Significance (Sig.)=0.000			

H1d: As a result of the regression analysis, it was determined that “Manager and Employee Attitude” and “Job Satisfaction and Workload” dimensions affect employee reliability ( $p < 0.05$ ), whereas “Movement Waste and Inventory Waste” dimensions do not ( $p > 0.05$ ). In this context, the relevant variables in Table 7 were placed in the regression equation “ $Y = \beta_0 + \beta_1 X_1 X_2$ ” and as a result; “Employee Reliability” =  $1.891 + 0.164$  Manager and Employee Attitude +  $0.365$  When “Job Satisfaction and Workload” was analysed, it was seen that a 1-unit increase in “Manager and Employee Attitude” increased “Employee Reliability” by 0.164 units. In addition, it was determined

that a 1-unit increase in “Job Satisfaction and Workload” increases “Employee Reliability” by 0.365 units in a positive direction.

### ***The Effect of Lean Management Approach on Establishing Empathy for Service Quality***

The results of regression analysis on the effect of the lean management approach on empathy is given in Table 8.

**Table 8.** Regression analysis table for the effect of lean management approach on empathy

Lean Management  (Independent Variable)	Dimensions	Empathy with Employees	
		$\beta$	P
	Still	3.452	0.000
	“Manager and Employee	-0.194	<b>0.021</b>
	“Job Satisfaction and	-0.156	<b>0.047</b>
	“Waste of Movement and	0.033	0.593
Regression Model Significance (Sig.) = 0.000			
Explanation Percentage (r) = 0.369			

H1e: As a result of the regression analysis, it was determined that the dimensions of “Manager and Employee Attitude” and “Job Satisfaction and Workload” affect the dimension of “Empathising with Employees” ( $p < 0.05$ ), whereas they do not affect the dimension of “Waste of Movement and Waste of Inventory” from the lean management dimensions ( $p > 0.05$ ). In this context, the relevant variables in Table 8 were placed in the regression equation “ $Y = \beta_0 + \beta_1 X_1 X_2$ ” and as a result, “Empathy” =  $3.452 - 0.194$  “Manager and Employee Attitude”  $- 0.156$ . When “Job Satisfaction and Workload” was examined, it was observed that a 1-unit increase in “Manager and Employee Attitude” would decrease “Empathy with Employees” by  $-0.194$  units (negative). In addition, it was determined that a 1-unit increase in “Job Satisfaction and Workload” would decrease “Empathy with Employees” by  $-0.156$  units (negative).

**Table 9.** Summary table of regression analysis on hypotheses

		Lean Management		
		“Manager and Employee Attitude”	“Job Satisfaction and Workload”	“Waste of Movement and Waste of Stock”
<b>Service Quality (Dependent Variable)</b>	“Physical Properties”	The relationship is statistically significant.	The relationship is statistically significant.	The relationship is not statistically significant.
	"Trust"	The relationship is statistically significant.	The relationship is statistically significant.	The relationship is not statistically significant.
	“Reality”/”Responsiveness to Service Requests”	The relationship is not statistically significant.	The relationship is statistically significant.	The relationship is statistically significant.
	Reliability	The relationship is statistically significant.	The relationship is statistically significant.	The relationship is not statistically significant.
	"Empathy"	The relationship is statistically significant.	The relationship is statistically significant.	The relationship is not statistically significant.

Collective results regarding the evaluation of hypotheses determined for lean management approach dimensions and service quality dimensions are included. In this context, it has been determined that service quality dimensions have a statistically significant effect on the lean management dimensions of “Manager and Employee Attitude” and “Job Satisfaction and Workload”.

## Discussion

In this study, the discussions, results, and suggestions regarding the evaluation of the quality of health services provided in hospitals by service providers are listed below:

As a result of the regression analysis conducted in this study, it was determined that within the scope of lean management practices, the service quality of hospitals has an effect on the physical characteristics in terms of manager and employee understanding, professional satisfaction, and workload. Panning stated that by implementing lean management in businesses, a 50% decrease in the time it took to complete the work was achieved, productivity increased by more than 40%, costs decreased by 31% and the number of errors was reduced to a minimum<sup>24</sup>.

Following the analysis of this study, it was determined that lean management practices in hospitals contributed to the increase in employees' trust in the hospital. In the research of Ballé and Régnier (2007), it was emphasized that lean management practices increased the trust of patients in health institutions, eliminated problems in the

workflow, and increased efficiency<sup>25</sup>. Also, in the research conducted by Çankaya in the health sector, it was determined that there is a weak and positive relationship between organizational trust and the quality of the services provided<sup>26</sup>.

As a result of the analysis conducted for this study, it was determined that lean management practices provide professional satisfaction, reduce workload, prevent movement waste and stock waste, are sufficient to respond to service requests, prevent waste, and employees are satisfied with their work. Aytaç stated that waste sources and bottlenecks were identified, appointment systems were created, and service quality was increased<sup>27</sup>.

As a result of the analysis conducted for this study, it was determined that the hospitals were sufficient in terms of lean management practices; manager attitude, employee attitude, professional satisfaction and workload. In the same direction, Gersil and Güven stated that the constant communication between the management and the employees increases the knowledge, respect, trust, ability, and helpfulness behaviors of the staff<sup>28</sup>.

In this study, it was determined that it is easier to establish “Empathy” with employees when flexibility is provided in the performance of tasks within the scope of lean management practices. In the same direction, in their research, Avcil and Özkan stated that the success of the hospital management in empathizing with the staff increased staff satisfaction, positively affected the quality of the services, and contributed to the work being carried out in a better organizational climate<sup>29</sup>.

## Conclusion and Recommendation

Suggestions regarding the effects of the lean management approach on the service quality of enterprises can be listed as follows:

- ✓ Adapting new technologies to business activities in healthcare institutions and increasing expert staff members increases the productivity and motivation of employees.
- ✓ In lean management practices, managers' good communication and empathy towards employees increase employees' job satisfaction and their trust in the hospital.
- ✓ In order to improve the attitudes of managers and employees in dental hospitals, increase the quality of service, and increase professional satisfaction, the working climate, physical conditions, and wages of the staff should be improved, and psychological support should be provided.
- ✓ In dental hospitals, job descriptions should be made appropriate to the abilities of each employee, and the workload should be planned according to the number of patients.
- ✓ Meal hours and staff rest hours in dental hospitals should not be disrupted except in emergencies.
- ✓ Emergency patient requests must be responded to in a timely manner, and rapid solutions must be created for possible complaints.
- ✓ New technologies in dentistry should be followed, and continuous training should be provided to use digital technologies to their full potential.

- ✓ Due to the high number of patients waiting for service, healthcare professionals should be the first to greet patients and be sensitive about the importance of their complaints, and employees should be in solidarity in cases of excessive workload.

## REFERENCES

1. Uzunal B, Uydacı M. Sağlık kurumlarında ağızdan ağıza pazarlama ve bir pilot çalışma. *Öneri Dergisi*. 2012;9(34):87-95. doi: 10.14783/od.v9i34.1012000232.
2. Acar S. Yalın yönetimin sağlık sektörü uygulamalarına ilişkin örnekler ve literatür incelemesi. *Bingöl Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 2023;13(26):241-263.
3. Narayanamurthy G, Gurumurthy A, Subramanian N, Moser R. Assessing the readiness to implement lean in healthcare institutions—A case study. *International Journal of Production Economics*. 2018;197:123-142. doi: 10.1016/j.ijpe.2017.12.028.
4. Kumar N, Hasan SS, Srivastava K, Akhtar R, Yadav RK, Choubey VK. Lean manufacturing techniques and their implementation: A review. *Materials Today: Proceedings*. 2022;(64):1-5. doi: 10.1016/j.matpr.2022.03.481.
5. Levy DL. Lean Production in an International Supply Chain. Boston, MA: CiteSeerX;1997:94-102.
6. Çil İ, Yalçın S. Yalın üretimin bankacılık sektörüne uyarlanması ve bir benzetim çalışması. *Sakarya University Journal of Science*. 2018;22(2):622-636.
7. Costa LBM, Filho MG, Rentes AF, Bertani TM, Mardegan R. Lean healthcare in developing countries: Evidence from Brazilian hospitals. *The International Journal of Health Planning And Management*. 2017;32(1):1-22. doi: 10.1002/hpm.2331.
8. Found P, Harrison R. Understanding the lean voice of the customer. *International Journal of Lean Six Sigma*. 2012;3(3):251-267. doi: 10.1108/20401461211282736.
9. Ulhassan W, Sandahl C, Westerlund H, et al. Antecedents and characteristics of lean thinking implementation in a Swedish hospital: A case study. *Quality Management in Healthcare*. 2013;22(1):48-61. doi: 10.1097/QMH.0b013e31827dec5a.
10. NHS Institute for Innovation and Improvement. Going lean in the NHS. NHS Institute for Innovation and Improvement. <https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/Going-Lean-in-the-NHS.pdf>. Published 2027. Accessed April 22, 2025.
11. Türkön BF, Toraman A. Sağlık kurumlarında yalın yönetim: Bursa ilinde bir uygulama örneği. *Verimlilik Dergisi*. 2023;57(1):211-238. doi: 10.51551/verimlilik.1120145.



12. Özer Ö, Özkan O, Özmen S. Yalın yönetim ve örgütsel güvene yönelik algının örgütsel özdeşleşmeye etkisi: Özel bir hastanede araştırma. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*. 2021;24(1):92-100. doi:10.29249/selcuksbmyd.875299.
13. Fu S, Wu XG, Zhang L, Wu LF, Luo ZM, Hu QL. Service quality improvement of outpatient blood collection by lean management. *Patient Preference and Adherence*. 2021;(15):1537-1543. doi: 10.2147/PPA.S320163.
14. Scott ME. Identifying barriers to organizational identification among low-status, remote healthcareworkers. *Communication Studies*. 2020;71(4):685-698.
15. González VA, Sacks R, Pavez I, Poshdar M, Alon LB, Priven V. Interplay of lean thinking and social dynamics in construction. In: Proceedings of the 23rd Annual Conference of the International Group for Lean Construction; 2015; Perth, Australia:681-690.
16. Akmal A, Foote J. Podgorodnichenko N, Greatbanks R, Gauld R. Understanding resistance in lean implementation in healthcare environments: An institutional logics perspective. *Production Planning & Control*. 2022;33(4):1-15.
17. Sari EN, Arso SP, Jati SP. Systematic review: Application of lean management in improving service efficiency in hospitals in Indonesia. *Indonesian Journal of Multidisciplinary Science*. 2023;3(2):96-101. doi: 10.55324/ijoms.v3i2.679.
18. Rosady DS, Lazuardi L, Sastrowijoto S. Telekonsultasi klinis: Etika, discipline, dan hukum kedokteran. *Jurnal Hukum Kesehatan Indonesia*. 2022;2(01):1-23.
19. Yazıcıoğlu Y, Erdoğan S. SPSS Uygulamalı Bilimsel Araştırma Yöntemleri. Ankara: Detay Yayıncılık; 2004.
20. Vidal M. Lean production, worker empowerment, and job satisfaction: A qualitative analysis andcritique. *CriticalSociology*. 2007;33(1-2):247-278.
21. Derin N. Çalışanların Algılamalarına Göre, Yalın Yönetimin İç İmaja Etkisi: Türkiye'deki Özel Hastanelerde Bir Araştırma. [doktora tezi]. Malatya, Türkiye: İnönü Üniversitesi Sosyal Bilimler Enstitüsü; 2008.
22. Lu X, Liu M. Adapting the SERVQUAL scale to China hospital services. In: Proceedings of the 2000 IEEE International Conference on Management of Innovation and Technology (ICMIT 2000): Management in the 21st Century. Vol 1. Piscataway, NJ: IEEE; 2000:203-208. doi: 10.1109/ICMIT.2000.917326.
23. Beydoğan GŞ. Kalyoncuoğlu. S. Fizik Tedavi ve Rehabilitasyon Hizmeti Alan Hastaların Kalite Algılarının Memnuniyetleri Üzerindeki Etkisi: Kırşehir İlinde Bir Araştırma. [yüksek lisans tezi]. Ankara, Türkiye: Gazi Üniversitesi Sosyal Bilimler Enstitüsü; 2017.
24. Panning R. Using data to make decisions and drive results: A lean implementation strategy. *Clin Leadersh Manag Rev*. 2005;19(2):E4.
25. Ballé M, Régnier A. Lean as a learning system in a hospital ward. *Leadership in Health Services*. 2007;20(1):33-41. doi: 10.1108/17511870710721471.

26. Çankaya M. Örgütsel güvenin örgütsel özdeşleşme üzerindeki etkisi: Sağlık sektöründe bir uygulama. *Akademik Sosyal Araştırmalar Dergisi*. 2020;8(107):185-204.
27. Aytaç Z. Hastanelerde Yalın Yönetim Sistemleri. [doktora tezi]. İstanbul, Türkiye: İstanbul Teknik Üniversitesi Fen Bilimleri Enstitüsü; 2009.
28. Gerşil M, Güven H. Üniversitelerde hizmet kalitesinin servqual analizi ile ölçülmesi: Celal Bayar Üniversite'nde bir uygulama. *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Dergisi*. 2018;11(1):111-125. doi: 10.25287/ohuiibf.310015.
29. Avcıl S, Özkan T. İstanbul'daki JCI akreditasyonuna sahip özel hastanelerin hizmet kalitesi. *Yönetim Bilimleri Dergisi*. 2020;18(36):309-338. doi: 10.35408/comuybd.5822677.