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ORIGINAL ARTICLE / ARAŞTIRMA YAZISI

Health Institutions Management / Sağlık Kurumları Yönetimi

Applicability of Balanced Scorecard in Private and Public Hospitals: A Comperative Analysis

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ABSTRACT

Purpose: The aim of this article is to present research findings on the applicability of the Balanced Scorecard in private and public hospitals based on a survey conducted among managers and to provide recommendations based on the results obtained.

Methods: As part of the study, interviews were conducted with managers from private and public hospitals in Yalova, Istanbul University Cerrahpaşa Medical Faculty, and Medipol Mega Hospital. The Balanced Scorecard Infrastructure Suitability Survey was administered to 165 managers. Data collected from the surveys were analyzed.

Results: The analysis of the data revealed findings on the scores obtained by private and public hospital groups, as well as private and public university hospitals, regarding the measurement frequency of the four dimensions of the Balanced Scorecard.

Conclusion: The study concluded that private hospitals have a more favorable approach to the applicability of the Balanced Scorecard compared to public hospitals. Additionally, managers of public university hospitals were found to be more aware of performance measurement than managers of other public hospitals. It was also concluded that public hospitals should consider the practices in private hospitals regarding performance measurement.

Keywords: Hospitals, Administration, Employee Performance

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ÖZET

Amaç: Bu makalede, Balanced Scorecard'ın özel ve kamuya ait hastaneler özelinde uygulanabilirliğe dair yöneticiler nezdinde yapılan bir anket çalışması ile birlikte araştırma bulgularına ulaşılması ve elde edilen sonuçlar doğrultusunda önerilerin sunulması amaçlanmıştır.

Yöntem: Çalışma kapsamında Yalova'daki özel ve kamu hastaneleri, İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi ve Medipol Mega Hastanesi yöneticileri ile görüşüldü ve 165 yöneticiye Dengeli Puan Kartı Altyapı Uygunluk Anketi uygulanmıştır. Anketlerden toplanan veriler analiz edilmiştir.

Bulgular: Analiz edilen veriler sonucu özel ve kamuya ait hastaneler grubu ile özel ve kamuya ait üniversite hastanelerinin Balanced Scorecard'ın 4 boyutuna ait ölçütlerin ölçüm sıklığı düzeylerinden aldıkları puanlara yönelik bulgulara ulaşılmıştır.

Sonuç: Çalışma sonucunda, Özel hastanelerin Balanced Scorecard'ın uygulanabilirliği konusunda Kamu hastanelerine nazaran daha uygun bir yaklaşım içinde oldukları, yine Kamu üniversite hastaneleri yöneticilerinin kamu hastanesi yöneticilerine kıyasla daha bilinçli oldukları, kamu hastanelerinin performans ölçümü konusunda özel hastanelerdeki uygulamaları dikkate alması gerektiği sonucuna ulaşılmıştır.

Anahtar kelimeler: Hastaneler, Yönetim, Çalışan Performansı

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The World Health Organization's strategy for evaluating health system performance begins with addressing a simple question: "What are health systems for?" The clear answer to this question is that health systems exist to enhance and sustain the health of the population. The World Health Report 2000 defines health systems as comprising all organizations, institutions, and resources aimed at improving health. The new strategy used by the WHO to evaluate health system performance has three main objectives: to enhance health, to ensure equity in competency and financing (1).

Contributing to the literature of healthcare management, Foss and Fine argue that hospitals have social responsibilities in promoting public health within their communities. They assert that understanding the community's health status is crucial for healthcare managers and institutions in the 21st century to be successful in planning, organizing, and delivering services to the community. Apart from engaging in public health, another significant activity hospitals should undertake is conducting institutional performance evaluations and implementing new approaches and tools such as the Balanced Scorecard (2).

The Balanced Scorecard is a systematic process aimed at setting goals aligned with the organization's vision and strategies, establishing balanced performance indicators/measures, evaluating performance, and thereby enabling the organization to achieve its long and short-term strategic goals (3). The objectives and measures in the Balanced Scorecard are not merely a collection of financial and non-financial measures serving a single function. These objectives and measures are derived from a detailed examination of the company's or department's mission and strategy (4). A well-prepared Balanced Scorecard reflects the organizational vision, facilitates its communication and better understanding, and provides a quick and comprehensive presentation of whether the organization is functioning effectively (5).

In the Balanced Scorecard, objectives and measures are determined considering the organization's vision and strategies. Business performance is evaluated in four different dimensions with the objectives and measures in the Balanced Scorecard (3). Thus, the Balanced Scorecard enables businesses to answer four fundamental questions:

• How do our customers perceive us? (customer dimension)

• In which areas should we excel? (operational dimension)

• Can we continue to improve and create value? (learning and growth dimension)

• How do we appear to our shareholders? (financial dimension) (6).

According to Kaplan and Norton, these four dimensions should not be seen as a ready-made jacket but rather as a mold or template. There is no mathematical theory that dictates that all four dimensions are necessary and sufficient. Some businesses may only use two or three of these dimensions, while others may add one or more dimensions depending on the conditions of the industry in which they operate and the company's strategy (7).

The Balanced Scorecard is a new management practice for healthcare organizations and hospitals in our country. Our study focuses on the readiness of healthcare organizations and hospitals in our country for Balanced Scorecard, based on their current practices and management understanding, with a mutual analysis focusing on both public and private sector hospitals. There are significant structural, strategic, and organizational differences between private and public hospitals in Turkey. With its findings, the study provides a new perspective on these differences through the Balanced Scorecard framework. The research aims to determine the applicability of the Balanced Scorecard in hospitals by examining the perceptions of managers in private and public hospitals in Yalova and two university hospitals in Istanbul, along

with assessing how ready hospitals are for the Balanced Scorecard with their current practices.

Materials and Methods

Sample Selection: This study was conducted with the ethical approval of the Istanbul University Cerrahpaşa Faculty of Medicine Clinical Research Ethics Committee, decision number 83045809/604.01/02-279751. As the sample for the study, a private and a public hospital in Yalova, and two university hospitals in Istanbul, one private and one public, were selected. The rationale for choosing one private and one public university hospital in Istanbul using stratified sampling is the absence of private or public university hospitals in Yalova, the existence of large-scale private and public university hospitals only in major cities like Istanbul in Turkey and the region, and Istanbul's leading role in the health economy. The reasons for selecting Cerrahpaşa Medical Faculty as the public university hospital in Istanbul are its affiliation with a long-established university like Istanbul University, its deep-rooted medical education, its highly specialized advanced health services, and its high bed capacity. On the other hand, the selection of Medipol Mega Hospital as the private university hospital was based on its comparable features with Cerrahpaşa Medical Faculty, such as its bed capacity, number of staff, and social security agreements, considering it is an appropriate private university hospital with four different branches (General, Cardiac Surgery, Oncology, and Dental Hospitals) at the start of the research.

Data Collection: The data used in the study were obtained from a survey conducted among managers of private and public hospitals in Yalova, Istanbul University Cerrahpaşa Faculty of Medicine and Medipol Mega Hospital, a private university hospital. Informed consent has been obtained from all participants prior to the study. The Balanced Scorecard Infrastructure Suitability Survey was used as the data collection tool in the research. The survey form was created based on the questionnaire prepared by Bardak and utilizing performance indicators used in the studies of Coşkun, Bekmezci, Kılınç et al. Kırgın, Chang et al., and Chen et al. (6,8,10,11,13). Criteria related to the four dimensions of the Balanced Scorecard (financial dimension, internal processes dimension, customer -patient and staff- dimension, and learning and growth dimension) are evaluated with a 5-point Likert scale (ranging from 1: Not Important at All to 5: Very Important, and from 1: Never Measured to 5: Always Measured). The validity and reliability of the survey have been demonstrated in previous studies (14, 15).

Statistical Analysis: The data obtained from the research were analyzed using the SPSS 17.0 program. The reliability (internal consistency) of the survey was measured with Cronbach's Alpha coefficient. Qualitative variables in the study are presented as percentages, while quantitative variables are shown as means with standard deviations. Descriptive statistics were used in the study, and the normal distribution of variables was checked with the Kolmogorov-Smirnov Normality test. Since the data did not show a normal distribution, non-parametric test,

Mann-Whitney U test were used to compare independent groups. The results were interpreted at a significance level of 5%.

Results

This section provides information about the hospitals participating in the research, including hospital classifications, the ages of private and public hospital group managers participating in the study, their educational backgrounds, managerial levels, job experiences, and the departments to which they are affiliated. Table 1 shows the distribution of managers according to their demographic characteristics.

Table 1: Distribution of Managers According to Demographic Characteristics				
Hospitals		**Frequency (n)**	**Ratio (%)**	
Cerrahpasa Medical Faculty Hospital		52	31,5	
Medipol Mega University Hospital		70	42,4	
Yalova Oral and Dental Health Center		6	3,6	
Yalova Çınarcık State Hospital		8	4,8	
Yalova State Hospital		22	13,3	
Yalova Private Atakent Hospital		4	2,4	
Yalova Private Uzmanlar Hospital		3	1,8	
Total		165	100,0	
Hospital Groups		**Frequency (n)**	**Ratio (%)**	
Cerrahpasa Medical Faculty Hospital		52	31,5	
Medipol Mega University Hospital		70	42,4	
Public Hospitals		36	21,8	
Private Hospitals		7	4,2	
Total		165	100,0	
Hospital Groups		**Frequency (n)**	**Ratio (%)**	
Public Hospitals Groups		88	53,3	
Private Hospitals Groups		77	46,7	
Total		165	100,0	
Educational Status	**Public**		**Private**	
	Frequency (n)	**Ratio (%)**	**Frequency (n)**	**Ratio (%)**
High School	1	1,1	3	3,9
Associate Degree	0	0	8	10,4
Bachelor's Degree	37	42,0	29	37,7
Postgraduate	23	26,1	20	26,0
Phd	16	18,2	9	11,7
Others	8	9,1	3	3,9
Empty	3	3,4	5	6,5
Total	88	100,0	77	100,0
Manager Level	**Public**		**Private**	
	Frequency (n)	**Ratio (%)**	**Frequency (n)**	**Ratio (%)**
Medium Level	63	71,6	75	97,4
High Level	23	26,1	2	2,6
Empty	2	2,3		
Total	88	100,0	77	100,0
Work Experience	**Public**		**Private**	
	Frequency (n)	**Ratio (%)**	**Frequency (n)**	**Ratio (%)**
0-5 year	4	4,5	29	37,7
6-15 years	29	33,0	24	31,2
16-25 years	34	38,6	10	13,0
26 years and above	14	15,9	4	5,2
Empty	7	8,0	10	13,0
Total	88	100,0	77	100,0
Affiliated Unit	**Public**		**Private**	
	Frequency (n)	**Ratio (%)**	**Frequency (n)**	**Ratio (%)**
Administrative Services	21	23,9	4	5,2
Operational Tasks	27	30,7	56	72,7
Nursing Services	31	35,2	17	22,1
Empty	9	10,2	0	0
Total	88	100,0	77	100,0
Age Range	**Public**		**Private**	
	Frequency (n)	**Ratio (%)**	**Frequency (n)**	**Ratio (%)**
20-30	10	11,4	39	50,6
31-40	23	26,1	21	27,3
41-55	36	40,9	9	11,7
Age Over 55	0	0	0	0
Total	88	100,0	77	100,0

When we look at the distribution of the managers according to their demographic characteristics, it is seen that the managers of Cerrahpaşa Medical Faculty Hospital, Medipol Mega University Hospital, Yalova Oral and Dental Health Center, Yalova Çınarcık State Hospital, Yalova State Hospital, Yalova Private Atakent Hospital and Yalova Private Uzmanlar Hospital participated in the study. Accordingly, a total of 165 managers, including 52 managers (31.5%) from Cerrahpaşa Medical Faculty Hospital, 70 managers (42.4%) from Medipol Mega University Hospital, 6 (3.6%) managers from Yalova Oral and Dental Health Center, 8 (4.8%) managers from Yalova Çınarcık State Hospital, 22 (13.3%) managers from Yalova State Hospital, 4 (2.4%) managers from Yalova Private Atakent Hospital, and 3 (1.8%) from Yalova Private Uzmanlar Hospital participated in the survey.

An survey was conducted for all the managers at Yalova Oral and Dental Health Polyclinic, Private Yalova Atakent Hospital, Private Yalova Uzmanlar Hospital, and Çınarcık State Hospital, as well as for almost all the managers at Yalova State Hospital, Cerrahpaşa Medical Faculty Hospital, and Private Medipol Mega University Hospital. Positions such as Hospital Manager, Chief Physician, Deputy Chief Physician, Director, Assistant Director, and Administrative Services Officer fall under the Administrative Services class, while positions like Quality, Human Resources, Finance, Patient Services, and Marketing Officers are categorized under the Operational Services class. Nursing Services Managers and Directors are categorized under the Nursing Services class.

In this part of the research, questions were directed to the managers of private and public hospital groups based on the measurement frequency levels of the four dimensions of the Balanced Scorecard, and their responses were compared across various variables. The performance criteria consist of 10 financial, 15 internal process, 10 customer, and 8 learning and growth dimensions, totaling 43 indicators. Each indicator was evaluated according to a 5-point Likert scale. The values of the criteria indicate that as they approach 5, they increase, and as they approach 1, they decrease. The comparison of the scores obtained from the measurement frequency levels of the financial dimension criteria belonging to the Public Hospitals and Private Hospitals Group and to the Private and Public University Hospitals is shown in Table 2.

Table 2: Comparison of the Scores Obtained from the Measurement Frequency Levels of the Financial Dimension Criteria of Public Hospitals, Private Hospitals Group, and Private and Public University Hospitals.

Measurement Frequency Level	**Public Hospitals Group (77)**		**Private Hospitals Group (88)**		**Test Values**
	X	SD	X	SD	p*
Profitability of Capital	2,86	1,391	3,79	1,268	0,002
Asset Turnover Ratio	2,81	1,276	3,45	1,389	0,022
Personel Expenses	3,02	1,268	3,96	1,026	0,001
Medical Supplies Expense	3,44	1,173	4,04	0,958	0,103
Direct Cost of Patient Care Services	3,32	1,170	4,04	0,855	0,035
Cost per Patient Day	3,35	1,223	4,08	0,891	0,009
Average Cost per Outpatient	3,35	1,213	4,13	0,914	0,010
Average Daily Cost of an Inpatient	3,36	1,215	4,18	0,884	0,007
Ratio of Total Expenses to Total Revenues	3,25	1,196	3,86	1,085	0,031
Ratio of Total Debt to Total Revenue	3,26	1,208	3,77	1,146	0,076
Measurement Frequency Level	**Public University Hospital**		**Private University Hospital**		**Test Values**
	X	SD	X	SD	p*
Profitability of Capital	2,58	1,363	3,84	1,268	0,000
Asset Turnover Ratio	2,67	1,184	3,46	1,410	0,001
Personel Expenses	2,81	1,189	3,97	0,985	0,000
Medical Supplies Expense	3,31	1,164	4,04	0,915	0,024
Direct Cost of Patient Care Services	3,33	1,024	4,09	0,818	0,028
Cost per Patient Day	3,37	1,048	4,09	0,836	0,009
Average Cost per Outpatient	3,40	1,107	4,14	0,862	0,024
Average Daily Cost of an Inpatient	3,44	1,127	4,20	0,827	0,010
Ratio of Total Expenses to Total Revenues	3,12	1,215	3,91	1,060	0,001
Ratio of Total Debt to Total Revenue	3,17	1,232	3,91	1,018	0,001

*X=Mean SD= Standart deviation *Mann-Whitney U*

When looking at the frequency scoring related to the financial aspect by the managers of public hospital groups and private hospital groups, it is observed that the managers of the private hospital group received higher scores in all criteria. In the evaluations of frequency measurement related to the financial aspect in the private hospital group, the highest scores were observed for the criteria "Average Daily Cost per Inpatient," "Average Cost per Outpatient," and "Cost per Patient Day." In contrast, in the public hospitals group, the criteria "Medical Supply Expenses," "Average Daily Cost per Inpatient," "Cost per Patient Day," and "Average Cost per Outpatient" received the highest scores. Notably, criteria such as "Return on Equity" and "Asset Turnover" which are considered much more vital for the private sector, received higher scores in managerial evaluation compared to public hospitals, and it is seen that the difference in criteria like "Return on Equity" (Z=1.833 p=0.002) and "Asset Turnover" (Z=1.505 p=0.022) is statistically significant.

When comparing the frequency scoring related to the financial aspect by the managers of public hospital groups and private hospital groups, statistically significant differences were found in the criteria: "Personnel Expenses" (Z=1.978 p=0.001), "Direct Cost of Patient Care" (Z=1.421 p=0.035), "Cost per Patient Day" (Z=1.650 p=0.009), "Average Cost per Outpatient" (Z=1.627 p=0.010), "Average Daily Cost per Inpatient" (Z=1.685 p=0.007), and "Ratio of Total Expenses to Total Revenue" (Z=1.446 p=0.031).

When examining the frequency scoring related to the financial aspect for the managers of private and public university hospitals, statistically significant differences were found in all criteria. Accordingly, for "Return on Equity" (Z=2.140 p=0.000), "Asset Turnover" (Z=1.902 p=0.001), "Personnel Expenses" (Z=2.483 p=0.000), "Medical Supply Expenses" (Z=1.489 p=0.024), "Direct Cost of Patient Care" (Z=1.463 p=0.028), "Cost per Patient Day" (Z=1.647 p=0.009), "Average Cost per Outpatient" (Z=1.489 p=0.024), "Average Daily Cost per Inpatient" (Z=1.633 p=0.010), "Ratio of Total Expenses to Total Revenue" (Z=1.927 p=0.001), and "Ratio of Total Debt to Total Revenue" (Z=1.900 p=0.001), statistically significant differences were detected among the groups.

The comparison of the scores obtained from the frequency level of measurement criteria concerning internal processes for public hospitals, private hospitals, and private and public university hospitals is shown in Table 3.

When examining the scores for the internal process dimension criteria based on measurement frequency levels for private and public hospitals, it is observed that the following criteria received higher scores in the private hospital group and lower scores in the public hospital group, with the differences being statistically significant: "Readmission rate" (Z=2.089, p=0.000), "Postoperative length of stay" (Z=2.253, p=0.000), "Average number of surgeries per day per surgeon" (Z=1.665, p=0.008), "Cesarean section rate" (Z=1.488, p=0.024), "Waiting time for surgery date" (Z=1.685, p=0.007), "Bed occupancy rate" (Z=1.529, p=0.019), "Mortality rate" (Z=1.415, p=0.037), "Hospital infection rate" (Z=1.841, p=0.002), and finally "Annual malpractice and medical error count" (Z=1.997, p=0.001).

When comparing the internal process dimension criteria measurement frequency levels between private and public university hospitals, it is observed that the private university hospital scores higher on every measure compared to the public university hospital, with the differences being statistically significant.

Table 4. also presents a comparison of the scores based on measurement frequency levels for patient and staff dimension criteria between private and public hospitals.

Table 3: Comparison of the Scores Obtained from the Measurement Frequency Level of the Criteria Related to the Internal Processes Dimension of Public Hospitals, Private Hospitals, and Private and Public University Hospitals

Measurement Frequency Level	Public Hospitals Group (77)		Private Hospitals Group (88)		Test Values
	X	SD	X	SD	p*
Readmission rate	2,89	1,360	3,88	1,154	0,000
Postoperative length of stay	3,10	1,251	4,16	0,784	0,000
The average number of surgeries per surgeon per day	3,19	1,221	4,03	0,794	0,008
Cesarean section rate	2,84	1,355	3,60	1,042	0,024
Number of outpatient clinic rooms / number of outpatient clinic doctors	3,11	1,179	3,66	1,034	0,120
Ameliyat tarihi için bekleme süresi	2,89	1,343	3,79	1,004	0,007
Waiting time for surgery date	3,51	1,114	4,04	0,715	0,114
Average length of stay	3,44	1,081	3,92	0,929	0,052
Bed occupancy rate	3,60	1,000	4,00	0,903	0,019
Annual number of outpatients per docto	3,07	1,211	3,68	1,006	0,120
Annual number of inpatients per doctor	2,97	1,254	3,60	1,079	0,093
Annual number of emergency patients per doctor	3,11	1,188	3,52	1,034	0,577
Mortality rate	3,14	1,205	3,78	0,868	0,037
Hospital infection rate	3,66	1,060	4,29	0,723	0,002
Annual number of malpractice and medical errors	2,89	1,272	3,83	0,938	0,001
Measurement Frequency Level	**Public University Hospital**		**Private University Hospital**		**Test Values**
	X	SD	X	SD	p*
Readmission rate	2,83	1,339	3,81	1,179	0,000
Postoperative length of stay	3,12	1,149	4,12	0,796	0,000
The average number of surgeries per surgeon per day	3,31	1,076	4,07	0,748	0,016
Cesarean section rate	2,65	1,327	3,61	1,054	0,003
Number of outpatient clinic rooms / number of outpatient clinic doctors	3,00	1,103	3,70	1,040	0,013
Waiting time for surgery date	2,90	1,272	3,83	0,963	0,008
Waiting time for surgery date	3,58	1,036	4,04	0,690	0,315
Average length of stay	3,60	0,891	3,89	0,956	0,231
Bed occupancy rate	3,79	0,723	4,00	0,901	0,131
Annual number of outpatients per docto	2,98	1,180	3,70	0,968	0,025
Annual number of inpatients per doctor	2,94	1,178	3,63	1,066	0,033
Annual number of emergency patients per doctor	2,96	1,120	3,54	1,017	0,044
Mortality rate	3,17	1,115	3,77	0,871	0,061
Hospital infection rate	3,92	0,788	4,27	0,741	0,081
Annual number of malpractice and medical errors	2,98	1,196	3,87	0,883	0,003

*X=Mean SD= Standart deviation *Mann-Whitney U*

Table 4: Comparison of Scores for Patient and Staff Dimension Criteria Based on Measurement Frequency Levels for Private and Public Hospitals Groups, and Private and Public University Hospitals

Measurement Frequency Level	Public Hospitals Group (77)		Private Hospitals Group (88)		Test Values
	X	SD	X	SD	p*
Inpatient satisfaction	3,40	1,109	4,38	0,632	0,000
Outpatient satisfaction	3,32	1,273	4,39	0,634	0,000
Emergency patient satisfaction	3,20	1,332	4,26	0,839	0,000
Patient complaint rate	3,61	1,217	4,36	0,647	0,007
Number of new patients	2,42	1,404	3,83	1,248	0,000
Nurses' average response time to patient calls	2,13	1,437	3,82	1,073	0,000
Patient satisfaction	3,65	1,062	4,32	0,658	0,004
Outpatient wait times	2,63	1,526	4,10	0,882	0,000
Staff satisfaction	2,59	1,283	3,17	1,271	0,139
Staff turnover rate	2,58	1,354	3,22	1,273	0,017
Measurement Frequency Level	**Public University Hospital**		**Private University Hospital**		**Test Values**
	X	SD	X	SD	p*
Inpatient satisfaction	3,21	0,936	4,39	0,647	0,000
Outpatient satisfaction	2,81	1,329	4,41	0,649	0,000
Emergency patient satisfaction	2,77	1,308	4,26	0,869	0,000
Patient complaint rate	3,21	1,319	4,36	0,664	0,000
Number of new patients	2,04	1,137	3,91	1,147	0,000
Nurses' average response time to patient calls	1,88	1,132	3,97	0,884	0,000
Patient satisfaction	3,44	1,110	4,33	0,675	0,000
Outpatient wait times	2,33	1,438	4,21	0,635	0,000
Staff satisfaction	2,19	1,067	3,13	1,273	0,008
Staff turnover rate	2,65	1,251	3,29	1,253	0,179

*X=Mean SD= Standart deviation *Mann-Whitney U*

When comparing the scores for patient and staff dimension criteria based on measurement frequency levels between private and public hospital groups, statistically significant differences were found in the following criteria: "Inpatient satisfaction" (Z=2.372, p=0.000), "Outpatient satisfaction" (Z=2.349, p=0.000), "Emergency patient satisfaction" (Z=2.181, p=0.000), "Patient complaint rate" (Z=1.673, p=0.007), "Number of new patients" (Z=2.960, p=0.000), "Nurses' average response time to patient calls" (Z=3.724, p=0.000), "Patient satisfaction" (Z=1.779, p=0.004), "Outpatient wait times" (Z=3.204, p=0.000), and "Staff turnover rate" (Z=1.540, p=0.017).

When comparing the scores for patient and staff dimension criteria based on measurement frequency levels between private and public university hospitals, statistically significant differences were found in the following criteria: "Inpatient satisfaction" (Z=2.774, p=0.000), "Outpatient satisfaction" (Z=2.565, p=0.000), "Emergency patient satisfaction" (Z=2.459, p=0.000), "Patient complaint rate" (Z=2.053, p=0.000), "Number of new patients" (Z=3.635, p=0.000), "Nurses' average response time to patient calls" (Z=4.025, p=0.000), "Patient satisfaction" (Z=2.314, p=0.000), "Outpatient wait times" (Z=3.680, p=0.000), and "Staff satisfaction" (Z=1.654, p=0.008).

Table 5. shows the comparison of scores for learning and development dimension criteria based on measurement frequency levels between private and public hospital groups.

Table 5: Comparison of Scores for Learning and Development Dimension Criteria Based on Measurement Frequency Levels Between Private and Public Hospitals, and Private and Public University Hospitals Groups

Measurement Frequency Level	Public Hospitals Group (77)		Private Hospitals Group (88)		Test Values
	X	SD	X	SD	p*
Employee in-service training costs	2,05	1,164	2,42	1,268	0,242
Medical research expenses	1,86	0,985	2,46	1,238	0,055
Number of academic publications per medical staff member per year	1,90	0,959	2,38	1,166	0,067
Number of staff attending annual congresses and conferences (sent by the hospital)	2,01	0,977	2,43	1,193	0,340
Annual investment in information technology systems	2,35	1,204	2,58	1,074	0,113
Number of quality improvement teams	2,35	1,029	2,78	1,138	0,196
Number of committees and commissions established within the hospital	2,22	1,011	2,62	1,095	0,079
In-service training expenses	1,94	0,975	2,67	1,148	0,001
Measurement Frequency Level	**Public University Hospital**		**Private University Hospital**		**Test Values**
	X	SD	X	SD	p*
Employee in-service training costs	2,00	0,929	2,52	1,279	0,297
Medical research expenses	2,04	0,839	2,58	1,230	0,136
Number of academic publications per medical staff member per year	2,13	0,817	2,52	1,133	0,515
Number of staff attending annual congresses and conferences (sent by the hospital)	2,23	0,807	2,57	1,169	0,297
Annual investment in information technology systems	2,52	1,196	2,62	1,086	0,980
Number of quality improvement teams	2,29	0,800	2,83	1,124	0,324
Number of committees and commissions established within the hospital	2,19	0,864	2,65	1,082	0,732
In-service training expenses	1,94	0,725	2,77	1,152	0,022

*X=Mean SD= Standart deviation *Mann-Whitney U*

When comparing the scores for learning and development dimension criteria based on measurement frequency levels between private and public hospital groups, it is observed that private hospitals received higher scores in the following criteria: "Employee in-service training expenses," "Medical research expenses," "Number of academic publications per medical staff member per year," "Number of staff attending annual congresses and conferences," "Annual investment in information technology systems," "Number of quality improvement teams," "Number of committees and commissions established within the hospital," and "In-service training expenses." However, statistically significant differences were found only in the "In-service training expenses" criterion (Z=1.913, p=0.001).

When comparing the scores for learning and development dimension criteria based on measurement frequency levels between private and public university hospitals, it is observed that the private university hospital received higher scores in the following criteria: "Employee in-service training expenses," "Medical research expenses," "Number of academic publications per medical staff member per year," "Number of staff attending annual congresses and conferences," "Annual investment in information technology systems," "Number of quality improvement teams," "Number of committees and commissions established within the hospital," and "In-service training expenses." However, statistically significant differences were found only in the "In-service training expenses" criterion (Z=1.501, p=0.022).

Conclusions

It has been concluded that managers in the private hospital group have adopted a more customer-focused service approach, with financial dimension criteria being relatively more emphasized in private hospitals. Managers of public university hospitals score higher than their counterparts in other public hospitals and demonstrate greater awareness in performance measurement. Additionally, private hospitals are found to have a more suitable approach to implementing the Balanced Scorecard in the internal process dimension compared to public hospitals.

It can be said that the reason for this is that private hospitals are more aligned with the performance criteria in the four dimensions of the Balanced Scorecard—financial, customer, internal processes, and learning and growth—compared to all public hospitals. Additionally, among public hospitals, public university hospitals have a longer-established history, a more autonomous structure and more experienced managers compared to public hospitals under the Ministry of Health.

In public hospitals, compared to private hospitals, insufficient measurements are made in the internal process dimension. It is believed that organizing human resources and patient services units in public hospitals to align with the dynamics found in private hospitals would yield more effective results. For this, public hospitals need to undergo a restructuring of their human resources and patient services units, similar to those found in almost all private hospitals. The administrative organization, which remains at the level of 'personnel units' in human resources and 'secretarial services' in patient services, should be reorganized toward a modern human resources and patient services structure.

Similar to the financial dimension, it has been concluded that managers of public university hospitals score higher in the internal process dimension compared to other public hospital managers and are more aware of performance measurement. Accordingly, it is understood that a more merit-based process should be implemented when selecting individuals for managerial positions in Ministry of Health hospitals, and the criteria, particularly regarding education and experience, should be reviewed.

In public hospitals, compared to private hospitals, insufficient measurements are made not only in the internal process dimension but also in the patient and staff dimensions. The measurements that are conducted are limited to specific units. This indicates a negative situation regarding the applicability of the Balanced Scorecard in the learning and development dimension for both hospital groups. While the applicability of the Balanced Scorecard in the learning and development dimension is negatively impacted in both university hospital groups, private university hospital managers score higher in this dimension compared to public hospital managers. However, considering the low average of scores, it has been concluded that both university hospital groups face unfavorable performance measurement conditions in the learning and development dimension regarding the applicability of the Balanced Scorecard. This result indicates that the performance of both public and private university hospital employees, particularly academic staff, does not adequately reflect the institution's mission. It also suggests that more investment is needed in enhancing employee performance, as well as in institutional infrastructure and technology.

It has been concluded that public university hospitals should consider the practices in private university hospitals, ensure coordination between public university hospitals and other public hospitals, and initiate pilot implementations in public university hospitals based on measurement results. The experiences gained from these pilot implementations should be transferred to other public hospitals.

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Conflict of Interest

None declared.

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