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STRATEGIC ELEMENT IN HEALTH, OPERATIONAL AND FINANCIAL PERFORMANCE ASSESSMENT: EXAMPLE OF SELCUK UNIVERSITY MEDICAL FACULTY HOSPITAL

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Abstract

Today, transferring resources to the health sector, distribution of transferred resources between health care services, use of resources and quality of provided services are very important in countries. When it became clear that the growing importance of strategic management and development of institutions are connected to provide improvements not only in a sub-unit but also in all sub-unit and in an integrated manner, researches carried out in hospitals reached holistic and administrative size. For a holistic assessment managers focused on the measurement of hospital performance.

In this study, we made the operational and financial data analysis of the Hospital of Selcuk University Faculty of Medicine that was established in 2001 and started it's activities in 2009. In this context, firstly some basic financial ratios were calculated by ratio analysis method based on the hospital's balance sheet. In the study second, medical statistics which described as operational data were analyzed. In addition some assessment and recommendations were made by comparing basic analysis results to overall Turkey. In this way, the hospital's current financial and operational performances have comparatively been evaluated.

Keywords: Performance Management in Health, Financial Performance, Ratio Analysis, Operational Performance

Introduction

With standing out of the strategic management and a service approach creating value, maximizing the value for the patients, i.e. the

studies in the direction of obtaining the best result with the lowest cost gain importance increasingly at the present days. These studies are adapted to the health sector in the form of setting the strategy and targets, revealing the existent potential, analyzing the stakeholders in the health sector, and calculating the concrete indicators such as

health sector, and calculating the concrete indicators such as effectiveness, profitability, and performance. The subject matter of this study, using the actual data of Selcuk University Medical Faculty Hospital, is to measure the actual performance of the hospital via ratio analysis and make some basic evaluations. It is considered that, this study, via assessing together the financial and operational data of a health business, may assist to the health managers in their preparing the managerial strategies on the future.

Theoretical framework: performance in health institutes and

Theoretical tramework: performance in nearth institutes and measurement of performance Health sector gained a competitive structure in the recent years. In this process, hospitals took serious actions, in order to reduce their costs, and to increase their performance compared to their competitors (Raju and Lonial, 2002). Due to the fact that hospitals are complex organizations using a number of resources in presenting the various medical treatment services, establishing performance management system in hospital is more difficult compared to the other industrial branches (Cher et al. 2012) (Chen et al. 2012).

With performance management system, it is aimed that to help the hospitals for making plan and coordinating about what to do, to provide feedback and feed-forward in time for the work they do and if

provide feedback and feed-forward in time for the work they do and if necessary to promote the corrective behaviors (Antony and Govindarajan, 2007; cited by Conrad and Uslu, 2012). More strict budgets and common restructuring applications led the expectations of many stakeholders such as patients, health employees, and taxpayers to rise. In this process, performance criteria became more concrete and restrictive. Today, hospitals are obliged to achieve several targets. These targets can basically be put in order as providing high clinic performance, increasing the effectiveness in restricted budgets, employing the qualified health staff, and attracting attention of patients (Minvielle et al., 2008). The targets can also be determined as presenting a better service in education and research, beside full treatment, care, and rehabilitation, in related to the traditional hospital function. (Tengilimoğlu and Toygar, 2013). Performance in health sector must be perceived as a multidimensional phenomenon. Financial perspective is only one of these

multidimensional phenomenon. Financial perspective is only one of these

dimensions. Performance should also be evaluated in the context of effectiveness, efficiency, and equality criteria. While the concept of effectiveness expresses to rehabilitate the patients via the presentation of medical care services and the concept of efficiency expresses the use of input in the scale to produce service with the minimum cost, the concept of equality states to provide an equitable health service among humans, to eliminate the distinctions in reaching the health (Begley et al., 2004).

- Potential areas, which can measure the performances in health services, can be defined as on the following (Metler and Rohner, 2009):
 Financial power of health services: income optimization, efficiency increase, waste and cost control, activity based costing
 - Health services operations: Common management and measurement, cooperation opportunities, rapidity and flexibility development, business capital, and asset management. •
 - Developing the health employees: experience measurement, liability analysis, precautions of learning and growing, innovation, knowledge, analysis of cultural and intangible values •

analysis, precautions of learning and growing, innovation, knowledge, analysis of cultural and intangible values
Patient service and satisfaction: patient experience, participation, happiness, measurement of liability and relationship,
Marketing of health services: branding, management of credibility and reliability, segmentation of patient –customer, patient profitability, and patient's survival value. When the different applications are examined, it is seen that the financial performance criteria among performance measurement areas, include the points such as hospitalization days of patient, business capital, and cost of patient care hours. Among the measures of patient satisfaction, the outputs of health care as well as care in department care in house, and support care services take place. In measuring the clinical applications due to acute myocardial infarction, complications, rate of one-day surgery, and application after hysterectomy are handled. As performance criteria showing the systemic integrity, the points such as clinical information technologies, clinical data collection, intensity of using information, continuity and coordination of health care services, the other services out of hospital, and cooperation ability with the other service presenter and agencies are evaluated (Aydın et al., 2007).
In public institutes, it is more difficult to define and measure the performance, because expectations of stakeholders are heterogeneous. Despite all of these difficulties, in hospitals, especially measuring financial performance and providing the sufficient capacity is important,

because financial capacity is a precondition for the care of patient (Macinatia and Pessinaa, 2014). With moving from this importance, in this study, calculated financial ratios which are related to Selcuk University Medical Faculty Hospital and operational data on hospital capacity were interpreted in integrated way.

Methodology

Methodology Study Method and Sample The universe of study consists of all hospitals taking place in Turkey. At the same time, Selcuk University Medical Faculty Hospital is the sample area of study. The data of Selcuk University Medical Faculty Hospital were basically examined by means of the method of ratio analysis. Method of ratio analysis, in literature, is a frequently preferred method to measure the financial performance. In this scope, data were subjected to analysis by calculating some financial, non-financial, and operational ratios. Selcuk University Medical Faculty Hospital is a hospital basically having the medical and administrative departments. In the hospital, health services are carried out with 10 scientific branches under Basic Medical Sciences, 19 scientific branches under Internal Medical Sciences, and 13 scientific branches under Surgical Medical Sciences. In addition, for

Sciences, 19 scientific branches under Internal Medical Sciences, and 13 scientific branches under Surgical Medical Sciences. In addition, for carrying out the health services provided in a way of problem-free and high quality, in hospital, 17 administrative units have been continuing their activities. Education Unit, Statistics Unit, and Public Relations Unit being in active in administrative part of hospital, with their activities, emphasize that presenting a high quality service and enabling this service to last with the continuous improvements are extremely important for the managers.

for the managers. The financial data of hospital are the ones obtained from accounting the records such as income-expenditure table. In this study, by using the data obtained from accounting records, 13 financial ratios were calculated such as Working Assets, Short Termed Foreign Resources, Current Rate, Acid Test Ratio, Cash Rate, Borrowing Rate, Financing Rate, Stock Turnover, Net Operating Capital (NOC) Turnover, Asset Turnover, Debt/Income Ratio, and Short Termed Foreign Resources Income Rate. On the other hand, operational data are the ones that will be qualified as input and output for hospitals. In this study, 9 medical statistical data such as Number of Bed In Hospital, Number of Outpatient, Number of Inpatient, Number of Surgery, Number of Discharged Patient, Number of Hospitalization Day, Average Hospitalization Time, Bed Occupancy Rate, and Bed Turnover were Analyzed.

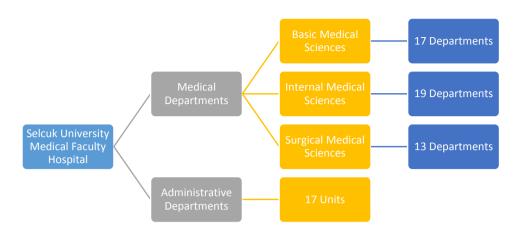


Figure 1: System Structure of Selcuk University Medical Faculty Hospital

Findings

Ratio Analysis and Its Results

According to the balance sheet and the income table of Selcuk University Medical Faculty Hospital, some financial ratios and calculated via ratio analysis, are shown in Table 1.

Financial Ratios	Formula	General Rare	S.U. Medical Faculty Hospital,		
		Kare	2012	2013	
DVt	$(DV_{t}-DV_{t-1}) / DV_{t-1}$		69%	-6,48%	
	<u>(KVYK_t-KVYK_{t-1})</u>		46%	45,10%	
KVYK _t	KVYK _{t-1}		4070	45,10%	
Current Rate	DV / KVYK	≥2	0,75	0,44	
Acid Test Ratio	(DV-Stocks) / KVYK	≥1	0,51	0,31	
Cash Rate (NİŞ)	(HD+MK) / KVYK	≥0,20	0,01	0,0002	
Borrowing Rate	ng Rate (KVYK+UVYK)		1,31	1,48	
(Leverage)	Asset	0,50-0,60	1,51	1,70	
Financing Rate	Equity / Debts	≥1	0	-0,24	
Stock Turnover	$\frac{Cost of Sales}{(Stock_{t-1}+Stock_t)/2}$		It cannot be calculated due to lack of data	10,65	
Receivable	<u>Net Sales</u>		2,75	5,99	
Turnover	Receivables		,	-	
NOC Turnover	<u>Net Sale</u>		2,75	-3,31	
rate	DV-KVYK				
Asset Turnover	Net Sale / Asset		3,63	4,12	
Rate of			33%	46%	
Debt/Income			2270		
KVYK/Income			39%	51%	
Rate					

Table 1: Ratio Analysis of S.U. Medical Faculty Hospital

According to Table 1, it is seen that the increase rate of working assets (cash + bank /+ receivable + stocks) of the year 2013 is decreased from the level of 69% to the level of -6,48% compared to the previous year. In spite of this, in the increase rate of short termed foreign resources, between the relevant years, from the level of 46% to the level of 45.10, a regression actualized. It can be expressed that this regression not arising from the commercial borrowing in working assets resulted from the decreasing remainder in the other accounts. When the delaying receivables in the middle term are considered, the realization of the share of hospital beds in the assets above the generally acceptable values as 1.48, will be able to also make effect in the negative direction on the ability to pay of the hospital its debts. The stock turnover's speed is becomes important in terms of that it indicates at what rapidity the business sold the service it produced. Also

indicates at what rapidity the business sold the service it produced. Also with NOC Turnover, in the sense of the ability of the most fundamental assets such as cash, stocks, and receivables to be able to return to the service sale (efficiency in some meaning), the consistent and valid evaluations based on the numbers can be made. The decrease of rate in 2013 shows that the hospital should be focused on the issues of net operating capital and incomes of service sale.

That receivable turnover rises from the level of 2.75, the rate of the previous rate, to the level of 5.99 in 2013 can be evaluated as positive from the point of collecting the receivables.

For being able to make the analysis of efficiency and profitability, it is also necessary to calculate a healthy asset value turnover. That asset value turnover turns out above 1, can be evaluated in such a way that the asset value tarnover tarns out above 1, can be evaluated in such a way that the assets are efficiently used. The augmentation of asset rate from 3.63 in 2012 to the level of 4.12 in 2013 gives the positive signals related to the ability to reflect the actives (assets = cash + receivable + stock) to the incomes of service sale, the studies should be continued for this rate to be as high as possible.

As seen in Table 1, the rate of debt/income (33%) ranged below the average of the year 2012 (42%). This rate actualized in 2013 at the level of 46%. (Above the average of the year 2012 of our country). In addition, for 2012, in ordering of the size of debt/income of university hospitals, S.U. Medical Faculty Hospital takes place the 24th order among 44 medical faculty hospitals.

Analysis of Operational Data and Its Turkey-Wide Comparison In Table 2, there are the operational data of S.U. Medical Faculty Hospital belonging to the years 2012 and 2013.

		edica	Jniver: l Facul pital		2012			2013				
Operational Data	201 2	20 13	201 4 ⁽ⁱ⁾	201 2- 201 3 Var iati on Rat es (%)	Over all Turk ey	Centr al Anato lia	Univer sity Hospit als	2011-2012 Turkey Variation Rate (%)	Over all Turk ey	Central Anatoli a	Uni ver sity Hos pita Is	2012-2013 Turkey Variation Rate (%)
Number of bed in the hospital	903	74 8	748	- 17, 17	200.0 72		35.150	2,86	202.0 31	2.521	36. 056	0,98
Number of Outpatient	415 .66 0	50 0.9 40	393 .81 3	20, 52								
Number of Inpatient	34. 023	39. 67 0	29. 315	16, 6	11.97 8.827	722.99 7	1.601.8 78	4,74	12.37 3.557	708.637	1.6 30. 464	3,30
Number of Surgery	19. 639	22. 89 2	16. 268	16, 56	4.410. 218		664.695	4,99	4.684. 237		715 .88 9	6,21
Number of Discharged Patient	33. 901	39. 39 0	28. 773	16, 19								
Number of Hospitalizat ion Day	156 .48 8	16 5.0 05	121 .71 7	5,4 4	47.51 0.099	1.527. 220	9.846.3 41	5,57	48.67 9.990	1.518.78 4	9.7 53. 138	2,46
Average Hospitalizat ion Time	6,7 1	6,0 3	5,9 8	- 10, 13	4	4,1	6,1	2,56	3,9	3,6	6	-2,50
Bed Occupancy Rate ⁽ⁱⁱ⁾	47, 48	60, 43	90, 4	27, 27	65,1	60,8	76,7	-0,76	66	63,3	74, 1	1,38
Bed Turnover (Patient) ⁽ⁱⁱⁱ⁾	37, 68	53, 03	39, 19	40, 74	59,9	54,7	45,6	-1,48	61,2	66,2	45, 2	2,17

Table 2: Operational Data of S.U. Medical Faculty Hospital

(i) The data of the year 2014 is the data belonging its first 9 month (January -September)

(ii) The bed occupancy rate was calculated by the formula of Bed Occupancy Rate=(Number of hospitalized day*100) / (365*Number of Bed)

(iii) Bed turnover was calculated by the formula of Bed Turnover=Number of Inpatient / Number of Bed

According to Table 2,

- between the years 2012-2013, the increase rate of inpatient • actualized at the level 20.52%;
- between the years 2012-2013, the increase rate of outpatient, at • the level 16.60;
- between the years 2012-2013, the increase rate of number of • surgery, at the level of 16.56%;
- between the years 2012-2013, the increase rate of number of • discharged patient at the level of 16.19%;

- between the years 2012-2013, the increase rate of number of hospitalization day, at the level of 5.44%;
- between the years 2012-2013, the increase rate of bed occupancy rate, at the level of 27.27%;
- between the years 2012-2013, the increase rate of bed turnovers, at the level of 40.74%;
- between the years 2012-2013, the decrease rate of bed number in hospital, at the level of 17.17%; and
- between the years 2012-2013, the decrease rate of average hospitalization time, at the level of 10.13 %.

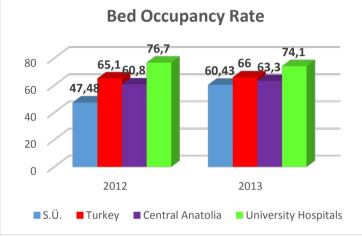


Figure 2: Bed Occupancy Rates of Hospital

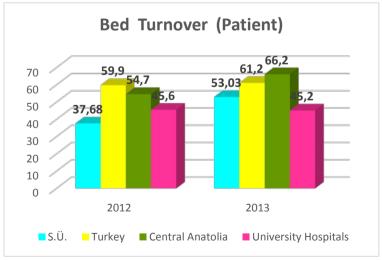


Figure 3: Bed Turnover of Hospital

Provided that the operational data of S.U. Medical Faculty Hospital in Table 2, Figure 2, and Figure 3 and their Turkey averages are comparatively examined, the following results are reached;

- In the recent years, in S.U. Medical Faculty Hospitals, the variation rate of number of inpatient and the variation rate of number of total surgery are higher than the average of universities in overall Turkey. This, in respect with these years, can be the indicator of that the prefer ability of the hospital about inpatient treatment increases . In addition, in Turkey-wide university hospitals, while the variation rate of inpatient decreases, in Selcuk University, this rate increases.
- Average hospitalization time of S.U. Medical Faculty Hospital is higher than Turkey-wide and average of university hospitals. But, in specific to hospital, in respect with the years, for inpatients, decrease of average hospitalization time can be an indicator of the shortness of treatment times, and improvement of treatment possibilities and treatment quality.
- Bed Occupancy Rates of S.U. Medical Faculty Hospital are lower than the average of Turkey University Hospitals and that of Central Anatolian Hospitals.
- Bed Turnover of S.U. Medical Faculty Hospital are lower than the average of Turkey, University Hospitals and Central Anatolian Hospitals

	20 12	20 13	201 4**	2013 Verti cal Anal ysis (%)	2014 Verti cal Anal ysis (%)	2012-2013 Variation Rates (%)	2013-2014 Variation Rates (%)
Prof.	37	45	48	12,36	12,60	21,62	6,67
Assoc. Dr.	26	37	39	10,16	10,24	42,31	5,41
Asst. Prof. Dr.	58	54	55	14,84	14,44	-6,90	1,85
Specialist	7	17	22	4,67	5,77	142,86	29,41
Research Asst.	17 3	21 1	217	57,97	56,96	21,97	2,84
Total	30 1	36 4	381	100	100	Jorsity Hospitals. Num	bor of specialist: 13

Table 3: Data of Academic Staff Number on S.U. Medical Faculty Hospital*

*For the year 2012, Health Ministry University Hospitals;: Number of specialist: 13, 544; Number of General Practitioner : 215; Number of Asst. Physician: 13,238 and for 2013, University Hospitals: Number of Specialist: 14,.911; Number of General Practitioner :222; Number of Asst. Physician: 13,179 **The data of Year 2014 are the data belonging to the first nine month of the year Table 3 includes the data analysis, regarding the numbers of academic staff of S.U. Medical Faculty Hospital. There is a balanced rate according to the results of analysis, in the distribution of academic member of the hospital. In addition, as can be seen from the results of commercial analysis, it can be said that the hospital has a young and dynamic physician infrastructure. This infrastructure shows that the presence of health service providers researching, learning, and implementing the latest technologies in the world. The data of academic staff indicates that Selcuk University Medical School Hospital has a structure being innovative and open to change, giving importance to the research and development, and trying to increase the patient satisfaction as well as service quality for the health of society in the health sector.

Conclusion and discussion

When the results of ratio analysis are evaluated in integrated way, the following points should be considered:

- According to the data of the hospital belonging to the years of 2012-2013, it was observed that the bed occupancy rate increased in the rate of 27.27 %, in return to the decrease in the rate of 17.17% in the number of actual bed. This situation shows that the hospital should go toward increasing capacity. On the other hand, the decrease in the number of bed in the hospital can also be accepted as an indicator of that the hospital will go toward specialization in time.
- The medical statistical data of hospital, cash –to-cash cycle of the hospital should be evaluated, considering that the numbers of income, expenditures etc.
- The increase in the data of the hospital such as inpatient, outpatient etc. should be examined in detail in the context of income, expenditure, and budgetary items. In addition, it is necessary to make assessments about balancing the decrease rate in the actual number of bed and increase in the rate of bed occupancy.
- That the hospital, using the young and dynamic academic infrastructure of the hospital, specializes and shapes its medical activities according to the main features of this infrastructure is suggested for a sustainable successful.

When the findings are taken into consideration which are obtained as a result of the study and main administrative process in today's health organizations, the following suggestions, specific to S.U. Medical Faculty and for hospitals generally, can be developed.

- Especially efficiency and profitability analyses of hospitals, in the hospitals developed by World Health Organization that can make a performance assessment, for developing quality, it is necessary to develop the criteria like performance assessment tool of hospitals (PATH) and implement institute –specific applications. However, with this way, in health institutes, it can be provided the minimization of expenditures and maximization of utility by the • efficiency and effectively.
- •
- efficiency and effectively. It is necessary to train the relevant staff about the financial analysis and assessment, for the efficiency of financial resources and human resources, to form a training and quality culture related to the employees, adopted by the top management and become widespread on the basis of employee. Instead of traditional performance assessment, a sustainable assessment system should be established. Therefore, the studies should be carried out beyond the financial indicators which are taken as a base in the study, with the indicators based on multiple criteria. It is necessary to make rich the aspect of financial indicators explaining the past with the fundamentals in managerial accounting i.e. with an approach that can offer solution suggestions toward the future. • future

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