A Study on The Internal Determinants of Financial Sustainability Performance in Private Hospitals

Özel Hastanelerde Finansal Sürdürülebilirlik Performansının İçsel Belirleyicileri Üzerine Bir Çalışma

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ABSTRACT

Financial sustainability has been a significant goal across all sectors recently. It is also imperative to set financial sustainability as an objective to sustain operations in private hospitals that are pivotal within Türkiye's health system. Literature highlights that the hospitals deliver services amidst significant financial challenges. The purpose of this study is to explore the internal factors related to financial sustainability performance in private hospitals, analyze the relationships between them, and develop recommendations based on the analysis. A quantitative, cross-sectional approach was employed in the research, utilizing a questionnaire to collect data. Seventy participants working in the administrative and financial departments of private hospitals from different cities were included. The data were analyzed by structural equation modeling. The study identified cost management practices, logistic performance, and marketing efforts as variables potentially related to financial sustainability performance. Correlation analysis indicated a significant, positive relationship between the variables and financial sustainability performance. Path analysis revealed that marketing efforts had the most significant impact on financial sustainability performance followed by cost management. Logistic performance had no significant influence within the model. The number of studies on healthcare sector considering financial sustainability and its' possible determinants is highly limited. This study provides practical implications by examining this phenomenon with its' potential internal determinants.

KEYWORDS

Financial Sustainability, Private Hospitals, Healthcare Services

ÖZ

Finansal sürdürülebilirlik konusu, son dönemde tüm sektörler için önemli bir hedef haline gelmiştir. Türkiye sağlık sisteminde önemli bir yere sahip olan özel hastaneler de faaliyetlerini devam ettirebilmek için finansal sürdürülebilirliği bir hedef olarak benimsemek durumundadırlar. Literatürdeki çalışmalar, hastanecilik sektörünün yüksek düzeyde finansal sıkıntılar ile hizmet üretmeye devam ettiklerini göstermektedir. Bu çalışmanın amacı, özel hastanelerde finansal sürdürülebilirlik performansı ile ilişki içsel faktörleri irdeleyerek aralarındaki ilişkileri analiz etmek ve böylece öneriler geliştirmektir. Nicel ve kesitsel tipte olan araştırmada veri toplama aracı olarak anket formu kullanılmıştır. Araştırmanın katılımcıları, farklı şehirlerdeki özel hastanelerin idari ve mali fonksiyonları ile ilgili birimlerinde çalışan yetmiş kişiden oluşmuştur. Veriler yapısal eşitlik modellemesi aracılığıyla analiz edilmiştir. Araştırmada finansal sürdürülebilirlik performansı ile ilişkili olabilecek olan boyutlar arasında maliyet yönetimi, lojistik performans ve pazarlama uygulamaları değişkenleri yer almıştır. Korelasyon analizi sonuçları, ilgili değişkenler ve finansal sürdürülebilirlik performansı arasında anlamlı ve pozitif yönde ilişki olduğunu göstermiştir. Yol analizi sonuçları ise finansal sürdürülebilirlik performansı üzerinde en yüksek ve anlamlı etkiye sahip olan değişkenin pazarlama çabaları ve onu takiben maliyet yönetimi uygulamaları olduğunu göstermiştir. Lojistik yönetiminin modelde anlamlı bir etkiye sahip olmadığı tespit edilmiştir. Sağlık sektörünü finansal sürdürülebilirlik teması çerçevesinde muhtemel belirleyicileri ile inceleyen çalışma sayısı oldukça kısıtlıdır. Bu çalışma, özel hastanelerde bu olguyu işletme içi faktörlerle birlikte inceleyerek, pratik uygulamalar için anlamlı bulgular sağlamaktadır.

ANAHTAR KELİMELER

Finansal Sürdürülebilirlik, Özel Hastaneler, Sağlık Hizmetleri

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INTRODUCTION

Financial sustainability has gained a global interest due to lack of resources, economic crisis (Adelino et al., 2022; Gider, 2011), and the pandemic (Başaran & Özdemir, 2022; Khullar et al., 2020). Hospitals have importance in global economy as they employ high skilled staff in high numbers, consume valued materials and carry out many complex activities (Raghupathi and Raghupathi, 2020). However, many hospitals struggle with financial problems in achieving their objectives (Enumah & Chang, 2021; Yener & Öksüz, 2017; Ramamonjiarivelo et al., 2015). Because, financial performance is associated with quality and safety of healthcare (Akinleye et al., 2019), access to healthcare (O'Hanlon et al., 2019), and patient experience (Cochrane et al., 2015), financial sustainability is crucial for health systems and hospitals. Therefore, many researches have focused on financial performance and sustainability of health systems (Liaropoulos and Goranitis, 2015; Pencheon, 2013), public hospitals (Dubas-Jakóbczyk et al., 2020; Dubas-Jakóbczyk and Kozieł, 2020), private hospitals (Al Rahhaleh et al., 2023; Lee et al., 2023) or other private health companies (Marques Clemente et al., 2018).

This study investigates the internal factors related to financial sustainability in private hospitals in Türkiye. The study has benefited from the definition of financial sustainability provided by Günther et al. (2020) and Gleißner et al. (2022). Günther et al. (2020) defined financial sustainability as "providing a continuous financial success without jeopardizing future financial success". Gleißner et al. (2022) provided four major criteria to investigate financial sustainability of a firm as: "real growth rate of the company, (2) a company's ability to survive without making demands on its owners, (3) total earnings risk exposure acceptable to owners, (4) economic interests of the owners in a lasting continuation of the company". Considering the criteria, this study includes cost management practices, logistical performance, marketing efforts as the possible determinants of financial sustainability.

This study is significant given that these major criteria of financial sustainability can be associated to effective marketing efforts, cost management practices and logistical management. Marketing efforts are strongly associated to sales volume of a company which is one of the possible determinants of real preservation of the company (Ho & Huang, 2020; Inbasagaran & Chandrasekaran, 2017). Cost management plays a crucial role in enabling businesses to have control on resource utilization and eliminate nonvalue adding procedures which ultimately improve profitability (Rauliajtys-Grzybek et al., 2017). Logistical activities in hospitals have a significant role on efficiency of service production because these activities are part of every type and level of activities in the hospitals. By improving logistical management, hospitals can improve processes in terms of waste, costs and quality (Kolomoyets et al., 2021).

In Türkiye, healthcare services are mainly provided by the public hospitals and primary care centers operating under the Ministry of Health, private hospitals and university hospitals. Public hospitals provide services to citizens who are under the cover of social insurance. Public hospitals are reimbursed by the general health insurance program under the Social Security Institutions (SSI) and offer services free of charge at the use point (Atun et al., 2015). There is a requirement for contribution co-payments for consultations and medicines (Tatar et al., 2011). The private hospitals also hold a significant position in the health system. Private hospitals can offer healthcare services reimbursed by the SSI, private insurances, and also with out-of-pocket payments from the patients. People can have services from contracted private hospitals under the coverage of SSI but have to make extra payments which is ruled by the legal regulations (Yener & Öksüz, 2017). The contracts between SSI and private hospitals made the private hospitals more affordable for the population. That is one of reasons that the private hospitals play a significant role in accessing healthcare services in Türkiye. According to the data of the Ministry of Health, 37% of the total hospitals are privately owned by 2021. The private sector has 21% of the total hospital beds. The share of application to private hospitals in total applications has also shown a significant increase from 0.1 to 0.8 in the last decade (Ministry of Health, 2022).

Numerous studies have been conducted on financial analysis of healthcare including public and private hospitals (Işikçelik et al., 2022; Lee et al., 2019; Augurzky et al., 2012). There are also studies examined the financial sustainability of hospital sector (Lee et al., 2023; Dubas-Jakóbczyk & Kozieł, 2020). This study contributes to the literature by examining the possible internal determinants of financial sustainability performance in private hospital sector. In this context, this study aims to explore the following question: Do marketing efforts, cost management practices, logistical management performance have significant roles in financial sustainability performance of private hospitals?

1. HYPOTHESIS DEVELOPMENT

Financial sustainability of companies is a complex phenomenon and influenced by many internal and external factors. The characteristics of companies with financial sustainability are basically accepted as follows; "a net income which is retained in real terms, a low level of probability or risk of insolvency, an acceptable level of volatility of income, a return on capital exceeding the cost of capital" (Gleißner et al., 2022). Hospitals are complex organizations with many medical and managerial functions. Hence, the sustainability of hospitals contains many success factors related to governance/management functions and clinical care processes (Tiu & Montemayor, 2019). This study explores the internal factors based on governance functions associated with financial sustainability in private hospitals. Evidence from the literature suggest that administrative functions are associated with financial sustainability (Park & Matkin, 2021). Governance and management contain many managerial functions such as; corporate resource management, organizational management, infrastructure management, waste management, financial management etc. (Tiu and Montemayor, 2019). Marketing efforts, logistics management, and cost management are the included factors because they can reflect the administrative performance in terms of the ability to generate revenue and contain costs which significantly effects the financial indicators.

Marketing efforts may play a significant role by attracting new patients, generating revenue and so maintaining a competitive advantage in the market. As the healthcare industry gets more complex, private hospitals must adapt their marketing efforts to remain competitive and financially sustainable. In today's age, marketing efforts from diverse arguments such as social media, online platforms are important for private hospitals to connect with potential patients and differentiate themselves from competitors (Inbasagaran & Chandrasekaran, 2017). Effective marketing strategies can increase visibility of hospitals and make them generate more revenue (Jena, 2017). Additionally, marketing efforts can also help private hospitals establish a strong and positive brand perception in the market, which can lead to high patient volume through loyalty and trust (Al-Qarni et al., 2013). This can provide a steady stream of patients, contributing to the financial stability of the hospitals (Raju & Lonial, 2002). There are several studies clarified that marketing information (Ahmad et al., 2019), and marketing activities (Jung, 2010) may positively affect financial performance in hospital industry. Hence, the first hypothesis of the study was formulated as:

H1: Marketing efforts positively influence the financial sustainability of private hospitals

Logistics management is among the fundamental management activities for companies to increase profitability and sustain a competitive advantage (Porter, 1998). As a function of companies, logistical activities are consisted of diverse tasks such as; demand management, purchasing, stock control, warehousing, waste management, transporting, invoicing, etc. (Bowersox et al., 2002). Hence, an effective logistics management provides both value and cost advantage for companies in the market by improving production processes, decreasing unit costs, and increasing customer value (Christopher, 2011). Logistics is also a significant management area for hospitals. In hospitals, activities like transporting of patients and materials, cleaning services, waste management, purchasing, inventory management, sterilization, catering, laundry are considered as logistical activities ((Nikzamir et al., 2020; Jawab et al., 2018; (Volland et al., 2017). There is evidence that hospitals expense %30 of their operational costs for logistics (Poulin, 2003). Many studies showed that hospitals can contain cost, improve patient satisfaction and increase profitability by improving logistics management (Essila, 2022; Al-Qatawneh et al., 2019, Papalexi et al., 2016). Based on all arguments, logistics management is considered to be one of the potential significant determinants of financial sustainability as these activities are related to nearly all processes in the hospitals. Hence, the second hypothesis of the study was formulated as:

H2: Logistics management performance positively influences the financial sustainability of private hospitals

Considering the complexity of hospitals and the competitive market conditions, all hospitals constantly try to increase efficiency and decrease cost (Öker & Özyapıcı, 2013). Cost management is the process of estimating, classifying and allocation cost of an organization to provide accurate cost data for managers to help them in achieving these purposes. Here, the most important term is accurate cost data. Accurate cost data means determining costs patient or at least departmental level (Gapenski & Reiter, 2016). By tracking costs at patient and departmental level, it will be possible to determine unnecessary processes, to eliminate non-value-added activities, and make proper pricing decisions (Özgülbaş, 2018). Therefore, accurate cost data and an effective cost management approach will have a positive effect on achieving financial sustainability in hospitals (Dražić Lutilsky et al., 2016). Hence, the third hypothesis of the study was formulated as:

H3: Cost management practices positively influence the financial sustainability of private hospitals

2. METHODOLOGY

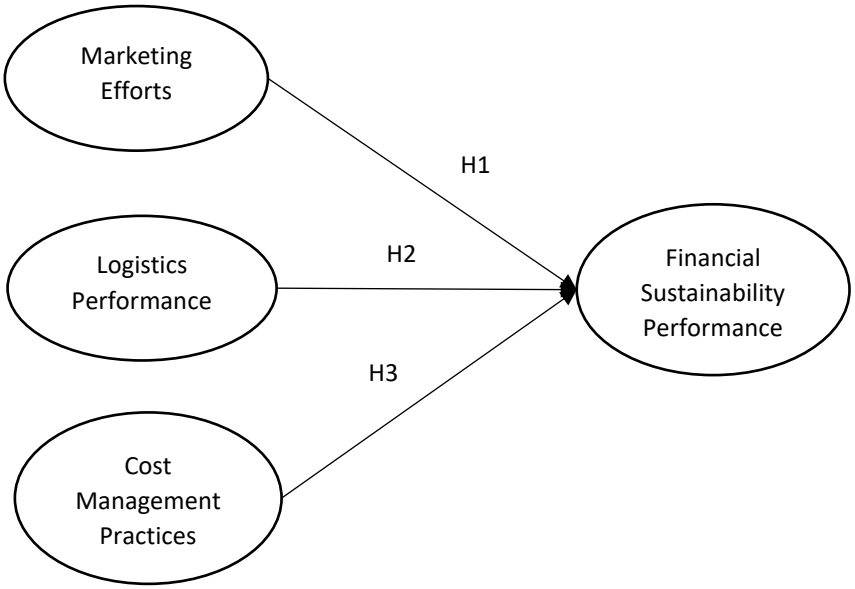
2.1. Study Design and Sample

The study is cross-sectional and using a survey to collect quantitative data. The survey was distributed to potential participants based on researcher's network and using snowball sampling method via e-mails and WhatsApp. The data collected from January to March 2024. 70 questionnaires were obtained from the participants who work in different administrative positions for private hospitals that operate in 11 different cities of Türkiye.

2.2. Variables and Analysis

The survey is consisted of a questionnaire and demographic questions. The questionnaire was developed based on the relevant literature (Al Rahhaleh et al., 2023; Kludacz-Alessandri, 2023; Kritchanchai et al., 2018). The first questionnaire form was consisted of four variables: cost management practices (CM) with 5 items, logistical performance (LP) with 5 items, marketing efforts (ME) with 4 items as independent variables, and financial sustainability (FS) with 6 items as dependent variable. (Figure 1). The statements were evaluated by two health management scholars to examine face validity. The scholars approved the questionnaire as all items were determined to be relevant and be able to measure latent variables. After the construct validity examination, two items per variables were dropped due to not being fit to the model.

Figure 1. Variables and The Model of The Study



The normal distribution of the dependent variable and the multicollinearity were checked to examine the assumptions of the analysis. To check normality of the distribution skewness and kurtosis were accepted to be between ±2.3 (Lei & Lomax, 2005). To assess multicollinearity, variance inflation factor (VIF), Tolerance values and Pearson correlation coefficients were checked. According to evidence from the literature VIF should be below 10, Tolerance values above 0.01. And, the Pearson correlation coefficients between independent variables should not be above 0.70 (Pallant, 2020)

To examine construct validity, confirmatory factor analysis (CFA) was conducted. In CFA analysis, factor loading and fit indices were evaluated and presented in results. The internal consistency of the structure were evaluated by Cronbach alpha coefficient, composite reliability (CR), and average variance extracted (AVE) values. The accepted values for these indicators are; >0.70 for Cronbach alpha, >0.70 for CR, and >0.50 for AVE (Field, 2018; Hair et al., 2021). Finally, to assess hypothesis, structural equation modelling (SEM) was carried out.

2.3. Ethical Considerations

The written ethical approval was obtained from the Social and Humanitarian Sciences Ethical Committee of Tarsus University with 2024/02 decision number.

3. FINDINGS

3.1. Characteristics of The Sample

The demographic characteristics of the participants were present in Table 1.

Table 1. Descriptive Statistics of The Sample

Characteristics		n	%
Bed capacity of the hospitals	<50 beds	3	4,3
	51-100 beds	23	32,9
	>100 beds	44	62,9
City	İstanbul	21	30
	Ankara	6	8,6
	Adana	14	20
	Mersin	15	21,4
	Diyarbakır	6	8,6
	Antalya	2	2,9
	Burdur	2	2,9
	Konya	1	1,4
	Malatya	1	1,4
	Manisa	1	1,4
	Sinop	1	1,4
Titles / Managerial position	Coordinator	9	12,9
	Manager	10	14,3
	Expert	29	41,4
	Office staff	22	31,4
Working years	<1 year	15	21,4
	1-5 years	16	22,9
	6-10 years	21	30
	>10 years	18	25,7
Gender	Female	42	60
	Male	28	40
Age	18-29 years	30	42,9
	30-39 years	29	41,4
	40-49 years	11	15,7
Total		**70**	**100**

Majority of the participants were employed in hospitals with over 100 hospital beds (62,9%) and in Istanbul (30%). There were participants from 10 other cities including Mersin (21,4%), Adana (20%), Ankara (8,6%).9 % of the sample held a position as coordinator while a significant proportion had expert title (41,4%). 56% of the participants had more than 6 years of experience in the healthcare sector. Females were the majority of the participants (60%). More than 80% of the participants was between the ages of 18-40.

3.2. Pre-assumptions, Validity and Reliability

To begin with, normality tests were conducted. The dependent variable's skewness and kurtosis value was respectively -0,119 and -0,479. Mean and median were respectively 14,9 and 15. Therefore, it was decided that the assumptions of the normality were obtained.

To test construct validity, confirmatory factor analysis, and to test reliability, Cronbach's alpha, AVE and CR analysis were conducted. Two items from each factor were dropped due to having low factor loadings. One item (this hospital has been increasing its sales at a rate surpassing the average inflation annually) with the factor loading of 0,636 were evaluated as significant to be remained in the scale, because it reflects one of the fundamental conditions of financial sustainability. Except that item, all items had a loading over 0.70. The fit indices verified the validity of the structure. Convergent validity was assured with AVE values over 0,50. Reliability were measured by CR and Cronbach's alpha which both reflected that the construct was reliable.

Table 2. Construct Validity and Reliability Results

Variables	Items	Factor Loading	Cronbach Alpha	CR	AVE
FS	This hospital has been increasing its sales at a rate surpassing the average inflation annually.	0,636*	0,800	0,834	0,564
	The return on investment for this hospital consistently outperforms that of its competitors.	0,839*			
	The profitability of this hospital has been exhibiting an annual increase.	0,830*			
	The profitability ratios of this hospital are consistently higher than the competitors.	0,759*			
CM	This hospital possesses an efficiently functioning cost accounting system.	0,784*	0,822	0,825	0,612
	Patient-based unit costs are regularly monitored in this hospital	0,771*			
	This hospital regularly tracks departmental unit costs.	0,793*			
LP	An efficient warehouse/material management process is conducted in this hospital	0,740*	0,851	0,864	0,680
	Medical invoicing and accounts receivable processes are efficiently managed in this hospital.	0,925*			
	Transfer processes in this hospital are carried out with adequate technical equipment and quality.	0,825*			
ME	This hospital regularly undertakes marketing activities aimed at improving its corporate image.	0,923*	0,877	0,892	0,805
	Marketing activities aimed at increasing sales are regularly conducted in this hospital.	0,871*			

Fit Indices: X^2 / df=1,057, GFI=0,895, CFI=0,994, NFI=0,900, RMSEA= 0,03
*p<0.01

Pearson correlation coefficients, Tolerance and VIF values were checked to assess multicollinearity. The results showed that the independent variables had significant correlation coefficients between each other which were below 0.70. There were a strong and significant relationship between cost management practices and logistics performance (r=0,60). The relationship between CM and ME was found to be significant and moderate (r=0,44). The relationship between LP and ME was found to be significant and strong (r= 0,61).

There were also significant and moderate relationship between the independent variables and the dependent variable. FS and CM was found to be moderately correlated (r=0,52). FS and LP had also a significant and moderate relationship (r=0,493). ME was found to be moderately related to FS (r=0,54).

Table 3. Multicollinearity of The Variables (Pearson Correlations, Tolerance and VIF Values)

Variables	Mean ±Std.	Pearson Correlation				Tolerance	VIF
		FS	CM	LP	ME		
FS	14,9±2,85	1					
CM	11,92±2,32	0,521*	1			0,626	1,597
LP	12,17±2,22	0,431*	0,605*	1		0,485	2,061
ME	7,65±1,79	0,540*	0,443*	0,614*	1	0,615	1,626

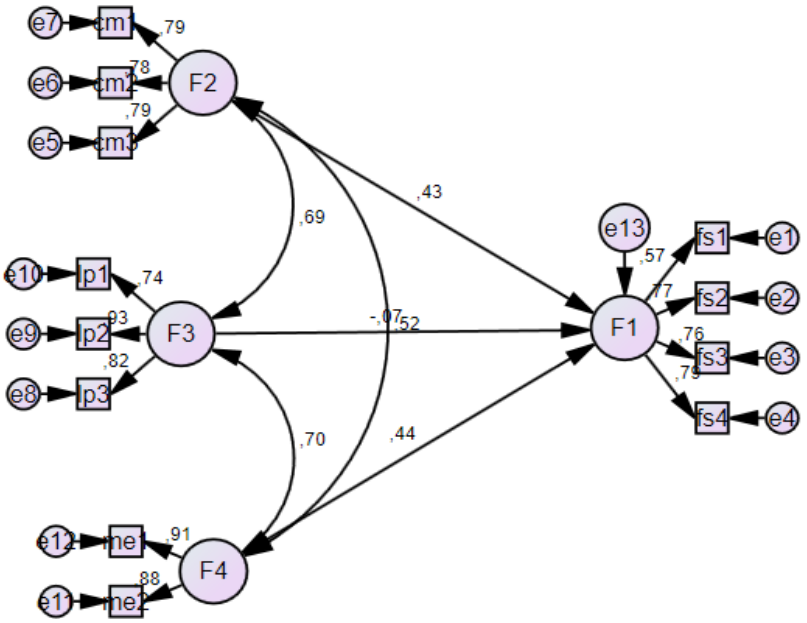
*p<0.01

All VIF values were below 10, and tolerance values were above 0.01.

3.3. Path Results

Figure 2. presents the results of the path analysis. Fit indices of the model were among the acceptable values. The model was significant (p<0.01) and %39,1 of the variance in the dependent variable were explained by the independent variables (R2= 0,391).

Figure 2. Path Model Results



R^2= 0,393; Fit Indices: X^2 / df=1,12; GFI=0,888; CFI=0,988; NFI=0,893; RMSEA= 0,04

ME showed the significantly highest and positive influence on FS performance (β=0,44, p=0,021). CM had also significant and positive influence on FS performance (β=0,42, p=0,033). However, the model showed LP had no significant effect on FS performance (p>0.05)

Table 4. Hypothesis Testing Results

Hypothesis	Path	Beta	Decision
H1	Marketing efforts ⟶ financial sustainability performance	0,441*	Supported
H2	Logistics performance ⟶ financial sustainability performance	-0,067	Not supported
H3	Cost management ⟶ financial sustainability performance	0,427*	Supported

*p<0.05

Based on the judgments of the participants it was seen that 1% of improvement in marketing processes can improve financial sustainability performance at 44% while 1% of improvement in cost management makes a contribution of 42% to financial sustainability performance.

DISCUSSION AND CONCLUSIONS

Many studies reported private hospitals suffered from financial distress (Enumah & Chang, 2021; Kourtis et al., 2021; Langabeer et al., 2018). There are also many studies that examined the financial performance of private hospitals in Türkiye (Koçyiğit et al., 2022; Tanç & Eravcu, 2021; Yücel & Önal, 2015). However, to the best of knowledge, evidence on how the financial sustainability performance of private hospitals are affected and can be enhanced through improvements in specific factors relevant to the operation is limited. In this context, the most significant contribution of this study to the literature is its examination on the internal management areas related to financial sustainability and the clarification of their influence on financial sustainability performance. The phenomenon of financial sustainability, when considered within the framework of the significant studies conducted in the literature (Gleißner et al., 2022; Günther et al., 2020), is

considered to be associated with cost management practices within the enterprise, logistics management that affects the cash cycle, and marketing efforts, which are a significant determinant of sales volume. Therefore, this study aimed to investigate the relationship between the financial sustainability performance of private hospitals and their cost management practices, logistics process performance, and marketing efforts. To achive this aim, a measurement tool including the relevant factors was designed, data collected from employees of private hospitals in various cities were used to examine validity and reliability, and the relationships between structures were tested through structural equation modeling.

The descriptive statistics of the study indicated that the participant group generally have positive evaluations regarding the financial sustainability performance of the hospitals they work in. Similarly, their judgements on cost management practices, logistics performance, and marketing efforts are observed to be at a moderate level. The correlation analysis results of the study have revealed a positive and significant relationship among all variables. The significant and moderate relationship between cost management practices and financial sustainability performance supports the findings of the positive impact of internal control processes on financial performance which was found in the study conducted by Al Rahhaleh et al. (2023). Effective cost management processes is an effective way to control resource consumption in activities, thereby increasing business profitability and, consequently, strengthening the stakeholder's equity. The path analysis of the current study also showed that participants indicated 1 unit improvement in cost management processes could enhance financial sustainability performance by 0.42 in a positive direction. A similar relationship has been identified between marketing efforts and financial sustainability performance. Evidence suggest that an effective marketing process can increase interest in the business, ensuring a regular and continuous cash flow (Raju & Lonial, 2002). The path results of the current study verified that this relationship is significant and positive (β=0.44). However, the regression analysis results of the study have revealed that logistics performance did not have a significant effect on financial sustainability performance. At this point, it can be considered that the impact of this variable could be evaluated on different samples and within the scope of a mediating role.

This study is not without limitations. Due to many barriers including the hesitancy of the expert to participate the study, the results may be limited by the sample. And more importantly, the current study included three dimensions of the internal activities. There is still 60% of variance can be explained by other factors. Further studies may consider to obtain a data from a wider range of hospitals and participants and consider other internal and external factors to examine the given topic.

As a conclusion, this study provides the following practical implications:

1. Healthcare administrators can enhance financial sustainability performance by implementing contemporary cost management practices at departmental and patient level. This will enable managers to investigate the processes and resource consumption at each level of production and ultimately influence financial results positively.
2. Cash flow is important for financial health. Cash flows regularly growing over inflation rates is one of the most important determinants of financial sustainability which can be indirectly improved by marketing efforts. Hospital sector is intensively regulated in terms of marketing activities. This study focused on the activities to increase corporate image. Hospitals can improve processes to improve patients' perception.
3. Although logistics performance did not directly impact financial sustainability in this study, hospital management should not overlook the potential indirect benefits of efficient logistics, such as reduced waste and improved patient satisfaction, which could contribute to financial stability in the long run.
4. Organizations should continuously monitor and evaluate the effectiveness of their management practices in cost management, marketing, financial management. Carrying out a continuous assessment framework may help private hospitals to identify areas for improvement and ensure that these practices are aligned with the hospital's financial sustainability objectives.

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