

ATTRIBUTES OF SUPERINTENDENTS AND FINANCIAL PERFORMANCE: AN ANALYSIS IN TEACHING HOSPITALS INCORPORATED BY EBSEH

ATRIBUTOS DOS SUPERINTENDENTES E DESEMPENHO FINANCEIRO: UMA ANÁLISE EM HOSPITAIS DE ENSINO INCORPORADOS PELA BSEH

ATRIBUTOS DE LOS SUPERINTENDENTES Y DESEMPEÑO FINANCIERO: UN ANÁLISIS EN LOS HOSPITALES DE ENSEÑANZA INCORPORADOS POR EBSEH

Victor Godeiro de Medeiros Lima
victor_godeiro@hotmail.com

Andrea de Oliveira Gonçalves
Universidade de Brasília
andreaegoncalves@gmail.com



Este é um artigo de acesso aberto distribuído sob os termos da Creative Commons Attribution License
This is an open-access article distributed under the terms of the Creative Commons Attribution License
Este es un artículo de acceso abierto distribuido bajo los términos de la Creative Commons Attribution License

ABSTRACT

The study aims to verify the relationship between financial performance and the attributes of the superintendents of teaching hospitals linked to EBSEH. The research sample involved 48 superintendents who worked in one of the 26 teaching hospitals whose data were available for the period from 2017 to 2019. Through panel data analysis, medium complexity contracting performance (*desempenho de contratualização de média complexidade*, in Brazilian Portuguese) was considered as a dependent variable and the independent variables are gender, level of formal education and professional experience (both tenure and in the sector). The control variables are the budget, number of employees and number of beds available in the hospital. The results pointed out that the male gender and the level of formal education are related to improved financial performance. The tenure is negatively related. It therefore concludes that these attributes are related significantly to the results of the financial performance of hospitals, pointing out that the ideal superintendent would be a man, PhD and with a shorter tenure, which would imply a manager prone to take more risks and test new strategies, with greater technical knowledge about the area and with an urge to show competence and impose changes.

Keywords: Financial Performance. Attributes. Superintendents.

RESUMO

O estudo tem como objetivo verificar a relação existente entre desempenho financeiro e os atributos dos superintendentes que atuam junto aos hospitais de ensino vinculados à EBSEH. A amostra da pesquisa envolveu 48 superintendentes que atuaram em um dos 26 hospitais de ensino cujos dados estavam disponíveis para o período de 2017 a 2019. Através de análise de dados em painel, foram consideradas como variável dependente o desempenho de contratualização de média complexidade (desempenho financeiro), as variáveis independentes de gênero, formação acadêmica e experiência profissional (tanto no cargo, como no setor) e as variáveis de controle representando o orçamento, número de empregados e números de leitos disponíveis no hospital. Os resultados da pesquisa apontaram que o gênero masculino e a formação acadêmica estão relacionados com melhor desempenho financeiro. A experiência no cargo está relacionada negativamente. Conclui-se, portanto, que os atributos estão relacionados significativamente com os resultados do desempenho financeiro dos hospitais, apontando que o superintendente ideal seria homem, doutor e com pouca experiência no cargo, o que o implicaria em um gestor predisposto a correr mais riscos e testar novas estratégias, com maior conhecimento técnico sobre a área e com ímpeto de mostrar competência e impor mudanças.

Palavras-chave: Desempenho Financeiro. Atributos. Superintendentes.

RESUMEN

El estudio tiene como objetivo verificar la relación entre el desempeño financiero y los atributos de los superintendentes que trabajan con hospitales docentes vinculados a EBSEH. Una muestra de la investigación involucró a 48 superintendentes que trabajaron en uno de los 26 hospitales docentes, cuyos datos estuvieron disponibles para el período de 2017 a 2019. Mediante el análisis de datos de panel, se usaron como variables dependientes o desempeño contractual promedio de desempeño (desempeño financiero), como variables independientes de género, capacitación académica y experiencia profesional (tanto de cargo como de sector) y como variables de control de representación o presupuesto, número de empleados y número de camas disponibles en el hospital. Los resultados de la encuesta señalaron el género masculino y los antecedentes académicos relacionados con un mejor desempeño financiero. La experiencia en el puesto está negativamente disponible. Se concluyó, por lo tanto, que los criterios están relacionados con los resultados del desempeño financiero de los hospitales, para cambiar lo que es el superintendente ideal, como hombre, médico y con poca experiencia sin una carga, o lo que está involucrado en un gerente predisposto a realizar más riesgos y probar nuevas estrategias, con mayor conocimiento técnico sobre un área y con el impacto de mostrar competencia e importancia de los cambios.

Palabras clave: Desempeño financiero. Atributos. Superintendentes.

INTRODUCTION

Recent developments in standards (OECD, 2011) and in the academic literature (GALSTIAN *et al.*, 2018) are concerned with understanding what affects the performance of public sector organizations. OECD (2011), when dealing with governance, asserts that strategic human resource

management allows employees to be used in the right positions with the right skills, allowing for increased efficiency, responsiveness and quality in service delivery.

Beuren, Ribeiro e Silva (2019) add that an organization's workforce is its most important asset and the way it is treated affects its commitment, trust, turnover and performance. Along these lines, Hambrick (2016) attributes - based on the developments obtained through the *Upper Echelons Theory* - to the *top management team* (TMT) a significant contribution to the obtained organizational results. However, not restricted to TMT, the author comments that studies that focused only on the CEO have found similar results, arguing that they have a direct influence on organizational results and an indirect one through TMT processes.

Specifically addressing the teaching hospitals linked to federal universities in Brazil, which are the focus of this paper, the directors of these hospitals (now known as superintendents) were of free appointment and dismissal by the deans of their respective linked universities, but two recent changes significantly affected the majority of these appointments: the first factor was the creation of a state-owned company responsible for the management of hospitals, the *Empresa Brasileira de Serviços Hospitalares* - EBSEH (in English, Brazilian Enterprise of Hospital Services); and the enactment of Law No. 13,303/2016, which provides in its article 17 certain conditions for acting as a member of the Board of Directors and Executive Board of a state-owned enterprise (BRAZIL, 2016).

In addition to EBSEH as responsible for the management of 40 of the related hospitals, imposing greater rigor and standard on the organizational structure and workers that occupy key positions in the institutions, the aforementioned law requires that management positions have a flawless reputation and notorious knowledge that would be observable, basically, through previous professional experience, compatible academic training and not falling under predicted ineligibility hypotheses.

But are these criteria adequate or sufficient? It should be noted that the aforementioned law is directed at all Brazilian state-owned enterprises, thus encompassing a wide variety of economic sectors. In the case of hospitals - which deserve special attention because they are considered knowledge-intensive organizations - Goodall and Baker (2015) comment that part of the literature argues that employees, as experts in the field, would act following their intrinsic motivation, being leadership (extrinsic motivation) less relevant. The authors disagree with this reasoning, arguing that certain types of leadership are relevant in the management of employees.

These employees, according to Law No. 12.550/2011 that created EBSEH, must value "a provision of public health care services of excellence, providing a scenario of practice suitable for teaching, research and management of Federal University Hospitals". These guidelines serve as the basis for the EBSEH Strategic Map for 2017-2021. In this map, one of the three result objectives consists of "Improving the performance of SUS Contracting", an indicator that serves to monitor the financial performance of the hospital (EBSEH, 2018, p.6).

However, it is salutary to emphasize that neither the current norms nor the academic literature has defined which profile of the top management is adequate to boost a better financial performance, leaving this analysis to the universities that nominate the candidate for the vacant spot and EBSEH's *Comitê de Elegibilidade* (Eligibility Committee) - body responsible for analyzing the suitability of the applicant for public office.

Therefore, seeking to collaborate to fill this gap in the literature, the research question is **how are the superintendent's attributes related to the financial performance of teaching hospitals incorporated into EBSEH?** Thus, this paper presents the results of this relationship. Despite some studies that have verified this relationship (Lunkes, Naranjo-Gil, & Lopez-Valeiras, 2018), the subject lacks more researches in the national scenario, considering that it is in evidence because of the changes in progress in the standardization (BRAZIL, 2016) and the short time of creation of EBSEH (BRAZIL, 2011).

The study is justified by the concern with the criteria for appointing hospital superintendents, since their decisions impact the lives of citizens through the volume of resources they manage (Lopes *et al.*, 2020), therefore, understanding how the attributes of managers are related to financial performance would help in this process, in addition to contributing to the Management Accounting literature by emphasizing a performance indicator and seeking to relate it to different variables, enabling the strengthening of accountability and the reporting process by quantifying efficiency, effectiveness and the

transmission of goals and objectives throughout the organization (PORTULHAK; ESPEJO; PACHECO, 2018)

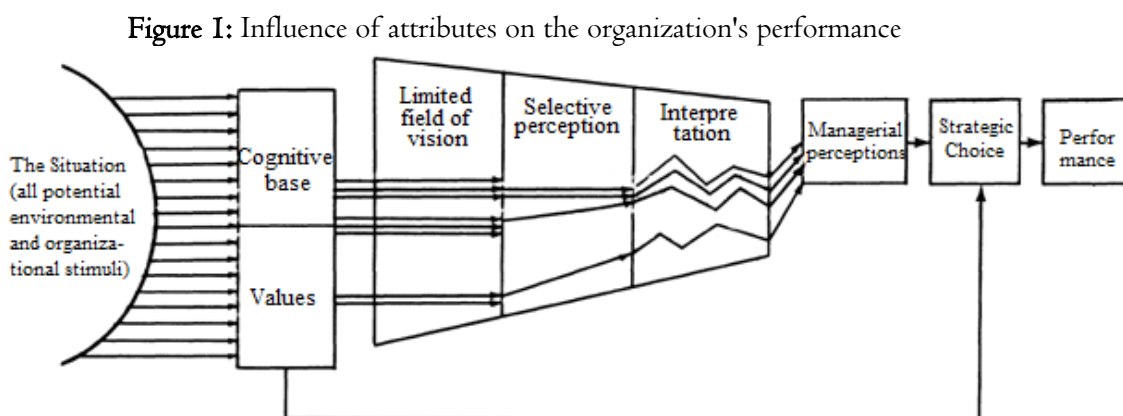
In this paper, we seek to verify how the attributes of superintendents (gender, academic background and professional experience), as used by Altoé, Pacheco and Espejo (2018) affect financial performance, through the medium complexity contract performance indicator.

The paper is organized in four chapters, in addition to this introduction. In the next chapter, studies that relate the attributes of the top management with different performance indicators are approached relating the hypotheses of the study. Then, the methodological procedures for data collection and analysis are described. The fourth chapter comprises the analysis of the results found in the light of Upper Echelons Theory - UET. Finally, conclusions, limitations and possibilities for future research are presented.

THEORETICAL FRAMEWORK AND HYPOTHESES

Attributes of the Superintendents

The UET was designed by Hambrick and Mason (1984) and assumes that the strategic decisions and performance levels of the *top managers* are due to their values and cognitive bases. However, the authors argue that they emphasize the observable attributes as proxies of what managers add to the organizational environment. Figure I below shows how this process works from the perspective of the authors:



Source: Own elaboration based on Hambrick and Mason (1984)

And what would be these and attributes? Hambrick and Mason (1984) proposed that some examples would be age, time in the organization, past functions, education, socioeconomic roots and financial position. Naturally, as examples given by the authors, the literature looked for other attributes that could be relevant to predict the performance of organizations. Table I presents some related studies when searching for the keywords “performance” and “CEO attributes” in the *Portal de Periódicos CAPES*, paying special attention to the most recent studies:

Table I: Empirical studies on the relationship between attributes and performance

(To be continued)

Authors	Journal	Theme and results
Bobe and Kober (2018)	Studies in Higher Education	With 56 respondents, they studied the deans of public universities in Australia and found that older female deans who have been in the academy longer, tend to use more non-financial performance indicators. The assumption is that the way they use these indicators impact the results of universities. The authors used the attributes of age, gender, educational background and experience.

(Conclusion)

Galstian <i>et al.</i> , (2018)	Journal of Healthcare Management	The study looked at how the attributes (education, experience in the organization and gender) of CEOs were related to the satisfaction score of patients in Californian hospitals. The authors showed that female and more experienced CEOs were related to higher scores, with education not significant.
Gabutti (2019)	International Journal of Healthcare Management	When analyzing the relationship between the attributes of CEOs and the propensity for innovation, it was concluded that managers who have made a career in the public health sector are more innovative than those who have made a career in the private sector. No relevance was found in academic training.
Silvera and Clark (2019)	Healthcare Management Review	They verified the influence of the CEO's gender on the patient satisfaction score using 391 non-rural hospitals in the United States as sample. As the main finding, the authors point out that women tend to transform organizations to be more patient-centered.

Source: Own elaboration.

Table I shows studies that demonstrate how different characteristics of top managers impact the performance of organizations in their various perspectives.

It should be noted that due to the considerable number of different characteristics of managers, the different ways of understanding the performance of an organization and its different types, there is no conformity in the literature about what would be desirable for a superintendent of a Brazilian teaching hospital. Keeping this in mind, it will be commented in more detail on the study of Lunkes, Naranjo-Gil and Lopez-Valeiras (2018) as it served as inspiration for the present paper. The remaining paragraphs of this subtopic refer to the authors' research.

Lunkes, Naranjo-Gil and Lopez-Valeiras (2018) investigated how the clinical experience of the top managers affects the performance of Brazilian public and private hospitals by proposing that this influence would be indirect, having as mediating variables the horizontal management control system and the perceived usefulness of management information.

In this study, the authors were authorized by the CEOs of 66 hospitals to carry out the research, in which the questionnaire was sent to the institutions. 150 responses were received, of which 56 were used, due to missing information.

Regarding the measurement of variables, the clinical experience corresponds to the number of years working in public hospitals and other health institutions, and the perception of performance compared to similar hospitals was measured across a five point Likert scale about: financial performance (divided into clinical costs and ability to obtain resources); operational performance (divided into clinical reputation and university teaching programs); research and quality of care.

Using *Partial Least Square*, the authors point out as results that the focus on the perceived usefulness of historical, internal, financial and short-term information has an important intermediary role in the relationship between experience and performance of hospitals. Therefore, they suggest that the authorities that appoint the superintendents should encourage the gain of experience, for example, by promoting training with the staff.

As for the differences between this research and that conducted by Lunkes, Naranjo-Gil and Lopez-Valeiras (2018), it is emphasized that for this research, the attributes addressed by Altoé, Pacheco and Espejo (2018) were adopted, notably gender, level of education, time in current position (years) and time of professional experience (years). It can also be mentioned as a difference the focus only on superintendents (instead of top managers), teaching hospitals (instead of public hospitals) and the search for direct relationships between characteristics and performance, disregarding mediating variables and data based on the perception of managers.

Financial performance in hospitals

With the gradual adoption of New Public Management (NPM), several aspects of the public sector have been subject to change. Accounting has a central function to operationalize these changes which, although their measurements and controls are not an innovation, have been transformed into a central aspect in the functioning of hospitals (JACOBS; MARCON; WITT, 2004)

In order to obtain more efficiency and effectiveness, planning and control became more focused on accounting, mainly by focusing on aspects such as inputs, results and performance indicators. These aspects should encourage the upper echelons of the hospital to communicate in the language of accounting, using concepts such as budget, cost accounting and balance sheets. This need is intensified because managers know that they will be evaluated according to economic criteria, based on the data that the accounting information tools will provide daily (SILVA; FERNANDEZ-FEIJOO; GAGO, 2018).

Rahimi *et al.* (2017) highlight that performance evaluation has been receiving increasing attention, since currently for several organizations it is the main concern and one of the primary issues of top hospital managers. They also assert that the importance of measuring performance is not restricted only to the organization's present performance, but is also used to allow performance to be better in the future. The authors also comment that measuring performance is not a simple task and due to its complex and multidimensional aspect, several models have emerged, for example: Analytical Hierarchical Process (AHP), Data Envelopment Analysis (DEA) and Balanced Scorecard (BSC).

Focusing on financial performance, the literature suggests some indicators. The studies presented in Table 2 were selected as examples when searching for the keywords "hospital" and "financial performance" on the *Portal de Periódicos CAPES*.

Table 2: Financial performance indicators for hospitals

Authors	Journal	Examples of Indicators
Brizola, Gil and Cordoni Júnior (2011)	Revista de Administração em Saúde	SUS revenue; Average value per AIH; Average value per outpatient procedure; average cost per hospitalized patient; average cost of outpatient care; average cost of emergency room care
Rahimi <i>et al.</i> (2017)	Journal of Health Management & Informatics	Percentage of revenue over costs; Percentage of deductions from hospitals; Average expenses per hospitalized patient; cost of medicines and materials; Percentage of personnel costs over total costs
Portulhak, Espejo and Pacheco (2018)	Revista de Administração Hospitalar e Inovação em Saúde	Obtained income; Percentage of procedures agreed and duly invoiced; Financial sustainability index

Source: Own elaboration.

Despite the various indicators and models available, EBSERH (2018) in its 2017 Annual Report emphasizes as one of its results goals in its 2017-2021 EBSERH Strategic Map the need to "Improve the performance of SUS Contracting". This objective is accompanied by an indicator made available by the company in its Indicator Panel for each of the hospitals incorporated into the company with data available as of 2017. This focus on the indicator makes top management give it a special attention, pursuing it actively, which will therefore constitute as the proxy for the financial performance of this study.

Development of hypotheses

Focusing on the gender of the superintendent, research suggests that female superintendents have a higher tendency to emphasize the patient's experience, thus obtaining better patient satisfaction scores (SILVERA; CLARK, 2019). When dealing specifically with financial performance, Post and Byron (2014) claim that the representation of women on the board is positively related to higher accounting returns, strategic involvement and monitoring. Zhang and Qu (2016) argue that there is no gender effect on performance, that is, a systematic performance difference between male or female CEOs, but instead a gender change effect (a male CEO being succeeded by a female CEO, for example). However, Bobe and Kober (2018) point out that women when managing their organizations are more concerned with non-financial performance indicators than men. Kaur and Singh (2019), when evidencing that men obtain better performance indicators, argue among the possible justifications that they tend to take more risks, accept challenges and make rational decisions.

H1: Male superintendents are positively associated with the financial performance of teaching hospitals.

Avellaneda (2009) used the attributes of professional experience and academic background as *proxies* for the managerial skills of a manager, arguing that their capacity positively affects the performance of the organization because they generate confidence in the decisions made and this is transferred to the subordinates.

Regarding academic training, Liu, Fisher and Chen (2018) complement that the level of education (e.g. master, PhD) can represent the desire to pursue significant and complex strategies and enrich the cognitive scheme, the openness to ideas and social networks, consequently increasing financial performance. In this context, Kaur and Singh (2019) argue that academic training is considered as an indicator of several cognitive orientations that can influence the performance of the company, being the most educated ones with better training, extensive cognitive growth and greater knowledge base, improving the relevant strategic actions and decision-making.

H2: The superintendent's higher level of formal education is positively associated with the financial performance of teaching hospitals.

About professional experience, Liu, Chen and Fisher (2018) comment that the experience of a CEO significantly affects their actions and ability to lead the organization. Specifically addressing time in office, studies show that more experienced CEOs tend to be more committed to the current organization since they were responsible for establishing it (Hambrick, & Mason, 1984), while younger superintendents tend to want to impose changes, having their perceived style, thus demonstrating competence (SHEN; CANNELLA, 2002). Avellaneda and Gomes (2017) emphasize that the public manager faces complex and constantly changing tasks that would be easier to deal with if he is qualified in terms of education and experience.

Complementing this reasoning, Kaur and Singh (2019) highlight that CEOs who have a long time in the position tend to compromise the independence of the board, not wanting to be questioned by anyone, hindering the monitoring of the board and consequently the organization's performance. On the other hand, the authors comment that the time in the position provides a feeling of continuity of the company, making the CEOs more responsible for their actions, which aligns his objectives with those of the organization.

H3: Time in the position as a superintendent is positively associated with the financial performance of teaching hospitals.

The experience in the sector is represented by the number of years that the professional worked in the area before assuming the position of CEO. This attribute finds divergent results in the literature: Serra, Três and Ferreira (2016), when studying the Brazilian context, noticed a negative relationship between professional experience and performance, and attributed this to the fact that, over time, CEOs tend to become more conservative, risk-averse and inflexible, which can undermine their tendency to seek innovative strategies; Wang *et al.* (2016) demonstrated that experience is positively associated with performance, as this experience provides a basis that allows the CEO to analyze and evaluate the information necessary to make a decision, affecting his preferences and strategic choices.

H4: The professional experience of the superintendent in the sector is positively associated with the financial performance of teaching hospitals.

It is noteworthy that Hambrick and Mason (1984) argue that companies in an environment of severe discontinuity, the years of service within the company are negatively associated with profitability and growth. The assumption is that these more experienced superintendents would be more resistant to change, which would undermine the organization's performance. This is what they defend by showing that in dynamic environments, more time in the position will be associated with a negative performance.

RESEARCH METHOD AND PROCEDURES

This study is characterized as exploratory and descriptive and was carried out by collecting secondary data with a quantitative approach to the problem. Thus, the relationship between the

attributes of the superintendents of public teaching hospitals linked to EBSEH and their financial performance in the Brazilian context is described.

For data collection, two different databases were used: to tabulate data on superintendents, the Lattes platform was used, which has updated curricula with all the information necessary for this research, with additional information (date of appointment and exoneration) being obtained in EBSEH's Service Bulletins; for performance data, they were collected on EBSEH's website directly for each teaching hospital investigated. The collection was carried out in January 2020 and correspond to the years 2017 to October 2019.

From the universe of the study of 40 university hospitals incorporated to EBSEH, 4 hospitals were excluded for lack of data on superintendents, which are: the *Maternidade Climério de Oliveira* (UFBA), the *Hospital Universitário Antônio Pedro* (UFF), the *Hospital de Doenças Tropicais* (UFT) and the *Hospital Universitário da UNIFAP*; and for lack of performance data, 10 hospitals were excluded: the *Hospital Universitário de Brasília* (UnB), the *Hospital Universitário da Grande Dourados* (UFGD), the *Hospital Universitário da UFPI*, the *Hospital Universitário da Univasf*, the *Hospital Universitário de Lagarto* (UFS), the *Hospital da Universidade Federal de São Carlos* (UFSCar), *Hospital Universitário Bettina Ferro de Souza* (UFPA), the *Maternidade Victor Ferreira de Amaral* (UFPR), *Maternidade Ana Bezerra* (UFRN) and *Hospital Escola da UFPE*. The final sample is shown in Table 03:

Table 3: Final sample of the research

Hospital das Clínicas da UFG	Hospital Universitário Cassiano Antônio Moraes (UFES)	Hospital Universitário Gaffrée Guinle (UNIRIO)	Hospital Universitário Maria Aparecida Pedrossian (UFMS)
Hospital das Clínicas da UFMG	Hospital Universitário da UFMA	Hospital Universitário Getúlio Vargas (UFAM)	Hospital Universitário Onofre Lopes (UFRN)
Hospital das Clínicas da UFPE	Hospital Universitário da UFS	Hospital Universitário João de Barros Barreto (UFPA)	Hospital Universitário Prof. Polydoro Ernani de São Thiago (UFSC)
Hospital das Clínicas da UFTM	Hospital Universitário de Juiz de Fora (UFJF)	Hospital Universitário Júlio Maria Bandeira de Mello (UFMG)	Hospital Universitário Professor Alberto Antunes (UFAL)
Hospital das Clínicas da UFPR	Hospital Universitário de Santa Maria (UFSM)	Hospital Universitário Júlio Müller (UFMT)	Hospital Universitário Professor Edgard Santos (UFBA)
Hospital Universitário Alcides Carneiro (UFCG)	Hospital Universitário Dr. Miguel Riet Corrêa Jr. (FURG)	Hospital Universitário Lauro Wanderley (UFPB)	Hospital Universitário Walter Cantídio (UFC)
Maternidade Escola Assis Chateaubriand (UFC)	Maternidade Escola Januário Cicco (UFRN)	-	-

Source: Own elaboration.

The data were tabulated in *Microsoft Excel* spreadsheets and through *EViews*© the regression through panel data was estimated. The choice of panel data is because of the monthly availability of performance data on hospitals for the period between January 2017 and October 2019. The variables used are enrolled in the following table, where the performance is presented as the dependent variable:

Table 4: Variables used in the study

(To be continued)

Variable	Description	Reference
Contracting Performance (MC)	Indicator that monitors the hospital's performance, under the financial aspect, related to the production of medium complexity care (MC). It is represented in percentage terms by dividing the financial production for the period and the value of the contract with the SUS manager. Available in EBSEH's website.	-
Gender	Dummy variable indicating whether the superintendent is a woman (0) or a man (1)	Silvera and Clark (2019)
Level of academic education	Categorical variable indicating that the superintendent is graduated (0), a specialist (1), master (2) or doctor (3)	Liu, Fisher and Chen (2018)

(Conclusion)		
Professional experience in the sector	It represents in years the time of the superintendent in the healthcare sector (professor, researcher and/or professional), as required by Law No. 13,303/2016	Lunkes, Naranjo-Gil and Lopez-Valeiras (2018)
Professional experience in the position	Represents in days the length of time in the position of superintendent (or general director, in the case of experience before incorporation by EBSEH) of the respective hospital	Avellaneda and Gomes (2017)
Budget	Control variable representing the budget allocated to the hospital in a given period	-
Number of employees	Control variable that represents the number of employees who were working at the hospital in a given period	Li (2018)
Number of beds	Control variable that represents the total number of beds available in the hospital in a given period	Silvera and Clark (2019)

Source: Own elaboration.

Despite the existence of monthly data in the period for the Contracting Performance (MC) variable, it was decided to aggregate the data in quarters (using the average of the variable) for the convenience of the researchers. Due to the absence of data at the time of collection for this survey, the October data alone represent the last quarter of 2019. Considering that it is an unbalanced panel, the final sample used for this survey was of 258 observations.

RESULTS AND DATA ANALYSIS

Table 5 presents the demographic data of the superintendentes of the 26 hospitals. 48 superintendentes held the position in the analyzed period with their descriptive data being show on the table below:

Table 5: Demographic characteristics of superintendentes

	Types	Number	%
Gender	Male	25	52%
	Female	23	48%
Academic education	Graduate	0	-
	Specialist	5	10.5 %
	Master	5	10.5 %
	Doctor	38	79 %
Professional Experience on the job (tenure)	Up to 3 years	18	37.5%
	Between 3 and 6 years	19	39.5%
	More than 6 years	11	23%
Professional Experience in the Sector	Up to 10 years	7	15%
	Between 10 and 30 years	19	39%
	Over 30 years	22	46%

Source: Own elaboration.

The tests required by the panel data were carried out to verify the robustness of the model. First, the Hausman test was performed to define whether the model would be of random or fixed effects. The test returned a probability of 0.1326, which indicates that random effects are appropriate. As for the normality of the data, it was conducted the Jarque-Bera test which showed the probability of 0.0675, indicating that the residues have a similar distribution to the normal distribution. Additionally, the VIF (variance inflation factors) and Durbin-Watson tests did not identify problems in the regression. With that done, it is presented the model estimation according to the following table:

Table 6: Regression by the random effects model

Performance	Coefficient	t
Constant	-2.43 (1.25)	-1.95
Gender	0.22*** (0.04)	4.94
Academic education	0.09*** (0.03)	2.73
Professional Experience on the job (tenure)	-0.07** (0.03)	-1.99
Professional Experience in the Sector	0.04 (0.10)	0.40
Budget	0.33* (0.18)	1.90
Number of Employees	0.17 (0.17)	1.04
Number of Beds	-0.10 (0.21)	-0.47
R ²	0.12	
Adjusted R ²	0.09	

Source: Own elaboration.

Note: * p <0.10, ** p <0.05, *** p <0.01

With regard to the results presented, the adjusted R² obtained was 0.09, which is in line with other similar studies, such as that of Avellaneda and Gomes (2017). This value can be explained by data limitation, since the study used only the attributes of the organization's top manager - the superintendents - when the theory allows and encourages the analysis of the upper echelons.

Analyzing the gender of the superintendents, it can be seen that the relationship with the financial performance of the institutions was significant at 1%, presenting a positive coefficient, which means that men tend to have a better contractual performance than women superintendents. The finding confirms H₁, demonstrating that male CEOs are positively related to financial performance, as was found by Kaur and Singh (2019). This finding is justified by the idea that male CEOs tend to take more risks, accept challenges and comments and make rational decisions (KAUR; SINGH, 2019), which would be appropriate in the case of hospitals undergoing a change in the organizational environment with the incorporation by EBSEH.

As for academic education, it was found that a superintendent with a higher degree corresponds to a better financial performance, being significant at 1%. The idea that doctor superintendents perform better in teaching hospitals seems to be prevalent, since they make up 79% of the sample in this study. H₂ is confirmed, therefore, corroborating Liu, Fisher and Chen (2018) by identifying that greater academic training positively impacts financial performance. This result is supported by the argument that CEOs with more formal education, they will be better trained and have greater knowledge about the sector (KAUR; SINGH, 2019), being more likely to have more desire for new, more complex and significant strategies, equipping them with the necessary capacity to understand and process information about changing organizational environments, new technologies, among others (WANG *et al.*, 2016).

The results obtained in relation to the managers' experience were different from those hypothesized. As for the experience in the position, the coefficient was negative and significant at 5%, indicating that superintendents with less time in the position have better performance rates, which does not support H₃. Despite this, the result finds support in the literature by predicting that newly appointed superintendents are predisposed to show competence, imposing changes and making their style noticed (SHEN; CANNELLA, 2002), which is plausible for an organization that is in the process of changing its organizational environment. A superintendent who has held his position for a longer time will be more likely to commit to the *status quo*, which leads to stagnation and adherence to outdated strategies (WANG *et al.*, 2016).

The H4 is also rejected considering that the variable that represents professional experience in the sector was not statistically significant to explain the financial performance of teaching hospitals. However, this lack of relationship is supported in the literature, since Wang *et al.* (2016) reported conflicting results in this regard.

CONCLUSIONS

The study aims to verify the relationship between the attributes of superintendents and the financial performance of teaching hospitals linked to EBSEH. The results of the research demonstrated that there is a statistically significant relationship between gender and academic education, but there was no support for the relationship between experience and performance.

The literature presents several perspectives of influences between the attributes of top managers with the performance of organizations from different sectors, and studies are still in a consensus in establishing these relationships. In general, there is more support for managers with greater human capital (e.g. academic background, experience) to obtain a better performance.

The present study finds results contrary to the expectations of the research, as established by the hypotheses of professional experience, showing that greater experience in the position is related to a worse financial performance. This finding can be explained by bringing the contributions of Hambrick and Mason (1984), who already hypothesized that a company that is discontinued in its organizational environment (e.g. change from traditional to decentralized management through EBSEH) needs managers who are more susceptible to changes.

This situation of discontinuity in the organizational environment also serves as a basis to justify the reason that male superintendents are related to better financial performance, because according to Kaur and Singh (2019), there is a tendency for male CEOs to take more risks, accept challenges and comments, which would be desirable in an environment that requires management adaptation.

Finally, the study concludes that male superintendents with a PhD and less experience in office are more likely to get better financial results, considering that the teaching hospitals currently face new challenges in their governance structures. Therefore, it is argued that superintendents who have such characteristics will be better able to make decisions, define ideal strategies and, consequently, achieve a better financial performance, contributing to the achievement of the result objective proposed in the 2017-2021 Strategic Map of EBSEH.

However, it is emphasized that the results evidenced in this research are limited to the available sample, having encountered difficulties in obtaining data of performance and from the superintendents. Therefore, it is recommended that future researches explore other possible variables, especially with regard to financial performance, which was the variable that most lacked data available in the period under analysis, in addition to seeking to extend the analysis to the *top management team*, as recommended by UET.

REFERENCES

- ALTOÉ, S. M. L.; PACHECO, V.; ESPEJO, M. M. S. B. Estilos de liderança e o uso de sistema de controle gerencial: evidências do nível de formação de gestores do topo. *Advances in Scientific and Applied Accounting*, II(2), 224-245, 2018.
- AVELLANEDA, C. N. Mayoral quality and local public finance. *Public Administration Review*, 69 (3), 469-486, 2009.
- AVELLANEDA, C. N.; GOMES, R. C. Mayoral Quality and Municipal Performance in Brazilian Local Governments. *Organizações & Sociedade*, 24(83), 555-579, 2017.

BEUREN, I. M.; RIBEIRO, F.; SILVA, O. L. da. Percepção de justiça organizacional e intenção de turnover em empresas de auditoria. *Revista de Ciências da Administração*, 21(53), 93-111, 2019.

BLANCO-OLIVER, A.; VERONESI, G.; KIRKPATRICK, I. Board heterogeneity and organizational performance: the mediating effects of line managers and staff satisfaction. *Journal of Business Ethics*, 152(2), 393-407, 2018.

BOBE, B. J.; KOBER, R. University dean personal characteristics and use of management control systems and performance measures. *Studies In Higher Education*, 45(2), 235-257, 2018.

BRAZIL. *Law n° 12,550*, from December 15, 2011. Autoriza o Poder Executivo a criar a empresa pública denominada Empresa Brasileira de Serviços Hospitalares - EBSERH; acrescenta dispositivos ao Decreto-Lei n° 2.848, de 7 de dezembro de 1940 - Código Penal; e dá outras providências. Recovered in February 03, 2020, from http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2011/Lei/L12550.htm.

BRAZIL. *Law n° 13,303*, from June 30, 2016. Dispõe sobre o estatuto jurídico da empresa pública, da sociedade de economia mista e de suas subsidiárias, no âmbito da União, dos Estados, do Distrito Federal e dos Municípios. Recovered in February 03, 2020, from http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2016/lei/l13303.htm.

BRIZOLA, J. B.; GIL, C. R. R.; CORDONI JÚNIOR, L. Análise de desempenho de um hospital de ensino antes e após a contratualização com o Sistema Único de Saúde. *Revista de Administração em Saúde*, 13(50), 7-22, 2011.

CARPENTER, M. A.; GELETKANYCZ, M. A.; SANDERS, W. G. Upper echelons research revisited: antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30(6), 749-778, 2004.

Empresa Brasileira de Serviços Hospitalares. Relatório de Administração 2017. Recovered in February 03, 2020, from https://www.ebserh.gov.br/sites/default/files/demonstracao-financeira/2018-12/Relatorio_Adm_2017_ok.pdf. Accessed in 03 fev. 2020.

GALSTIAN, C.; HEARLD, L.; O'CONNOR, S.; BORKOWSKI, N. The relationship of hospital CEO characteristics to patient experience scores. *Journal of Healthcare Management*, 63(1), 50-61, 2018.

GABUTTI, I. Hiring the right CEO: a pilot explorative study of the most innovative CEO's career pathways in the healthcare sector. *International Journal of Healthcare Management*, 1-7. doi: <https://doi.org/10.1080/20479700.2018.1562613>

GOODALL, A. H.; BÄKER, A. A theory exploring how expert leaders influence performance in knowledge-intensive organizations. In: Welpel, I., M.; Wollersheim, S. R.; Osterloh, M. (Coords.). *Incentives and performance*. (pp. 49-68). Bern: Springer International Publishing, 2015.

HAMBRICK, D. C.; MASON, P. A. Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206, 1984.

HAMBRICK, D. C. *Upper echelons theory*. In: AUGIER, M.; TEECE, D. J. (Orgs.). *The Palgrave Encyclopedia of Strategic Management*. Londres: Palgrave Macmillan UK, 2016.

HENDERSON, A. D.; MILLER, D.; HAMBRICK, D. C. How quickly do CEOs become obsolete? Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal*, 27(5), 447-460, 2006.

- JACOBS, K.; MARCON, G.; WITT, D. Cost and performance information for doctors: an international comparison. *Management Accounting Research*, 15(3), 337-354, 2004.
- KAUR, R.; SINGH, B. Do CEO characteristics explain firm performance in India? *Journal of Strategy and Management*, 12(3), 409-426, 2019.
- LIU, D.; FISHER, G.; CHEN, G. CEO attributes and firm performance: a sequential mediation process model. *Academy of Management Annals*, 12(2), 789-816, 2018.
- LOPES, A. V.; PANTOJA, M. J.; GONÇALVES, A. de O.; BILHIM, J. A. de F. Profissionalização da liderança pública: uma revisão da literatura sobre valores, competência e seleção de dirigentes públicos. *Revista Gestão e Conexões*, 9(1), 8-27, 2020.
- LUNKES, R. J.; NARANJO-GIL, D., LOPEZ-VALEIRAS, E. Management control systems and clinical experience of managers in public hospitals. *International Journal of Environmental Research and Public Health*, 15(4), 2018, doi: 10.3390/ijerph15040776.
- Organisation for Economic Co-operation and Development – OECD. *Government at a glance*. (2011). Recovered in February 03, 2020, from <https://www.oecd.org/gov/47887615.pdf>
- PORTULHAK, H.; ESPEJO, M. M. dos S. B.; PACHECO, V. Public Value Scorecard: alternativa para avaliação de desempenho em hospitais universitários. *Revista de Administração Hospitalar e Inovação em Saúde*, 15(1), 110-126, 2018.
- POST, C.; BYRON, K. Women on boards and firm financial performance: a meta-analysis. *Academy of Management Journal*, 58(5), 2015, doi:10.5465/amj.2013.0319
- RAHIMI, H.; KAVOSI, Z.; SHOJAEI, P.; KHARAZMI, E. Key performance indicators in hospital based on balanced scorecard model. *Journal of Health Management & Informatics*, 4(1), 17-24, 2016.
- SHEN, W.; CANNELLA, A. A. Revisiting the performance consequences of CEO succession: The impacts of successor type, postsuccession senior executive turnover, and departing CEO tenure. *Academy of Management Journal*, 45, 717–733, 2002.
- SILVA, A. F. da; FERNANDEZ-FEIJOO, B.; GAGO, S. Accounting information tools in managerial clinical service decision-making processes: evidence from Portuguese public hospitals. *International Public Management Journal*, 2018, doi: 10.1080/10967494.2018.1495136
- SILVERA, G. A.; CLARK, J. R. Women at the helm: chief executive officer gender and patient experience in the hospital industry. *Healthcare Management Review*, 2019, doi: 10.1097/HMR.0000000000000252
- WANG, G.; HOLMES, R. M.; OH, I. S.; ZHU, W. Do CEOs matter to firm strategic actions and firm performance? A meta-analytic investigation based on upper echelons theory. *Personnel Psychology*, 69, 775-862, 2016.
- ZHANG, Y.; QU, H. The impact of CEO succession with gender change on firm performance and successor early departure: Evidence from China's publicly listed companies in 1997–2010. *Academy of Management Journal*, 59: 1845–1868, 2016.