HUMAN CAPITAL AND ITS RELATIONSHIP WITH THE ORGANIZATIONAL PERFORMANCE IN ACCOUNTING SERVICES PROVIDERS

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ABSTRACT

Currently the value of companies cannot only be estimated by their tangible assets. The generation and acquisition of knowledge are key for obtaining competitive advantages, reason for which the importance of the intellectual capital of the organization grows. In this context the research aims to analyze whether the human capital (CH) held by companies providing accounting services are positively related to their organizational performance (DO). Methodologically, the research is characterized as quantitative and of an applied nature, with the empirical data obtained from a questionnaire in intentional sample. Data were collected from both constructs and respondents and their companies. Statistical methods were t test and the analysis of variance for averages comparisons. We have also used exploratory and confirmatory factor analysis and modeling in structural equations to evaluate the conjectured relationship. The results have showed that the respondents have statistically equal perceptions for both constructs when considering gender and the type of management the firm has, but there were differences for the perception of performance according to the size. Larger companies report higher performance. The hypothesis that CH is positively and significantly related to OD is, therefore, confirmed.

Keywords: Human Capital. Performance. Accounting.

1 INTRODUCTION

The concept of intellectual capital is often used as a synonym for intangible assets. However, some definitions, for example the Society of Management Accountants of Canada, do not include the competence of employees, the company's image and reputation, organization and culture, customer loyalty, among other components (Lopes Costa, 2012), which relate to the multidimensional concept of intellectual capital. For the construct, three dimensions are recognized: human capital, structural capital and relational capital (Edvinsson & Malone, 1997).

The component of highest value in the dimensions of intellectual capital, according to Rahman (2012), is the human capital and organizations with great efficiency in this type of capital tend to show better financial performance.

In the case of companies providing accounting services, both structural and relational capital can be considered relatively constant. The organization of work, the relations between bosses and subordinates, and organizational learning as examples of structural aspects, fluctuate little over time. On the other hand, information technology, which is the most changeable among the structural components, usually related to standardized obligations, ends up affecting equally all offices and, therefore, the effect is diluted. Accordingly, the customer portfolio, its satisfaction, the indexes of complaints, such as some of the items from the relations with the users of the services, also remain almost stable.

However, a common fact is the high turnover perceived in these companies. The turnover of the employees under this research is reflected in the relation existing between the time in the profession and the time in the company where they currently work. Therefore, it is justified to study the dimension that measures human capital, conceived as the knowledge, skills and capacities of individuals (Coleman, 1988).

Taking into account this assertion it can be supported that every organization has its human capital, but the business success also undergoes other conditions. The ability of a company to recognize the value of new, external information; to assimilate it, and apply it for commercial purposes is key to its innovative capabilities." (Cohen & Levinthal, 1990, p. 128), is one of the success pillars.

Based on the foregoing, this paper aims to analyze if the human capital (CH) that the companies providing accounting services have is positively related to its organizational performance (DO).

With the present study, we sought to obtain new empirical evidence regarding the relationships between the constructs under analysis. Its performance, in addition to the original for research focus organizations, has practical relevance for improving the functioning of offices. On the other hand, the propositions of theoretical articulations, still little addressed in empirical studies within the Brazilian reality, ground the academic interest.

Following this introduction, the theoretical framework defined is presented. The following section details the material and methods used followed by the description and analysis of the data. Finally, the final considerations are made and the bibliographic references cited in the text.

2 THEORETICAL REFERENCE

In this section, we present the theoretical framework defined as necessary to understand the adopted approach. After the treatment of the human capital construct, the hypothesis of its relation with the organizational performance in companies providing accounting services is drawn-up.

2.1 intellectual Capital

The value of an organization is directly influenced by knowledge and the application thereof, thus ensuring benefits. In general, they have been denominated as intangible assets and as intellectual capital. Wernke, Lembeck and Bornia (2003, 24) state "despite the difficulty of understanding and perceiving the intellectual capital in the face of its subjectivity, it remains evident that it is representative and relevant today, affecting the market value of companies."

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Cassol, Zapalai and Cintra (2017, p. 13), in turn, emphasize, "Organizations began to look for possibilities to register and manage their intangible assets so as to develop competitive differentials towards their competitors, intensifying, therefore, the value of knowledge management".

The concept of such capital is related to the role knowledge plays in economic growth (Huang & Liu, 2005). Thus, it has been pointed out that intellectual capital is a vital asset to organizational success (Bontis, Keow, & Richardson, 2000; De Castro, Sáez, 2008, Kamukam, Ahiauzu, & Ntayi, 2010). Stewart (1998, p.8) affirms "intellectual capital is the intellectual matter - knowledge, information, intellectual property, experience, which can be used to generate wealth. It consists of the collective mental capacity."

It can be seen that intellectual capital can be considered as the sum of knowledge, whether individual or collective, as well as tacit or explicit (Bontis, 2001), used by companies to gain competitive advantage. Because of this sum, the intangibles that compose it are drivers of organizational performance (Sainaghi & Baggio, 2013).

In the view of Perez and Famá (2006), intellectual capital is generated by innovation, organizational practices and human resources. According to Gracioli, Godoy, Lorenzett and Godoy (2012), it is responsible for an increasing percentage in the development of organizations, creating the greater part of the value of its products and services. In general terms, the authors express that all intangible resources and their interconnections are considered intellectual capital. Brooking (1996), Stewart (1998), Sveiby (1998) and Edvinsson and Malone (1997, 1998) understand that intellectual capital consists of a set of components, according to Figure 1.
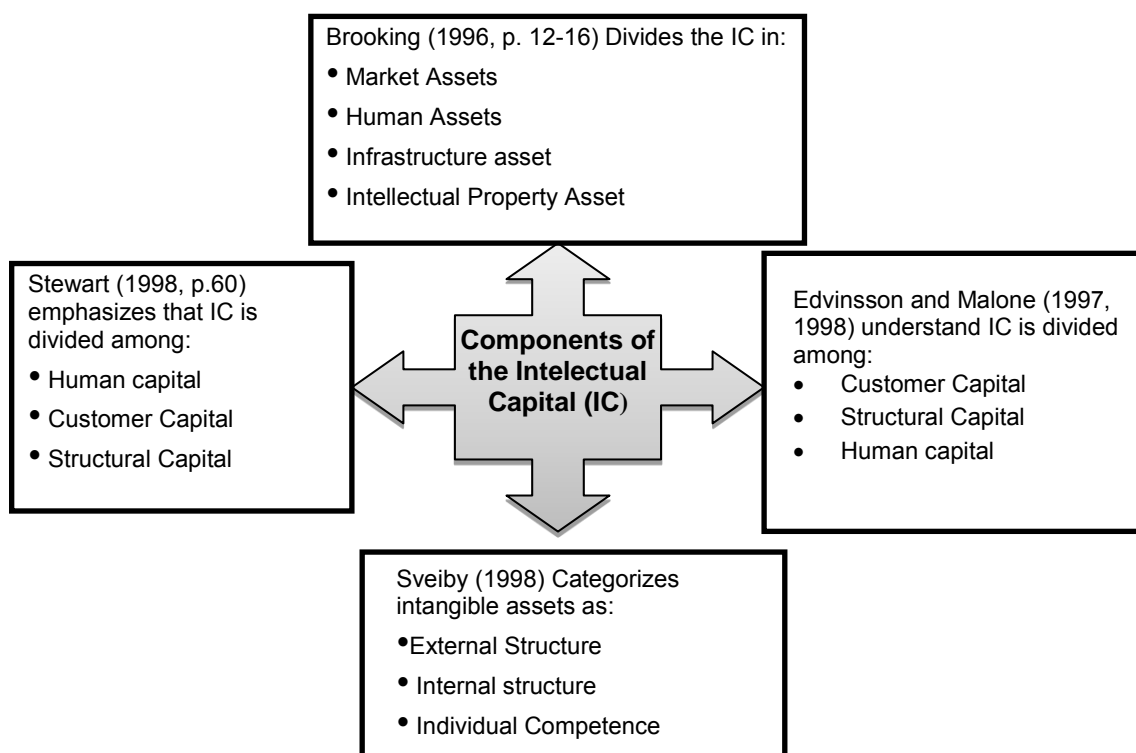

Figure 1. IC Components according to Brooking (1996), Stewart (1998), Sveiby (1998) and Edvinsson and Malone (1997, 1998)

Source: (Edvinsson & Malone, 1997, 1998).

Regarding Figure 1, this research is theoretically related to the categorization of intellectual capital proposed by Edvinsson and Malone (1997, 1998), who understand that IC is composed of human, structural and relational capital. Below, human capital is more deeply investigated, a it is the component analyzed in this study.

2.2 Human Capital

The value of an organization has been directly influenced by knowledge and its application, thus ensuring benefits. They have been generally denominated as intangible assets and as intellectual capital. The concept of this capital relates to the role knowledge plays in economic growth (Huang & Liu, 2005). Thus, it has been pointed out that intellectual capital is a vital asset for organizational success (Bontis, Keow, & Richardson, 2000, De Castro & Sáez, 2008). Accounting science's challenge is to measure it so as to evidence the return that these intangible assets may provide to the company (Oliveira & Beuren, 2003, Sena & Petri, 2011).

In this sense, Stewart (1998, p.8) argues "intellectual capital is the intellectual matter - knowledge, information, intellectual property, experience, which can be used to generate wealth. It consists of the collective mental capacity. "Thus, intellectual capital can be considered as the sum of knowledge, whether individual or collective, as well as tacit or explicit (Bontis, 2001), used by companies to obtain competitive advantage when converted into value (Silva, Bilich, & Gomes, 2002).

In the view of Perez and Famá (2006), intellectual capital is generated by innovation, organizational practices and human resources. In general terms, the authors state that all intangible resources and their interconnections are considered intellectual capital, which is formed, according to Edvinsson and Malone (1997), by the following components: structural, relational and human capital. The latter being the central focus of this study.

Human capital is an intangible asset that can be used to generate value for the organization. Thus, Florin (2005) argues that human capital refers both to the capacity, skill and experience as to the formal knowledge that people hold and that adds value to the company. That is, as conceived by Coleman (1988), he comprises knowledge, skills, and abilities of individuals. Gil and Arnosti (2007) emphasize that human capital involves the knowledge and learning capacity of the employees that make up the organization. Therefore, investments in human capital, according to Unger, Rauch, Frese and Rosenbusch (2009), become important as they enable companies to improve the qualification of their employees, increasing their satisfaction, commitment and, consequently, their performance. Therefore, it is possible to establish the following hypothesis:

H1: Human capital is positively related to organizational performance.

2.3 Organizational Performance

The performance evaluation serves to control a strategy defined by the organization, confronting its result with the established objectives. In this perspective, Neely, Gregory and Platts (2005) see it as a process of quantifying the efficiency and effectiveness of business actions. For Igarashi, Ensslin, Ensslin and Paladini (2008), it is through the performance analysis that organizations can measure their ability to survive and continue, given the demands of the internal and external environment within which they are. The growth of interest in organizational performance measures is a result of important changes both in the business environment and the strategies adopted (McAdam & Bailie, 2002).

Regarding the measurement thereof, Gunasekaran and Kobu (2007) consider it a great challenge for managers to develop appropriate measures to make decisions that are able to contribute to the achievement of competitiveness. Backes, Silva, Adão and Corso (2009) argue that measuring performance is complex and the various methodological forms and approaches used in its evaluation should take into account. Performance can be measured from two perspectives: first, as a subjective concept, which is related to the organizations' performance according to their own expectations or to competition (Pelham & Wilson, 1996); and second to

analyze it by the objective method, based on absolute measures of performance (Chakravarthy, 1996).

In support to the strategic decision of the organization, its measurement, according to Bortoluzzi, Ensslin and Ensslin (2010), shall take into account some important elements, namely: taking into account the particularities of each organization; considering financial and non-financial indicators, that is, the tangible and intangible aspects; connecting strategic and operational targets; and building a communication process that allows all organizational levels to identify in a clear and easy way the objectives idealized by the organization. In this sense, for Dani, Santos and Kaveski (2017: 35) "... business performance indicators are designed to provide the necessary support to decision makers and the survival of the organization."

However, the validity of the use of subjective performance indicators has been demonstrated as a viable alternative in the event of absence of reliable secondary data (Perin & Sampaio, 1999) or impossibility of obtaining them. According to Hoque (2005), the reason why subjective measures are usually chosen is because a significant number of small firms do not have those data or because they have insufficient objective information, making it almost impossible to accurately measure them. In this study, we have chosen to use subjective performance measurements, working in collaboration with the managers of the accounting offices. This decision is based on the fact that this construct constitutes the dependent variable in the model and its measurement, as a value in relation to the closest competitors, being appropriate to estimate the relations the human capital (CH) has therewith.

3 MATERIAL AND METHODS

In view of the adopted criteria, the approach to the problem was quantitative. The quantitative evaluation comprises organizing, summarizing, characterizing and interpreting numerical data (Martins & Theóphilo, 2007). The characteristics of this study, given the perspective of its objectives, place it as descriptive. For Vergara (1998), the objectives of the descriptive research refer to the obtaining of information about a phenomenon or about a certain population and the description of its characteristics. With regards to technical procedures, it was a survey-type, which aims to contribute to the knowledge of a particular area of interest through the collection of data about individuals or their environment.

The material for the study was obtained by means of a non-random sample using a self-filling questionnaire. It was applied in March and April 2016 in person and also sent by e-mail to managers, coordinators and assistants of companies providing accounting services located in the municipalities of Itajaí, Balneário Camboriú and Itapema, in the State of Santa Catarina. The instrument for data collection consisted of 33 assertions, to be answered with a 7-point Likert agreement scale, ranging from totally disagree (1) to fully agree (7). There were also 6 questions for obtaining data from respondents and offices.

The two main sections of the questionnaire comprised the constructs: human capital (CH) and organizational performance (OD). The first section contained 26 assumptions for CH, measured by values (4), attitudes (5), knowledge (6), abilities (6) and leadership (5). In the last section, intended to measure perception about OD, 7 items were presented to be evaluated in relation to the closest competitor. The indicators were: net profit, total sales, achievement of financial goals, employment and personnel targets, customer satisfaction, customer retention and overall performance.

All data obtained were typed in Excel® spreadsheet, which was pre-processed and performed according to the indications of Hair, Black, Babin, Anderson and Tatham (2009). It was observed that there were 17 data missing in the 202 questionnaires received, but on the grounds that the occurrence of any pattern was not recognized, they were filled with the average value of the item considered. Then, the outliers were evaluated using the Box-Plot graphical function of the Statistica software, with which 32 were recognized. Likewise missing data, it was verified that they did not follow certain pattern and it was chosen to maintain them. No typos were found. As a result of the procedures described, the initial database consisted of 202 respondents and 39 variables.

The statistical methods used to compare averages were the t-test and variance analysis.

Anova carried out was univariate and therefore very robust against violations of normality and homoscedasticity (Harris, 1975). The multivariate methods used in evaluating the relations between the constructs were exploratory factorial analysis (AFE), confirmatory factorial analysis (AFC) and structural equation modeling (MEE). The software used was Statistica®, SPSS® and AMOS®.

Before carrying out the factorial analyzes, the Cronbach's alpha coefficient was calculated for each construct considered as well as the correlation of the item with the total, according to the procedure suggested by Churchill (1979). The mean inter-item correlation was calculated and Kaiser, Olkin and Meyer (KMO) and Bartlett's tests were used to confirm the feasibility of factorial analysis. The extraction by principal components was used in AFE, which does not require multi-normality. Factors were extracted according to Kaiser criterion for correlation matrix.

Further restrictions imposed imply that factor loads must be greater than or equal to 0.70 in module and the commonality greater than or equal to 0.5. The variance extracted by the factor in the case of unidimensionality should be greater than or equal to 50%. After these procedures the base was left with 35 variables. These include the 6 variables referred to individual and corporate information along with the 23 variables measuring the human capital and 6 variables measuring performance. In order to evaluate the normality of the distribution of these selected variables and to take into account the data came from Likert scales, calculations of asymmetry and kurtosis were performed (Hair et al., 2009). Finney and Distefano (2006) state that data with coefficients of up to 2 asymmetry and up to 7 skewness, in module, can be considered almost within normality.

Once confirmed that each factor extracted had been with more than three items a confirmatory factorial analysis (AFC) was developed using the AMOS® software. It was posed as a restriction that, between the indicator and the dimension or construct evaluated, the standardized coefficient should have minimum value of 0.50. The AFC corrects possible shortcomings of the exploratory model and leads to a greater certainty of the hypotheses that must be contrasted by means of models that explain the interrelationships existing in the structure of a questionnaire. In this study AFC was used to validate the measurement model individually, for each dimension of the construct, and then for the construct considering all its dimensions. Finally, the general measurement model between human capital and performance was validated.

The analysis of the predictable relation was carried out through the modeling of structural equations, also with AMOS® software. The main function of MEE and the specification and estimation of linear relations models between variables. This technique offers the possibility to investigate how well the predictor variables explain the dependent variable, being also possible to identify which of the predictable variables are the most important (Kline, 2011).

4 RESULTS

With the data from the obtained sample, consisting of 202 valid questionnaires and 35 variables, the procedures described in the previous section were performed prior to conducting the factorial analyzes. Thus, following Churchill (1979) guidelines, in order to confirm the adequacy of data the reliability was evaluated through Cronbach's alpha and the correlations of the item with the total, besides the average value of the inter-item correlation. The results obtained are presented in Table 1, which also shows the value of the test performed by Kaiser, Olkin and Meyer (KMO), which also serves to confirm the feasibility of performing a factorial analysis. Values above 0.7 are expected for KMO. The results of the Bartlett test are not presented in the Table since they were all significant (p <0.001).

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Table 1
Indicators of feasibility in performing factorial analysis with the considered constructs

| Construct | Dimension | Number of items | Cronbach α | Correlation | | K-M-O |
				Item-total	Inter-items	
CH	Values	4	0,8428	> 0,6	0,576	0,781
	Attitudes	5	0,9196	> 0,7	0,703	0,884
	Knowledge	5 *	0,8622	> 0,4	0,527	0,819
	Skills	5 *	0,8181	> 0,45	0,484	0,758
	Leadership	5	0,9049	> 0,65	0,682	0,787
DO	Performance	6 *	0,9420	> 0,55	0,729	0,876

Note. Source: Research Data (2016).
* Means the number of items were adjusted to obtain satisfactory data.

Exploratory factorial analysis made it possible to make other adjustments in the database, resulting in the final number of items per dimension and each construct considered (Table 1). Calculation of asymmetry and skewness has showed that none of the values exceeded the limits suggested by Finney and Distefano (2006), as shown in Table 2. This indicates that the distribution can be considered almost within normality.

Once defined the variables used in the data analysis, a comparison of average was made for each construct. For such, dependent variables were the sum of the scores attributed to the selected indicators of each construct. In the comparison between respondents, the gender was used as categorical variable; while to contrast the companies were used the type of administration presented by them: family or professional. In the first t-test there were no differences related to the subject's gender for any of the constructs. For the type of management there was a difference in the averages of three dimensions of human capital, with higher values in family management companies. These differences were verified for the attitudes, capacities and leadership; however, equality was observed for the total sum of the five dimensions.

When considering the size of the office, which are categorized as small (up to 49), medium (from 50 to 99) and large (with 100 or more employees), the contrast of the averages was created using the variance analysis. There were differences for performance and for human capital in simultaneous comparisons, being both constructs measured by the total sum of the selected indicators (Table 2).

Table 2
Calculation of descriptive measures of selected items in the exploratory factorial analysis

Dimension	Item	Average	d.p.	Ass.	Skewness		Dimension	Item	Average	d.p.	Ass.	Skewness
PERFORMANCE	DO1	5,38	1,201	-0,08	-1,317	CAPITAL HUMANO	Knowledge	CN1	5,34	1,076	-0,41	0,025
	DO2	5,57	1,085	-0,06	-1,279			CN3	5,22	1,178	0,03	-0,751
	DO4	5,73	1,131	-0,31	-1,305			CN4	5,52	1,217	-0,24	-0,849
	DO5	5,80	1,157	-0,46	-1,253			CN5	5,77	1,023	-0,51	-0,540
	DO6	5,80	1,215	-0,46	-1,384			CN6	5,30	1,087	-0,19	-0,777
	DO7	5,77	1,150	-0,40	-1,286		Attitudes	AT1	5,83	1,293	-0,91	-0,130
Dimension	Item	Average	d.p.	Ass.	Skewness			AT2	5,77	1,144	-0,70	-0,070

Continue

Table 2 (continuation)

Dimension		Item	Average	d.p.	Ass.	Skewness	Dimension		Item	Average	d.p.	Ass.	Skewness
HUMAN CAPITAL	Values	VL1	5,80	1,010	-0,57	0,769	HUMAN CAPITAL	Attitude	AT3	5,88	1,208	-1,10	0,512
		VL2	5,57	1,200	-0,21	-1,429			AT4	5,47	1,406	-1,40	1,341
		VL3	5,13	1,343	-0,69	0,239			AT5	5,57	1,536	-1,05	0,203
		VL4	5,99	1,182	-0,79	-0,707		Leadership	LD1	5,35	1,530	-0,61	-0,748
	Capacities	CP1	5,45	1,034	-0,38	0,399			LD2	5,14	1,536	-0,34	-0,995
		CP2	5,72	1,134	-0,28	-1,144			LD3	4,86	2,008	-0,71	-0,915
		CP5	4,58	2,027	-0,48	-1,144			LD4	5,40	1,517	-0,42	-1,251
		CP6	5,61	1,348	-0,63	-0,922			LD5	4,67	2,121	-0,78	-0,800

Note. Source: Research Data (2016).

In Anova for human capital, the simultaneous comparison have showed that there are differences between averages, as shown in Figure 2, and confirms the result of test [$F(2, 199) = 3.4968$, $p = 0.03217$]. However, when comparing the comparisons paired with the Tukey test for unequal number of observations, it can be observed that large companies have higher average scores compared to small companies, but their significance is only verified at 10% ($p = 0.067$) . Medium-size companies, in turn, are no different from large or small companies.
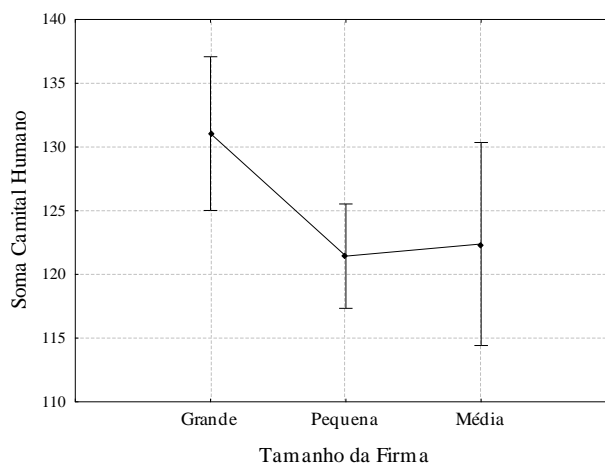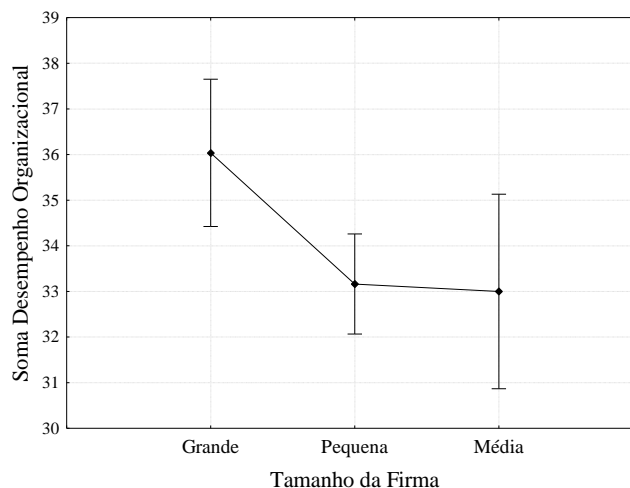

Key: vertical = Human Capital Sum | horizontal = Big Small Medium | Company Size

Figure 2. Simultaneous comparison in Anova of the sum of the score of selected human capital items according to the size of the accounting services office.

Source: Research Data (2016).

In performance Anova with the same predictors, in turn, it is also confirmed that there are differences in the simultaneous comparison [$F (2, 199) = 4.6322$, $p = 0.01081$]. Likewise, the larger offices are those that declare better performance (Figure 3).

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Key: vertical = Organizational Performance Sum | horizontal = Big Small Medium | Company Size

Figure 3 – Simultaneous comparison in Anova of the sum of the score of selected human capital items according to the size of the accounting services office.

Source: Research data (2016)

And, in the comparisons paired with the Tukey test for unequal number the difference is confirmed to be significant at 5%, as shown in Table 3, between the averages of the performance score for large offices contrasted with small ones. The medium-size offices are not different from big or small offices.

Table 3
Values of average scores and of significance of performance comparisons with Tukey test for unequal number of elements

Size	Big	Small	Medium
Medium	36,037	33,162	33,000
Big		0,034837	0,115324
Small	0,034837		0,993798
Medium	0,115324	0,993798	

Note. Source: Research Data (2016).

In order to evaluate the first hypothesis proposed, the structural model was organized considering the 5 dimensions of human capital (CH), with 23 items influencing the organizational performance (OD) measured by 6 indicators. Figure 4 shows the model with the values of standardized covariance (or correlations) of the relations.

The adjustment of relations by means of the covariance coefficients was obtained in 11 interactions. The results obtained are presented in Table 4, which presents the standardized coefficients and their significance.
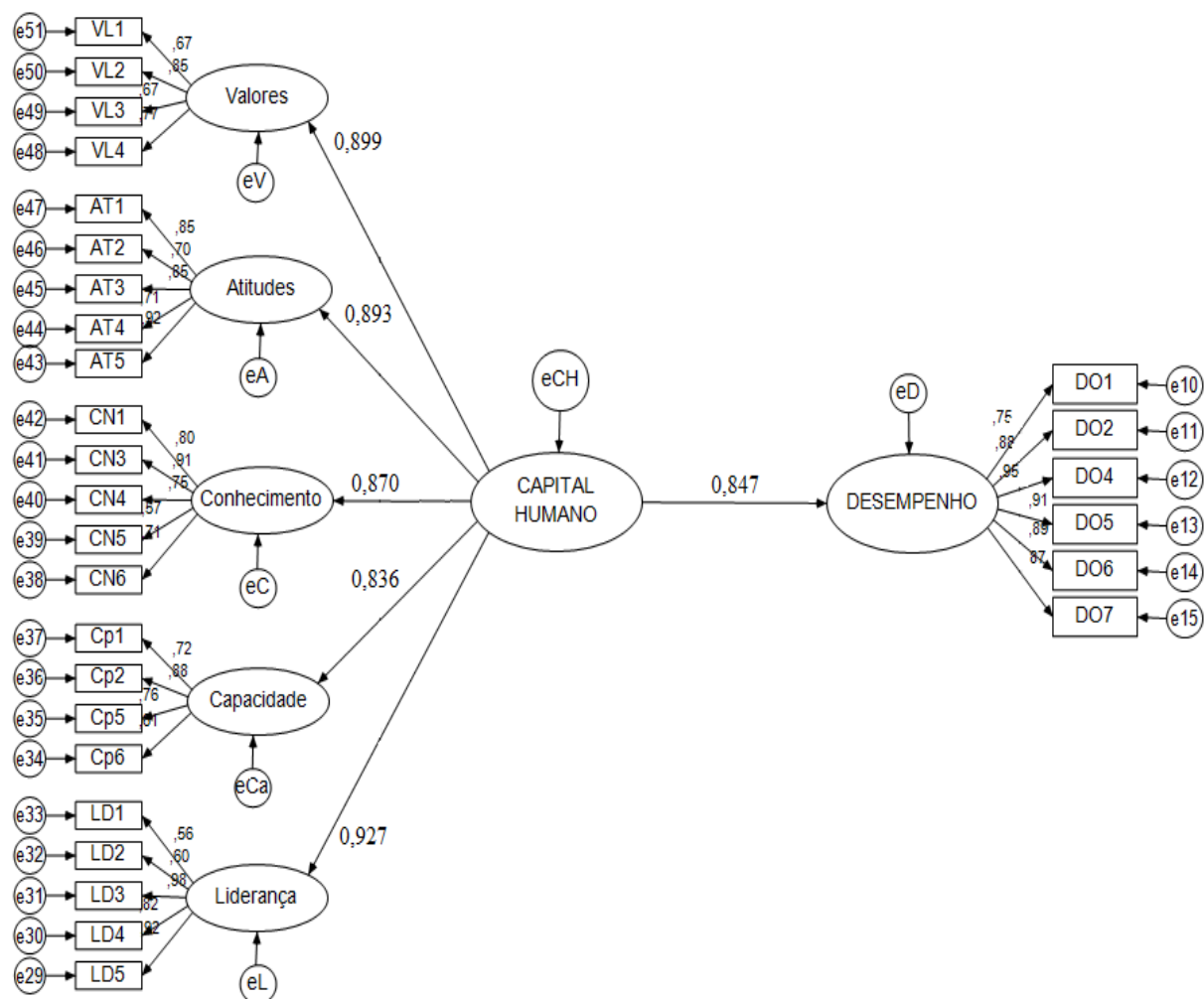
Key: Column 1 = Values / Attitudes / Knowledge / Capacity / Leadership | Column 2 = Human Capital | Column 3 = Performance

Figure 4. Structural model of the relationship between the human capital and the organizational performance

Source: Research Data (2016).

Observing the tabulated values, we confirm that all associations involving the human capital with their dimensions and performance were significant.

Table 4
Coefficients calculated in the modeling of structural equations and the significance thereof

Relation		Coefficient	Significance
Knowledge	HUMAN CAPITAL	0,87	***
Attitudes	HUMAN CAPITAL	0,893	***
Capacities	HUMAN CAPITAL	0,836	***
Values	HUMAN CAPITAL	0,899	***
Leadership	HUMAN CAPITAL	0,927	***
PERFORMANCE	HUMAN CAPITAL	0,847	***

Note. Source: Research data (2016).
***: $p < 0.001$.

It is, therefore, confirmed the hypothesis that provided the positive relationship between CH and DO. These same findings were obtained in the researches with several types of companies, such as companies from the software sector (Seleim et al., 2007) and the pharmaceutical sector (Sharabati, 2013).

To evaluate the adjustment of the model, the following indices were used: chi-square divided by degrees of freedom (χ^2/g.l.); Root Mean Square Error of Approximation (RMSEA); Non-Normed Fit Index (NNFI); Comparative Fit Index (CFI); And, Root Mean Residual (SRMR). The reference values suggested as appropriate are: χ^2/g.l. < 5; RMSEA < 0.08; NNFI > 0.90; CFI > 0.90; RMR < 0.10.

In this list data processing the adjustment values obtained were: χ^2/g.l. = 5.5251; RMSEA = 0.086; NNFI = 0.852; CFI = 0.890; and RMR = 0.126. Therefore, the adjustment can be considered satisfactory.

5 CONCLUSIONS

In line with the general objective of the research, it focused on the analysis of the associations between the human capital (CH) and the organizational performance (OD) of accounting offices. Based on the theoretical reference, the hypothesis that postulated such relation was proposed as positive. Initially, some analyzes were carried out to determine whether the gender or type of company management influence the respondents' perception of constructs.

Average comparisons tests failed to show significant differences for any of these predictors. However, according to the size of the companies, differences are observed in performance. The largest are those declaring better performance and still have a higher average in the human capital score, with significance at 10%, if compared to small companies.

As a conclusive remark of this study, we emphasize that in the offices integrating the sample, the available human capital is positively related to the declared performance if compared to competitors. It has also been observed that the aspect that most influences the relations with the human capital is leadership.

We suggested that further researches are done on this type of organization, considering the other components of the intellectual capital, namely structural and relational components. Moreover, we recommend that the database is expanded in new researches, thus including other important constructs, such as the absorptive capacity of knowledge, and conducting a probabilistic sampling so as to generalize the results.

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