THE CORRELATION BETWEEN THE INTELLECTUAL CAPITAL DISCLOSURE LEVEL AND THE STAKEHOLDER STRUCTURE

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Abstract: *The objective of the research is to identify the link between the stakeholder structure and the level of disclosure of intellectual capital on a sample of 38 Romanian entities listed on the Bucharest Stock Exchange, from fields with a strong emphasis on knowledge. The assessment of the degree of disclosure of intellectual capital was conducted using the content analysis of annual reports of entities investigated in 2010-2013 by leveraging the intellectual capital information according to a list of 72 items taken as a standard. The next step in research is to analyze the structure of stakeholders and their grouping into 4 categories: major shareholders the state and government institutions, foreign investors, institutional investors and the investors as natural persons. The question around which the entire research described in this paper oscillates around is whether the stakeholder structure of an entity influences the level of disclosure on intellectual capital. From this general idea we built 4 research hypotheses in order to identify correlations between the average degree of intellectual capital disclosure and various categories of shareholders. The research has led us to conclude that the disclosure of intellectual capital is influenced by the stakeholder structure. For example, the entities whose owner is the State and government institutions disclose more intellectual capital, while those whose ownership is foreign disclose less. This result is contrary to our expectations, but understandable due to the young capital market in Romania, whose limits are inherent (even regarding the profile of the investors). The entities whose owner is the State and government institutions are generally in the pharmaceutical field, are large entities with an age of more than half a century. The entities whose securities are held mostly by domestic institutional investors or individual investors do not either disclose information on intellectual capital more than the average of the sample. Due to the analytical approach of the connection between the level of capital intellectual disclosure and the stakeholder structure (correlations tested on categories of shareholders), the study receives a novelty character among indigenous studies in the field*.

Keywords: intellectual capital disclosure, content analysis, stakeholder structure, knowledge based economy, Romanian listed entities

JEL classification: O34, M41, D83, G31

1. Introduction

The subject of intangible assets has constituted an issue of analysis and debate among researchers, because of those among which, due to their features, don't meet recognition criteria in financial situations. For example, information such as innovation, human resources, customers or technology of an entity are not to be found in the financial reports because they are difficult to identify, recognize and measure. But investors are increasingly aware of these immensurable resources, not reflected directly in the financial statements (Hidalgo et al., 2011) and therefore they become more and more receptive to information about them, voluntarily disclosed in annual reports.

Orens et al. (2009) show that disclosure inclined entity, presents a higher value and a lower cost of funding. In support of their investment decisions, improved reports of these entities are appreciated by investors. They are able to estimate much better the state of the entity, they recognize opportunities and they are more likely to allocate their financial resources.

Transparent and voluntary communication policy on the unrecognized intangible assets, encountered further as the intellectual capital, we believe depends on the type of shareholders who have invested in the entity. Managers in their turn, to reduce the agency costs that are the result of information asymmetry as a consequence of ownership-control split, should be willing to publish information on intellectual capital, to satisfy all stakeholders. But we consider that the manager's profile is closely related to the nature of investors.

Therefore, the objective of our research is to identify the link between stakeholder structure and the level of intellectual capital disclosure on a sample of 38 Romanian entities, listed on the Bucharest Stock Exchange, from fields with a strong emphasis on knowledge.

Consistent with the logic of the research, we have structured the work into five sections. After a brief introduction, we made a synthesis of previous studies with similar topic and then we detailed the research methodology and we presented the hypothesis. The fourth section is reserved for discussions of the results based on statistical processing, while conclusions concerning the effect of the stakeholder structure intellectual capital disclosure are contained in the last part of this work.

2. Theoretical background

Most authors whose research topic was the intellectual capital, besides the fact that they tried to assess its level of disclosure (Brennan, 2001; Bozzolan et al., 2003; Firer and Williams, 2005; White et al. 2007; Hidalgo et al., 2011) or its effectiveness (Mohd-Saleh et al., 2009), they have also made an attempt to build associations between various factors that may affect the level of intellectual capital (Oliveira et al., 2006; White et al., 2007).

As regards the methods used in research, Mohd-Saleh et al. (2009) utilized the VAIC™ method to assess the performance of intellectual capital, while Firer and Williams (2005), White et al. (2007) and Hidalgo et al. (2011) applied the disclosure index. For some specialists (Mohd-Saleh et al., 2009; Hidalgo et al., 2011) the period of investigation was three years in a row (2005-2007), while others focused their analysis on a single year (Firer and Williams 2005).

Likewise, the encoding method has been approached differently from one researcher to another. Most of them have chosen to apply 0 to unidentified elements of

intellectual capital in the studied reports and 1 for identified items (Oliveira et al., 2006; Li et al., 2007, 2008; White et al., 2007; Hidalgo et al., 2011). While others have opted for giving more detailed scores, using the notation type 0, 1, 2 (Bozzolan et al., 2003), or 0, 1, 2, 3, 4 (Firer and Williams, 2005) or 0.25, 0.5, 0.75 (Fădur, 2013; Precob, 2014; Fădur et al., 2012), thus being more particular on the issue of the quality disclosed information.

Consistent with the purposes of this inquiry, worth mentioning the research analyzing the correlation between the degree of intellectual capital disclosure and specific aspects of corporate governance (Li et al., 2008; Hidalgo et al., 2011) or, more precisely, those studies that are trying to identify some direct correlation between stakeholder structure and the level of intellectual capital (Firer and Williams, 2005; Mohd-Saleh et al., 2009).

From the study of Firer and Williams (2005), whose interest was centered on firm ownership structure directly correlated with intellectual capital disclosures, it appears that listed companies from Singapore, whose capital is held by a smaller group of shareholders, publish less information on intellectual capital than those whose actions are more widespread. Similar is the effect of those entities in which the executive director has a higher percentage of their capital. Nevertheless, in government linked corporations, disclosure of intellectual capital is greater than in the case of others.

Similar to Firer and Williams (2005), Mohd-Saleh et al. (2009) assay whether the ownership structure of listed Malaysian companies influence the variation in performance of their intellectual capital (assessed by the method VAIC™). They deduce that the family business has a negative influence; the bigger the property, the lower the interest in creating value, as they only manifest own interests to the detriment of minority shareholders.

Unlike Mohd-Saleh et al. (2009), Hidalgo et al. (2011) infer that entities with major institutional ownership have a negative effect on intellectual capital disclosure. Due to unrestricted access they have to the necessary information to support decisions, they are not interested in transparent disclosure of information on intellectual capital. The study is conducted on 100 Mexican entities, listed in 2005-2007, and tests the association between corporate governance characteristics of the entity and its availability in the disclosure of intellectual capital.

White et al. (2007) in their investigation of the factors that lead to a better disclosure of intellectual capital points out that, in the case of Australia's biotechnology companies, a positive influence is due to board independence, firm age, firm size and the level of leverage. They did not identify correlations between ownership concentration and disclosure behavior. Li et al. (2008) found a significant association between the level of intellectual capital disclosure and corporate governance variables (ownership structure, board composition, audit committee - size and frequency of meetings, and CEO role duality) except the latter.

With respect to the Romanian listed companies behavior in voluntary disclosure, Fekete et al. (2009) focus on the association between corporate characteristics and disclosure comprehensiveness, quality and quantity, measured by the level of corporate internet reporting and observe that elements of corporate governance generate a greater disclosure. Bogdan et al., in the same year, study the relation between the ownership structure and practices of voluntary disclosure in the case

of the top fifteen entities, selected after market capitalization. They conclude that companies with large institutional ownership disclose more information voluntarily.

3. Research design and methodology

To appreciate the degree of disclosure of intellectual capital we used content analysis. With this research technique grounded and reproducible conclusions can be drawn based on information extracted from a context, according to Krippendorff in 1980 (quoted by Bozzolan et al, 2003). Actually, the method helps identify the existence or inexistence of information on a given topic (Fădur, 2013). Specific steps of content analysis include: establishing the frame of reference of the analyzed phenomenon (in our case - the intellectual capital), creating a list of elements that describe the phenomenon in question, codifying these elements and assessing the amount of information learned from analyzing the content of that theme (Bozzolan et al., 2003).

Regarding the first step, in our view, intellectual capital is the sum of all immaterial recognized or unrecognized resources, employee-specific knowledge, of their organization and about partners, as well as intercorrelations among them likely to create value and competitive advantage, because they are unique and hard to imitate.

Studying the writings of Beattie & Thomson (2006), Abeysekera & Guthrie (2004, 2005), Fădur (2013), Brennan (2001), Li et al. (2007), Fădur et al. (2012) we have formulated a list of 72 items that make up the intellectual capital that were taken as the benchmark in the content analysis.

The level of intellectual capital disclosures is found encoded differently from one author to another. Bozzolan et al. (2003) was limited to encoding into three categories: 0 if the unit did not disclose information on the analyzed indicator, 1 for presentation of qualitative data and 2 for presenting quantitative information. While other authors (Fădur, 2013; Fădur et al., 2012; Precob, 2014; Li et al., 2007) have opted to allocate scores between 0 and 1 or 1 for indicator identification and 0 for its absence (Li et al., 2007) or, more detailed, using intermediate scores such as 0.25 for scarce, general information, 0.5 for partial information and 0.75 for detailed but incomplete information on the analyzed indicator (Fădur, 2013; Precob, 2014; Fădur et al., 2012). We used in materializing our research, similar to Precob (2014), five scores in the range [0: 1] as we described them above. The sum of all these scores related to the total number of items is the average level for the disclosure of intellectual capital (ICD).

The sample on which research was done comprises 38 companies, although initially we identified a total population of 55 companies, listed on the Bucharest Stock Exchange. Due to the fact that they were not disclosing data required for the study or because companies were in a process of insolvency, reorganization, liquidation or they were engaged in other kinds of activities than the ones stated, or they were receiving cash flow from sources other than their primary activity, 17 companies were excluded from the total population. So, out of the 38 companies that correspond to the scope of the research, 10.53% belong to the field Information and communications, 15.79% to Research and development, 26.31% to Architectural and engineering services, 23.68% to Clothing manufacture, 13.16%

to Pharmaceuticals and 10.53% to Computers. These six industries we consider to be representative for knowledge economy.

The analysis consisted of examining the content of annual reports of the investigated entities, in 2010-2013, regarding the existence or absence of information, as well as the quality of such information on the 72 items that describe intellectual capital.

Once ICD calculated and interpreted, in the next stage of the research we have been committed to understanding the behavior of Romanian companies concerning disclosure of information about their intellectual capital under the influence of the sampled stakeholder entities. For this we investigated the shareholders' types of each entity and the result shows that there are 4 categories: state and government ownership, foreign investors, institutional investors and individual investors, in visible proportions in Figure 1.
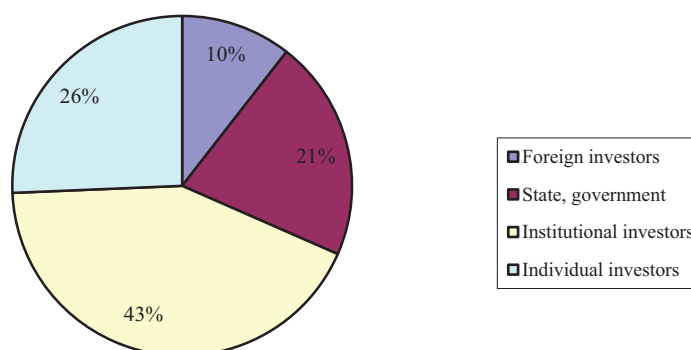

Figure 1: Distribution of major shareholders
Source: own data processing

The question we asked ourselves is whether the stakeholder structure influences the level of intellectual capital disclosure. From this general idea we built four research hypotheses in order to identify correlations between the average degree of intellectual capital disclosure and various categories of shareholders, as follows:

H1: The companies owned by foreign investors have an average degree of disclosure of the intellectual capital (ICD) above the average.

H2: The companies owned by institutional investors have an average degree of disclosure of the intellectual capital (ICD) above the average.

H3: The companies owned by state or government have an average degree of disclosure of the intellectual capital (ICD) above the average.

H4: The companies owned by individual investors have an average degree of disclosure of the intellectual capital (ICD) below the average.

The fourth part of this work, in addition to a brief descriptive statistics, contains the answer to the above question, as well as issues regarding the validation or invalidation of research hypotheses.

4. Discussion of results and validation of research hypotheses

After a thorough analysis of the annual reports published by the Romanian listed entities in key areas of knowledge economy, we found that they publish an extremely low volume of information on intellectual capital. We emphasizde that according to the research methodology, ICD values can range between 0 and 1. The closer to 1 the value of ICD, the larger the volume of information on intellectual capital (with reference to the 72 items selected). A value tending to 1 indicates the availability of communication and transparency of the entity to its stakeholders. The more the ICD value gets closer to 0, the lowest the amount of information on intellectual capital, because either the entity does not possess this rich resource for value creation, or the adopted communication and transparency policy is a restrictive one.

According to the table below the average ICD values show the little information found in the investigated entities' reports on their intellectual capital, these being ranged between 0.08 and 0.27. The highest mean value belongs to Pharmaceutical companies, entities that highly rank above the ones from other fields of activity. The lowest mean values are registered by the Information and communication entities, but the mean of the nine entities from Clothing manufacture is lagging not far behind. All other 20 branches from Research and development, Architectural and engineering services and Computers have average intellectual capital disclosure values between 0.13 and 0.17.

Table 1: ICD by fields of activity

Fields of activity	Number of entities	Minimum	Maximum	Mean	Standard deviation
Informations and communications	4	0.0338	0.1650	0.08442	0.04198
R&D	6	0.0547	0.2947	0.13897	0.06772
Architecture and engineering	10	0.0438	0.5503	0.14462	0.14595
Clothing	9	0.0447	0.1677	0.09776	0.03274
Farmaceuticals	5	0.0741	0.7027	0.26924	0.24014
Computers	4	0.0276	0.3073	0.17053	0.09864

Source: own data processing

Referring to the minimum values, in each of the six domains of activity there is an entity with ICD under 0.08. The highest minimum is of a pharmaceutical entity, while the lowest belongs to an entity in the field of Computer Science. The maximum values indicate that a Pharma entity presents a high level of information disclosure on intellectual capital and one of the Architectural and engineering services presents a medium level. The remaining areas contain entities that disclose a low level of information on intellectual capital, even when discussing the maximum ICD values.

Following this finding, the natural question is: which factors is this low volume of disclosed information about intellectual capital indebted to? In this article we choose to test whether the stakeholder structure influences the level of intellectual capital disclosure.

In order to test the validity of research hypothesis H1, H2, H3 and H4 we have grouped the companies by the type of the shareholders and we have computed the average ICD for each group. We have also computed the standard deviation and the standard error mean in order to apply a T-Student significance test for the mean. The values are presented in the table below:

Table 2: T-Student significance test statistics used for the validation of research hypothesis H1-H4

	N	Mean	Std. Deviation	Std. Error Mean	T	Degrees of freedom
Foreign investors	16	0.0594	0.01340	0.00335	-15.111	15
State, government	32	0.2116	0.19820	0.03504	2.899	31
Institutional	65	0.0920	0.06665	0.00827	-2.174	64
Individual	39	0.0928	0.04279	0.00685	-2.507	38

Source: author's calculations

H1: The companies owned by foreign investors have an average degree of disclosure of the intellectual capital (ICD) above the average.
In order to test the validity of this hypothesis we are going to apply a test for the significance of the mean. We will thus ascertain whether the number of companies owned by foreign investors have an average degree of disclosure of the intellectual capital above the average. We have first computed the ICD in our sample and we have obtained a value of 0.11. We issued the following hypothesis:
H_0: ICD $_{(foreign\ investors)}$ = 0.11
H_1: ICD $_{(foreign\ investors)}$ > 0.11
The unilateral T test statistic is equal to -15,111. As this value is smaller than -2.12, which represents the critical value for the T test for 16 degrees of freedom, for a 95% probability, the hypothesis that the companies owned by foreign investors have an average degree of disclosure of the intellectual capital (ICD) above the average is rejected. *In conclusion,* research hypothesis H1 is rejected at the level of the sample and the total population (the average ICD in the sample for these companies is 0.0594).

H2: The companies owned by institutional investors have an average degree of disclosure of the intellectual capital (ICD) above the average.
We will now investigate whether the number of companies owned by institutional investors have an average degree of disclosure of the intellectual capital above the average. We issued the following hypothesis:
H_0: ICD $_{(institutional\ investors)}$ = 0.11
H_1: ICD $_{(institutional\ investors)}$ > 0.11
The unilateral T test statistic is equal to -2,174. As this value is smaller than -1.96, which represents the critical value for the T test for 65 degrees of freedom, for a 95% probability, the hypothesis that the companies owned by institutional investors have an average degree of disclosure of the intellectual capital (ICD) above the average is rejected. *In conclusion,* research hypothesis H2 is not validated neither at the level of the sample or the total population (the average ICD in the sample for these companies is 0.0920).

H3: The companies owned by state or government have an average degree of disclosure of the intellectual capital (ICD) above the average.

In order to test the validity of this hypothesis we are going to apply the same Student T test for the significance of the mean. We will thus ascertain whether the number of companies owned by state or government have an average degree of disclosure of the intellectual capital above the average. We issued the following hypothesis:

H_0: ICD (state, government) $= 0.11$

H_1: ICD (state, government) > 0.11

The unilateral T test statistic is equal to 2,899. As this value is higher than -1.96, which represents the critical value for the T test for 31 degrees of freedom, for a 95% probability, the hypothesis that the companies owned by state or government have an average degree of disclosure of the intellectual capital (ICD) above the average is confirmed. *In conclusion,* research hypothesis H3 is validated at the level of the sample and the total population (the average ICD in the sample for these companies is 0.2116).

H4: The companies owned by individual investors have an average degree of disclosure of the intellectual capital (ICD) below the average.

We will now investigate whether the number of companies owned by individual investors have an average degree of disclosure of the intellectual capital below the average. We issued the following hypothesis:

H_0: ICD (individual investors) $= 0.11$

H_1: ICD (individual investors) < 0.11

The application of the unilateral T test enables us to obtain a calculated value of the test equal to -2,507. As this value is smaller than -1.96, which represents the critical value for the T test for this volume of the sample, for a 95% probability, the hypothesis that the companies owned by individual investors have an average degree of disclosure of the intellectual capital (ICD) below the average is confirmed. *In conclusion,* research hypothesis H4 is validated at the level of the sample and the total population (the average ICD in the sample for these companies is 0.0928).

5. Conclusions

The study of disclosed intellectual capital through annual reports of listed Romanian entities from areas with a strong emphasis on knowledge has led us to the conclusion that they release a small amount of information on intellectual capital. The five Pharma entities are positively outstanding as they disclose, in a detailed form, the most information on intellectual capital.

One of the factors that influence the degree of intellectual capital disclosure is the stakeholder structure. Statistical processing revealed that state and government-owned enterprises disclose more of their intellectual capital, while those with foreign ownership, do less of this. The result is contrary to our expectations, but explicable due to the young capital market in Romania, whose limits are inherent (even regarding the investors' profile). Entities whose owner is the state and governmental institutions are generally pharmaceutical ones and are large, with an age of more than half a century. Also the research results show that entities whose securities are mostly held by domestic institutional investors and individual

investors disclose information on intellectual capital below the average of the sample.

Other factors that may affect the level of intellectual capital disclosure could be: the entity size, the branch of activity which it emerges from, the trading section and age. Testing the correlations amongst them and the degree of intellectual capital disclosure will be the subject of future research. Research limits are reduced to sample selection and its relatively small size, item identification to describe the intellectual capital, data collection and processing. Despite these limitations, the analytical approach of the relation between the level of intellectual capital disclosure and the stakeholder structure (correlations tested on categories of shareholders) ensures a novelty feature to this study among national studies of the sort.

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