Voluntary disclosure: Evidence from UK

Nikolaos S. Zourarakis[14]

Executive summary
This paper investigates the voluntary disclosure of Intellectual Capital (IC) of British firms and provides some evidence on an unexplored area of the literature; that of the association of Corporate Governance (CG) with IC disclosure. Inconsistent with expectations, the results show that British firms disclose more information about their human capital. On the other hand, findings indicate that ownership structure, size and industry are important factors in describing disclosure trends of IC which is in line with what anticipated. Lastly the outcomes of the study support the notions of Agency theory that refer to manager's opportunism and information asymmetry.

1. Introduction

During the last decades information age competition started to substitute the traditional industrial age competition and inevitably firms started to formulate their strategies in order to be up-to-date with the new business environment and the phosphorus opportunities of the new era. In line with this change, the users of financial statements adjusted their needs for information to the new circumstances that had been emerged from this transaction of economical conditions.
However, the inadequacies of the traditional accounting systems to incorporate the requirements of firms have resulted in an information gap between managers and stakeholders. A possible solution for this problem is the provision of voluntary disclosures through the annual reports of the firms, which will eventually reduce this gap. Thus, voluntary disclosures have gained much attention and have been the center of academics and accounting legislators during the last years. Apart from the one described above, a new problem came into sight and contributed to the increased demand of voluntary disclosures; agency costs, which resulted from the separation of the principals from the decision-making function of the firms (Fama and Jensen 1983). . Consequently, voluntary information which will eventually eliminate the gap between internal and external parties has become a necessity.
The present paper focuses on a particular type of voluntary disclosure, that of IC. Although there is not a consistent definition of IC, it is regarded as a type of intangible asset and a form of unaccounted capital. Moreover, IC is highly connected with knowledge management and it is a sign of competitive advantage, especially in developed economies where technological advances and R&D are of great significance.
Previous studies concerning IC disclosure explored the reporting practices of companies; nevertheless IC literature is still developing and more studies will have to be carried out, so that to provide a strong background for future researchers. It has to be mentioned that

[14] The author would like to thank his supervisor, Mrs dr. Yue Wang, for the attention and the valuable advice that has provided throughout the period of the research.

none of the studies concerning IC disclosure incorporates the term of corporate governance (CG), despite the fact that in the voluntary disclosure literature CG is described as a significant factor influencing disclosures. More specifically it is argued that voluntary disclosures are a result of managers' decisions and that the board of directors is the main control mechanism in terms of monitoring the management's actions. Therefore, corporate governance (CG) can be a significant factor in explaining voluntary disclosure patterns and academic research shows that determinants of CG, such as board composition and ownership structure, are positively associated with the voluntarily provision of information.

This study deals with the description of IC disclosure trends of British listed firms and the relationship of CG attributes and other firm's characteristics with IC disclosure. Moreover the main objectives of the research is i) the contribution to the existing literature in terms of results and ii) the investigation of an unexplored area of the literature; that of the association between IC and CG.

For this purpose, two different techniques were employed. The first is content analysis, which aimed to capture the voluntary disclosure trends based on pre-defined IC categories. The second is regression analysis, which was the main tool in describing the relationship between measures of CG and other firm's attributes, and IC disclosure.

The remainder of this paper is organized as follows: Next chapter includes the literature review, as well as a review of relevant prior research results. Chapter 3 underlines the research objectives and presents the major aspects of the methodology employed. Chapter 4 describes the results obtained, while chapter 5 discusses these empirical results. Finally, Chapter 6 concludes the study, discusses the main problems and limitations of the present paper, and provides suggestions for further research.

2. Literature review

2.1 Theoretical background

Although Johansson et al. (2001) maintain that IC definitions are connected with various theories of the organization, in the literature there is not a common view of which theory provides a better understanding of IC disclosure, and thus researchers tend to use different approaches in order to perform their studies. This is also proven by the fact that the majority of the studies do not provide a clear link between IC reporting practices and theoretical approaches. This paper acknowledges this fact and addresses this issue by adopting Positivist Agency Theory, as a relevant theoretical background in explaining voluntary IC disclosure patterns.

The paradigm on which the paper chose to base its analysis is the positivistic one, which assumes that the IC phenomenon is given and can be understood by dividing it in isolated parts and adding knowledge to these parts (Bornemann et al. 1999). This approach includes hypothetico-deductive testing (O'Donnel 2004) and is based on the assumption that social reality is independent of individuals and exists even if these individuals are not aware of it (Collis and Hussey 2003).

Agency theory states that principals (managers) will provide voluntary information only if this action increases their welfare or in other words if the benefits from disclosure are

higher than the costs incurred. Additionally individuals may be self-interest-seeking. This implies that agents may act to serve their own interests rather than the interest of the principals. Hence, managers should try to satisfy and convince shareholders that they are not acting for their own-interest by providing voluntary information in the annual reports (Eisendhardt 1989).
The emergence of agency costs and the increased demand for voluntary disclosures are two strong incentives for managers to disclose a considerable amount of voluntary information. Provision of voluntary information by managers can potentially decrease both the information gap between the firm and the stakeholders, and the agency costs arisen. As Depoers (2000) argues, widely held firms present higher agency costs, which can be controlled and eventually decreased through voluntary disclosure.
Concerning CG, agency theory suggests that wider ownership is more likely to result in a higher level of voluntary information, since wide share ownership can create more conflicts between managers and stakeholders (principals and agents). Thus, CG policies should be formed in such a way that address these conflicts and potentially reduce agency costs. Consequently, CG has a crucial role in addressing the relationship between the firm and the providers of finance. In view of the fact that IC reflects the hidden value of the firm and it is a an indicator of competitive advantage, the role of CG is of major importance in formulating the IC reporting trends, indicating the significance placed on IC and revealing the will of managers to provide voluntary information related to IC.

2.2 Measuring intellectual capital

Within the literature there have been identified several frameworks which are used over time in order to classify and measure intellectual capital (Table 1). However, the present paper focuses on the framework which is considered to be the most relevant for the purposes of the study; Intangible Asset Monitor. This framework for IC measurement was the major template for the conduction of the research. Intangible Asset Monitor was created by Karl Sveiby (1997), who managed to create an intangible asset monitor (IAM), which is regarded as one of the most widely accepted models for understanding and reporting on IC. The scholar tried to address this issue, by dividing intangible assets into three categories; internal structure, external structure and employee competence.

2.3 Prior research studies

In the literature there are several studies dealing with the issue of voluntary disclosure and its determinants. Meek et al. (1995) showed that size and, to a lesser extent, industry are important factors in explaining voluntary disclosures. However, their results vary depending on the kind of information. Hossein et al. (1995) proved that size, foreign listing status and leverage are considered as important incentives for voluntary disclosure. On the other hand auditor and assets are insignificant. Furthermore, Chow and Wong (1987) also underlined the strong association between size and voluntary disclosure; nevertheless their results do not reveal a significant correlation between leverage and assets, and corporate disclosure. In line with the previous findings, Depoers (2000) and Raffournier (1995) showed that size as well as internationality of a firm affects the provision of voluntary information. Finally, the results of McKinnon and Dalimunthe (1993) demonstrated significant relationships between disclosure and size, industry and ownership structure.

The present paper acknowledges the results of the above studies and further focuses on papers that examine a. the IC disclosure and b. the influence of CG on voluntary provision of information.

TABLE 1: FRAMEWORKS FOR MEASURING IC

Developers	Framework	Classification of IC
Kaplan and Norton (1992)	The Balanced Scorecard	Internal process perspective Customer perspective Learning and Growth Financial Perspective
Haanes and Lowendahl (1997)	Classification of Resources	Competence Relational
Lowendahl (1997)	Classification of Resources	Competence Relational
Sveiby (1997)	Intangible Asset Monitor	Internal structure External structure Employee competence
Edvinsson and Malone (1997)	The Navigator	Human capital Structural capital
Petrash (1996)	Value Platform	Human capital Customer capital Organizational capital
Danish Confederation of Trade Unions (1999)	Three categories of knowledge	People Systems Market
Roos et al. (1997)	Intellectual Capital Index	Human capital Infrastructure capital Relationship capital

2.3.1 IC disclosure

Empirical studies were performed in several countries to investigate the corporate reporting practices on IC and the majority of these studies utilized different IC indicators and measurement approaches. The latter fact is rather expected, since both the definition and the theory of IC is controversial, as it was previously discussed. The results of the studies vary, as far as the content of IC reporting is concerned. On the other hand, the majority of the studies reveal a significant relationship between the disclosure amount and firm's characteristics. The findings of the most relevant studies are summarized below.

The study of Guthrie and Petty (2000) had a number of imperfections; however it provided valuable information to researchers on how to address the crucial issue of IC reporting. Findings indicated that IC disclosure was low and Australian firms did not report according to an IC framework. Brennan (2001) focused on Irish knowledge-based companies and the results showed that companies had substantial IC assets, but they are not measuring these assets in an appropriate way. Among the categories, external capital was the most reported, followed by internal capital and human capital. The study of Bozzolan et al. (2003) revealed that firms pay attention to their external structure, while industry and size seem to be relevant factors in explaining the reporting practices. Abeysekera and Guthrie (2005) found that companies had increased their IC reporting level and the more reported category of the three was external capital, followed by internal capital and human capital. Garcia-meca et al. (2005) concluded that the most reported categories of IC are customers, strategy and process. On the other hand, firms did not choose to report a big amount of information about innovation and R&D. Additionally, the scholars showed that the size and the internationality of the firm are positively associated with IC disclosure. Guthrie et al. (2006) tried to provide a comparative analysis of IC disclosure in Australia and Hong-Kong. Results indicated that Australasian firms did not disclose a high amount of information related to IC, while they focused primarily on qualitative data. As it was anticipated, size was positively correlated with disclosure for both locations.

2.3.2 Corporate governance

Corporate governance is highly related to agency theory and its assumptions, since it can be defined as a way to protect the shareholders' interests (Tirole, 2001). Thus the linkage between the problem (agency costs) and the potential solution (voluntary disclosure) is how effectively organizations deal with the concept of CG. Within the literature there have been identified various determinants of CG, such as ownership structure, board composition, managerial ownership, governmental ownership, audit committee and audit firms. Regarding the association of CG and disclosure, only few studies have been conducted that examine the impact of CG on the extent of voluntary disclosures.

More particularly, Eng and Mak (2003) examined whether CG measures and other relevant factors affect the disclosure of voluntary information. The results showed that ownership structure and board composition influence the voluntary disclosure and that lower managerial ownership and considerable government ownership are positively associated with voluntary disclosure. Blockholder ownership, though, was not a relevant factor in describing disclosure trends. Haniffa and Cooke (2002) found that two CG measures and only one cultural characteristic of firms were associated with voluntary disclosure. Chau and Gray (2002) examined the influence of ownership structure of firms on voluntary disclosures. The findings showed that more widely held firms disclosed more voluntary information, while "insider" or family-controlled firms demonstrated a lower level of disclosure. Lastly, Barako et al. (2006) showed that audit committee, board composition, foreign ownership and percentage of stocks owned by institutional shareholders are the most statistically significant CG measures that influence voluntary disclosure. Among the other factors, size and leverage ratio were positively related to the extent of disclosures.

3. Methodology

3.1 Research design

The main purpose of this research is to investigate the magnitude of IC disclosure in annual reports of British firms and thus the main research question of the paper is: "What is the importance placed from British firms on IC?" Furthermore, one main objective is to examine the extent of IC disclosure and reveal the significance placed on IC categories, while another goal is to identify the association between IC disclosure and CG measures, as well as other firm's attributes.

3.2.1 Coding Process

The coding process involved reading the annual report of each company and coding the information according to pre-defined categories of IC. More specifically, after reading the annual report, each sentence was coded based on a numerical scheme: "0" if no information was provided, "1" if qualitative information was provided, "2" if quantitative information was provided and "3" if information was presented in graphs, tables or figures. Additionally this paper focused on information, that was not requested by laws or accounting principles and was provided voluntarily by the companies. Same information regarding an IC item was not counted more than once. After its identification, each item was classified into the three main categories and sub-categories based on key words that were the titles of each sub-category (Table II).

3.2.2 Statistical Models

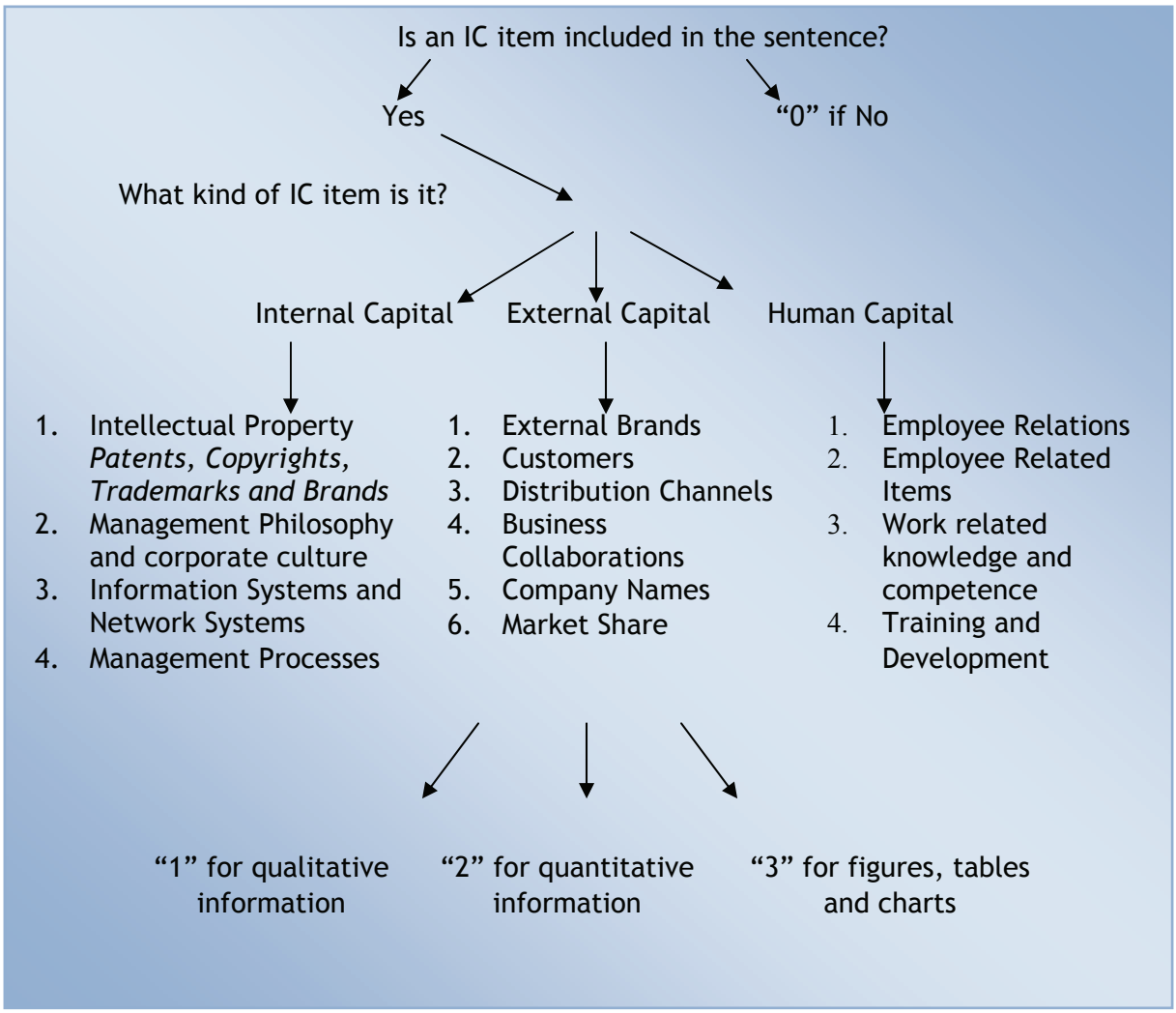
The four main categories (Overall IC disclosure, Internal Capital, External Capital and Human Capital) were set as the dependent variables for four statistical models (Model 1, Model 2, Model 3, Model 4). The models were estimated based on the following equation:

Regression Model:

$$D_i = a + b_{1i}BC_i + b_{2i}OS_i + b_{3i}MO_i + b_{4i}Ln(TA_i) + b_{5i}ROA_i + b_{6i}ROE_i + b_{7i}LR_i + b_{8i}IND_i$$

a = constant
b = Coefficients for each variable
D = Disclosure index (Total Disclosure, Internal capital, External capital, Human capital)
BC = Board composition (percentage of independent directors in the board of directors)
OS = Ownership structure (Sum of substantial shareholders, who hold more than 3% of ordinary share capital)
MO = Managerial ownership (Percentage of ordinary shares held by executive directors)
Ln(TA) = Natural Logarithm of Total Assets (as at 31/12/07)
ROA = Return on assets
ROE = Return on equity
LR = Leverage ratio (defined as Total Assets/Total Liabilities)
IND = Industry (Dummy Variable; 0 for Financial companies and 1 for non-financial companies)

TABLE II: CODING PROCESS



3.2.3 Hypotheses development

Board Composition

Non-executive directors are a crucial element of the board's ability to address a potential agency conflict (Barako et al. 2006). Hence, higher proportion of non-executive members in the board of directors can be a strong incentive for voluntary disclosure.

H1 = IC disclosure is positively associated with the proportion of non-executive members in a board.

Ownership structure

Agency theory underlines that widely held firms are more likely to disclose voluntary information due to the effort of managers to prove that they do not act self-centered. Thus companies with wide share diffusion are expected to present a higher level of disclosure.

H2 = IC disclosure is negatively associated with the proportion of shares held by substantial shareholders

Managerial Ownership

Agency costs are more likely to emerge when managerial ownership is low (Eng and Mak 2003) and thus low managerial ownership is expected to lead to higher disclosure levels

H3 = IC disclosure is negatively associated with managerial ownership

Size

Large companies undertake more activities and consequently firms need to report more information to external parties in order to reduce agency costs. This study utilizes the natural logarithm (Ln) of Total Assets as the proxy measure for a firm's size.

H4 = IC disclosure is positively associated with size

Industry

Companies were separated in two different groups; financial and non-financial companies. In the regression model "Industry" was set as a dummy variable and the first group of firms was assigned with "0", while the second was assigned with "1".

H5 = IC disclosure is higher for Non-Financial companies

Profitability

Profitability is regarded as a significant factor from the scope of agency theory, since managers of profitable firms tend to use voluntary disclosure as a way to justify their position and compensation package (Barako et al. 2006). In the present paper profitability is measured with two proxies; ROA and ROE.

H6 = IC disclosure is positively associated with ROA

H7 = IC disclosure is positively associated with ROE

Leverage Ratio

Finally, leverage ratio is an important factor in corporate reporting, since higher debts tend to increase agency costs and hence voluntary disclosure (Meek et al. 1995). Leverage ratio is calculated as Total Assets divided by Total Liabilities.

H8 = IC disclosure is positively associated with debt

3.2 Methods Employed

The first method employed is content analysis, which is a significant tool for gathering data through the codification of qualitative and quantitative information into pre-defined categories in order to derive patterns regarding the presentation and the reporting of information (Abeysekera and Guthrie 2005). The second method, regression analysis,

describes the relationship between a quantitative dependent variable and one or more independent quantitative variables. In the literature regression analysis is used in order to investigate whether various factors are relevant in explaining the amount of IC disclosure.

3.3 Sample

The final sample consisted of 97 companies, which were listed on FTSE 100 as at 31th December 2007 (Appendix I). Three companies (TUI Travel, Thomson Reuters and Carnival) were excluded from the sample since they did not provide adequate information about CG. The data were gathered mainly by hand, while information about industry and profitability was obtained from the official site of LSE[15] and Compustat Global respectively.
It could be argued that the selection of the sample is biased. Nevertheless the majority of the previous studies concerning voluntary reporting show that the size of firms is a key factor that determines the extent of voluntary information (Gray et al. 1995, Mitchell et al. 1995). More particular Gray et al. (1995) mention that a sample consisted of large companies is more likely to demonstrate examples of voluntary disclosure, than a similar sample of medium or small companies. In addition to this, it has been proved that bigger firms tend to disclose more information on their annual reports (Guthrie and Mathews 1985) and are the pioneers in any improvements in corporate disclosure, due to the demanded financial resources that they possess (Andrew et al. 1989). Bigger firms are also expected to possess more intellectual capital because they are more noticeable and have more resources at their disposal to fund new projects (Abeysekera and Guthrie 2005). Thus a sample consisted of large companies is more appropriate, in terms of examining trends, identifying innovations and recording voluntary disclosure practices. Therefore, this study focuses on the biggest companies listed on the index FTSE-100 of the London Stock Exchange, which tracks the performance of the top listed companies ranked according to criteria such as market capitalization, liquidity and free float of shares.

3.4 Data Source and Unit of Analysis

The source of the data was the annual report of each firm for the fiscal year 2007. Annual reports are a highly useful source of data, because companies use them to provide helpful and important information to account users (Guthrie and Petty 2000). Moreover, annual reports give the opportunity to users to make comparisons of management strategies across reporting periods, since annual reports are the product of a regulatory procedure (Abeysekera 2001; Abeysekera and Guthrie 2005).
The unit of analysis that should be used in content analysis is a crucial part of this study and many papers have highlighted its importance. However, the appropriate unit of analysis is a topic highly debated in the IC literature, with words, sentences, paragraphs and pages being as the most suitable unit. According to Milner and Adler (1999) words contain little meaning without context, while paragraphs and pages have several different meanings that are difficult to be coded. Thus, the present paper uses sentences as the unit of analysis, so as to ensure that problems related to the use of words, paragraphs or pages are overcome and unnecessary unreliability is avoided (Bozzolan et al. 2003). This method is supported by many scholars (Abeysekera and Guthrie 2005; Bozzolan et al. 2003; Beattie

[15] www.londonstockexchange.com

and Thomson 2006) because sentences are easily identifiable wholes (Carney 1972) and they are preferred when meanings are to be deducted from written data (Gray et al. 1995).

4. Results

4.1 Content analysis

The most reported category of IC was human capital and the most reported sub-categories were i) employee related measures, ii) work related competence and knowledge, and ii) management philosophy and corporate culture. On the other hand the least reported category of IC was external capital and the least reported subcategories were i) external brands, ii) market share, and iii) information and network systems. During the research the term "intellectual capital" was included to one annual report; nevertheless the company that used the term of IC did not provide any relevant information. Regarding the categories of IC, all companies disclosed more information about their Human Capital which is far the first reported category, followed by Internal Capital and External Capital. Detailed descriptive statistics are shown on table III. What is interesting is that out of the first ten ranked companies in IC reporting the first is a financial one, while the majority of the rest belongs to the non-financial group (Table IV).

TABLE III: DESCRIPTIVE STATISTICS

Company	Internal Capital	External Capital	Human Capital	Total IC disclosure
Mean	37,4433	30,0619	55,7526	123,2577
Median	35,0000	27,0000	56,0000	116,0000
Std. Deviation	17,92052	19,55112	23,33632	46,64053
Minimum	8,00	2,00	9,00	28,00
Maximum	101,00	82,00	130,00	242,00

TABLE IV: TOP 10 COMPANIES ACCORDING TO TOTAL IC DISCLOSURE

Company	Internal Capital	External Capital	Human Capital	Total IC disclosure
1. HSBC Holdings PLC	60	52	130	242
2. GlaxoSmithKline	70	81	87	238
3. National Grid	101	35	80	216
4. Vodafone Group	54	54	99	207
5. Rio Tinto	71	18	115	204
6. FirstGroup	64	55	81	200
7. SABMiller	49	42	108	199
8. HBOS	42	82	67	191
9. Aviva	52	66	69	187
10. BP	55	24	108	187

4.1.1 Overall disclosure

British companies included on average 123 items that are related to IC items in their annual reports; 37 of them refer to internal capital, 30 refer to external capital and 56 refer to human capital. This means that 52% of the reported IC items are related to external capital, 27% to internal capital and 21% to human capital. The most reported sub-categories were those of "Employee Related measures" and "Management Philosophy and Corporate Culture", while the least reported were "External Brands" and "Information and Networking Systems".

As far as the companies are concerned, "HSBC Holdings Plc" was ranked first in the Overall Disclosure index, followed by "Glaxo SmithKline", "National Grid", "Vodafone Group" and "Rio Tinto". All of the previous firms chose to disclose more information about their Human Capital, except "National Grid" which reported a fairly big percentage of Internal Capital items. Details of the top ranking companies are shown in Table VI. Finally, the last five companies in IC reporting are "Cadbury", "Liberty International", "ENR Corporation", "Lonmin" and "Bunzl".

4.1.2 Internal capital

Internal capital is considered as the structural capital which is held inside the company. The two most reported sub-categories of internal capital were "Management philosophy and corporate culture" and "Management Processes", representing half of the total sentences related to internal capital. On the other hand the category "Information and Networking systems" had the lowest marks, although many companies included IT costs on their balance sheet. Chart 1 shows the distribution for each internal capital sub-category. "National Grid" reported the highest amount of internal capital information, giving emphasis on Infrastructure Assets which were assigned with 52 marks. The next ranked companies were "Shire" and "AstraZeneca", which both belong to the Pharmaceutical Industry. Finally Bunzl, Eurasian and Liberty International reported the lowest level of information with marks 10, 10 and 8 respectively.

4.1.3 External capital

External Capital, which was the least reported category of IC, refers to relationships and value resources that derive from outside the firm. The category with the highest number of marks was "Distribution Channels", while the next two most reported sub-categories were "Customers" and "Business Collaborations". An encouraging sign was that a large number of companies included not only sections of "corporate social responsibility" reports, but also environmental reports. Of course those companies, which dedicated a big part of their annual reports for environmental activities, were mainly companies that their operations had an impact on natural resources (Mining, Oil & Gas). The percentages of each external capital item are shown in Chart 2.

"HBOS" was the company with the highest number of reported sentences, followed by "Glaxo SmithKline" and "3I Group". It has to be mentioned that the majority of the first ranked companies were financial and this was rather expected since this type of companies pay more attention to external business factors.

4.1.4 Human capital

Human Capital has as its focus the employees of the firm and includes areas such as education, know-how and entrepreneurial spirit. This category was the most reported among the others, representing almost the half marks of the total IC disclosure. The sub-category with the highest number of sentences was "Employee Related Measures" followed by "Work related Knowledge and Competence". The category of human capital was also the most reported in terms of the number of charts, tables and figures. Chart 3 shows in detail the percentages of the reported categories.
"HSBC Holdings", "Rio Tinto", "BP" and "SAB Miller" reported the highest amount of information about human capital. All of the previous companies included statements for equality in the working sector and gave much emphasis to employee knowledge and competence.

4.2 Regression Analysis

In order to examine whether CG and firm's characteristics have a statistically significant effect on British firms in terms of IC reporting, four different models were estimated. This method assists in examining possible negative or positive associations between the amount of IC information disclosure and measures that can affect this amount. In each one of the four models, a different dependent variable was set; Overall Disclosure, Internal Capital, External Capital and Human Capital. The results are summarized in Table V[16] (numbers inside the brackets stand for the results of the t-test).

[16] Details about the regression results can be found in Appendix II

TABLE V: REGRESSION RESULTS

	Internal Capital	External Capital	Human Capital	Total IC disclosure
R^2	0,262	0,304	0,239	0,371
Adjusted R^2	0,195	0,241	0,170	0,314
F statistic	3,912	4,806	3,454	6,489
Significance	0,001	0,000	0,002	0,000
Variables:				
BC	0,115(1,144)	-0,200(-2,041)*	-0,039(-0,394)	-0,059(-0,636)
MO	0,022(0,228)	-0,098(-1,043)	0,033(0,339)	-0,016(-0,183)
OS	-0,178(-1,749)*	-0,233(-2,358)*	-0,228(-2,261)*	-0,280(-2,894)**
Ln(TA)	0,236(1,914)*	0,332(2,773)**	0,450(3,680)**	0,455(3,999)**
ROA	0,007(0,062)	-0,044(-0,400)	-0,008(-0,073)	-0,020(-0,190)
ROE	-0,048(-0,421)	-0,005(-0,050)	0,11(-0,097)	-0,015(-0,145)
LR	0,189 (1,544)	0,023(0,197)	0,12(0,097)	0,088(0,781)
IND	0,401 (3,822)**	-0,084(-0,789)	0,309(2,962)**	0,294(3,999)**

* significant at 5% level
** significant at 1% level

BC = Board composition
OS = Ownership structure
MO = Managerial ownership
Ln(TA) = Natural Logarithm of Total Assets
ROA = Return on assets
ROE = Return on equity
LR = Leverage ratio
IND = Industry

5. Analysis

5.1 Analysis of results

The results of the present research show that the crucial elements of IC were adequately identified and captured by the firms; nevertheless they were not reported within a consistent IC reporting framework. This was rather expected since none of the companies that were included in the sample had installed IC reporting framework. More specifically the term “Intellectual Capital” was mentioned only in one of the annual reports. This proves that British firms seem to be unaware of the systematic reporting of their IC assets. The high percentage of human capital items indicates that organizations have highlighted the importance of their human assets and resources. Guthrie (2001) gives credit to the fact that the adequate reporting of human capital can create several advantages for the company, such as the efficient allocation of human resources, the identification of gaps in

skills and abilities of employees, and finally public policy benefits. The lower percentages of external and internal capital can be the result of the firms' unawareness and inadequaecy to efficiently report information about these items. On the other hand, when taking into account the notions of agency theory one could underline that managers are acting in an opportunistic way and thus are hiding crucial IC elements. Eitherway, firms did dislcose a substantial amount of information about their human capital, which clearly shows the importance placed on this aspect of IC.

Furthermore, the different weight given on IC categories raises questions as to whether British firms have evaluated the significance of their IC as a whole. Particularly the relatively low percentage of external capital items can be explained as an inadequate identification of external factors related to globalization and intense competition. April et al. (2003) outlines the importance of external capital in a domestic economy that is pressured from globalization and the need for companies to centre their attention on external factors for future growth. Additionally, Guthrie (2001) states that the emphasis given towards external capital is related with the intense competition, which characterizes segmented and fractured markets. Moreover the reason for lower percentages of external and internal capital may lie on the fact that managers are concerned with the exploitation of such additional information by competitors. Thus IC disclosure may hide risks, even though companies have strong theoretical incentives for disclosing IC information. This finding can be explained within the fields of Agency Theory, since such actions indicate that managers are acting in an opportunistic way and they do not wish to disclose information about IC, because it can be used from competitors to increase their competitive advantage.

The results of the regression analysis can be described as partly adequate in explaining the factors of IC disclosure, with the models showing relatively weak explanatory power. On the other hand all the models present a significant relationship with only one measure of CG; ownership structure. In addition to this, a number of other independent factors that are further analyzed below are associated with IC disclosure. Independent variables, when used together, can reliably predict the dependent variables at a significant level of 1%, since the p-values of F-stat for all models are lower than 1% (Dielman 1991). Furthermore, R-squared is relatively low for all IC categories, which indicates that the model was not properly specified, since the fit of the regression line to the data is considered better, as the value of R-squared tends to one (Dielman 1991, 99). In other words, other variables which are not being taken into account by this study, can explain a larger amount of the variance. However, R-squared is not in such a low level that deters the researcher from reaching to a reliable conclusion.

Managerial ownership (MO) seems to have a negative association with Total disclosure; however p-values for t-tests are insignificant and hence we can reject H1. Board structure does not affect IC disclosure, with the exception of external capital, where the association is significant at 5% level. Thus, although there seems to be a negative association between board structure and IC disclosure for the majority of the models, the adverse statement cannot be rejected with high confidence (90% or more). This means that British firms disclosed information about their IC, regardless of the percentage of non-executive directors in the board or the percentage of ordinary shares held by executive directors.

This result is inconsistent with the prior studies, in which both variables demonstrated a strong association with voluntary disclosure.
On the other hand ownership structure (OS) demonstrates a negative association for all models, which is considered significant at 1% for total disclosure and 5% for the rest of the models. This leads us to accept H2 for all models and conclude that higher percentage of ordinary shares held by substantial shareholders results in lower amount of IC information provided by the firms. In this case there is a consistency between the present paper and previous studies.
As far as the rest of the factors are concerned, profitability does not influence voluntary disclosure, since in any case the association can be considered as significant. Thus, we cannot accept H6 and H7 with a high level of confidence. Conversely, *size* seems to have a strong association with IC disclosure, as it was expected. All models demonstrate strong associations between size and disclosure, with p-values lower 1% for the majority of the models. Therefore we can state that big firms tend to disclose more voluntary information about their IC. This fact is consistent with all the studies in the literature and, mostly, supports the notion of agency theory about information asymmetry and opportunistic behavior. On the other hand, debt does not seem to significantly influence voluntary provision of IC information, although there seems to be a positive association with the dependent variables. Consequently, it is evident that debt is not an incentive for firms to disclose non-mandatory information related to IC. Finally industry seems to have a significant association with voluntary disclosure with the exception of the second model. Therefore we conclude that Non-Financial of the firms disclose a higher amount of voluntary information than financial firms.

TABLE VI: RESULTS OF THE HYPOTHESIS TESTED

	Internal Capital	External Capital	Human Capital	Total IC disclosure
H1	NS	SS*	NS	NS
H2	NS	NS	NS	NS
H3	SS*	SS*	SS*	SS**
H4	SS*	SS**	SS**	SS**
H5	NS	NS	NS	NS
H6	NS	NS	NS	NS
H7	NS	NS	NS	NS
H8	SS**	NS	SS**	SS**

* significant at 5% level
** significant at 1% level
NS - Not Significant
SS - Statistically significant

5.2 Comparative Analysis

As far as content analysis is concerned, comparisons with other studies should not be performed in terms of absolute numbers, since the numerical scheme followed by these papers is not similar to the method adopted by this study. However, the results can be compared in percentages, which depict the general trend of IC disclosure.

British companies focused on their human capital, which is the most reported category followed by internal capital, while the least reported category is external capital. This is inconsistent with most of the previous IC studies, which showed that companies paid more attention to their external capital. Moreover, these studies also revealed the unawareness of companies concerning the understanding of IC. This fact was underlined by the present paper which revealed that firms in UK have not implemented a theoretical framework on which to report IC.

Abeysekera and Guthrie (2005) argue that the high percentage of external capital reported by firms in Sri Lanka stems from the fact that organizations are facing an external competition from developed economies where visible brand names are dominant. The adverse statement can be also true for British firms since the economy that they operate in, which is one of the strongest of the world, does not provide with them with strong incentives to report on specific information. This can also be a reason that the "External Brand" sub-category is the least reported within the British companies' sample.

Guthrie and Petty (2001) attribute the high amount of external capital items reported by Australian firms to the rationalization of distribution channels, reconfiguration of firm value chains and re-assessment of customer value. However, it seems that British economy either has already gone through the economical changes mentioned before or pays less attention to these changes since they are not influencing the economy as a whole.

Finally, Bozzolan et al. (2001) discuss that Italian companies reported a low level of information about human capital, because managers were concerned with the potential exploitation of such information from competitors. However, it seems that managers of British firms place a completely different meaning on human capital and this shows that the reporting of IC items is highly attributable to the economic circumstances and the corporate reporting background of each country.

Concerning the measures of CG (ownership structure, managerial ownership and board structure) only one seems to be strongly associated with disclosure at 1% significant level. McKinnon and Dalimunthe (1993) also reached the same conclusion in their study for Australian firms, while this result is inconsistent with the study of Eng and Mak (2003) who showed that ownership structure is not related to disclosure. Hence it is obvious that CG affects voluntary disclosure depending on the economic environment of each country. It is possible that in more developed countries substantial shareholders of firms have different motives for corporate disclosure, than in less developed countries. Moreover, board composition and managerial ownership are not affecting disclosure of British firms in contrast with the findings of previous studies (Eng and Mak 2003; Chau and Gray 2003; Ho and Wong 2001; Barako et al. 2006; Haniffa and Cooke 2002).

Regarding the other factors, size has a positive association with IC disclosure. This was rather expected since all of the previous studies have underlined the association of size with IC disclosure (Bozzolan et al. 2003; Guthrie et al. 2006; Bozbura 2004; Garcia-meca et al. 2005) and voluntary disclosure in general (Meek et al. 1995; Barako et al. 2006; Chow

and Wong 1987; Depoers 2000; Hossein et al. 1995; Raffournier 1995; Schadewitz and Blevins 1998). Hence size is the most important factor related to voluntary disclosure. This notion is valid for all economies around the world, regardless of the development level of each economy.

6. Conclusion

The aim of this paper was to investigate the extent of voluntary disclosure and whether measures of CG as well as other firm's characteristics are associated with the provision of IC information. A sample of ninety-seven listed British firms was used and a total number of eight factors were set as independent variables in four statistical models. Additionally, content analysis and statistical techniques, such as regression analysis, were utilized in order to gather the data and establish statistical relationships between the dependent and independent variables.

Findings showed that British firms presented a high level of IC disclosure, although they have not implemented a framework on which to report IC. Human capital was the most reported IC category, suggesting that British firms not only give more emphasis on the human factor but also have identified the major importance of human resources, since they are regarded as the driving force of a company and a potential source of sustained competitive advantage (Wright et al. 1994). On the other hand the low percentage of external capital can be attributed to the small importance placed by British firms on it. However the fact that information about important aspects of the organization is not disclosed or not disclosed adequately leads us to the conclusion that managers are following an opportunistic approach in providing information to stakeholders. Thus the firms' effort to reduce agency costs with the provision of voluntary information has certain gaps and insufficiencies, which recycles the agency problem.

Concerning the outcomes of the statistical methods findings indicated that CG measures do not influence IC disclosure, with the exception of ownership structure which showed a strong positive association with disclosure in all models estimated. Thus it is evident that substantial shareholders are a crucial part in a company's reporting policy development. This finding supports the concept of Agency theory which underlines that widely held firms tend to disclose more voluntary information, due to agency problems. Among the other factors only size and industry seem to be important in describing IC disclosure trends.

The results of the present paper present a contradiction when compared to previous studies. On one hand, content analysis showed that British firms focused mostly on their Human Capital which is totally inconsistent with all studies related to IC. On the other hand, the strong association of the majority of the factors that were incorporated by the present paper is also supported by previous researchers. Specifically ownership structure and size seem to be important factors regardless the economic environment.

The results of the paper also support the notion of *reliability* since there seems to be strong association between a number of factors and voluntary disclosure. However, as Collins and Hussey (2003, 58) mention, a research can be regarded as reliable if it can be repeated. At this point several arguments can be raised against the method of content analysis since it includes a high level of subjectivity when coding the data. Therefore, to ascertain reliability, the researcher conducted his study very carefully and with

consistency to the guidelines of previous papers. As for *validity*, Groves *et al*. (2004) argue that a survey is valid according to the extent to which its findings accurately reflect the intended construct. The sample of the present study can be considered at least as adequate in describing reporting trends of big British firms and thus the study can be considered as valid. Finally, as far as *generalisability* is concerned, taking into consideration that the sample consists only of the biggest firms in LSE, generalizations should be made with caution and care.

- ***Contribution***

The paper acknowledged the increased significance placed on IC and the importance of CG in terms of providing information and tried to present valuable information with the scope of contributing to the IC literature, which is still being under development. This contribution refers to the results of IC disclosure as well as to the identification of the factors that affect this disclosure. Additionally, this study provided evidence about an area of IC literature that has not been investigated before and aimed at presenting a picture of annual reporting practices and revealing critical issues concerning IC disclosure in UK. The importance of the results lies on the fact that English companies are provided with significant information about IC reporting trends, enabling them to either improve or modify their disclosure practices. Lastly, this paper is concerned to make visible the crucial roles for accounting in the English economy, particularly in the field of IC, and contribute in the identification process of the competitive advantage in organizations.

- ***Limitations and suggestions for future improvement***

This research has both theoretical and practical implications. Concerning the highly debated topic of the appropriate theoretical approach, the findings of this paper was analyzed on the grounds of Agency theory. However, it is possible that an alternative approach may yield more comprehensive conclusions. Thus, future studies will have to deal with a crucial theoretical dilemma, which demands an in-depth understanding of the accounting literature.

On the other hand, practical implications of this study are mainly related to the content analysis. A major issue of content analysis is the subjectivity involved in its methodology. This is due to the heavy reliance of the method on the reliability of the coder (Abeysekera 2006). Reliable data are regarded the data that remain stable during the measuring process (Krippendorff 2004). Neuendorf (2002) points out that without the establishment of reliability, content analysis measures are uninterpretable. However, she argues that reliability is an essential, but not an adequate condition for validity. According to Milne and Adler (1999) the estimation of reliability requires the measurement of accuracy, stability and reproducibility. Consequently future researchers will need to address this issue before carrying out their study by distinguishing the accurate nature of information related to IC and judging whether references to IC should be counted as IC items (Beattie and Thomson 2006). Other implications of the statistical model are related to the sample and the variables. A bigger sample can possibly result in higher accuracy and *generalisability*, while other variables which were not taken into account by this study, could explain a larger amount of the variance.

References

Abeysekera, I. 2001. A framework to audit intellectual capital. *Journal of Knowledge Management Practice* 2 (August): available at http://www.tlainc.com/articl25.htm (accessed on 01 February 2008).

Abeysekera, I. 2006. The project of intellectual capital: Researching the research. *Journal of Intellectual Capital* 7(1): 61-77.

Abeysekera, I., and J. Guthrie. 2005. An empirical investigation of annual reporting trends of Intellectual Capital in Sri Lanka. *Critical Perspectives on Accounting* 16: 151–163.

Andrew, B.H., F.A. Gul, J.E. Guthrie, and H.Y. Teoh. 1989. A note on corporate social disclosure practices in developing countries: the case of Malaysia and Singapore. *British Accounting Review* 21: 371–376.

April, K.A., P. Bosma, and D.A. Deglon. 2003. IC measuring and reporting: establishing a practice in SA mining. *Journal of Intellectual Capital* 4(2): 165-180.

Barako, D.G., P. Hancock, and H.Y. Izan. 2006. Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review* 14(2): 107-125.

Beattie, V., and S.J. Thomson. 2006. Lifting the lid on the use of content analysis to investigate intellectual capital disclosure. Discussion Paper Series in Accountancy & Finance, School of Management and Languages, Heriot-Watt University, Edinburgh.

Brennan, N. 2001. Reporting Intellectual Capital in annual reports: evidence from Ireland. *Accounting, Auditing and Accountability Journal* 14(4): 423–436.

Bornemann, M., A. Knapp, U. Schneider, and K.I. Sixl. 1999. Holistic measurement of intellectual capital. *Measuring and Reporting Intellectual Capital: Experience, Issues, and Prospects*. International Symposium: 9-10 June 1999 (Technical Meeting), Amsterdam.

Bozzolan, S., F. Favotto, and F. Ricceri. 2003. Italian annual Intellectual Capital disclosure. *Journal of Intellectual Capita* 4(4): 543-558.

Carney, T.F. 1972. *Content analysis*. Winnipeg, Canada: University of Manitoba Press.

Chau, G.K., and S.J. Gray. 2002. Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *The International Journal of Accounting* 37: 247–265.

Chow, C.W., and A. Wong-Boren. 1987. Voluntary financial disclosure by Mexican corporations. *The Accounting Review* 62(3): 533-541.

Collins, J., and R. Hussey. (2003). *Business research*. 2nd edition. London: Palgrave MacMillan.

Depoers, F. 2000. A cost benefit study of voluntary disclosure: some empirical evidence from French listed companies. *European Accounting Review* 9(2): 245–263.

Dielman, T.E. 1991. Applied regression analysis for business and economics. 2nd edition. Boston, USA: PWS-Kent.

Eng, L.L., and Y.T. Mak. 2003. Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy* 22(4): 325-345.

Fama, E., and M. Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics* 26: 301-325.

García-meca, E., I. Parra, M. Larrán, and I. Martínez. 2005. The explanatory factors of intellectual capital disclosure to financial analysts. *European Accounting Review* 14(1): 63–94.

Gray, R., D. Owen, and C. Adams. 1995. *Accounting and Accountability: Changes and challenges in corporate social and environmental reporting*. London: Prentice Hall.

Groves, R. M., F. J. Flowler, M. P. Couper, J. M. Lepkowski, E. Singer, and R. Tourangeau. 2004. *Survey methodology*. London, UK: Wiley publications.

Guthrie, J. 2001. The management, measurement and the reporting of intellectual capital. *Journal of Intellectual Capital* 2(1): 27-41.

Guthrie, J., and M.R. Mathews. 1985. Corporate social accounting in Australasia. *Research in Corporate Social Performance* 7: 251–277.

Guthrie, J. and R. Petty. 2000. Intellectual capital: Australian annual reporting practices. *Journal of Intellectual Capital* 1(3): 241-251.

Guthrie, J., R. Petty, and F. Ricceri. 2006. The voluntary reporting of Intellectual Capital: Comparing evidence from Hong Kong and Australia. *Journal of Intellectual Capital* 7(2): 254-271.

Haniffa, R.M., and T.E. Cooke. 2002. Culture, corporate governance and disclosure in Malaysian corporations. *Abacus* 38(3): 317-349.

Ho, S. S. M., and K.S. Wong. 2001. A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing & Taxation* 10(2): 139–156.

Hossein, M., M.H.B. Perera, and A.R. Rahman. 1995. Voluntary disclosure in the annual reports of New Zealand Companies. *Journal of International Financial Management and Accounting* 6(1): 69-87.

Johansson, U., M. Martensson, and M. Skoog. 2001. Mobilizing change through the management control of intangibles. *Accounting, Organizations and Society* 26(7-8): 715-733.

Krippendorff, K. 2004. *Content analysis: an introduction to its methodology*. 2nd edition. London: Sage Publications.

McKinnon, J.L., and L. Dalimunthe. 1993. Voluntary disclosure of segment information by Australian diversified companies. *Accounting and Finance* 33: 33–50.

Meek, G.K., C.B. Roberts, and S.J., Gray. 1995. Factors influencing voluntary annual report disclosures by U.S., U.K. and continental European multinational corporations. *Journal of International Business Studies* 26(3): 555-572.

Milne, M.J., and R. Adler. 1999. Exploring the reliability of social and environmental disclosures content analysis. *Accounting, Auditing and Accountability Journal* 12(2): 237-256.

Mitchell, J.D., C.W.L. Chia, and A.S. Loh. 1995. Voluntary disclosure of segment information: Further Australian evidence. *Accounting and Finance* 35(2): 1–16.

Neuendorf, K.A. 2002. *The content analysis guidebook*. London: Sage Publications.

O'Donnel, D. 2004. Theory and method on intellectual capital creation: Addressing communicative action through relative methodics. *Journal of Intellectual Capital* 5(2): 294-311.

Raffournier, B. 1995. The determinants of voluntary financial disclosure by Swiss listed companies. *The European Accounting Review* 4(2): 261-280.

Schadewitz, H.J., and D.R. Blevins. 1998. Major determinants of interim disclosures in an emerging market. *American Business Review* 16(1): 41-55.

Sveiby, K.E. 1997. *The new organizational wealth, managing and measuring knowledge based assets*. 5th edition. San Francisco, USA: Barrett-Koehler.

Tirole, J. 2001. Corporate Governance. *Econometrica* 69: 1-35.

Wright, P.M., G.C. McMahan, and A. McWilliams. 1994. Human resources and sustained competitive advantage: a resource-based perspective. *International Journal of Human Resource Management* 5(2): 301-326.

Appendix I: Companies

3i Group	Friends Provident	Royal Bank of Scotland Group
Admiral Group	G4S	Royal Dutch Shell
Alliance Trust	GlaxoSmithKline	RSA Insurance Group
Amec	Hammerson	SABMiller
Anglo American	HBOS	Sage Group
Antofagasta	HSBC Holdings plc	Sainsbury (J)
Associated British Foods	ICAP	Schroders
AstraZeneca	Imperial Tobacco Group	Scottish and Southern Energy
Aviva	Innvensys	Severn Trent
BAE Systems	InterContinental Hotels Group	Shire
Barclays	International Power	Smith and Nephew
BG Group	ITV	Smiths Group
BHP Billiton	John Wood	Standard Chartered
BP	Johnson Matthey	Standard Life
British Airways	Kazakhmys (WI)	Tesco
British American Tobacco	Kingfisher	Thomas Cook Group
British Energy Group	Land Securities Group	Tullow Oil
British Land Co	Legal and General Group	Unilever
British Sky Broadcasting	Liberty International	United Utilities Group
BT Group	Lloyds TSB Group	Vedanta Resources
Bunzl	London Stock Exchange Group	Vodafone Group
Cable and Wireless	Lonmin	Whitbread
Cadbury	Man Group	Wolseley
Cairn Energy	Marks and Spencer Group	WPP Group
Capita Group	Morrison WM Supermarkets	Xstrata
Carphone Warehouse Group	National Grid	
Centrica	Next	
Cobham	Old Mutual	
Compass Group	Pearson	
Diageo	Petrofac	
Drax	Prudential	
Enterprise Inns	Reckitt Benckiser Group	
Eurasian Natural Res Corp	Reed Elsevier	
Experian	Rexam	
FERREXPO	RIO TINTO	
FirstGroup	Rolls-Royce Group	

Appendix II: regression results

Model 1: Internal capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,512a	,262	,195	16,07590

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8087,708	8	1010,964	3,912	,001[a]
	Residual	22742,230	88	258,434		
	Total	30829,938	96			

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

b. Dependent Variable: INTCAP

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12,286	14,232		-,863	,390
	BC	,173	,151	,115	1,144	,256
	MO	,038	,166	,022	,228	,820
	OS	-,179	,103	-,178	-1,749	,048
	LNTA	2,399	1,253	,236	1,914	,035
	ROA	,011	,183	,007	,062	,951
	ROE	-,011	,026	-,048	-,421	,675
	LR	14,685	9,510	,189	1,544	,126
	IND	16,361	4,281	,401	3,822	,000

a. Dependent Variable: INTCAP

Model 2: External capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,551[a]	,304	,241	17,03536

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11157,735	8	1394,717	4,806	,000[a]
	Residual	25537,893	88	290,203		
	Total	36695,629	96			

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

b. Dependent Variable: EXTCAP

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	23,691	15,082		1,571	,120
	BC	-,327	,160	-,200	-2,041	,044
	MO	-,183	,176	-,098	-1,043	,300
	OS	-,256	,109	-,233	-2,358	,021
	LNTA	3,683	1,328	,332	2,773	,007
	ROA	-,078	,194	-,044	-,400	,690
	ROE	-,001	,028	-,005	-,050	,961
	LR	1,985	10,078	,023	,197	,844
	IND	-1,606	4,537	-,036	-,354	,724

a. Dependent Variable: EXTCAP

Model 3: Human capital

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,522[a]	,273	,207	20,78531

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14261,494	8	1782,687	4,126	,000[a]
	Residual	38018,568	88	432,029		
	Total	52280,062	96			

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

b. Dependent Variable: HUMCAP

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,805	18,401		-,044	,965
	BC	-,077	,196	-,039	-,394	,695
	MO	,073	,214	,033	,339	,735
	OS	-,300	,133	-,228	-2,261	,026
	LNTA	5,962	1,620	,450	3,680	,000
	ROA	-,017	,237	-,008	-,073	,942
	ROE	,003	,034	,011	,097	,923
	LR	1,190	12,296	,012	,097	,923
	IND	16,397	5,535	,309	2,962	,004

a. Dependent Variable: HUMCAP

Model 4: Total disclosure

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,609[a]	,371	,314	38,63405

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	77484,675	8	9685,584	6,489	,000[a]
	Residual	131347,881	88	1492,590		
	Total	208832,557	96			

a. Predictors: (Constant), IND, MO, BC, LR, ROE, OS, ROA, LNTA

b. Dependent Variable: TOTDIS

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10,599	34,203		,310	,757
	BC	-,231	,363	-,059	-,636	,526
	MO	-,073	,399	-,016	-,183	,855
	OS	-,736	,247	-,280	-2,984	,004
	LNTA	12,044	3,012	,455	3,999	,000
	ROA	-,084	,440	-,020	-,190	,850
	ROE	-,009	,063	-,015	-,145	,885
	LR	17,860	22,855	,088	,781	,437
	IND	31,153	10,288	,294	3,028	,003

a. Dependent Variable: TOTDIS