UNIVERSITY OF LJUBLJANA

SCHOOL OF ECONOMICS AND BUSINESS

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DISCLOSURE OF INTANGIBLES AS A TOOL FOR INFLUENCING THE BEHAVIOUR OF FIRMS

DOCTORAL DISSERTATION

Ljubljana, 2019

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ACKNOWLEDGEMENTS

The doctoral study has been co-financed by the European Union from the European Social Fund, in the framework of the Operational Programme for Human Resources Development for the Period 2007-2013, 1st development priority Promotion of Entrepreneurship and Adaptability; priority axis 1.3: Scholarship schemes.

RAZKRITJE NEOTIPLJIVEGA KAPITALA KOT ORODJE VPLIVANJA NA OBNAŠANJE PODJETIJ

POVZETEK

V Sloveniji se lahko podjetja sama odločijo, ali bodo razkrila informacije o neotipljivem kapitalu, da bi zadovoljila različnim potrebam deležnikov po informacijah in tako izboljšala transparentnost na ravni poslovodstva in med različnimi deležniki podjetja. Podjetja za sporočanje pomembnih podatkov različnim deležnikom pogosto uporabljajo letna poročila. Vendar pa empirične ugotovitve kažejo neskladnost v razmerju med obsegom razkritih informacij o neotipljivem kapitalu v letnih poročilih in obsegom neotipljivega kapitala v podjetjih. Zato je eno od vprašanj, ki vzbuja zanimanje v strokovni razpravi, ali podjetja letna poročila tudi zares uporabljajo za posredovanje ustreznih informacij različnim deležnikom ali jih uporabljajo zgolj kot orodje tržnega komuniciranja. V slednjem primeru podjetja s posredovanimi informacijami odvračajo pozornost javnosti in vlagateljev od negativnega vpliva aktivnosti podjetja ali slabega poslovanja.

Doktorska disertacija se osredotoča na vprašanje, ali imajo uspešnejša slovenska proizvodna podjetja v lasti večji delež neotipljivega kapitala ter zaradi katerih virov neotipljivega kapitala se taka podjetja razlikujejo od manj uspešnih. Disertacija proučuje tudi, ali uspešnejša slovenska proizvodna podjetja prostovoljno razkrivajo več informacij o neotipljivem kapitalu ter kakšne so razlike v praksah poročanja med uspešnimi in manj uspešnimi podjetji, nenazadnje pa se osredotoča tudi na obseg in kakovost poročanja o neotipljivem kapitalu v obdobju 2006–2010. Pri tem sta nas zanimala predvsem motivacija vodstva podjetij za razkrivanje informacij o neotipljivem kapitalu ter podatek, kateri interesni skupini je v preučevanem obdobju namenjeno največ pozornosti za izpolnjevanje njenih potreb po informacijah.

V skladu s teorijo virov predvidevamo, da imajo uspešnejša podjetja v lasti več neotipljivega kapitala. Za razmejitev med uspešnimi in manj uspešnimi podjetji smo uporabili metodo razvrščanja v skupine (angl. *cluster analysis*). Z uporabo t-testa smo s podatki iz vprašalnikov preverili razlike med skupinama po organizacijskih značilnostih in deležu neotipljivega kapitala. Rezultati študije kažejo, da ima sorazmerno manjša skupina uspešnejših podjetij v povprečju statistično značilno večji delež neotipljivega kapitala. Ta kapital jih pozitivno razlikuje od manj uspešnih podjetij in jim zagotavlja podlago za ustvarjanje podjetju lastnih in drugačnih konkurenčnih prednosti, potrebnih za doseganje boljšega poslovanja.

Da bi ugotovili, ali uspešnejša podjetja razkrivajo več informacij o neotipljivem kapitalu, smo s podatki iz indeksa razkritij preverili razlike v obsegu razkritih informacij o neotipljivem kapitalu med skupinama. V skladu s teorijo signaliziranja (angl. *signalling theory*) smo predvideli, da uspešnejša podjetja informacije o neotipljivem kapitalu razkrivajo prostovoljno kot signal udeležencem na trgu glede nadpovprečnega poslovanja. Po teoriji agentov (angl. *agency theory*) se agentski stroški zvišujejo s spremljanjem in nadziranjem managerjev, zato predpostavljamo, da

managerji uspešnejših podjetij razkrivajo več informacij o neotipljivem kapitalu s ciljem zmanjšanja asimetrije informacij in s tem agentskih stroškov. Rezultati študije kažejo, da uspešnejša podjetja v povprečju razkrivajo več informacij o neotipljivem kapitalu. Prav tako ugotavljamo, da bi manj uspešna podjetja morala proučiti učinkovitost svojih praks poročanja, da bi ugotovila, ali razkrivajo ustrezne informacije za zadovoljitev potreb različnih deležnikov podjetja.

Da bi ugotovili, ali so podjetja od leta 2006 do leta 2010 izboljšala komunikacijo z različnimi deležniki ter kateri interesni skupini je bilo za izpolnjevanje njenih potreb po informacijah namenjeno največ pozornosti, smo preverili obseg, kakovost in vrsto sporočenih informacij o neotipljivem kapitalu. Za oceno obsega in kakovosti razkritih informacij smo uporabili analizo vsebine in metodologijo indeksa razkritij. Na podlagi rezultatov študije ugotavljamo, da sta v obravnavanem obdobju obseg in kakovost razkritih informacij o neotipljivem kapitalu rasla. Najvišja stopnja kakovosti razkritij človeškega kapitala kaže, da so podjetja v preteklih letih okrepila sodelovanje zlasti z lastnimi zaposlenimi. Ugotavljamo tudi, da prostovoljna razkritja informacij o neotipljivem kapitalu skozi obravnavano obdobje odražajo družbeno, politično in gospodarsko stanje v državi, v kateri poslujejo analizirana podjetja. Rezultati so prav tako potrdili dognanja nekaterih novejših raziskav, ki so pokazale, da obsega razkritij ne gre enačiti s kakovostjo poročanja o neotipljivem kapitalu.

Rezultati študije izpostavljajo tiste vire neotipljivega kapitala, zaradi katerih se uspešnejša podjetja razlikujejo od manj uspešnih. Razumevanje ključnih virov neotipljivega kapitala z zmožnostjo ustvarjanja vzdržnih konkurenčnih prednosti, ki opredeljujejo uspešnejša podjetja in njihovo nagnjenost k investiranju v neotipljivi kapital, je lahko za managerje in oblikovalce politik ključnega pomena. Rezultati študije lahko pomagajo podjetjem razumeti, kako s poročanjem o neotipljivem kapitalu kot pomembnem dejavniku poslovne rasti na najboljši način predstaviti edinstven proces ustvarjanja vrednosti. Tovrstno poročanje ima vlogo samoanalize, ki podjetjem omogoča prepoznavanje lastnega neotipljivega kapitala in povezav med različnimi vrstami kapitala, pa tudi prepoznavanje prispevka neotipljivega kapitala k organizacijski uspešnosti. Podjetja tako spoznajo, kako okrepiti korporacijsko upravljanje in izboljšati transparentnost med poslovodstvom in različnimi deležniki podjetja. Študija je prispevek k obstoječi literaturi o prostovoljnih razkritjih, ki so namenjena različnim deležnikom, ne samo vlagateljem. Študija prispeva k obstoječim primerjalnim študijam o vrsti in obsegu prostovoljno razkritih informacij o neotipljivem kapitalu v letnih poročilih podjetij. Prav tako prispeva k omejenemu številu raziskav z uporabo vzdolžnega pristopa (angl. *longitudinal approach*). Z našo raziskavo smo proučili ne samo obseg, temveč tudi kakovost razkritih podatkov o neotipljivem kapitalu. Predhodne raziskave razkritij o neotipljivem kapitalu se pogosto osredotočajo na razvite države, medtem ko rezultati naše raziskave prispevajo k rezultatom raziskav držav v razvoju.

Ključne besede: neotipljivi kapital, prostovoljna razkritja, poslovanje podjetij, motivacija managementa, deležniki

DISCLOSURE OF INTANGIBLES AS A TOOL FOR INFLUENCING THE BEHAVIOUR OF FIRMS

SUMMARY

Slovenia is a cultural setting where firms can decide to disclose or not intangible capital (IC) information in order to suit information needs of various stakeholders and consequently improve transparency between the management and stakeholders. Management often uses annual reports to discharge accountability to stakeholders and to indicate what is important for them. On the other hand, empirical findings show an inconsistent relationship between the extent of IC disclosure in annual reports and IC performance. One of the issues of concern in IC disclosure debate is whether companies truly use annual reports to communicate relevant information or whether such reports are used as a marketing tool to distract investors and public from low performance.

In this dissertation we investigate whether the Slovenian better performing manufacturing companies possess more intangible capital and which intangible resources positively differentiate them from the worse performing companies? We also examined whether the better performing companies voluntarily disclose more IC information in annual reports and what the main differences in disclosure policies between the better and the worse performing companies are. We were also interested in the quantity and the quality of IC disclosures in annual reports of Slovenian manufacturing companies over five-year period (2006-2010). Accordingly, we assessed the motivation of the management behind their IC disclosure and the stakeholder group that was given highest attention in meeting its information needs.

In accordance with the resource based view of the firm, we predict that the better performing companies possess a higher share of intangible capital. We used cluster analysis to identify the better performing companies. To reveal the difference between the groups of companies regarding their internal organisational characteristics and the corresponding share of intangible capital, we applied questions from the questionnaires on identified clusters of firms. The results obtained indicate that on average the better performing companies hold a higher share of intangible capital within majority of analysed intangible resources. This capital positively differentiates them and provides the successful companies with a base for constructing their respective and different competitive advantages that are required in superior performance.

To reveal whether companies with superior performance disclose more IC information, we applied annual report items from the disclosure index on the identified clusters of firms. We used signalling theory to predict that the better performing firms report additional IC voluntary information to signal the above average quality of the firms and favourably distinguish themselves from others in the market. Following the argument that agency costs increase with the monitoring and controlling of actions made by

managers, we anticipated that managers in the better performing companies disclose higher level of IC information to their shareholders to reduce information asymmetry and thus agency costs. The results obtained indicate that, on average, the better performing companies disclose a higher level of IC information on almost all analysed intangible capital resources. The worse performing companies might reconsider the efficiency of their disclosure practices to ascertain whether they disclose the relevant information based on the needs of different stakeholders.

To reveal whether companies enhanced their communication with stakeholders over the five-year period (2006-2010) and which interest group was given highest attention in meeting its information needs, we analysed the type, quantity and quality of IC disclosures, using disclosure index methodology based on content analysis. The results of the study revealed an upward trend of IC disclosures in terms of the quantity and quality. The highest quality level of human capital disclosures indicates that, over the years, companies enhanced their stakeholder engagement with respect to their employees. Over the investigated period voluntary IC disclosures reflect social, political and economic context of the country in which sample companies operate. Moreover, results of the study confirmed some of the recent studies, which revealed that disclosure frequency (quantity) is not equivalent to the quality of IC reporting.

Study results highlight the existence of IC resources, which favourably distinguish the better performing companies from the worse performing ones. For managers and policy makers gaining a clear understanding of core IC resources that determine the better performing firms and their tendency to invest in intangible capital can be of crucial importance as it offers some insights for policy design. Findings of the study may assist companies in how to best express their unique value creation process by reporting on their intangible capital as an important driver of business growth. IC reporting have a fundamental function of self-analysis, which helps companies to recognise their implicit intangible capital, different links between various types of company's capital, as well as IC contribution to company performance. Accordingly, companies could be advised on how to strengthen its corporate governance and introduce a new dimension in transparency. The study adds to the body of literature on IC disclosure by redirecting the attention from antecedents of disclosure to disclosure-performance linkage. The results also contribute to literature on IC disclosure directed towards stakeholders other than investors. The study contributes to the existing comparative studies on the level and the type of voluntarily disclosed IC information. In this respect it contributes to the so far limited research using a longitudinal approach. Whereas most of the previous studies only assessed the quantity of IC disclosures, we examined the quantity and the quality of IC disclosure. Since prior research was often focused on developed countries, our research contributes to the limited research on developing countries.

Keywords: intangible capital, voluntary disclosure, firm performance, management motivation, interest groups

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INTRODUCTION

The dissertation studies voluntary disclosures of intangible capital (hereafter "IC") in annual reports of Slovenian manufacturing companies in relation to their performance, IC base, management's motivation for voluntary disclosures, and information requirements of the main stakeholders.

It is important to note that a unified definition of IC is virtually non-existent. The term "intangible capital" is often used interchangeably with the term *intellectual capital*, *intangible assets* or *knowledge assets*, referring to the immateriality and "invisibility" of IC elements, their relation to knowledge, and the role of intangible capital as a generative resource (Moldaschl & Fischer, 2004). Today, the term *intangible capital* is usually used in the management literature, the term *intellectual capital* is used in legal literature, the term *intangible assets* is used in accounting literature, while the term *knowledge assets* is mainly used by economists. Due to different perspectives adopted in the use of the IC term by various interest groups, different approaches of the IC classification exist. The most frequently used among them is a three-categorisation model defined by Edvinsson and Malone (1997), where IC is identified at the level of individuals, the level of organisation, and the level of relationship between the firm and its suppliers, customers, and other stakeholders. Following this model, the dissertation considers the human capital, organisational capital, and relational capital as elements of intangible capital.

In the past two decades, the sources of competitive advantages shifted from traditional (tangible) capital to intangible capital. We are witnessing a new phase in economic development, which is characterised by constant innovation, digitalisation, as well as the prevalence of intangible factors. Therefore, the contribution of intangible capital to the creation of value and company performance is exceeding that of tangible assets' in most industries (Bose & Oh, 2003; Cohen & Kaimenakis, 2007; Kaufmann & Schneider, 2004, St-Pierre & Audet, 2011; Zeghal & Maaloul, 2011). In the economies where digital and communication technologies, networks and alliances, the quality and organisation of human resources, and innovation are becoming major drivers of growth in companies, the management of intangible capital has become an important practice in those companies that try to achieve superior performance. Appropriate selection of intangible resources and their ability to generate sustainable competitive advantages (SCA) through their interaction might differentiate the better performing companies from the worse performing ones (Lippman & Rumelt, 2003; Youndt, Subramaniam & Snell, 2004). Whether intangible resources are fully utilised depends on the organisational competences to use them. With the growing importance of intangible, non-financial capital, the disclosure of IC information to different stakeholders has become important in order to capture and understand the current company performance.

The rise of importance in intangible capital has also divulged the limits of traditional accounting, which is based on transactions, while the value of intangible capital is generated through the interaction of different intangible and tangible resources of the company. Various elements of intangible capital can be deeply intertwined, which makes them difficult to isolate and quantify. Accordingly, the valuation of intangibles becomes problematic mainly due to difficulties related to their identification, measurement and control. Many types of intangible capital are left unrecognised in financial statements because it is hard to predict whether the expenditure to develop an intangible capital is going to generate any future economic benefits. Because of the restrictive accounting recognition criteria, a significant proportion of intangible resources are not recognised in a company's financial statements. Consequently, companies cannot adequately include in their balance sheets and show all the benefits of investment in human resources, research and development, customer services and quality improvements (Bagherpour Velashani & Arabsalehi, 2008).

The failure to recognise intangible capital means that investors and general public are not receiving relevant information about the company's activities. The negative consequences of inadequate accounting treatment of intangible capital are shown through information asymmetry, high cost of capital, systematic undervaluation of intangibles, and insufficient investment in intangible capital (Zeghal & Maaloul, 2011; Lev, 2001). The business and scientific community reacted to the measurement problem of intangible capital and its inadequate accounting treatment by proposing many guidelines and recommendations how to measure and report companies' intangible capital. These solutions tend to re-contextualise the traditional accounting as well as measurement, reporting and disclosure methods to be more consistent with the new economic environment. The procedures for verification of information on intangible capital still needs to be standardised and agreed on at an international level.

A review of literature shows that companies recognise the benefits of voluntary disclosure of IC information. This means that companies voluntarily disclose the IC information to improve transparency between the management and various stakeholders, and accordingly reduce information asymmetry (Yi & Davey, 2010; Guthrie & Petty, 2000; Schneider & Samkin, 2008; Vergauwen et al., 2007; Pablos, 2002). Another reason for voluntary disclosure of IC information is to overcome adverse selection mechanisms, since higher performance firms want to distinguish themselves from others in the market (Dye, 1985; Grossman, 1981; Milgrom, 1981; Pae, 2002; Verrecchia, 1983; Welker, 1995). A disclosure of IC information also forces companies to recognise their own intangible capital, different links between various types of capital, as well as the contribution of intangible capital to the performance of the company. This helps companies to more properly define their strategic position as well as to evaluate their internal and external growth opportunities. For this reason, the use of IC information is also important for managerial and decision-making purposes.

Companies often use annual reports to discharge accountability to various stakeholders and to indicate important content (Guthrie & Petty, 2000; Yi & Davey, 2010). The Company Act (Official Gazette of the RS No. 65/2009) in Slovenia requires all companies, including banks and insurance companies, to prepare basic and consolidated financial statements in compliance with the Slovenian accounting standards. No standards or rules have yet been developed in Slovenia on the type of information that could additionally be disclosed voluntarily in annual reports. Arsov and Bucevska (2017) revealed that, on average, Slovenian companies prepare more comprehensive annual reports compared to companies in Croatia, Serbia or Macedonia, which mostly report on financial information.

One of the issues of concern in the IC disclosure debate is whether companies truly use annual reports as a means to communicate the relevant information to various stakeholders or whether such reports are used as a marketing tool. Namely, the empirical findings (Williams, 2001; Slapničar, 2006) show an inconsistent relationship between the extent of IC disclosure in annual reports and IC performance of the companies. Such disclosures are primarily driven by public pressure in order to obtain an agreement to operate from various stakeholders, or perhaps to distract the public and investors from the prevailing negative impact of the company activities or its low performance.

Given the role of intangible capital and voluntary IC disclosure for company performance, we have developed the following research questions about the Slovenian manufacturing companies: (1) Do better performing companies possess a higher share of intangible capital compared to the worse performing companies? (2) Which intangible resources positively differentiate the better performing companies from the worse performing companies? (3) Do better performing companies voluntarily disclose more IC information in companies' annual reports? (4) What are the main differences in disclosure policies between the better and worse performing companies? (5) Did the quantity and quality of IC disclosures in companies' annual reports increase over the 2006–2010 period? (6) What is the management's motivation to disclose IC information? (7) Which stakeholder group was given highest attention in meeting its information needs?

In the first chapter of the dissertation, we investigate the difference between the better and worse performing companies based on the profile of core intangible resources. In accordance with the resource-based view of the firm, we predict that the better performing companies possess a higher share of human, organisational and relational capital than the worse performing companies. The resource-based view (RBV) theory advocates that a company should identify and manage its intangible resources effectively in order to achieve the above average performance (Penrose, 1959, 1980; Kristandl and Bontis, 2007; Raja Adzrin, Abu Thahir, and Maisarah, 2009; Lewicka, 2011). In order to maintain an above average profitability, firms need to build

sustainable competitive advantages (SCA) by creating intangible strategic resources (Ahmad and Mushraf, 2011; Sydler et al., 2014). They should analyse own resources and competences to identify those that are superior and distinctive (Camelo-Ordaz et al., 2003). Elements of IC can be helpful for detecting the core intangible resources and consequently for conceptualising the strategically significant competences and capabilities of the firm.

In the second chapter of the dissertation, we examine the correlation between a company performance and its IC disclosure level. We also investigate disclosure policies of the better and worse performing companies. In accordance with the signalling theory, we predict that the better performing companies use annual reports for the voluntary dissemination of IC information in order to signal the above average quality of the firm to various stakeholders and positively distinguish themselves from others players in the market. Following the argument that agency costs increase with the monitoring and controlling of actions made by managers, we anticipated that managers in the better performing companies disclose more information to their shareholders in order to reduce information asymmetry.

The third chapter of the dissertation analyses the type, quantity and quality of IC voluntary disclosures over a five-year period (2006–2010) to reveal whether Slovenian manufacturing companies enhanced their communication with internal and external stakeholders. Because there is no generally accepted theory to explain the management's motivation for voluntary IC disclosures, a number of theoretical disclosure frameworks are utilised. We use the stakeholder and legitimacy theory to explain disclosures of companies as a mechanism employed by managements to present their firms as socially responsible institutions that operate within the norms and values of the society in return for society's support. The stakeholder theory provides a framework for viewing IC disclosures from the perspective of a specific stakeholder group, while the legitimacy theory is used to present IC disclosures as a management's tool to influence the perceptions of stakeholder groups to gain social legitimacy of the company actions. The political economy of accounting (PEA) theory provides a framework for viewing disclosures as a product of the economic, political and social environment and an attempt to balance interests of various stakeholder groups. The agency and signalling theories focus primarily on IC reporting in relation to financial performance of the company. They are used to present disclosures as a means to reduce information asymmetry and to allow managers to signal their superior business performance. According to these theories, the disclosure of information is targeted mostly at capital providers, such as shareholders and investors. The other theories focus on reporting that goes beyond financial performance, taking into account social values of the society in which a company operates and the needs of different stakeholders.

We gathered the primary and secondary data for analyses. The primary data was collected within the research project called *Analysis of firm-level investment in tangible*

and intangible capital from the perspective of future competitive advantages of Slovene firms, code J5-4169. The project research group developed questionnaires that addressed various types of intangible capital, i.e. human capital, branding, relational capital, research and development (R&D), information technology (IT) capital, and interest groups in the firm. The questionnaires were tested through personal interviews with CEOs. During the testing, we noticed that, in many cases, smaller companies did not provide the requested data due to the absence of organisational units that would be able to collect and provide data on intangible capital. Given the lack of record keeping in relation to some types of intangible capital in smaller Slovenian firms, we decided to focus on large Slovenian manufacturing firms. Another reason for selecting large companies was that, in contrast to the smaller ones, large firms are more capable of exploiting the economies of scale in intangible capital accumulation, can be more effective in the protection of their intangible capital, and thus have a greater incentive to invest in it. Large companies are more capable of managing risks related to IC investment (Arrighetti et al., 2014). Because large firms have more resources to invest in new initiatives, they are also more likely to possess a higher level of intangible capital and to afford disclosure costs easier than the smaller firms (Meek, Roberts & Gray, 1995). Because of higher public exposure (Bozzolan, Favotto, & Ricceri, 2003), they can be put under more pressure to match their values with that of the society (Lu & Abeysekera, 2014). Accordingly, the demand for disclosure of IC information is stronger (Bozzolan, Favotto, & Ricceri, 2003; Dainelli et al., 2013).

We sent questionnaires to 364 Slovenian manufacturing companies and received questionnaires from 102 companies, which is a 28-percent response rate. However, not all companies provided answers to all of the questions. For this reason, we included 93 companies into our research study that had responded to most of the questions regarding the different types of intangible capital. We then collected annual reports for sample companies for the 2006–2010 period, from which secondary data was acquired. Content analysis was used to collect the data from annual reports. Content analysis involved the reading of the annual report's section devoted to the management report and coding of IC information contained in annual reports in accordance with the selected framework of IC indicators included in the disclosure index. A disclosure index is an extensive list of 89 IC items that may be disclosed in corporate annual reports. In the process of determining the IC items, we consulted the body of literature on IC disclosures regarding the categories of intangible capital and their related items that are discussed most frequently. We also considered the IC items that were covered in questionnaires.

To identify the better performing companies, we performed a hierarchical cluster analysis, which excluded four companies as potential outliers. The sample for analysis in intangible resource profiles and disclosure policies was thus composed from 89 companies. In the cluster analysis, we used financial data for the year 2009, which was

retrieved from annual financial reports, because data provided on the questionnaires was also mostly related to the year 2009.

To reveal the differences between the better and worse performing companies regarding their internal organisational characteristics and the corresponding share of intangible capital, we applied questions from the questionnaires on identified clusters of firms. By comparing the resource profile between both groups, we found that the better performing companies on average hold a higher share of intangible capital within majority of analysed intangible resources compared to the worse performing companies. This capital provides the successful companies with a base for constructing their different respective competitive advantages that are required in superior performance.

To reveal the difference between the groups of companies regarding the level of disclosed IC information, we applied annual report IC items from the disclosure index on the identified clusters of firms. In order to keep a degree of comparability within the above study results, we used the IC disclosure items from annual reports for the year 2009. The obtained results show that the better performing companies disclose a higher level of IC information on almost all analysed intangible capital resources. By comparing disclosures from annual reports to the ones contained in the questionnaires, we found that the better performing companies use annual reports to communicate the relevant information and consequently decrease information asymmetry.

In order to examine the type of IC voluntary disclosures, both the quantity and quality of disclosures, we use the disclosure index methodology based on the content analysis. By examining the quantity and quality of IC disclosures over the studied period, we discovered an upward trend in the IC disclosures. The highest quality level was achieved by human capital disclosures, indicating that companies enhanced their stakeholder engagement mostly with respect to their employees. Furthermore, voluntary IC disclosures reflect the social, political and economic environments in which companies operate. The results of the analysis confirmed some of the recent studies, which revealed that disclosure frequency (quantity) is not equivalent to the quality of IC reporting.

The dissertation findings reveal the existence of IC resources, which favourably distinguish the more successful firms from the less successful ones. In order to achieve sustainable competitive advantage (SCA), companies must understand the core intangible resources and competences that they possess. This understanding allows firms to evaluate their growth opportunities and select appropriate corporate strategies for achieving the best economic returns. Acquiring a clear understanding of companies' core IC resources with the SCA potential and their tendency to invest in IC could be crucial for managers and policy makers as it offers insights that are useful in drawing up policies. Accordingly, firms could be advised on how to introduce a new dimension in transparency as well as strengthen their corporate governance. Our findings may assist

companies on how to better express their unique value creation process by reporting on their intangible capital as an important driver of business growth. Reporting on intangible capital raises the level of transparency in a company towards its external and internal stakeholders. A better understanding of the company contributes to a better evaluation of company's performance and increases customer and supplier loyalty. It also contributes to a higher level of motivation in employees, who then contribute their knowledge and abilities towards achieving operational efficiency. All this means that the results of the study might be useful for stakeholders to realise the extent of voluntary disclosure and its relationship with firm performance.

The dissertation contributes to the theoretical insights of the resource-based view of companies and adds to the body of literature on IC disclosure by redirecting the attention from antecedents of disclosure to the disclosure-performance linkage. It also contributes to the existing literature on voluntary disclosures directed towards stakeholders other than investors, an area that has not been thoroughly covered so far. In addition, we employ a number of theoretical disclosure frameworks to interpret our research findings in relation to stakeholders of companies, who are targeted by managements' IC disclosures. Finally, the study contributes to the existing comparative studies on the type and the level of voluntarily disclosed IC information in annual reports of companies. It contributes to the so far limited research using a longitudinal approach (Campbell & Rahman, 2010; Wagiciengo & Belal, 2012). Whereas most of the previous studies were focused on the assessment of the quantity of IC disclosures, we examined the quantity and the quality of IC disclosure. Furthermore, we show a difference in IC disclosure quality in the period before and after the crisis. Prior research of IC disclosures was often focused on developed countries, while our research contributes to the research on developing countries.

The dissertation consists of three scientific article papers presented in the form of chapters. In the first chapter, we reveal the existence of individual strategic intangible resources and compare the resource profile of the better performing Slovenian manufacturing companies to the worse performing companies. Then, we demonstrate the disclosure profile of companies and their dissemination practices and show the difference in the level of IC disclosure between the better and worse performing firms. In the third chapter, we present the trending behaviour of IC disclosures in terms of the quantity and quality of IC disclosures. We reveal whether companies enhanced their communication with stakeholders in the 2006–2010 period and which of the interest groups was given a priority in meeting its information needs. We conclude the dissertation with a joint conclusion.

1 DO BETTER PERFORMING COMPANIES POSSESS MORE INTANGIBLE CAPITAL: CASE OF SLOVENIA[1]

1.1 Introduction

Historical roots of research on intangible capital starts in 1990s. Initial work mainly focused on raising awareness about the existence of intangible capital and its value within the organisations (Itami, 1991; Brooking, 1996; Roos, Roos, Dragonetti & Edvinsson, 1997; Stewart, 1997) followed by the first classification models (Marr, Gray & Neely, 2003). A change in investment structure with the increased investment in intangible capital indicated a transition of industrial economy towards knowledge-based economy. Accordingly, further research formulated the concept of knowledge-based organisation (Nonaka, 1991; Spender & Grant, 1996; Teece, 1998; Teece, 2000) and focused on the management of knowledge assets, which are often referred to as intangible capital, intangible assets, invisible assets or intellectual capital (Alcaniz, Gomez-Bezares & Roslender, 2011). They are considered a key driver of business' growth, profitability and competitiveness (Bose & Oh, 2003; Kaufmann & Schneider, 2004; Cohen & Kaimenakis, 2007; Zeghal & Maaloul, 2011; Sydler, Haefliger, & Pruksa, 2014). Canals (2001) emphasised that with the development of knowledge-based society intangible capital increasingly came in the forefront exceeding the contribution of tangible assets in the process of value creation (Guthrie, 2001)[2].

It is important to note that a unified definition that determines the scope of intangible capital does not exist. The term intangible capital is often used interchangeably with the term intellectual capital or intangible assets. Galbraith (1969) was the first who used the term intellectual capital and described it as a bundle of assets and as a process of value creation at the same time. Later, many scholars tried to give the definition of intellectual capital and shed light on its measurement and management process to better understand how it contributes to the value creation (Boj et al., 2014). Even though many authors tried to define the term in accurate manner the literature review revealed that there is no broadly accepted definition. According to Brooking (1997) intellectual capital refers to intangible capital that can potentially enhance corporate performance in case that appropriate combination of intangible capital, financial resources, and good relationship with stakeholders exists (Abdullah & Sofian, 2012).

[1] This paper was co-authored with Matjaž Koman and published in Economic and Business Review Journal, i.e., Lalović & Koman (2018).

[2] Corrado, Charles, Hulten, & Sichel (2005) estimated that investment in intangibles averaged US$1.1 trillion between 1998 and 2000 (1.2 times tangible capital investment) or 12% of GDP, and showed that an important part of the US productivity acceleration since the mid-1990s can be attributed to growth in intangible assets. Other country studies estimated the contribution of previously unmeasured intangible capital to multifactor productivity (MFP) growth of 14% in UK (Marrano, Haskel & Wallis, 2009) and 3% in Finland (Jalava et al., 2007) over a period between the mid-1990s and early 2000s. Estimated contribution of all intangibles to MFP growth in Japan and in France is 19% (Fukao et al., 2008), 18% in Germany, and 9% in Spain (Hao et al., 2008).

The notion that intangible capital has the impact on business performance is consistent with the resource-based view (RBV) theory, which advocates that a company should identify and manage its intangible resources effectively to achieve the above average performance (Penrose, 1959, 1980; Kristandl & Bontis, 2007; Raja Adzrin, Abu Thahir, & Maisarah, 2009; Lewicka, 2011)[3]. To maintain an above average profitability, firm needs to build sustainable competitive advantages (SCA) by creation of core strategic resources i.e., most valuable, rare, inimitable and non-substitutable resources (Ahmad & Mushraf, 2011; Sydler et al., 2014). Therefore, they should analyse their own resources and competences to discover those that are superior and distinctive (Camelo-Ordaz et al., 2003). In identification of their core resources and consequently in conceptualisation of strategically significant competences and capabilities of the firm, elements of intangible capital can be helpful.

In this chapter, we analyse the correlation between the size of intangible capital and the performance of Slovenian manufacturing companies using cluster analysis. Obtained results show than on average the better performing companies hold a higher share of intangible capital within majority of analysed intangible resources and thus may have developed more competences and capabilities needed for superior performance. By comparing the profile of different intangible capital resources of better performing companies, we highlight the existence of intangible resources that favourably distinguish the better performing firms from the worse performing firms. We also examined whether investment in human resource management, marketing activities, information technology and research and development differs between identified resource profiles of Slovenian manufacturing companies.

For the managers and policy makers gaining a clear understanding of core intangible resources that determine superior firm performers and their tendency to invest in intangible capital can be of crucial importance as it offers some insights that are useful in drawing up policies. To achieve sustainable competitive advantages, companies must understand the core intangible resources and competences that they possess. This understanding allows firms to select appropriate corporate strategies for achieving the best economic returns. The study results contribute to the previous literature as they highlight the existence of intangible capital resources within the population of firms with common characteristics, which favourably distinguish the better performing firms from the worse performing firms. The findings of the study reveal different profiles of the core intangible resources that evolved across the better and the worse performing firms contributing to the theoretical insights of the resource-based view of the firm. A

[3] Nevertheless, many companies are still facing a lot of difficulties with the management of intangible resources (Dzinkowski, 2000) due to intangible nature of intangible capital. Therefore, its identification and measurement becomes difficult as it is hard to measure intangible capital by financial figures. As a result, only 20% of firm's knowledge is actually used because firms lack appropriate IC measurement system (Chen, Zhu & Xie, 2004).

comparative analysis, which shows the resource differential between the studied firms, is one of the learning experiences in organisation science and strategic management.

The structure of the chapter is as follows. The study begins with brief presentation of IC definitions and its classifications. The next section introduces RBV theory of the firm as the basis for hypothesis development. Given the high importance of the core intangible resources in their contribution to superior performance, the resource profile of Slovenian better performing companies is examined and compared to the worse performing companies. Discussion and conclusion are presented in the final section.

1.2 Intangible resources and their role in improving business performance

1.2.1 Definition and origins of intangible capital

The Kaufmann and Schneider (2004) and Choong (2008) reviewed main definitions of intangible capital. They pointed to the use of different terms by different scholars from different economic fields, which refer to the same subject. Invisible assets (Itami, 1991), intellectual capital (Brooking, 1997; Stewart, 1997), immaterial capital (Sveiby, 1997), intangibles (Lev, 2001) are the most recurrent terms, with intangible assets being the most often used term by accountants and accounting standards. Today the term *intellectual capital* is usually used in the legal literature, the term *intangible capital* is used in management literature, while the term *knowledge asset* is mainly used by economists. The difference exists in different perspective adopted referring to the immateriality of IC elements, their "invisibility", their relation to knowledge and/or information, and to the role of intangibles as generative resources (Moldaschl & Fischer, 2004).

Finally, due to different viewpoints of various interest groups different approaches on IC classification exist and consequently different ways of categorisation and different lists of intangibles are offered. A three-categorisation model of Edvinsson and Malone (1997) is most frequently used, where IC is identified at the level of individuals, the organisational level and the level of relationship that the firm has with its suppliers, customers and other stakeholders in general (Marzo, 2013)[4]. Beside commonly acknowledged pioneering Edvinsson and Malone's classification, Sveiby (1997) classification is often used. He divided IC competences into internal capital (patents, concepts, computer and administrative systems) and external capital (customer segmentation, market growth, efficiency and stability). These frameworks helped researchers to better conceptualise intangible capital and make it easier to operationalise

[4] Due to different approaches in IC measurement accountant tried to establish accounting standards to provide stakeholders with a more comprehensive picture of firms' IC expressed in terms of traditional monetary data (Petty & Guthrie, 2000). Therefore, accounting literature uses classification of intangible capital into four categories of assets (Gadau, 2012): market assets, substructure assets, assets as intellectual property, human values.

it for research. Thus, some researchers conceptualise intangible capital as the sum of all knowledge and capabilities that the firm can utilise to generate competitive advantage. However, due to idiosyncratic nature of intangible capital, the value of intangible capital is more than just the sum of its elements, since it is generated through the interaction of IC elements, i.e. dynamic combination of different IC elements.

What seems to be shared by all authors is that IC is non-tangible (and non-financial) asset based on the knowledge, which span human, intra-organisational and inter-organisational level of the firm. In our study, we will refer to the definition of Turk (2000) who defines intangible capital as firms' knowledge included in its operations; it could be capitalised or not (like intellectual property); it impacts firms' operating profit and its value; and it exists as human, relational and organisational capital. In his definition Turk also follows the Edvinsson and Malone's IC classification where human capital is defined as combined knowledge, skill, innovativeness and ability of employees to meet the task at hand; organisational (structural) capital refers to organisational capability that supports employee's productivity like hardware, software, databases, organisational structure, patents, trademarks; and relational (customer) capital consists of relationships developed with the key customers (Bronzetti, Mazzotta, Puntillo, Silvestri & Veltri, 2011).

1.2.2 Description of IC elements

Due to the role of intangible capital in reduction of companies operating costs, we provide description of individual intangible elements and their contribution to organisational efficiency.

Human capital is considered the most important resource of the company especially in relation to firm's future value creation (Gadau, 2012). It is also a foundation of intangible capital and the basic element in performing other functions of intangible capital (Chen, Zhu & Xie, 2004). Several authors suggested that to effectively generate and derive benefits from intangible capital a firm has to possess high quality human resources (Galor & Moav, 2004), which represent the collection of employees' skills and abilities (Bontis & Fitz-enz, 2002) that can be leveraged to further extend intangible capital base of the firm (Arrighetti, Landini & Lasagni, 2014).

Basically, human capital refers to individual abilities, know-how, skills, expertise, experience, and leadership abilities of employees and managers, which increase their professional qualification and contribution to the firm (Edvinsson & Malone, 1997; Fernandez, Montes & Vazquez, 2000). Together with teamwork and learning capacity, loyalty, training and education, these attributes comprise employees' competences (Chen et al., 2004); whereas employees' attitude includes the motivation of the employees for the work and satisfaction from work (Sydler et al., 2014; Inkinen, 2015).

Creativity of employees enables them to be innovative and is one of the most important factors in developing intangible capital of the firm (Chen et al., 2004). The competences, attitude and creativity of employees can result in outstanding products and in improvement of production efficiency. HRM practices like annual performance appraisals, work-life balance programs or health improvement programs transform employees' competences into capital by affecting the employee competence outputs. HRM practices can affect and enhance not only organisational performance (e.g., productivity, quality and innovation) but also social performance in terms of lower employee turnover and absenteeism or an increase of job satisfaction (Abhayawansa & Abeysekera, 2008).

Human capital is people dependent knowledge which is not a property of the firm. Thus, it is very important for the company to establish and to enforce the relationship with its workers to keep this value within the company (Bronzetti et al., 2011). In this respect knowledge transfer among employees is important factor of knowledge keeping within the firm[5].

Organisational (structural) capital, also called internal capital, refers mainly to the internal organisation that supports human capital to perform and create value or wealth for the firm (Edvinsson & Malone, 1997; Sveiby, 1997; Bollen, Vergauwen & Schnieders, 2005). It represents the human capital substructure (Gadau, 2012) and could also be defined as human resource supportive infrastructure (Benevene & Cortini, 2010) as it allows efficient operation of a firm, which helps adaptation to novel situations (Youndt & Snell, 2004).

Organisational capital is the capital that organisation owns. It is people independent intangible resource and refers to the knowledge, skills and information that stay behind when employees leave the company. One of its functions is to reduce firm's dependence on a particular individual or group of individuals and to ease incorporation and coordination of new employees (Fernandez et al., 2000). It includes corporate culture, policies, distribution networks, and other "organisational capabilities" developed to meet requirements of the market, such as patents, trademarks, licences, quality and improvement processes, organisational processes, IT systems, or R&D activities that have been or will be implemented in order to improve the effectiveness and profitability of the firm (Dzinkowski, 2000; Moon & Kym, 2006; St-Pierre & Audet, 2011; Sydler et al., 2014). Among others, database of clients, suppliers and competitors also provides competitive advantage as it is important information source, which reflects firms' internal structure of relations.

[5] Fernandez, Montes and Vazquez (2000) offer some of possible solutions how to keep knowledge of individual employees within the firm by limiting the freedom of personnel movement for a certain period of time in case that worker received a specialised training needed for specific job performance or rewarding the employees for the remaining in the firm in the form of compensations for long service to the firm or high pensions, which the employees lose in case that they leave the firm.

Most of organisational knowledge is not formally written in any of companies' documents. It resides in organisational routines, principles and values shared by all members of the firm that make up firm's corporate culture. Routines represent firm specific knowledge, which is a product of employees' interaction and collective learning produced in teamwork - assets that enable productivity and enhance human capital (Fernandez et al., 2000). Companies develop routines to facilitate coordination of activities in the context characterised by uncertainty. Organisational routine defines a regular, predictable pattern of activity, consisting of a sequence of coordinated actions put in practice when the organisation faces a specific problem or stimulus. In addition, organisational capital is supporting infrastructure of human and relational capital in their contribution to firm performance since it enables creative and innovative activities within the firm (Bozbura, 2004). Together with human capital organisational capital enables companies to generate and utilise relational capital in a coordinated way (Chen et al., 2004).

Relational (customer) capital, also called external capital, represents ability of the firm to relate with various stakeholders, such as customers, suppliers, investors, members of the community, society, and the knowledge embedded in and derived from these relationships (Grasenick & Low, 2004; Green & Ryan, 2005; Abdullah & Sofian, 2012). It includes the perceptions of external stakeholders of the firm itself, such as corporate image, brand recognition, and similar (Przysuski, Lalapet & Swaneveld, 2004).

Relational capital does not only incorporate the network of relations with its stakeholders but also integrates potential assets obtained through these networks (Wang, Yen & Liu, 2014). Examples are: customer and brand loyalties (Park & Luo, 2001), access to quality raw materials, better service, faster and more reliable suppliers' delivery (Peng & Luo, 2000), reduced possibility of opportunistic behaviour of business partners (Pisano, 1989), and development of new knowledge and competences with greater exchange of information, skills and know-how due to enhanced evolution of partner's relationships (Kale, Singh & Perlmutter, 2000). Cooperation with customers, suppliers and competitors does not only provide the access to their knowledge and resources but also enables the sharing of risks and provides necessary flexibility needed in changing environment (Fernandez et al., 2000). A good relationship with company's stakeholders implies improvement in firm's trust and reputation and consequently an increase of relational capital (Bronzetti et al., 2011).

Relational capital facilitates cooperation among the members of a team and shapes collective actions (Chua, Lim, Soh, & Sia, 2012). Therefore, it can help employees to collaborate with others leading to better individual performance. The higher level of relational capital induces better planning and problem solving, enhances customer benefits by better identification and satisfaction of their needs, which in turn increases

production and efficiency of service delivery and thus reduces organisational costs (Youndt & Snell, 2004; Kijek & Kijek, 2008). Relational capital is among all elements of intangible capital the most directly related to firm's performance but cannot be developed without the support of human and organisational capital (Chen et al., 2004).

Therefore, intangible capital is the knowledge of the firm embedded in the skills and experience of its employees, its policies, procedures and routines, and its relationships with its customers, suppliers, and other stakeholders of the firm (Bharadwaj, 2000).

1.3 Research analysis

1.3.1 Literature review and hypothesis development

Resource based theory (Barney, 1991) recognises the resources and competences as a source of competitive advantage of the firm (Bowman & Toms, 2010; Bronzzeti et al., 2011). To be the source of sustainable competitive advantage resources must be rare, unique, inimitable, durable, idiosyncratic, and non-substitutable, i.e. not easily replaceable by another resource (Peng, 2001; Fahy, 2002). Such resources are considered to be core or strategic as they distinguish a firm from a strategic point of view (Leonard-Barton, 1992). Since intangible capital is the only source that fulfils all conditions required to be considered the source of firms' sustainable competitive advantage (Sanchez, Chaminade & Olea, 2000), many authors used RBV in analysing firms' intangible capital (e.g., Fernandez et al., 2000; Sveiby, 2001; Riahi-Belkaoui, 2003; Herremans & Isaac, 2004; Marr, Schiuma & Neely, 2004; Reed, Lubatkin & Srinivasan, 2006).

Development of firms' intangible capital is closely linked to the firm's history (path-dependency) and causal ambiguity (making it hard for other firms to imitate or to recreate due to unique historical evolution of each company). Many of firms' intangible resources are externalities derived from their activities (Arrow, 1974). Due to their complex relations of complementarity and causal connections among intangibles themselves and among intangibles and other resources of the firm, intangible resources are hard to understand and replicate. Their co-specialisation with other resources of the firm reduces their value outside the firm and impedes the knowledge of its individual creation (Grant, 1991). The more numerous and more complex these connections are, harder it is to understand and imitate intangible resources of the firm (Reed & DeFillippi, 1990; Fernandez et al., 2000)[6]. This idiosyncratic character of intangible resources makes them an important factor of firms' differentiation.

[6] Among the reasons why resources and competences might be difficult to imitate we can find: complexity of core competences because of the ability of company to internally and externally link activities and processes in such a way that they deliver value to the customer; path dependency of competence development, which are culturally embedded; causal ambiguity where competitors cannot

Compared to tangible capital intangibles contribute significantly more to firm's success (Galbreath, 2005) as they have more potential for creation of firm's sustainable competitive advantage and to enable the firm to sustain higher levels of profit (Bowmana & Toms, 2010). From the perspective of RBV, sustainable competitive advantage of the firm depends on the exploitation of relationships between different complementary intangible resources that generate value synergies (Powell & Dent-Micallef, 1997). The synergy effect is obtained with the use of intangible resources that are accumulated in one part of the firm and are simultaneously used in other parts without additional expense or at low cost. This simultaneous use of intangibles is possible due to their knowledge nature, which enables synergies: it can be used at the same time in different forms, its value doesn't deteriorate with the use but increases as opposed to tangible material resources, whose value depreciates with the use. In addition, with the combination of its parts it is possible to obtain even more knowledge. Therefore, companies enlarge their intangible capital base through combination of internally and externally absorbed knowledge with pre-acquired knowledge into new one (Cohen & Levinthal, 1990) and through new combinations of pre-acquired knowledge that generates new knowledge (Gratton & Ghoshal, 2003).

Because of their capability to generate synergies, the possession of intangible resources is of great importance for firms' growth (Fernandez et al., 2000). Companies that can generate superior core resources may be capable to use them in order to develop sustainable competitive advantages of the firm (Srivastava et al., 1998; Lippman & Rumelt, 2003).

Hamel and Prahalad (1990) argue that superiority of better performing companies over their competitors stems from their core competences and the way they are deployed, which implies that firms possess different profiles of resources (Carmeli, 2001). Intangible resources decisively contribute to the heterogeneity of resources with their unique characteristics (lasting, specialised and non-marketable) and superiority (scarce and difficult to imitate). They may exist at different levels within the firm: employees, teams, functions, processes, or the organisation as a whole (Villalonga, 2004). Type, nature and the size of these resources determine a company's profitability (Amit & Schoemaker, 1993). Thus, in explaining why some firms are more competitive and perform better than others resource based theorists (Barney, 1991; Grant, 1991; Peteraf, 1993; Amit & Schoemaker, 1993; Collis, 1994) emphasise the role of internal, firm-specific factors and their effect on performance.

Many authors investigated link between intangible capital and different measures of performance like: sales (Lev, Radhakrishnan & Zhang, 2009), return on equity

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comprehend the significance of firm's characteristics that may be based on tacit knowledge or the linkage of processes and activities that create core competences (Foundations of strategic capability, 2015).

(Appuhami, 2007), sales variation, productivity and return on assets (St-Pierre & Audet, 2011), cash flows (Herremans, Isaac & Bays, 2008), business profitability and productivity (Kamath, 2008), efficiency and the net value added over total asset (Riahi-Belkaoui, 2003). Authors often show significant contribution of intangible capital to firms' market value (Lev & Sougiannis, 1996; Eberhart, Maxwell & Siddique, 2004; Greenhalgh & Rogers, 2006; Anagnostopoulou & Levis, 2008; Sandner & Block, 2011). Some authors also found a positive contribution of intangible capital to both firm- and industry-level productivity (Oliner, Sichel & Stiroh, 2007; O'Mahony & Vecchi, 2009; Marrocu, Paci & Pontis, 2012). Carmeli and Tishler (2004) and Riahi-Belkaoui (2003) showed the positive relationship between intangible capital and firm's future performance. St-Pierre and Audet (2011) listed some of the studies where we can find a positive relationship between intangible capital and firm performance as well as between the growth rate of intangible capital and firm performance (Cohen & Kaimenakis, 2007; Tan, Plowman & Hancock, 2007; Tovstiga & Tulugurova, 2009).

In addition, some authors found significant positive correlation between individual elements of intangible capital and firm's performance: human capital and profitability and productivity of firms (Kamath, 2008), human and organisational capital and investors' capital gains on shares (Appuhami, 2007), organisational and relational capital and firm performance, reflected through reduction of operational costs and new product development (Bontis, 1998; Bontis, Keow & Richardson, 2000). Others showed significant positive correlation between firm performance and certain elements of organisational and relational capital, like: R&D and innovation (Capon, Farley & Hoenig, 1990; Lev & Sougiannis, 1996; Deng, Lev & Narin, 1999), advertising (Chan, Lakonishok & Sougiannis, 2001), customer satisfaction (Luo, 2007; Aksoy, Cooil, Groening, Keiningham & Yalcin, 2008) and companies' image (Deephouse, 2000; Roberts & Dowling, 2002).

Authors also showed that no single intangible capital can create value on its own (Gupta & Roos, 2001). The combination and interaction between different types of intangible capital is the one that yields a sustainable competitive advantage and enhances firm performance (Chen, Cheng & Hwang, 2005; Fernstrom, 2005; Cohen & Kaimenakis, 2007; Inkinen, 2015). Hence, Nazari (2010) revealed that human capital is significantly associated with organisational capital and positively influences firm's performance. Other authors showed that human capital has positive influence on relational capital, whereas both elements in turn influence organisational capital (Bontis et al., 2000; Chen et al., 2004). Another study by Hsu and Fang (2009) provided evidence that combined effect of human and relational capital improves organisational learning and development of new products. Huang and Hsueh (2007) found that interaction of human and relational capital, especially employees' training, has a strong impact on firm performance. Later, Inkinen (2015) confirmed that employees, the organisational supporting structures or the established relations that the firms possess, has only little

value separately but combined they represent a strong performance driver. Other studies also documented the support of human capital to other dimensions of intangible capital which in turn directly influence firm performance (Cabrita & Bontis, 2008; Kim, Kim, Park, Lee & Jee, 2012). Wang and Chang (2005) observed that the influence of human capital on performance is indirect as it influences innovation capital, process capital and customer capital, which in turn are the main determinants of firm performance.

In accordance with the resource based view of the firm and the above stated empirical arguments concerning the relationship between different dimensions of intangible capital and firm performance, we believe that the better performing companies possess more beneficial intangible resources that help them to be more competitive and to perform better than others. Thus, we hypothesise that the better performing companies possess a higher share of the human capital, relational capital and organisational capital:

— *Hypothesis 1: The better performing companies possess a higher share of human capital.*
— *Hypothesis 2: The better performing companies possess a higher share of relational capital.*
— *Hypothesis 3: The better performing companies possess a higher share of organisational capital.*

1.3.2 Methodology and data

This study was part of the basic research project called *Analysis of firm-level investment in tangible and intangible capital from the perspective of future competitive advantages of Slovene firms, code J5-4169* during which we collected the primary data. The project was performed at the School of economics and business, University of Ljubljana in the period from 2010 to 2014[7]. To collect data on various resource constructs, we sent questionnaires on different type of intangible capital to 364 Slovenian manufacturing companies in 2010. Data provided on the questionnaires mainly relate to the year 2009. Therefore, we used the secondary data for the year 2009, retrieved from corporate annual reports, published by The Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES).

To encourage companies to participate in the study, we sent them a covering letter explaining the purpose of the research and guaranteeing them a complete confidentiality of data. We contacted managers by phone referring to the covering letter and asking for a permission to send them the questionnaires by e-mail. After we had sent them related questionnaires, detailed follow-up was conducted by phone or email one week latest.

[7] The project was performed by the research group led by Janez Prašnikar and financed by the Slovenian Research Agency.

The questionnaires were answered by CEOs, and/or senior managers in charge of corporate R&D, marketing, sales, human resource, and other relevant departments as they possess comprehensive operational and strategic knowledge to adequately assess the firm's resource base. All participants held high-level managerial positions, thus the potential for significant data biases was diminished.

In many cases smaller companies did not provide the requested data due to not established organisational entities that would be able to collect data on intangible capital. Given the lack of record keeping in relation to some type of intangible capital in the smaller Slovenian firms, we decided to focus on the larger Slovenian manufacturing firms. In contrast to the smaller companies, large firms are more capable of exploiting the economies of scale in intangible capital accumulation, can be more effective in the protection of their intangible capital, and thus have a greater incentive to invest in it. They are also more capable of managing risks related to IC investment (Arrighetti et al., 2014). In addition, large firms are also more inclined to a more thorough disclosure of information on intangible capital (Bozzolan, Favotto, & Ricceri, 2003). We received questionnaires from 102 companies, which is a 28-percent response rate. However, not all companies provided answers to all of the questions. For this reason, we included 93 manufacturing companies in the research study that had responded to most of the questions regarding the different types of intangible capital.

The surveyed companies operated in 23 different industries according to NACE classification (see Table A2.2). As the resource-based theory is concerned with resource-based advantages rather than monopoly-based the use of a sample with a variety of industries is appropriate (Fahy, 2002).

Questionnaires focus on broader classification of intangibles and addressed various types of intangible capital, i.e. human capital, branding, relational capital, research and development (R&D), information technology (IT) capital, and interest groups in the firm[8] to capture the entire intangible capital structure of the firm and to provide better understanding of its "immaterial" parts by investigating their relative importance. The respondents were asked to evaluate different intangible resources by answering the set of "yes/no" questions, where each set covers one field of study. Affirmative answers to the questions reflect increased complexity of specific category and the tendency of a firm to achieve higher level of productivity. Questionnaires are based on the work of Miyagawa et al. (2010). Questionnaires also comprised some Likert scale questions. Namely, in our research we used three-point Likert scale question to rate different type of innovations, where 1 means low relevance and 3 means high relevance. We also used

[8] Authors of individual questionnaires are: Tjaša Redek for R&D capital, Matjaž Koman and Gordana Lalović for the field of relational and IT capital, Nada Zupan and Daša Farčnik for HRM capital, Janez Prašnikar and Damjan Voje for social capital, and Vesna Žabkar for marketing. Results of the study are published in the book edited by Janez Prašnikar with the title The role of intangible assets in exiting the crisis (2010).

four-point Likert scale question (from low = 1 to high = 4) to measure the importance of quality and improvement goals for organisational innovations. We also included some standard questions asking for specific piece of information, like market share, number of competitors, patents, sales, expenditure for employees' training, IT, research and development (R&D), and marketing activities. With the following questionnaires we identified the type of intangible resources that companies possess as well as the processes run in the companies:

- HRM questionnaire focused on different aspects of human capital, like: training and transfer of knowledge within the company; HRM practices, like performance feedback, programs for work-life balance, employee health improvement programs, employee motivation and satisfaction; and organisational flexibility in respect to teamwork, process of continuous improvements, internal communication of employees and implementation of new business practices and methods.
- With the social capital questionnaire, we investigated the ownership structure of the firms as well as the process of negotiations between managers and employees in terms of their bargaining power, the role of unions within the process along with the employees' participation in decision making, risk and profit sharing.
- With the IT questionnaire, we measured different IT dimensions, from investment in and development of IT system, its use for customers' central database, sales analysis, or sales projections, and the role of informatics in current activities, business reorganisation, or for achieving competitive advantage.
- With the R&D questionnaire we focused primarily on: R&D activity in companies, characteristics of product and process innovation, and company competences and capabilities relative to competition.
- With the marketing questionnaire, we investigated the level of development of brand management based on the existence of three aspects: brand development, brand measurement, and brand investment.
- We measured relational capital using a questionnaire that focused on firm's customers, competitors and suppliers, analysing different dimensions of relational capital, like: relationship with customers and suppliers, their impact on business decisions and product development, monitoring of customers and acquiring new one as well as acquiring information on competitors and their influence on business operations.

Based on the literature review we defined categories of intangible capital according to Edvinsson and Malone's categorisation of organisational, relational and human capital with related intangible items that are most frequently discussed in literature and investigated within respective questionnaires. Therefore, in the HRM capital category we included the following intangible constructs: employees' training, teamwork capacity and employees' co-operation, knowledge transfer, system for employees' motivation, HRM practices, like: annual performance appraisals, work-life balance,

health and safety programmes. We included union activity within the human capital category as it is reflection of employees' relations. Organisational capital category comprises intangible constructs: information system, corporate culture, board and ownership structure, organisational innovation, quality and improvement process, R&D activities, patents. Relational capital category consists of following intangible constructs: brand recognition, brand value, corporate image, new customers, customers' loyalty and long-term relationship with customers, their impact on product development and business decisions, customers' grievances, customers' share of sales, suppliers' relationship and their influence on product development, competition and competitors' influence on business decisions. We also examined investment of Slovenian manufacturing companies in human resource management, marketing activities, information technology, and research and development. Investment in these areas are considered to be most important for companies to increase their intangible capital base as suggested by Youndt et al. (2004).

1.3.3 Results and discussion

1.3.3.1 Identification of better performing companies

Literature review indicates that there is no widely accepted consensus about definition, dimensionality and measurement of the firm performance concept. Many studies measure firm performance with a single indicator representing this concept as unidimensional (Glick, Washburn & Miller, 2005). Others suggest that in case of several dimensions, those most relevant to the research should be chosen (Richard, Devinney, Yip & Johnson, 2009). We measured firm performance based on accounting information contained in financial statements. Since questionnaires mainly relate to the year 2009 we also collected financial data for that year.

To define the better performing companies, we used performance indicators useful in predicting the capacity of the firm to generate profit, productivity and growth from the use of its current resources. We measured profitability by using ROA, ROE, EBIT, and EBITDA financial indicators. Since size of the company and profitability are interdependent, we used sales indicators as a measure of size most closely related to profitability and growth while we used value added per employee as a measure of productivity. These indicators have been identified also as factors for which empirical studies found to be important drivers of firm's disclosure policy[9]. In addition, widely held view is that indebted firms have an incentive to voluntarily increase the level of corporate disclosure to fulfil information needs of investors (Al-Shammari, 2007; Alsaeed, 2006). Therefore, we also included other measures of financial performance like indicators of indebtedness and liquidity.

[9] See Alsaeed (2006) for an extensive summary of studies examining relationship between information disclosure and performance.

Size of a company is a trait that is related to the tendency of firm to invest in intangible capital (Arrighetti et al., 2014) and to disclose information on intangible investment. In our analysis company size was measured by total assets, as has been done in other studies on voluntary disclosure (Depoers, 2000; Ho & Wong, 2001). Additionally, we used a measure of company's size with respect to the number of employees. Therefore, we divided companies into 5 groups: size 1 (from 0 to 50), size 2 (from 51 to 250), size 3 (from 251 to 500), size 4 (from 501 to 1000), size 5 (above 1000). Therefore, the full set of performance measures that we used is: ROA, ROE, EBIT, EBITDA, value added per employee, ROS, growth of sales compared to a year prior, sales, leverage, net debt, liquidity, and size with respect to total assets and to employees' number[10].

To identify the better performing companies, we performed an agglomerative hierarchical cluster analysis in IBM SPSS Statistics 24. To identify eventual outliers, we first used hierarchical cluster analysis with nearest neighbour method. Hierarchical cluster analysis excluded four companies as potential outliers, so our results are based on 89 companies. After excluding identified outliers, we used two step cluster analysis for classification of firms into groups based on their financial indicators calculated from firms' accounting data. We used t-test to find differences between the groups of firms, which are statistically significant at 10-percent level.

The cluster analysis revealed two distinct clusters of companies. Based on their financial indicators 32 firms were identified as the better performing companies (cluster 1), while 57 as the worse performing companies (cluster 2). Results presented in Table 1.1 show that the better performing companies are bigger regarding the size of total assets and on average employ more employees. They are more productive as they are characterised by higher added value per employee. The sales as an indicator most closely related to the profitability and growth is also significantly higher. In addition, this group of companies is also more indebted as it reports higher value of leverage ratio. However, there were no significant differences with respect to following financial indicators: ROA, ROE, EBIT and EBITDA profitability indicators, ROS and sales' growth indicator, liquidity, or net debt. It should be noted that in 2009, the better performing companies have lower value of ROA and ROE ratios compared to worse performing companies. This may be because the crisis hit this group of companies earlier as they are more export oriented. In addition, data reveals that growth of sales was negative in 2009 compared to the worse performing companies. The better performing companies could not off-set a decrease in sales with a decrease in their costs

[10] Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for leverage indicator; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for net debt; Current assets/Current liabilities for liquidity; (Net profit – Net loss)/Average Equity for ROE and (Net profit – Net loss)/Average Assets for ROA. ROS indicator is calculated as Operating profit/Net sales. For added value per employee indicator we used the following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

as they were involved in long-term contracts with suppliers and could not reduce the number of their employees in such a short period of time. To test the robustness of the results we also performed cluster analysis for the year 2007. Significant differences between the groups occurred with respect to the size of total assets, number of employees, EBITDA and sales, which are higher for the better performing companies[11]. Cluster analysis results, performed on financial data for the year 2009 and 2007, are presented in Appendix in Table A2.1 and Table A2.3, respectively.

Table 1.1: Clusters of companies based on identified financial indicators

Financial indicators	**Cluster 1**		**Cluster 2**		**Sign.**
	Mean	SD	Mean	SD	
ROA	-0.01	0.06	0.02	0.16	0.175
ROE	-0.08	0.24	-0.00	0.34	0.231
EBIT (EUR)	1,308,033	2,105,703	2,429,781	9,907,991	0.530
EBITDA (EUR)	4,693,427	4,365,327	4,460,372	10,855,761	0.908
Value added per employee (EUR)	72,652	131,749	35,970	22,345	**0.043**
ROS (%)	5.8	15.8	3.4	3.8	0.275
Annual sales growth (%)	-24.8	19.1	1.27	124.4	0.242
Sales (EUR)	60,781,272	54,303,530	36,642,002	45,352,603	**0.027**
Leverage	0.56	0.21	0.48	0.22	**0.095**
Net debt	0.06	0.34	0.09	0.26	0.594
Liquidity	1.35	1.74	1.71	1.20	0.253
Size by total assets (EUR)	80,122,003	83,128,819	49,635,502	77,852,265	**0.087**
Size by number of employees	3.38	1.43	2.44	0.682	**0.000**

Note: SD stands for Standard Deviation.

Source: AJPES (2015) and own calculations.

[11] When we applied questions from questionnaires on the clusters of firms for the year 2007 we got results similar as for the year 2009. In relation to human capital, most of the differences between the groups occurred regarding the implementation of some HRM practices. Significantly higher share of better performers stated that special programs aimed at improving work-life balance and employee health exist in the company. As a result, the level of employees' satisfaction increased, and the level of health improved. Worse performers differ regarding employees' organisation in unions. About relational capital, results pointed to significantly higher share of the worse performers having long-term contract with all most important customers. Also, results like: engagement of customer representatives in development of new products, the impact of customers on fundamental decisions of the company and the choice of suppliers pointed to higher impact of customers on business decisions of the worse performers which implies that this group is more customer responsive. With respect to organisational capital, significantly higher share of superior companies confirmed that cooperation of employees in formal continuous process significantly contributes to performance of the company. Worse performers differ from better ones regarding the importance of the capability of firms for developing new products or procedures in implementation of organisational innovation, which is significantly higher for worse performers.

1.3.3.2 Resource profile of Slovenian companies

To reveal the difference between the groups of companies regarding their internal organisational characteristics and the corresponding share of intangible capital, we applied questions from the questionnaires on identified clusters of firms. For each of the two clusters, mean values and standard deviations are provided with data on the statistical significance of differences between the clusters. Results presented in Table A2.4 in Appendix show that in most cases the share of intangible capital is higher for the better performing companies. In the remainder of this chapter, we report and discuss mainly the results which are statistically significant between two clusters.

1.3.3.2.1 Human capital

The statistically significant[12] results for two clusters with respect to human capital are presented in Table 1.2, which shows that the group of better performing companies possesses a higher share of human capital primarily in terms of developing of employees' core competences, like teamwork skills and employees' abilities to share their knowledge across the company. A higher share of human capital can also be observed through the implementation of certain HRM practices, which transfer employees' competences into capital.

Within the group of better performing companies, teamwork is considered to be a common form of employee cooperation. All more successful companies state that there is a great need for employees to work in work groups because of the nature of the work processes. This is in line with the studies showing the importance of employee co-operation for development of intangible capital (Nahapiet & Goshal, 1998; Van den Bossche et al., 2006; Wang et al., 2014) and in prevention of its loss in case that employee leaves the company. This is achieved with the transformation of individual knowledge into shared cognition and "know-how" embodied within the team (Fernandez et al., 2000; Wang et al., 2014). Important factor of knowledge keeping within the firm in majority of better performing companies (90-percent versus 71-percent of worse performing companies) is also knowledge transfer, which better performing companies systematically induce among their employees. Teamwork contributes not only to increased productivity and performance (Maranno & Haskel, 2006; Boning, Ichniowski & Shaw, 2007; Bloom & Van Reenen, 2010; Dunlop & Weil, 2000; Hamilton, Nickerson, & Owan, 2003; Bartel, 2004) but also to increased disclosure of information and building loyalty to the firm (Starbuck, 1992).

Majority of more successful firms employ a range of HRM practices, like: work-life balance programs and health improvement programs. Special programs and policies aimed at improvement of work-life balance of employees and health improvement can

[12] As a measure of statistical significance, we use alpha of 10-percent.

increase job satisfaction and employees' commitment to the company leading to increased productivity and reduction in absenteeism, presentism and employee turnover (Center for organizational excellence of American psychological Assocciation, 2015). In fact, 35-percent of better performing companies in our study (compared to three percent of worse performing companies) confirmed that the general level of satisfaction increased and employee turnover decreased due to the special programs aimed at improving work-life balance of employees. In addition, due to the special programs for improving employee health (other than those required by law) the general level of health of employees improved and sick-leave hours decreased, which is a confirmation of firms' commitment to the continual improvement of working conditions (Tsalis, Stylianou & Nikolaou, 2017). A multidisciplinary literature review on the relationship between HRM practices and performance reveals that studies predominantly report positive effect of individual HRM practices on performance or productivity (Siebers et al., 2008; Bloom & Van Reenen, 2010).

The better performing companies also invest more in human capital by providing employee training, which is confirmed by their significantly higher yearly costs of employees' training (on average 120.807 EUR compared to 40.484 EUR of worse performing group of companies or 212 EUR per employee compared to 157 EUR per employee of worse performing group). In addition, this group of companies measures training effectiveness by conducting a survey at the end of a training program as well with other methods. According to the results of Koch and McGrath's research (1996) firms that systematically train and develop their workers are more likely to enjoy the rewards of a more productive workforce than those that do not. As shown by Nerdrum and Erikson (2001), investment in education and training increases professional skills and competences of employees, which results in better individual and organisational performance and leads to higher performance rates and human and organisational capital increase (Youndt et al., 2004).

Table 1.2: Share of human capital in Slovenian manufacturing companies

HUMAN CAPITAL	Cluster 1			Cluster 2			Sign.
	Data type	Mean	SD	Data type	Mean	SD	
TEAMWORK							
We have systematically introduced teamwork in the last five years.	Binary	**0.80**	0.410	Binary	0.56	0.504	**0.076**
There is a great need for workers to work in work groups because of the nature of the work processes.	Binary	**1.00**	0.000	Binary	0.89	0.320	**0.049**
KNOWLEDGE TRANSFER							
Company systematically induce knowledge transfer among employees.	Binary	**0.90**	0.301	Binary	0.71	0.462	**0.086**
HRM PRACTICES:							
Work-life balance							
Special programs aimed at improving work-life balance of employees exist in the company.	Binary	**0.40**	0.503	Binary	0.06	0.242	**0.002**
More than half of employees are involved in these programs for improving work-life balance.	Binary	**0.25**	0.444	Binary	0.03	0.171	**0.012**
Because of these programs for improving work-life balance the general level of satisfaction has increased and turnover decreased.	Binary	**0.35**	0.489	Binary	0.03	0.171	**0.001**
Health and safety programmes							
Special programs for improving employee health (other than those required by law) exist in the company.	Binary	**0.85**	0.366	Binary	0.35	0.485	**0.000**
Because of these health-improvement programs the general level of health of our employees has improved and sick-leave hours have decreased.	Binary	**0.60**	0.503	Binary	0.26	0.448	**0.014**
Employee training							
We measure training effectiveness also with other methods not only conducting a survey at the end of a training program.	Binary	**0.71**	0.463	Binary	0.44	0.504	**0.049**
Investment in employee training							
Total costs for employees' training per year in EUR.	Cont. data	**120,807**	128.221	Cont. data	40,484	40.030	**0.012**

Note: Mean values of binary data could be replaced by the share of companies as an incidence of a specific intangible capital aspect/practice.

Source: SEBLU (2010-2014) and own calculations.

1.3.3.2.2 Organisational capital

Groups of firms significantly differ regarding their ownership structure (see Table 1.3). On average, higher share of firms within the group of worse performing companies (79-percent) are firms where the private owner has more than a 50-percent share of ownership (dominant ownership share)[13]. This result is in line with the studies showing the negative relationship between the presence of a large shareholder and corporate performance attributed to the extraction of extra benefits by the large blockholder through less than optimal dividend payments, failure to reinvest, transferring profitable parts of the business to other firms in its ownership and similar devices (Džanić, 2011). An important finding of the research done by Bole, Guštin, Koman and Prašnikar (2018) is that the productivity of firms, where dominant owner alone holds at least a 50-percent share of the ownership, is significantly lower compared to the control group of firms with dispersed ownership. On the other hand, study of Damijan, Gregorič and Prašnikar (2004) find evidence for the absence of any significant influence of ownership control on a firm's productivity of Slovenian large and medium sized firms, which is attributed to most well-performing firms lack of controlling owners and their different sources of growth, such as the accumulation of knowledge and human capital having the highest impact on financial performance.

When examining R&D activities in companies focusing on the characteristics of product and process innovation, results show that intensity of R&D activities is significantly higher for the better performing companies as they show better performance regarding introduction of significant process innovation (93-percent versus 63-percent of worst performing companies), production process improvement (89-percent versus 58-percent) and improvement of support services like maintenance, sales, IT, accounting and other processes in the company (67-percent versus 45-percent)[14]. In addition, significantly larger share of better performing companies (81-percent versus 47-percent) confirmed that cooperation of employees in formal continuous improvement process resulted in improvements that significantly contribute to performance of the company. The formal continuous improvement process ensures constant improvements by seeking ways to cut costs and raise efficiency. It is often

[13] In Central and Eastern Europe privatisation, market conditions and institutional environment have mostly directed the evolution of corporate governance systems towards concentrated ownership and voting power, namely the system of large blockholders. But empirical evidence regarding the effect of concentrated ownership on firm performance is mixed. There are studies showing positive effect (Tribo et al., 2007) due to easier long-term goal orientation agreements (Hoskisson et al., 2002) and more intense monitoring of managers' actions, consequently decreasing managerial discretion and inhibiting self-serving behaviour (Finkelstein & Boyd, 1998). However, there are also studies showing negative effects of blockholding on firm performance due to decreased liquidity of equity (Maug, 1998), misguided corporate strategic alignment (Thomsen & Pedersen, 2000) or deriving benefits from the control function only for the largest blockholder (Johnson et al., 2000; Dyck & Zingales, 2004).

[14] Similar results can be found in the study done by Redek, Kopriva, Mihelič and Simič (2010) on the sample of 61 companies operating in 23 industries, which showed that three quarters of the studied companies improved their processes in terms of improved production processes, logistics and distribution, and supporting processes.

aligned to the standards like Six sigma, which focus on improving customer requirements understanding, business systems, productivity, and financial performance (Kwak & Anbari, 2004). Benefits of adopting the continuous improvement approach include: increased productivity, improved quality, lowered costs, decreased delivery times, improved employees' satisfaction, and reduced employee turnover rate. The knowledge developed in formal continuous process is deployed beyond the firm's employees and applied to the whole organisation (Formento et al., 2013). The better performers also show better performance regarding the average number of introduced patents. The results of the study also show that the better performing companies place a greater emphasis on R&D investment as significantly higher share of companies from this group invests at least 2-percent of revenue in R&D (70-percent versus 45-percent). Investment in R&D is fundamental in creation of new knowledge. As shown by Youndt et al. (2004), history of greater R&D investment leads to greater capacity to absorb new knowledge, which should in turn lead to a higher level of human capital. To protect new knowledge, companies create integrated knowledge, embodied in their processes, routines and products, which in turn increases the level of organisational capital.

Table 1.3: Share of organisational capital in Slovenian manufacturing companies

ORGANISATIONAL CAPITAL	Cluster 1			Cluster 2			Sign.
	Data type	Mean	SD	Data type	Mean	SD	
OWNERSHIP STRUCTURE							
The private owner has more than 50-percent share of ownership (dominant ownership share).	Binary	0.63	0.492	Binary	**0.79**	0.409	**0.094**
QUALITY AND IMPROVEMENT PROCESS							
Improvement as a result of formal continuous improvement process significantly contributes to company performance.	Binary	**0.81**	0.402	Binary	0.47	0.507	**0.012**
R&D ACTIVITIES							
The company introduced significant process innovation in the past five years.	Binary	**0.93**	0.267	Binary	0.63	0.490	**0.005**
The company significantly improved the production processes.	Binary	**0.89**	0.320	Binary	0.58	0.501	**0.005**
The company significantly improved the logistics, delivery, distribution of inputs and outputs (products and services).	Binary	**0.67**	0.480	Binary	0.45	0.504	**0.083**
PATENTS							
Number of patents in 2007.	Discrete	**1.56**	5.221	Discrete	0.15	0.580	**0.095**
R&D EXPENDITURES							
In 2009 R&D expenditure amounted to at least 2% of revenue.	Binary	**0.70**	0.465	Binary	0.45	0.504	**0.041**

Source: SEBLU (2010-2014) and own calculations.

1.3.3.2.3 Relational capital

Based on our study results the group of better performing companies possessess a higher share of relational capital in terms of their ability to relate with the customers and manage perceptions regarding the image of the firm (see Table 1.4).

Firms from this group have more developed marketing capabilities particularly measurement capabilities of processes and activities that enable a firm to develop, support, and maintain strong corporate image. Our results show that 42-percent of more successful companies evaluate corporate image by measuring perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position, compared to only 22-percent of worse performing companies. This is in line with the research of many marketing scholars who emphasised the impact of reputation on firm success (Aaker, 1991; Keller, 1993; Srivastava et al., 1998, 2001). Namely, by developing corporate image the better performing companies also send signals about their key characteristics, future actions and behaviour. They inform external stakeholders about the firm's trustworthiness, credibility and quality (Galbreath, 2005) and shape the response of customers, suppliers and competitors (Teece, Pisano & Shuen, 1997). Schwaiger (2004) displays many positive effects of strong corporate image, which helps firms in acquiring and retention of best employees and customers because of increased confidence in company's products and services. Also, companies with strong corporate image have better access to capital markets, which decreases the cost of capital. Thus, a firms' profitability increases with better reputation.

Regarding the worse performing companies, results show on significantly higher customers' impact on their business decisions, since significantly higher share of worse performing companies (90-percent versus 68-percent of better performing companies) stated that consumer representatives of their products were engaged in the process of the development of new product. In addition, a higher share of worse performing companies stated that customers directly influenced the fundamental companies' business decisions (47-percent versus 32-percent of better performers) and dictated the choice of their suppliers (17-percent versus 11-percent among better performers) but the difference between the groups is not statistically significant. The higher share of worse performing companies also has a long-term contract with all most important customers (27-percent versus 11-percent of better performing companies) and make long-term contracts with their new customers (43-percent versus 26-percent). These results imply that the worse performing companies are more customer responsive, which is mainly a characteristics of market driven companies (Barlow Hills & Shikhar, 2003), that collect information on their customers to assess their future needs but do not attempt to create

or change customers' behaviour[15]. Similar result was also gained by Koman, Filić, Flerin, and Juriševič (2010), who confirmed that less productive companies closely monitor their customers and engage them in product development. However, our results show that a higher share of better performing companies is more successful in obtaining new customers, since 58-percent of them succeed to obtain at least 10-percent of new customers each year (versus 40-percent of worse performing companies), however the difference between groups is not statistically significant.

Table 1.4: Share of relational capital in Slovenian manufacturing companies

RELATIONAL CAPITAL	Cluster 1			Cluster 2			Sign.
	Data type	Mean	SD	Data type	Mean	SD	
CORPORATE IMAGE							
Company measures perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position.	Binary	**0.42**	0.504	Binary	0.22	0.419	**0.094**
CUSTOMERS' IMPACT							
In period 2006-2008, consumer representatives of our products were engaged in the process of the development of new product.	Binary	0.68	0.478	Binary	**0.90**	0.305	**0.059**

Note: Mean values of binary data could be replaced by the share of companies as an incidence of a specific intangible capital aspect/practice.

Source: SEBLU (2010-2014) and own calculations.

Based on the answers provided in the questionnaires we can also reveal some of the firms' characteristics regarding the business environment in which group of firms operates even though the difference between the groups is not statistically significant. The better performing companies operate in more competitive business environment, since they have, on average, larger number of major competitors compared to the group of worse performing companies (10.3 versus 6.8). Some authors stress that sharpening the competition in markets leads to the accumulation of intangible resources as firms in such environment resort to less imitable intangible capital to enhance their distinctive know-how and product differentiation (Petrick, Scherer, Brodzinski, Quinn & Ainina, 1999; Arrighetti et al., 2014). Even though the difference between the groups is not statistically significant, the group of better performing companies invest higher share of sales in marketing activities. On average, marketing investment increases with the years in contrast to the worse performing group, whose investment in marketing activities decreases.

[15] In contrast, the market-driving firms set the needs and desires of their customers and thus change their behaviour and attitudes (Narver, Slater & MacLachlan, 2000; Kumar, Scheer & Kotler, 2000).

To summarise, when we explore these two groups more in detail, we found significant differences regarding their internal organisational characteristics with respect to the level of investment in the human capital, organisational capital and relational capital, which is on average higher for the better performing firms. In relation to human capital, most of differences occur regarding employees training and knowledge transfer, teamwork and implementation of some HRM practices, which are all elements associated with better performance (Capelli & Neumark, 2001; Siebers et al., 2008; Bloom & Van Reenen, 2010). As regards the relational capital of firms, the better performing companies have more developed corporate image, which also contributes to better firm performance according to previous research evidence (Srivastava et al., 1998; Sulait, 2007; Morgan, Slotegraf, & Vorhies, 2009). With respect to the organisational capital, the better performing companies significantly differ from the group of worse performing companies in terms of higher intensity of R&D activities. Furthermore, a significantly higher share of companies from this group invests at least 2-percent of revenue in R&D. In addition, a significantly larger share of better performing companies confirmed that cooperation of employees in the formal continuous process resulted in improvements that significantly contribute to the performance of the company. However, the group of worse performing companies differs from better performing with respect to higher impact of customers on the process of development of new products. Also, a higher share of worse performing companies are companies with the private owner having more than a 50-percent ownership share.

1.4 Conclusion

The aim of the study was to investigate how the human, relational and organisational capital in companies forms distinct profile of resources to better understand the core resources (i.e., most valuable, rare, inimitable and non-substitutable) that may generate sustainable competitive advantages and lead to superior performance. Therefore, the resource profile of Slovenian better manufacturing performing companies was examined and compared to the worse performing companies. We also examined whether the investment in human resource management, marketing activities, information technology and research and development differs across the identified resource profiles of Slovenian companies as investment in these areas is considered very important for companies to increase their intangible capital base.

We found that a relatively smaller group of superior performing companies, on average, holds a significantly higher share of intangible capital within the analysed intangible capital resources that provides them with a base for constructing their respective and different competitive advantages. This group of companies invests significantly more in development of human capabilities in terms of employees' training and in development of organisational capabilities in terms of R&D investment.

For the companies in the studied sample following core intangible resources that favourably differentiate the better performing companies from the worse performing companies stand out:

- Human capital capabilities, like: development of employees' co-operation and teamwork capacity with promotion of knowledge sharing. Development of human capital capabilities is supported by investment in employees and continual improvement of working conditions through implementation of certain HRM practices. These factors are fundamental drivers of knowledge development and relationship building with firm's employees in order to keep this knowledge within the company. They increase intangible capital base and hence positively influence firm performance.

- Organisational capabilities, like investment in R&D, enable companies to create new knowledge, which should in turn lead to a higher level of human capital. To protect new knowledge, companies create integrated knowledge embodied in their processes, routines and products, which in turn increase the level of organisational capital. Together with human capital organisational capital enables companies to generate and utilise relational capital.

- From the resource-based view, relational capability, like corporate reputation building is recognised as important strategic asset capable for generating sustainable firm performance.

Based on this study, our findings suggest that the better performing companies are strategically oriented towards development of those core capabilities and competences that are not dependent on individual employees' knowledge but are residing in the organisation. Due to established working conditions that foster employees' cooperation and knowledge sharing companies enhance teamwork and increase interdependence among their employees and doing so keep the knowledge within the firm. At the same time as employees learn and create new knowledge they increase their human capital and create organisational knowledge, which is foundation for organisational learning and knowledge accumulation. Intensive employees' training also contributes to the adoption and sharing of companies' common values, which consequently have a strong impact on development of organisational capital.

Essential in the management of firm resources is also building and maintaining a good reputation of the firm, which in turn enhances ability of the firm to attract and retain higher-quality employees. Because of increased confidence in their management, products and services, companies with good corporate image also increase customer and supplier loyalty contributing to the sales' increases and consequently to better firm performance (Morgan, Slotegraf & Vorhies, 2009; Srivastava, Shervani & Fahey, 1998; Schwaiger, 2004).

Therefore, the findings of our study suggest that managers should put a considerable attention to the analysis and identification of companies' core intangible resources and their functions within the firm. This allows managers to concentrate their efforts on understanding firms' strengths and weaknesses. Consequently, managers may allocate resources more efficiently to intangible capital that may translate into competences and capabilities on which the company builds its sustained competitive advantages. Exploitation of relationship between such resources generate synergies, which are more capable of generating sustain economic rents. Thus, our results are in accordance with previous research, which suggest that firms need to increase their overall level of intangible capital to improve firm performance (Chen et al., 2004).

In this study, we investigated only individual dimensions of intangible capital, but many authors suggest strong interdependence between these categories of intangible capital in creation, development and utilisation of firms' knowledge. Therefore, firms should be aware that it is not sufficient only to possess a resource because intangible resources enhance firm performance through their interaction with other resources. Given that intangible resources exhibit complementarities and enhance firm performance through their interactions it is hard to empirically identify unique resources and attribute superior performance to specific assets. Therefore, the exploration of these interactions between and among intangible resources and their contribution to the success of the firm is a challenge for future research. Finally, given that results were obtained from a small sample of manufacturing firms operating in Slovenia, they may not be generalisable beyond the immediate domain.

2 DO BETTER PERFORMING FIRMS VOLUNTARILY DISCLOSE MORE IC INFORMATION: CASE OF SLOVENIA[16]

2.1 Introduction

In last two decades, the nature of company investment changed drastically. Many authors provided empirical evidence that intangible investment is becoming more important than investment in tangible capital following transition of the industrial economy towards a new "knowledge-based" economy (Corrado, Hulten & Sichel, 2006, 2005; Van Ark, Inklaar & McGuckin, 2002, 2009; Fukao, Hamagata, Miyagawa & Tonogi, 2007; Miyagawa et al., 2010). In this new knowledge economy intangible capital became explicitly important for the value creation and company performance. It is exceeding the contributions of tangible capital in most of the industries (Bose & Oh, 2003; Cohen & Kaimenakis, 2007; Kaufmann & Schneider, 2004, St-Pierre & Audet, 2011; Zeghal & Maaloul, 2011). Appropriate selection of intangible resources and their

[16] This paper was co-authored with Matjaž Koman.

ability to generate sustainable competitive advantages through their interaction have become important differentiator between the better and the worse performing ones (Lippman & Rumelt, 2003; Youndt, Subramaniam & Snell, 2004). Therefore, management of intangible capital has become an important practice in those companies that try to achieve superior performance.

At the same time, the rise of intangible capital indicated the limits of traditional accounting model. Traditional accounting model doesn't recognise many types of intangible capital in the financial statements and thus fails to anticipate future value-creation of the firm. The picture on business performance of the company is, therefore, incomplete. Consequently, investors and other stakeholders are not receiving relevant information about the company (Beattie & Thomson, 2007). To fairly represent all the activities of the firm and to create a real base for assessing the performance of the company, the disclosure of information on intangible capital has become important for managerial and decision-making purposes.

Lev (2001) claims that the lack of accurate reporting on intangible capital has probably led to 'systematic undervaluation of intangibles' and as a result to insufficient levels of investment in these core assets. As shown by Healy and Palepu (2001) and Botosan and Plumlee (2002), disclosing additional voluntary IC information reduces information asymmetry and agency costs[17] providing investors with information needed for accurate investment decisions. To be more consistent with the new economic environment radical reforming of reporting model is required. As a response to the inefficiency of traditional accounting model, new initiatives arose, such as integrated reporting. They aim to communicate a full range of factors that materially affect the ability of an organisation to create value over time.

In this chapter, we examine the practice of voluntary disclosure policies of Slovenian manufacturing companies in relation to their performance. Using cluster analysis, we investigate the relationship between the level of corporate disclosure on different intangible resources not only in relation to individual financial indicator, as done in most of the previous studies, but to the set of company's performance indicators, which are important drivers of firm's disclosure policy. The results obtained show that on average the better performing companies disclose a higher level of intangible capital information on almost all analysed intangible resources. According to our best knowledge our study is the first in the South-eastern Europe that examines the

[17] Lack of disclosed relevant information on intangible capital causes information asymmetry favouring those who work in a firm and have privileged access to that information (Alcaniz, Gomez-Bezares & Roslender, 2011). Therefore, information disclosure may be used to reduce information asymmetries and agency costs in situation when agent possesses superior information, which he may use to his own advantage and take actions on expense of principal, which jeopardise principal's welfare (Inchausti, 1997). Akerlof (1970) sees information asymmetry as "lemons" problem that arises when seller knows more than a buyer.

correlation between the size of information disclosure on different intangible resources and companies' performance using the cluster analysis.

The findings of our study may assist companies on how to best express their unique value creation process by reporting on their intangible capital as an important driver of business growth. By reporting on intangible capital, Slovenian companies raise the level of information on company to internal and external stakeholders. A better understanding of the company contributes to a better evaluation of company's performance and to increased customer and supplier loyalty. Nevertheless, it also contributes to a higher level of motivation in employees, who then contribute their knowledge and abilities towards achieving operational efficiency. All this means that the results obtained might be useful for all stakeholders to realise the extent of voluntary disclosure and its relationship with firm performance. In addition, reporting on intangible capital have a fundamental function of self-analysis, which helps companies to recognise their implicit intangible capital, different links between various types of company's capital, as well as the contribution of intangible capital to the performance of the company. Consequently, companies are able more easily and consciously to define appropriate strategic positioning and to evaluate their growth opportunities. Therefore, information on intangible capital should be an input to management activities. Accordingly, by intangible reporting firms could be advised on how to strengthen their corporate governance as well as introduce a new dimension in transparency.

The chapter is structured as follows. It begins with the presentation of the inadequate treatment of intangible capital and the limitations of traditional accounting model. In the next section, we briefly discuss signalling and agency theories and implications for our research. We examine disclosure profile of Slovenian companies and their dissemination practices to reveal what Slovenian companies actually disclose to different stakeholders and what the main differences in disclosure policies of better and worse performing companies are. Discussion and conclusion are presented in final section.

2.2 Regulation and accounting treatment of intangible capital

Important determinant of corporate information environment is disclosure regulation (Beyer, Cohen, Lys & Walther, 2010). Traditional accounting model is not capable for full evaluation of intangible capital since it is primarily based on tangible capital, historical costs and accounting conservatism (Zeghal & Maaloul, 2011; Beyer, Cohen, Lys & Walther, 2010; Blaug & Lekhi, 2009). Accordingly, valuation of intangibles becomes problematic mainly due to difficulties related to their identification, measurement and control[18] (Guthrie, 2001; Zeghal & Maaloul, 2011). Intangible

[18] A company controls an asset if the company has the power to obtain the future economic benefits flowing from the underlying resource and can restrict the access of others to those benefits, which rises

investment will appear in the firms' financial statements only if it meets the definition of intangible assets[19] and accounting recognition criteria, which are so restrictive that not much of companies' intangible investment appears in financial statements (Siegel & Borgia, 2007; Zeghal & Maaloul, 2011)[20]. This is mostly attributable to uncertain prediction of their future benefits as well as inability to measure these benefits, and the lack of a causal relationship between costs and benefits. Most accounting problems arise when intangible capital is internally generated by the company (Zeghal & Maaloul, 2011), like capital tied to firms' employees, customer relationships, computer and administrative systems (Guthrie, 2001). Thus, it is important to improve the reporting system to fairly represent all the activities of the firm. This is necessary to create real base fundamental in decision making process (Gadau, 2012).

As a response to the inefficiency of traditional accounting model, many guidelines and recommendations how to measure and report companies' intangible capital arose. In the second half of '90s new concept of sustainability appeared putting together environmental, social and financial aspects ("triple bottom line") linked also to the

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accounting problems with intangibles, like regarding the protection of employees' skills and knowledge in case that employee leaves the firm. Similarly, market share and customer loyalty cannot normally be intangible assets, since an entity cannot control the actions of its customers. Control over know-how or technical knowledge only exists if it is protected by a legal right.

[19] International Accounting Standard Board (IASB) (2004) defines intangible asset as "an identifiable non-monetary asset without physical substance", which must be interpreted within general definition of an asset "as a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise".

[20] In Slovenia this field is regulated by Slovenian accounting standards 2 (SRS 2) according to which intangible asset can be recognised as non-monetary asset that physically does not exist (SRS 2.1) under the balance sheet of intangible assets in accordance with international accounting standard 38 (2004). Intangible assets will be recognised in financial statements if its possible future economic benefits can be obtained and if its purchase value can be measured (SRS 2.10). Therefore, a lot of intangible capital components are not reported on the balance-sheet. Left out are important items such as firm's reputation, organisational culture, capability to adapt to market conditions, knowledge, experience and qualifications of employees, business cooperation. Intangible assets comprise of following categories of assets (SRS 2.2): long-term deferred development costs, investment in acquired industrial property rights (like patents, licences, brands and similar property rights) as well as other rights, investment in the goodwill of acquired company.

Research costs are not recognised as intangible assets but as costs or expenses in the accounting period when they occur (SRS 2.12). Firm's brand or goodwill developed within the company cannot be recognised as intangible asset (SRS 2.14) while development costs could be recognised as intangible assets under the strict conditions (SRS 2.13). Investment in acquired industrial property rights will be recognised as intangible assets only in case of their purchasing.

SRS was updated in 2006 in accordance with International Accounting Standard 38 (IAS 38) which regulates acquisition and valuation of intangible assets. According to this standard, intangible assets represent computer software, patents, trademarks, internet domains, video and audio-visual materials, list of customers, import quotas, franchise agreements, relationship with customers and suppliers, customer loyalty, and marketing rights. According to paragraph 9 and 10, intangible assets meet the definition of intangible assets, if they fulfil following requirements: identifiability, control over a resource and future economic benefits, which may come from the sale of products or services, or from a reduction in expenditure (cost savings). With non-physical items, there may be a problem with 'identifiability': If an intangible asset is acquired separately through purchase, there may be a transfer of a legal right that would help to make an asset identifiable. An intangible asset may be identifiable if it is separable, i.e. if it could be rented or sold separately.

emergence of the Corporate Social Responsibility (CSR). The idea behind this concept is that companies should demonstrate sustainable, responsible and ethical behaviour by an ad hoc report. The most important body in this area the Global Reporting Initiative (GRI) has issued the widest adopted Sustainability Reporting Guideline. EU also intervened in the field of corporate reporting with Commission Recommendation on «Recognition, measurement and disclosure of environmental issues in the annual accounts of companies». In October 2014, the EU adopted new rules on the disclosure of CSR information. These roles are mandating the publication of information relating to at least environmental, social and employee matters, respect for human rights, anticorruption and bribery matters in the Management Report. Many international initiatives arose also with respect to IC reporting, like Ricardis (European Commission's research study on IC reporting to increase research and development in small and medium companies and help these companies to access bank credit), Prism and Meritum (EU research projects on intangibles and their reporting), as well as many academic initiatives. Global network like World Intellectual Capital Initiative (WICI) was also established with the aim to improve capital allocation through better business reporting information. The latest global initiative by GRI is going towards convergence of intangible capital reporting and sustainability reporting. To bring greater cohesion and efficiency in reporting, the international framework for integrated reporting has been developed in order to bring together financial, environmental, social and governance information in consistent and comparable format. An integrated report aims to communicate a full range of factors that materially affect the ability of an organisation to create value over time. In addition, it enhances accountability with respect to the broad base of capitals (financial, manufactured, intellectual, human, social and relationship, and natural) and promotes understanding of the interdependencies between them. Accordingly, it improves the quality of information available to different stakeholders. However, the procedures for verification of information on intangible capital still need to be standardised and agreed on at an international level. All these guidelines and recommendations serve to encourage companies to increase voluntary disclosure and additionally provide information on: human resource policies, which communicate information on the competitive strengths of companies to market participants, communication processes with shareholders and other stakeholders, key relationships with its employees, creditors, suppliers, customers and other significant parties that may materially affect the performance of the company, and on social responsibility of the company in order to enable better evaluation of its relationship with communities in which they operate.

Increased voluntary disclosures of intangibles should reduce negative consequences of inadequate accounting treatment of intangibles, which are shown through information asymmetry, high cost of capital, systematic undervaluation of intangible capital, and insufficient investment in this capital (Zeghal & Maaloul, 2011; Lev, 2001). Thus, with additional voluntarily disclosed IC information, managers capture potential informative

and incentive problems that may exist between managers and investors (Healy & Palepu, 2001).

In addition, companies find it advantageous to provide additional information to various stakeholders to overcome adverse selection mechanisms, since the better performing firms want to favourably distinguish themselves from others in the market (Pae, 2002; Verrecchia, 1983; Welker, 1995). However, literature emphasises the importance of IC disclosure, inter alia for efficient allocation of resources. Disclosures should reflect intangible resources which management considers as being important in the process of value creation. Signalling and sharing this importance of individual resources to stakeholders is the main motivator for disclosure (Vergauwen, Bollen & Oirbans, 2007). As pointed out by Javornik (2012), information is a critical resource not only for financial investors but also for other stakeholders within and outside the company. For instance, information disclosure to workers provides their representatives with information that might be valuable in collective bargaining, since information sharing tends to shorten and ease the negotiation process and decrease the probability of a strike (Morishima, 1991). Voluntarily IC disclosure enhances firm's reputation and has positive influence on trust and confidence from all stakeholders in the firm's management, its products and services. Nevertheless, the benefits of reporting in terms of formalised and enhanced communication, stronger engagement with different stakeholders, and easier benchmarking of company's performance may contribute to firm performance (Dwyer, 2005). Hence, the efficiency of disclosure process depends on the interests of the management and the needs of different stakeholders (Debreceny, Gray, & Mock, 2001).

On the other hand, intangible capital disclosure also come at a cost, which is related to information collection, processing costs, litigation and proprietary (i.e., competitive disadvantage and political) cost, that arise when information revealed results in increased competition or government regulation that can potentially damage the firm (Meek, Roberts & Gray, 1995; Core, 2001). According to Karpoff and Lott (1993) driving force behind such costs may stem from external stakeholders' interest in the company's actions and their pressure on the firm to undertake actions detrimental to the firm's future performance.

2.3 Research analysis

2.3.1 Literature review and hypothesis development

The present study focuses on corporate voluntary disclosure practices of Slovenian firms in relation to their performance in terms of its profitability, productivity, liquidity, use of leverage and size of the company. Several theories have been found in the literature to explain different aspects of voluntary disclosure. These are agency theory, signalling theory, stakeholder theory, political economy of accounting (PEA) theory,

resource based theory and legitimacy theory. To explain the practice of voluntary disclosure policies of Slovenian companies in relation to their performance we used agency and signalling theories, which many authors used in explaining the level of corporate disclosure with respect to company's performance. Namely, the agency and signalling theories focus primarily on intangible reporting in relation to financial performance of the company. According to these theories, the disclosure of information is targeted mostly at capital providers, such as shareholders and investors. The other theories focus on reporting that goes beyond financial reporting, taking into account social values of the society in which company operates and the needs of different stakeholders. Thus, this section reviews some of the studies that have been conducted in order to investigate relationship between the extent of corporate disclosure and company performance from the aspect of signalling and agency theories. Furthermore, we briefly discuss signalling and agency theory and implications for our research.

The signalling theory posits that most profitable companies disclose more and better quality information to signal institutional confidence to the market and to positively distinguish themselves from other players in the marketplace (Bini, Dainelli & Giunta, 2011; Bhayani, 2012; Birjandi, Hakemi & Sadeghi, 2015). Due to asymmetric information, the investors are not able to determine the quality of the firm, since they do not know the real value of the firm. Consequently, the firms with the above average quality incur an opportunity loss because their superior quality is not recognised by investors, while the firms with a low quality obtain an opportunity gain. Therefore, to attract more investors, superior firms have an incentive to highlight their superior quality by reporting on different type of intangible capital, which is important for determination of company future performance. Signalling of IC related attributes may bring many benefits to a firm, such as improving corporate image, lowering cost of capital, attracting potential investors, decreasing volatility of stocks, creating understanding of its products and services, and improving the relationship with various stakeholders (Rodgers, 2007; Singh & Van der Zahn, 2008; Verguawen & Alem, 2005). The choice of disclosed information is dictated by what the company would like to signal to its stakeholders. To be reliable, a signal must convey relevant incremental information (Beyer, Cohen, Lys & Walther, 2010). Signalling theory implies that companies will be more inclined to send signals when company's performance is good (Inchausti, 1997; Watson, Shrives & Marston, 2002). Management of a profitable firm may wish to disclose more information to public to promote its positive impression (Alsaeed, 2006). This is also confirmed by Verrecchia (1983) who outlines that firms prefer to disclose only favourable information that increases the value of the firm, with bad news being disclosed only if the cost of disclosure is low enough or if the information asymmetry between the firm and its investors is sufficiently high. Thus, signalling theory can be used to predict that the better performing firms will use annual reports to disseminate additional voluntary information on intangible capital to

favourably distinguish themselves from worse performing companies contributing to the reduction of information asymmetry among various stakeholders.

However, literature review revealed that empirical evidence concerning the association between the profitability and the extent of corporate disclosure is mixed. Lang and Lundholm (1993) investigated the determinants of voluntary disclosure choice and found that disclosure scores are higher for better performing firms. This positive relationship between disclosure and profitability has been confirmed by Haniffa and Cooke (2002), Gul and Leung (2004), Cheng and Courtenay (2006), Lim, Matolcsy and Chow (2007), Wang, Sewon and Claiborne (2008), Gamerschlag, Moller and Verbeeten (2011) namely for voluntary disclosure of listed firms in Malaysia, Australia, China, and Germany, respectively. Whereas, numerous studies show no significant relationship between disclosure and firm profitability (Inchausti, 1997; Ho & Wong, 2001; Alsaeed, 2006; Cahan, Rahman & Perera, 2005; Chau & Gray, 2002, 2010; Eng & Mak, 2003; Hossain & Hammami, 2009; Malone, Fries & Jones, 1993; Meek, Roberts & Gray, 1995; Patelli & Prencipe, 2007). On the contrary, Galani, Gravas and Stavropoulos (2012) observed significant negative relationship between profitability and the level of corporate disclosure.

Agency theory suggests that agents will increase disclosure to their principals to reduce information asymmetry (Mensah & Kwame, 2011). Agency theory defines the agency relationship as "a contract under which the principal engages an agent to perform on his behalf" (Jensen & Macking, 1976, p.5). From a companies' perspective agents correspond to managers, whereas principals correspond to shareholders. The central assumption of the agency theory is that the principal and the agent are utility maximisers who tend to maximise their returns (An, Davey, & Eggleton, 2011). Agency costs stem from the assumption that agent and principal have different interests. Problems arise due to the moral hazard and information asymmetry (Ittonen, 2010). As the principal has difficulty in observing the behaviour of the agent, agent who possesses superior information, may use this information to his own advantage and take actions at the expense of principal, which jeopardise principal's welfare. In these circumstances the amount of disclosed information becomes important in monitoring and controlling agent's actions (Namazi, 1985; Baiman, 1982, 1990).

Agency theory predicts that managers of more profitable firms will disclose more information to promote positive impression and to justify the level of profits (Inchausti, 1997). Following the argument that agency costs increase with monitoring and controlling managers actions (Namazi, 1985; Baiman, 1982, 1990), we anticipate that managers of better performing companies will disclose higher level of information to their shareholders to reduce information asymmetry and thus agency costs, which are even higher for firms with more intangible capital resources (Mensah & Kwame, 2011; Lev 2001). According to Verrecchia (2001) one way of reducing information asymmetry and agency costs is to increase the amount of information included in annual

reports. Thus, by disclosing additional information companies are likely to reduce potential agency cost and information asymmetries and hence attract liquidity in the company's shares, which in turn leads to lower cost of capital (Inchausti, 1997; Diamond & Verrecchia, 2001). Disclosing information on intangibles improves stock valuation as investors can assess more correctly firms' competitiveness and expected future performance (Marr, Gray & Neely, 2003). This lowers the risk of the firm to be misevaluated (AlShammari, 2007; Alsaeed, 2006)[21].

Agency costs also increase with leverage (Jensen & Meckling, 1976). Hence, it is argued that leveraged firms have to disclose more information to satisfy information needs of the creditors in evaluation of company's financial risk (Uyar & Kılıç, 2012). Many authors (Hossain, Perera & Rahman, 1995; Inchausti, 1997; Watson, Shrives & Marston, 2002; Alsaeed, 2006; Abdullah & Ismail, 2008) used agency theory in explaining the relationship between the leverage and corporate disclosure. Considering earlier disclosure studies, the support for a positive relationship between the extent of disclosure and leverage is weak. Many of the previous studies proved no significant association between the leverage and the level of voluntary disclosure (Inchausti, 1997; Aksu & Kosedag, 2006; Alsaeed, 2006; Huafang & Jianguo, 2007; Chau & Gray, 2010), while Malone, Fries and Jones (1993), Hossain, Perera and Rahman (1995) found a weak positive relationship. A weak positive relationship has also been found between leverage and the extent of disclosure on intangibles (Williams, 2001). In contrast Eng and Mak (2003) found a negative significant association. On the other hand, signalling theory provides contradicting explanations regarding the direction of relationship between the extent of disclosure and leverage, as increased leverage might signal firm's superior performance according to Ross (1997) or signal below-expected cash flow (Myers & Majluf, 1984).

Additionally, agency costs are higher for larger firms because of their widespread shareholders. From the signalling viewpoint, it is generally agreed that larger the company, the greater the information asymmetry with current and prospective capital providers (Prencipe, 2004). Revealing more information allows larger firms to obtain new capital at lower cost (Botosan, 1997). Consequently, larger firms should pay more attention to signalling strategies than small firms. Hence, size (of both total assets and total sales) is an important predictor of firm's reporting behaviour (Barako, 2007; Almilia & Surabaya, 2009; Barako, Hancock & Izan, 2006; Gray, Kouhy & Lavers, 1995). Researchers that found the relationship between the size and extent of disclosures emphasise that bigger firms are more likely to disclose more information (Guthrie & Mathews, 1985) and that any improvements in corporate disclosure are

[21] By increasing voluntary information managers decrease companies' cost of capital, which is believed to include a premium for investors' uncertainty about adequacy and accuracy of available information about the company. This is reduced by increased voluntary disclosures on intangible capital. Based on IC information investors are able to assess more correctly firm's competitiveness and expected future performance, which lowers the risk of the firm to be misevaluated and in turn improves stock valuation. This in turn attracts liquidity in the company's shares and leads to lower cost of capital.

likely to come from bigger and foreign owned firms (Abdel-Azim, 2007). It has also been suggested that, in aggregate terms, bigger firms are likely to possess more intangible capital because they have more resources to sponsor new initiatives and to afford disclosure costs better than smaller firms (Meek, Roberts & Gray, 1995). Other arguments in favour of this hypothesis are that large firms are exposed to higher pressure by public to disclose larger amounts of information (Watts & Zimmerman, 1978; Schipper, 1991).

Many national studies also provide the evidence that variety of other firm specific characteristics is related to the extent of disclosed information (Modarres, Alimohamadpour & Rahimi, 2014; Buzby, 1975). For instance, positive relationship between the extent of disclosure and productivity is shown in works of Sadka (2004a, 2004b), Lin, Chang, Chen and Wu (2014), and Cvelbar, Assaf and Josiassen (2012). They provided empirical evidence on impact of disclosure on performance efficiency of companies through reduction of information asymmetry and improvement in production efficiency. According to Sadka (2004a, 2004b), financial reporting and information sharing facilitate growth by increasing total factor productivity (TFP) and gross domestic product (GDP). Lin, Huang, Du and Lin (2011) found that the level of accounting disclosure, through its interaction with capital market intensity, has a positive effect on national productivity growth after controlling for the potential impact of endogeneity. Cvelbar, Assaf and Josiassen (2012) showed that more extensive reporting on environmental, social and financial issues leads to better performance of Slovenian hotels.

In view of the above stated findings, the following hypotheses have been developed:

Hypothesis 1: The better performing companies provide a higher level of disclosed information (higher disclosure scores) on human capital resource.

Hypothesis 2: The better performing companies provide a higher level of disclosed information (higher disclosure scores) on organisational capital resource.

Hypothesis 3: The better performing companies provide a higher level of disclosed information (higher disclosure scores) on relational capital resource.

2.3.2 Disclosure index methodology and data

Disclosure index methodology is still a dominated method of corporate disclosure evaluation despite critiques of many authors regarding its limited validity due to subjective selection of intangible capital attributes in disclosure index and limited reliability due to subjective coding (Cheng & Courtenay, 2006; Guthier, Petty, Yongvanich & Ricceri, 2004; Santema, Hoekerk, van de Rij kand Oijen, 2005; Vandemaele, Vergauwen, & Smith, 2005). It is based on content analysis as opposed to

sender approach (ask mangers for a self-evaluation of corporate disclosure) or receiver approach (ask financial analysts for an evaluation). In our study, the content analysis involved the reading of the annual report's section devoted to the management report of each company and coding of intangible capital information contained therein in accordance with the selected framework of intangible capital indicators included in the disclosure index. A disclosure index is a list of selected IC items that companies may disclose in annual reports.

To develop our disclosure index, a review of the literature on intangible disclosures[22] was conducted to examine, which categories of intangible capital and their related items are most frequently discussed. Generally, researchers in the field of intangible capital follow the classification of Edvinsson and Malone's intangible capital framework, which consists of organisational capital, relational capital and human capital. We employed this three-dimension framework as a foundation for construction of disclosure index on various intangible resources, which we applied to examine the level of intangible voluntary disclosures by Slovenian companies in relation to their performance. Therefore, we classified intangible capital information into one of these three disclosure categories to keep a degree of comparability with previous research.

Our intangible disclosure index consists of a list of 89 intangible capital items that appear in annual reports, and which are useful to a wide range of users (see List of voluntary disclosure IC items in Table A2.5). Predefined IC items used in the coding framework raised the objectivity of data. Selected intangible capital items focus on voluntary information not required by an accounting standard or under corporations' law. In our disclosure index we also focus on the disclosure of some non-financial performance indicators related to market perspective (i.e., market share, satisfaction level, number of new clients, loyal customers); internal processes perspective (i.e., production capacity, number of new stores); growth perspective (i.e., new products, number of patents, registered costs of employee training). Additionally, we focus on the disclosure of environmental and social performance indicators (i.e., emission reduction rate, energy saving rate, CSR contributions), which are recognised in literature to have influence on firm value (Al-Tuwaijri, Christensen & Hughes, 2004; Ruf, Muralidhar, Brown, Janney & Paul, 2001).

As a unit of analysis, we used sentences, since individual words without a sentence or sentences cannot provide a meaningful context for coding intangible capital disclosures.

[22] The following country studies were reviewed in order to design the checklist: Guthrie and Petty (2000), Yi and Davey (2010), Yi, Davey and Eggleton, (2011), Guthrie, Petty, Ferrier and Wells (1999), Garci´A-Meca, Parra, Larran and Martinez (2005), Oliveira, Rodrigues and Craig (2005, 2006), Li, Pike and Haniffa (2008), Singh and Van der Zahn (2009), Vergauwen, Bollen and Oirbans (2007), Ordónez de Pablos (2002), Gray, Kouhy and Lavers (1995a, 1995b), Vergauwen and van Alem (2005), Bontis, Keow and Richardson (2000), Bontis (2003), Goh and Lim (2004), Oliveras, Gowthorpe, Kasperskaya and Perramon (2008), Abeysekera and Guthrie (2005), Bozzolan, Favotto and Ricceri (2003), Chaua and Gray (2002), Arvidsson (2003).

In the process of coding we also employed some decision rules: we did not code for graphs, pictures, or diagrams; if an intangible capital item was repeated in the report, it was considered only once.

We assigned disclosure score to intangible capital item based on its qualitative or quantitative nature. Scoring methodology that we propose in our study is developed on basis of prior literature (e.g., Bozzolan, Favotto and Ricceri, 2003; Oliveira, Rodrigues and Craig, 2006; Guthrie et al., 1999; Cormier & Magnan, 2000; Walden & Schwartz, 1997; Firer & Williams, 2005; Schneider & Samkin, 2008): 0 if the disclosure item is not referred to; 1 for disclosures in qualitative terms; 2 for disclosure in quantitative terms; 3 for quantitative comparison with previous years. The higher scores assigned to quantitative information compared to qualitative is based on assertion that precise information is more useful in the decision-making process and may enhance management's reporting reputation and credibility (Bottosan, 1997). Some variables are dichotomous (with values 0 indicating the absence and 3 indicating the presence of information) as some intangible capital items in the index are narrative in nature and it is problematic to assign them a quantitative value. Such items were assigned a maximum score of three in case of information disclosure. We must stress that scores ascribed to individual intangible capital items reflect the level of information completeness and do not judge on the content of information in terms of good or bad news. Table 2.1 demonstrates detailed criteria for measurement scale.

Table 2.1: Measurement scale of intangible capital disclosure

Type of item disclosure reported in the annual report	**Score**
Non-disclosure	0
Narrative: Reported in qualitative terms	1
Quantitative	2
Trend: Quantitative comparison with previous years	3

Source: Own work.

In order to collect disclosure data, we used annual reports of Slovenian manufacturing companies for the year 2009 as they are a common communication device used by managers to signal what is important to various external and internal stakeholders. It is known that companies have diverse communication channels to voluntarily disclose information, but literature reveals that disclosure levels in annual reports are positively correlated with the amount of disclosure provided by other media (Botosan, 1997; Oliveira, Rodrigues & Craig 2006). Therefore, using the amount of voluntary information in annual report can serve as a proxy for the amount of disclosure provided by a firm across all media. However, if substantial amount of information is disseminated through other channels, measurement error may arise in the analysis. To

keep a degree of comparability with our previous study results on the level of intangible capital in the sample companies (see Chapter 1), we used intangible disclosure items from annual reports of Slovenian manufacturing companies for the year 2009.

Sample companies were selected within the research project called *Analysis of firm-level investment in tangible and intangible capital from the perspective of future competitive advantages of Slovene firms, code J5-4169*. The project was performed at the School of economics and business, University of Ljubljana in the period from 2010 to 2014[23]. During the project, we collected the primary data using questionnaires on resources of intangible capital to capture the entire intangible capital structure of the firm.

We have started with all big Slovene manufacturing firms in year 2010 (364 firms). Questionnaires were tested through personal interviews with CEOs. During the testing, we noticed that in many cases smaller companies did not provide the requested data due to not established organisational entities that would be able to collect data on intangible capital. Given the lack of record keeping in relation to some types of intangible capital in smaller Slovenian manufacturing firms, we decided to focus on larger firms. Another reason accountable for selecting large companies was that, in contrast to the smaller ones, large firms are more capable of exploiting the economies of scale in intangible capital accumulation, can be more effective in the protection of their intangible capital, and thus have a greater incentive to invest in it. Large companies are also more capable of risk management related to IC investment (Arrighetti et al., 2014). In addition, large firms are also more inclined to a more thorough disclosure of information on intangible capital (Bozzolan, Favotto, & Ricceri, 2003). Because of higher public disclosure (Bozzolan, Favotto, & Ricceri, 2003), they can be put under more pressure to match their values with that of the society (Lu & Abeysekera, 2014). Accordingly, the demand for disclosure of IC information is stronger (Dainelli et al., 2013). Finally, because large firms are more visible and have more resources to invest in more initiatives, they are also more likely to possess more intangible capital and to afford disclosure costs easier than the smaller firms (Meek, Roberts & Gray, 1995).

We sent questionnaires to 364 largest Slovenian manufacturing companies and received questionnaires from 102 companies, which is a 28-percent response rate. However, not all companies provided answers to all of the questions. For this reason, we included 93 manufacturing companies in the research study, that had responded to most of the questions regarding different types of intangible capital. Data provided on the questionnaires relate mainly to the year 2009. Therefore, we also used secondary data retrieved from annual reports for the year 2009. In addition, we measured firm performance based on accounting information contained in financial statements of

[23] The project was performed by the research group led by Janez Prašnikar and financed by the Slovenian Research Agency.

annual reports for the year 2009, published by The Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES).

2.3.3 Results and discussion

2.3.3.1 Identification of better performing companies

Literature review indicates that there is no widely accepted consensus about definition, dimensionality and measurement of the firm performance concept. Many studies measure firm performance with a single indicator representing this concept as unidimensional (Glick, Washburn & Miller, 2005). Others suggest that in case of several dimensions, those most relevant to the research should be chosen (Richard, Devinney, Yip & Johnson, 2009).

To define the better performing companies, we used performance indicators useful in predicting the capacity of the firm to generate profit, productivity and growth from the use of its current resources. We measured profitability by using ROA, ROE, EBIT, and EBITDA financial indicators. Since size of the company and profitability are interdependent, we used sales indicators as a measure of size most closely related to profitability and growth while we used value added per employee as a measure of productivity. These indicators have been found to be important drivers of firm's disclosure policy as identified by empirical studies[24]. A widely held view is that indebted firms have an incentive to voluntarily increase level of corporate disclosure to fulfil information needs of investors and reduce information asymmetry (Al-Shammari, 2007; Alsaeed, 2006). Therefore, we also included other measures of financial performance like indicators of indebtedness and liquidity.

As already pointed out, in our research we have focused on larger manufacturing firms. In our analysis company size was measured by total assets, as has been done in other studies on voluntary disclosure (Depoers, 2000; Ho & Wong, 2001). Additionally, we used a measure of company's size with respect to the number of employees. Therefore, we divided companies into 5 groups: size 1 (from 0 to 50), size 2 (from 51 to 250), size 3 (from 251 to 500), size 4 (from 501 to 1000), size 5 (above 1000). Therefore, the full set of performance measures that we used are: ROA, ROE, EBIT, EBITDA, value added per employee, ROS, annual growth of sales, sales, leverage, net debt, liquidity, and size with respect to total assets and average number of employees[25].

[24] See Alsaed (2006) for an extensive summary of studies examining relationship between information disclosure and performance.

[25] Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for leverage indicator; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for net debt; Current assets/Current liabilities for liquidity; (Net profit – Net loss)/Average Equity for ROE and (Net profit – Net loss)/Average Assets for ROA. ROS indicator is

In the research study we included 93 manufacturing companies that had fulfilled most of the questionnaires on different type of intangible capital. To identify the better performing companies, we performed an agglomerative hierarchical cluster analysis in IBM SPSS Statistics 24. To identify eventual outliers, we first used hierarchical cluster analysis with nearest neighbour method. Hierarchical cluster analysis excluded four companies as potential outliers, so our results are based on 89 companies. The studied companies operated in 23 different industries according to NACE classification (see Table A2.2). After excluding identified outliers, we used two step cluster analysis for classification of firms into groups based on their financial indicators calculated from firms accounting data. We used t-test to ascertain differences between groups, which are statistically significant at 10-percent level.

The cluster analysis revealed two distinct clusters of companies. Based on their financial indicators 32 firms were identified as the better performing companies (cluster 1), while 57 as the worse performing companies (cluster 2). The results presented in Table 2.2 show that the better performing companies are bigger regarding the size of total assets and on average employ more employees. They are more productive as they are characterised by higher added value per employee. The sales as an indicator, which is most closely related to the profitability and growth, is also significantly higher for the group of better performing companies. In addition, this group of companies is also more indebted as they reported higher value of leverage ratio. However, there were no significant differences with respect to following financial indicators: ROA, ROE, EBIT and EBITDA profitability indicators, ROS and sales' growth indicator, liquidity, or net debt. It should be noted that in 2009, the better performing companies have lower value of ROA and ROE ratios compared to the worse performing companies, but the difference is not significant. This may be due to the crisis hitting this group of companies earlier, as they are more export oriented. In addition, data reveals that growth of sales was negative in 2009 compared to the worse performing companies. The better performing companies could not off-set a decrease in sales with a decrease in their costs as they were involved in long-term contracts with suppliers and could not reduce the number of their employees in such a short period of time. To test the robustness of the results we also performed cluster analysis for the year 2007. Significant differences between the groups occurred with respect to the size of total assets, average number of employees, EBITDA and sales, which are higher for the better performing companies[26]. Results of the cluster analysis for the year 2009 and 2007 are presented in Appendix in Table A2.1 and Table A2.3, respectively.

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calculated as Operating profit/Net sales. For added value per employee indicator we used following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

[26] When we applied IC disclosures from annual reports on the clusters of firms identified for the year 2007 we got similar results as for 2009. In relation to human capital disclosures, better performing

Table 2.2: Cluster analysis by financial performance indicators

Financial indicators	Cluster 1		Cluster 2		Sign.
	Mean	SD	Mean	SD	
ROA	-0.01	0.06	0.02	0.16	0.175
ROE	-0.08	0.24	-0.00	0.34	0.231
EBIT (EUR)	1,308,033	2,105,703	2,429,781	9,907,991	0.530
EBITDA (EUR)	4,693,427	4,365,327	4,460,372	10,855,761	0.908
Value added per employee (EUR)	72,652	131,749	35,970	22,345	**0.043**
ROS (%)	5.85	15.86	3.4	3.8	0.275
Annual sales growth (%)	-24.8	19.1	1.27	124.4	0.242
Sales (EUR)	60,781,272	54,303,530	36,642,002	45,352,603	**0.027**
Leverage	0.558	0.211	0.477	0.223	**0.095**
Net debt	0.059	0.344	0.094	0.263	0.594
Liquidity	1.352	1.743	1.713	1.202	0.253
Size by total assets (EUR)	80,122,003	83,128,819	49,635,502	77,852,265	**0.087**
Size by number of employees	3.38	1.43	2.44	0.682	**0.000**

Note. SD stands for Standard Deviation.

Source: AJPES (2015) and own calculations.

2.3.3.2 Disclosure profile of Slovenian companies

To reveal the difference between groups of companies regarding the level of disclosed information on intangible resources, we applied IC items from the disclosure list on identified clusters of firms. For each of the two clusters, mean values of disclosure scores on individual IC item and standard deviations were provided with data on the statistical significance of differences between the clusters. The obtained results show that in most cases the level of disclosed information on different intangible capital resources is higher for the better performing companies. Therefore, this section reveals what Slovenian companies actually disclose to different stakeholders and what the main differences in disclosure policies of better and worse performing companies are.

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companies revealed significantly higher level of information on implementation of some HRM practices like knowledge transfer and performance feedback. Group of worse performing companies stands out with respect to significantly higher disclosure scores on total number of terminated contracts, number of newly employed and added value per employee. With respect to organisational capital disclosures, better performing companies disclosed significantly higher level of information regarding the employees' participation in internal improvement and technological innovation projects. As regards relational capital disclosures, results pointed to significantly higher level of disclosure on awards related to corporate brands and information on different type of customers of worse performing companies. Better performing companies differ regarding the strategies they implement to attract new customers.

2.3.3.2.1 Human capital disclosure category

What statistically significantly[27] distinguishes disclosure policy of better performing companies regarding human capital resources (see Table 2.3) is a higher level of disclosed information on the implementation of the HRM practices, such as annual performance appraisals for feedback on past performance of employees and disclosures on absentee rates, which is an indicator of occupational health and safety performance. Absentee rates reveal the progress of firms' commitment to the continual improvement of working conditions (Tsalis, Stylianou & Nikolaou, 2017) that have a positive impact on employee morale, productivity and engagement (Chandrasekar, 2011). According to our previous study results (see Chapter 1) on average statistically significantly more better performing companies (85-percent versus 35-percent of worse performing companies) provide additional health improvement programs, beyond those that are legally required. Because of these health programs a general level of employees' health improved, and the number of sick-leave hours decreased.

The better performing companies disclosed more information on employment of annual performance appraisals. Performance reviews are used not only to provide employees with targeted feedback on their past performance but also as a guidance to the achievement of work-related objectives, which facilitate employee learning and development and lead to higher operating performances (Forzza & Salvador, 2000). Even though the difference between the groups is not significant, results of our previous analysis (see Table A2.4) also revealed that on average a higher share of better performing companies (57-percent versus 47-percent) provide regular performance feedback to its employees contributing to improved performance of the companies.

The group of worse performing companies stands out with respect to employee demography items as they provided more employee demography information but not statistically different to better performing companies. According to the literature on intangible capital disclosure, in preparation of annual reports managers put the least importance to human capital disclosures since the most reported intangible capital category in annual reports is relational capital followed by organisational capital (Abhayawansa & Abeysekera, 2008)[28]. Furthermore, results of the Study on the Measurement of Intangible Assets and Associated Reporting Practices (2003) also revealed that information on employees did not appear to be particularly important information in the process of firm performance valuation. These findings oppose traditional beliefs that people are the most important asset in the firm and that the basic

[27] As a measure of statistical significance, we use alpha of 10-percent.

[28] Findings from the studies that report intangible capital disclosure by IC categories show that relational capital is the most reported IC category in annual reports (40-percent to 49-percent of total IC disclosures). In most studies, organisational capital is second in terms of frequency of disclosure (20-percent to 37-percent) followed by human capital category (22-percent to 36-percent). See Guthrie and Petty, 2000; Abeysekera and Guthrie, 2005; Bozzolan et al., 2003; Goh and Lim, 2004; Vandemaele, Vergauwen and Smith, 2005.

motivation in preparing annual reports of the firm is to show that their human resources are valued (Mouritsen, Bukh & Marr, 2004; Bukh, Larsen & Mouritsen, 2001). However, studies done by García-Meca and Martínez (2005), Bukh, Nielsen, Gormsen and Mouritsen (2005), Nielsen et al. (2005) show that some managers still provide huge amount of human capital information.

Table 2.3: Human capital disclosures in Slovenian manufacturing companies

	Cluster 1		Cluster 2		Sign.
HRM DISCLOSURE CATEGORY	**Mean**	**SD**	**Mean**	**SD**	
EMPLOYEE DEMOGRAPHIC CHARACTERISTICS					
Employees number	2.63	1.008	**2.84**	0.676	0.228
Full/part time	0.47	1.107	**0.63**	1.234	0.537
Employees working in different departments	0.19	0.738	**0.32**	0.929	0.504
Gender (% of women employees)	0.94	1.413	**1.05**	1.444	0.717
Average age	**1.03**	1.448	0.95	1.407	0.790
Education	2.06	1.413	**2.47**	1.151	0.140
Disabled	**0.84**	1.370	0.74	1.407	0.716
Terminated contracts	0.84	1.370	**0.95**	1.407	0.737
Terminated open-end and fixed-term contracts	0.28	0.888	**0.63**	1.234	0.161
Newly employed	0.66	1.260	**0.74**	1.303	0.778
Newly employed for open-end or for fixed term contract	0.00	0.000	**0.16**	0.676	0.191
Stuff turnover rate	0.13	0.554	**0.23**	0.627	0.440
Absentee rates	**0.91**	1.254	0.46	0.946	**0.059**
HRM ACTIVITIES					
Training/education costs	**0.94**	0.914	0.82	0.869	0.565
Knowledge transfer	**0.19**	0.738	0.05	0.397	0.265
Performance feedback	**0.56**	1.190	0.16	0.676	**0.043**
Training programs for leaders	**0.19**	0.738	0.05	0.397	0.265
Incentive and remuneration system	0.25	0.568	**0.28**	0.620	0.818
Motivation of employees	**0.06**	0.354	0.04	0.265	0.680
Employee satisfaction	**0.16**	0.574	0.12	0.381	0.743
Added value per employee	1.03	1.448	**1.09**	1.405	0.858
Workers participation in the workplace	0.09	0.530	**0.11**	0.557	0.924
Work life balance programmes	**0.09**	0.530	0.05	0.397	0.680
Health and safety policy	**1.69**	1.512	1.16	1.473	0.111
EMPLOYEE RELATIONS					
Unions	**0.66**	1.260	0.47	1.104	0.479

Note. SD stands for Standard Deviation.

Source: AJPES (2015) and own calculations.

2.3.3.2.2 Organisational capital disclosure category

The groups of companies statistically significantly differ regarding the disclosure of R&D activities (see Table 2.4) with the better performing companies being more

informative on: number of services and products, product innovations like modification of existing products and introduction of new product lines. They also disclosed a significantly higher level of information on: investments in R&D activities, description of the R&D department in relation to number of R&D employees, as well as awards related to innovative products. According to Entwistle (1999), firms with higher R&D disclosure are firms that are characterised with higher R&D expenditures. Results of our previous study (see Chapter 1) show that the better performing companies place a greater emphasis on R&D with respect to R&D investment as significantly higher share of companies from this group (70-percent versus 45-percent of worse performing companies) invests at least 2-percent of revenue in R&D. The results of previous study also revealed a higher intensity of R&D activities of better performing companies, which is consistent with a higher level of disclosure on R&D activities, achieved by this group of companies. The better performing companies also showed higher disclosure scores regarding information provided on employees' participation in internal improvement and technological innovation projects. This finding is also in line with the result of our previous study, which revealed that significantly higher share of better performing companies (81-percent versus 47-percent of worse performing companies) stated that improvement, because of employees' participation in formal continuous improvement process, significantly contributes to the performance of the company.

Because R&D investment affect performance, expected profits, and cash flows, R&D disclosure is of relevance to investors (Grandi et al. 2009). In addition, higher level of voluntary R&D disclosures helps investors to better evaluate current performance and to assess the amount and uncertainty of future cash flows. Thus, voluntary R&D disclosures are important especially in case of firms' lower financial performance given that financial statements do not communicate effectively the value of R&D investments. Therefore, voluntary R&D disclosure helps market participants to bridge the gap between the financial statements and the economic reality of fundamental business activities (Glassman, 2003). Prior research suggests that the likelihood of firms to disclose additional R&D information increases as reported performance differs from expectations (Bagnoli & Watts, 2007). Accordingly, the better performing companies from our study might have stronger incentive to provide more R&D disclosures to help investors to more correctly evaluate the change in their performance. As regards the performance of better performing companies with respect to ROA and ROE ratios in 2009, a change of performance compared to the year 2007 can be noticed. Notably, results of the cluster analysis performed on financial data for the year 2007 showed that, even though not statistically different, the group of better performing companies had higher values of ROA and ROE ratios compared to the worse performing companies while in 2009, the values of these ratios were lower for the group of the better performing ones.

Table 2.4: Organisational capital disclosures in Slovenian manufacturing companies

ORGANISATIONAL CAPITAL DISCLOSURE CATEGORY	Cluster 1		Cluster 2		Sign.
	Mean	**SD**	**Mean**	**SD**	
IT					
IT system	**0.53**	0.915	0.46	0.600	0.642
HRM ORGANISATION					
Strategy	**1.59**	1.521	1.47	1.513	0.721
Time frame for corporate goals	**0.56**	1.190	0.42	1.051	0.563
Management structure	1.97	1.448	**2.16**	1.360	0.540
Profile of directors	0.00	0.000	0.00	0.000	-
Ownership/shareholder structure	**1.88**	1.476	1.84	1.473	0.920
Workers representative is the member of the governing	**1.13**	1.476	0.79	1.333	0.276
Integrated management system	**0.09**	0.530	0.00	0.000	0.184
Customer-supplier support: reduced reaction time	0.00	0.000	**0.05**	0.397	0.457
Customer-supplier support: closeness to potential real	**0.47**	1.107	0.32	0.929	0.489
R&D AND INNOVATION					
Quality and improvement process					
Accreditations and certifications assessed	**2.06**	1.413	2.00	1.427	0.843
Internal improvement and technological innovation projects	**1.13**	1.476	0.63	1.234	**0.095**
R&D department					
Description of basic R&D projects	**0.69**	1.256	0.32	0.929	0.115
Number of employees in RD department	**0.19**	0.738	0.00	0.000	**0.057**
R&D activities					
Number of services and products	**0.19**	0.738	0.00	0.000	**0.057**
Investment in product and process development	**0.56**	0.504	0.47	0.570	0.465
Process improvement	**1.03**	0.933	1.02	0.896	0.946
New services and products	0.47	1.107	**0.68**	1.270	0.424
Modification of existing products	**1.03**	1.448	0.47	1.104	**0.044**
Extensions of existing product lines	**0.66**	1.260	0.63	1.234	0.929
New product lines	**0.28**	0.888	0.05	0.397	**0.098**
Novelties on global markets	0.00	0.000	0.00	0.000	-
RD expenditure	**0.44**	0.948	0.16	0.591	**0.090**
Sales revenue of new products	**0.19**	0.592	0.05	0.397	0.203
IC					
Patents	**0.19**	0.738	0.16	0.676	0.848
Trademarks	**0.19**	0.738	0.11	0.557	0.554
Copyrights	0.00	0.000	0.00	0.000	-
AWARDS FOR R&D ACTIVITIES					
Awards related to R&D activities	**0.09**	0.530	0.00	0.134	0.184
Awards related to innovative products	**0.66**	1.260	0.11	0.557	**0.005**
FINANCIAL RELATIONS					
Finance providers	**0.75**	1.320	0.11	0.557	**0.002**

Note. SD stands for Standard Deviation.

Source: AJPES (2015) and own calculations.

The better performing companies statistically significantly differ from the group of worse performing companies in relation to the level of disclosed information on relationship with the finance providers, such as banks, which could be indicative of companies' performance. According to Wang et al. (2018), investors tend to invest in companies that have favourable relationships with banks, as this is an affirmation of companies' business performance. Based on strong bank-relationship, companies can attain higher level of leverage during a crisis, secure new banking credit with favourable conditions, and consequently achieve higher profitability. Thus, a large line of credit issued by a bank suggests a marked understanding of the enterprise's internal operation and a notable amount of trust in the positive performance to be generated by the management (Cole, 1998, Jones et al., 2005, Petersen & Rajan, 1994, Scott & Dunkelberg, 1999). By disclosing their relationship with the banks the better performing companies from our study show their established bank-lending relationship and might signal their higher performance to investors.

2.3.3.2.3 Relational capital disclosure category

Statistically significant differences in companies' discloser policy concerning relational disclosure category are observed particularly with respect to: development of corporate brand and corporate reputation building, customer satisfaction, long-term relationship with suppliers and their influence on development of new products or services as well with respect to the compliance of companies with environmental standards (see Table 2.5).

Higher level of disclosure on corporate reputation building by the better performing companies is in line with results of our previous study (see Chapter 1). The results of our previous study showed that a significantly higher share of better performing companies (42-percent versus 22-percent of worse performing companies) develops their corporate reputation by measuring perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position. According to Schwaiger (2004, p. 48) by developing corporate reputation firms send signals about firms' key characteristics, future actions and behaviour as "a pledge that justifies and promotes expectations of a principal about the actions of the agent". In addition, the better performing companies also disclosed a significantly higher level of information on corporate brand development. The results of our previous study (see Table A2.4) also indicated that the better performing companies are more developed in terms of brand management as a higher share of better performing companies (54-percent versus 34-percent of worse performing companies) develops brand architecture and also invest more in marketing activities in order to increase the value of their brands, but differences between the groups are not significant.

The better performing companies also disclosed statistically significantly more information on customer satisfaction. Customer satisfaction is intangible capital that signifies the strength of the firm's relationships with customers and establishes stable customer base that ensures future cash flows (Anderson et al., 2004) as satisfied customers tend to repurchase and be more receptive to cross-selling efforts (Reichheld & Teal, 1996), less sensitive to price (Stock, 2005) and willing to pay a premium price (Homburg et al., 2005). Increased customer satisfaction, therefore, enhances firm value by increasing cash flows and reducing risks through analyst recommendations (Luo et al., 2010). Thus, information on customer satisfaction is relevant to capital market participants such as financial analysts and investors (Lee, Lim & Oh, 2018) as satisfaction information improves analysts' forecast (Ngobo et al., 2012) and enables investors to capture companies' true financial value and their long-term financial sustainability (Mizik & Jacobson, 2007; Srinivasan & Hanssens, 2009). The better performing companies might thus provide more information on customer satisfaction to provide investors and financial analysts with relevant information needed for evaluation of companies' prospects.

The group of better performing companies also provided statistically significantly more information regarding long-term relationship with suppliers and their influence on business decisions and product development, which is also in line with our previous result. The results of our previous study imply that this group of companies might have more developed supply-chain relational capabilities, that include adoption of long-term relationship with suppliers, collaborative communication, supplier involvement in development of new product, since slightly higher share of better performing companies stated that they regularly visit major suppliers and that relationship with suppliers stimulated development of new products and services (see Table A2.4). However, the differences between the groups are not significant. By disclosing information regarding long-term relationship with suppliers, the better performing companies signify the strength of such relationship, which in turn fosters knowledge development and exchange, facilitates joint problem solving, promotes cooperation, and reduces transaction costs.

Environmental disclosures reveal that the better performing companies reported statistically significantly more information on their compliance with environmental standards. As shown by Cormier and Magnan (2013), and Qiu, Shaukat and Tharyan (2014), effective communication of firms' superior environmental performance not only enhances firm's environmental legitimacy and positive reputation but also yields competitive advantages to the firm, which can in turn bring economic benefits.

The group of worse performing companies differs from better performing with respect to the level of information on future industry and market tendencies. This group of companies discusses more on factors that could affect companies' results increasing the accuracy of investors' expectations regarding the firms' future operations.

Table 2.5: Relational capital disclosures in Slovenian manufacturing companies

	Cluster 1		Cluster 2		
RELATIONAL (EXTERNAL) CAPITAL	**Mean**	**SD**	**Mean**	**SD**	**Sign.**
BRAND AND CORPORATE IMAGE					
Development of its own brands	**1.31**	1.512	1.00	1.427	0.334
Corporate brand development	**0.28**	0.888	0.05	0.397	**0.098**
Brand architecture development	0.09	0.530	**0.11**	0.557	0.924
Awards related to product or corporate brands	0.28	0.888	0.26	0.856	0.925
Promotion	0.22	0.553	0.25	0.544	0.825
Relationships with media	**0.38**	1.108	0.21	0.773	0.391
Communication system	**0.38**	1.108	0.11	0.557	0.107
Company perception measurement	**0.19**	0.738	0.00	0.000	**0.057**
Awards related to corporate image	**0.38**	1.108	0.11	0.557	0.107
CUSTOMERS AND MARKETS					
New customers	**0.50**	0.718	0.35	0.582	0.290
Types of customers	**0.47**	0.842	0.35	0.719	0.487
Customers loyalty	**0.38**	1.108	0.21	0.773	0.391
Customers impact on business decisions	**0.38**	1.108	0.21	0.773	0.391
Customer satisfaction measurement	**0.41**	0.756	0.11	0.409	**0.017**
Cost of grievances	**0.47**	0.879	0.42	0.865	0.805
Principal products	1.66	0.937	**1.77**	0.964	0.585
Principal markets	**1.81**	1.091	1.74	1.173	0.765
Past industry/market tendencies	1.03	1.448	**1.26**	1.494	0.479
Future industry/market tendencies	0.00	0.000	**0.26**	0.856	**0.086**
Distribution channels	**0.94**	1.413	0.79	1.333	0.624
On-line sale	0.00	0.000	**0.05**	0.397	0.457
Business collaborations	**0.38**	1.008	0.21	0.773	0.391
Research collaborations	0.66	1.260	**0.84**	1.360	0.527
SUPPLIERS					
Long-term relationship with suppliers	**0.28**	0.888	0.05	0.397	**0.098**
Suppliers impact and suggestions	**0.19**	0.738	0.00	0.000	**0.057**
COMPETITORS					
Competition	**0.16**	0.369	0.05	0.294	0.150
Competitors impact	0.00	0.000	**0.02**	0.132	0.457
ENVIRONMENTAL ACTIVITIES					
Compliance with environmental standards	**1.97**	1.448	1.21	1.485	**0.022**
Environmental considerations	**0.56**	1.190	0.42	1.051	0.563
Community involvement	**0.50**	0.672	0.35	0.582	0.276
CSR	**0.28**	0.888	0.11	0.557	0.254
Environmental performance	**1.00**	1.107	0.82	0.889	0.416
Energy and water consumption	**0.47**	1.016	0.42	0.925	0.822
Listed environmental managers	0.00	0.000	0.00	0.000	-

Note. SD stands for Standard Deviation.

Source: AJPES (2015) and own calculations.

2.4 Conclusion

One of the issues of concern in the intangible capital debate is whether companies truly use annual reports as a tool to reduce the information asymmetry by communicating relevant information to various stakeholders or whether such reports are used as a marketing tool to distract investors and public from companies' low performance or negative impact of their activities. In our study, we used signalling theory to predict that the better performing firms use annual reports to disseminate additional voluntary intangible information, to signal the above average quality to the market, and to positively distinguish themselves from other players in the marketplace. Following the argument that agency costs increase with the monitoring and controlling of actions made by managers, we anticipated that managers in the better performing companies disclose higher level of information to their shareholders to reduce information asymmetry and agency costs, which are higher for bigger firms, firms with more intangible capital resources, leveraged firms and foreign owned firms.

Consistent with above mentioned theories, with our study results, we found that the better performing companies, on average provide more information on the human capital, relational capital and organisational capital resources. Our previous study (see Chapter 1) showed that the group of better performing companies on average holds significantly more intangible capital resources and invests more in intangible capital compared to the worse performing companies. Thus, we may confirm the results of some previous empirical studies, which show that an increased level of investment in intangible capital can result in higher level of disclosure (Entwistle, 1999; Gelb, 2002; Vergauwen, Bollen & Oirbans, 2007; Zeghal, Mouelhi & Louati, 2007). In addition, results of our study confirmed positive relationship between the extent of voluntary disclosed IC information and companies' leverage, productivity and size, with respect to total assets, average number of employees, as well as sales, an indicator closely related to profitability and growth of the firm.

The group of better performing companies disclosed more IC information important for investors with respect to future cash flows, like R&D and customer satisfaction related information. This type of information increases the accuracy of investors' expectations regarding the firm's prospects. In addition, by reporting on corporate's compliance with environmental standards, on corporate brand, and reputation, the better performing companies send signals about firms' key characteristics and future actions justifying the expectations of different stakeholders.

According to EU study on measurement of intangibles (2003) forward looking non-financial information was recognised as one of most important type of information for assessing firm performance and value. Since the group of better performing companies is also more indebted, they might be more inclined to disclose more information with respect to future cash flows to satisfy information needs of creditors, which are able to

assess more correctly the firm's expected future performance and better evaluate company's financial risk. The group of better performing companies also disclosed more on their relationship with the banks showing their established bank-lending relationship, which is indicative information of companies' performance. By disclosing more on their relationship with the banks, the better performing companies from our study may signal their higher performance to investors.

In addition, the better performing companies might have stronger incentive to provide more disclosure on R&D activities to help investors to more correctly evaluate the change in their performance. This is in line with prior analytical work, which suggests that the likelihood of firms to disclose additional R&D information increases as reported performance of companies differs from expectations. Notably, results of the cluster analysis on financial data for the year 2007 showed that the group of better performing companies had higher values of ROA and ROE ratios compared to the worse performing companies but not statistically different. Regarding the performance of better performing companies with respect to ROA and ROE ratios in 2009, a change can be noticed. The group of better performing companies revealed lower ratios compared to the group of worse performing companies. This may be because the crisis hit the better performing companies earlier as they are more export oriented. In addition, data reveals that growth of sales was negative in 2009 compared to the worse performing companies. The better performing companies could not off-set a decrease in sales with a decrease in their costs as they were involved in long-term contracts with suppliers and could not reduce the number of their employees in such a short period of time. In their annual reports the group of better performing companies also disclosed significantly more information regarding long-term relationship with suppliers signifying the strength of the firms' relationship with this stakeholder group.

As regards human capital disclosures, management of better performing companies focused on description of working conditions reflected in employment of some HRM practices like annual performance appraisals. By providing regular performance feedback, companies help employees to achieve work-related objectives, and facilitate employee learning and development, which leads to higher operating performance (Forzza & Salvador, 2000). They also reported significantly more on absenteeism, which is important indicator of health and safety performance of the firms. In addition, absentee rates reveal the progress of firms' commitment to the continual improvement of working conditions (Tsalis, Stylianou & Nikolaou, 2017) that have a positive impact on employee morale, productivity and engagement (Chandrasekar, 2011). This kind of information is also important for investors, since they put higher emphasis to companies' that address their responsibilities towards firms' employees and that are trying to improve the relationship with this important stakeholder.

What is compelling is that the worse performing companies did not report more information in their annual reports not even on intangible capital for which our previous

analysis revealed a higher share of intangible capital existence compared to the better performing companies. Even though the difference between the groups is not significant, results of our previous study showed that the group of worse performing companies differed from the better performing companies regarding a higher share of employees organised in unions, but this group did not disclose more information on their existence in annual reports (see Table A2.4). Interesting characteristic of disclosure policy of worse performing companies is that they provided more information on employee demography items. In assessing the value of the firm and its performance this type of information is not considered important to major stakeholders. To ascertain whether they truly disclose relevant information based on the needs of different stakeholders, the worse performing companies might reconsider the efficiency of their disclosure practices. However, positive signs can also be observed from their current disclosure policy as they discuss more on the future industry and market tendencies that may positively or negatively affect the company results. This type of information contributes to the accuracy of investors' expectations regarding future economic prospects of the companies.

In contrast to the worse performing companies, we may say that the better performing companies truly use annual reports to signal the above average quality of the firms to various stakeholders and capture other benefits of increased disclosure. By reporting more on their intangible capital, the better performing companies reduce information asymmetry with potential investors and thus lower the risk to be misevaluated and improve the capacity for raising capital. With a higher level of disclosure, the better performing companies also improve transparency between various stakeholders and the management, which decreases agency costs and has positive influence on trust and confidence from all stakeholders in the firm's management, products and services. Because of increased confidence, companies also increase customer and supplier loyalty contributing to firm sales' increases and consequently to better firm performance (Morgan, Slotegraf & Vorhies, 2009; Srivastava, Shervani & Fahey, 1998; Schwaiger, 2004). In more transparent information environment employees are more motivated to contribute their knowledge and abilities towards achieving operational efficiency (Lin et al., 2012) as they have better understanding of the company. By sending relevant signals to the market participants, companies increase their reputation, which in turn enhances ability of the firm to attract and retain higher quality employees, as well as customers.

In our study, we focused only on disclosure of information on individual intangible capital resources. However, it is not enough only to disclose individual intangible resources but also to show how these resources and capabilities are applied within the company as intangible resources can be a source of competitive advantage only in interaction with other resources of the company. Therefore, future research could focus on the disclosure of resource interactions to correctly assess and evaluate the company's

opportunities to create value. In addition, disclosure index approach of content analysis is subject to criticism of low validity and reliability due to subjectivity involved in selection of intangible capital items and coding of disclosures. Given the limitations of the study, future research could employ more coders to improve reliability of data in the process of coding. These limitations result from the disclosure index approach itself and cannot be resolved with any known methodology (Marston & Shrives, 1991). Hence, these limitations apply to all index-based studies.

3 A LONGITUDINAL ANALYSIS OF VOLUNTARY INTANGIBLE CAPITAL DISCLOSURES OF SLOVENIAN MANUFACTURING COMPANIES[29]

3.1 Introduction

Companies voluntarily disclose information on intangible capital, not only to improve transparency between the management and various stakeholders, but also to construct relationship with various stakeholder groups, which help companies implement their strategies (Williams & Adams, 2013; Yi & Davey, 2010; Guthrie & Petty, 2000; Schneider & Samkin, 2008; Vergauwen et al., 2007; Pablos, 2002). Stakeholders can either facilitate or impede the company to execute its strategy and mission (Hut, 2012). Therefore, management needs to address the interests and needs of each individual stakeholder group. Thus, the level of disclosed IC information will depend mainly on the motivation of the management as well as the needs of different groups interested in the firm. In addition, decision to disclose IC information will be influenced by firm's characteristics (such as size or industry) and cultural context, in which the firm operates. To discharge accountability to various stakeholders, and to indicate what is important for them, management often uses annual reports as a communication tool (Guthrie & Petty, 2000; Yi & Davey, 2010). The annual report of a company comprises both mandatory and voluntary information, in the forms of numbers, narratives, photographs and graphs (Stanton & Stanton, 2002). No standards or rules have yet been developed in Slovenia on the type of information that could be disclosed in annual reports in addition to mandatory data.

To reveal management’s motivation for IC disclosure many researchers began to analyse the amount and the type of reported IC information (Abeysekera & Guthrie, 2004a, 2004b, 2005; Abeysekera, 2014; Guthrie, Petty & Ricceri, 2006; Zeghal & Maaloul, 2011). Some international comparative studies (Bozzolan et al., 2006; Vergauwen & van Alem, 2005) revealed that differences in IC reporting could be due to

[29] This paper was co-authored with Matjaž Koman.

firms' inclination to create good relations with social, political, and economic interest groups (Brennan, 2001; Guthrie & Petty, 2000; Olsson, 2001). Which group of users will be given most of the attention in meeting its information needs depends on the relationship between the company and the users of its information, and on the political, economic and legal system of the country in which the company operates.

Results of the previous studies show that most of the studied companies experienced low level of IC disclosure due to the general lack of knowledge to measure IC information as well as the lack of an established IC framework for external reporting (Guthrie & Petty, 2000). Nevertheless, management realised the growing importance of intangible capital for success of their companies, but only few appear to be proactive in measuring and reporting different forms of intangible capital to various stakeholders. Since previous studies, in general, suggest an upward trend of voluntary information disclosures, we predict that Slovenian manufacturing companies also follow the upward trend in the quantity and the quality of voluntary IC disclosures over the investigated period (2006-2010). Therefore, in this chapter, we assess the disclosure components, i.e. the quantity and quality of IC disclosure of Slovenian manufacturing companies from a longitudinal perspective (over a five-year period). Based on the quantity and quality of IC disclosure, we reveal the motivation of the management to disclose IC information as well as stakeholder groups targeted by the management in the context of social, political and economic change in Slovenia.

To examine the quantity and quality of IC voluntary disclosures, we used the disclosure index methodology based on content analysis. The results indicate an upward trend in the quantity and quality of IC disclosures over the investigated period (2006-2010) marked by the financial crisis and general economic downturn. The results also indicate that management reports IC information proactively, mediating the interests of different stakeholders. Voluntary disclosures of Slovenian manufacturing companies reflect social, political and economic context of the country in which companies conduct business. Results of our analysis confirmed some recent studies, which revealed that disclosure frequency (quantity) is not equivalent to disclosure quality.

To the best of our knowledge, our study, with longitudinal approach in examining the quantity and quality of IC information, is the first of this kind not only in Slovenia, but also in South-eastern Europe. In the study, we consider only voluntary IC disclosers contained in firms' annual report's section devoted to management report. Notes to financial statements or any other items required by regulation are not included in the analysis.

Our research has numerous contributions to the existing body of literature with respect to intangible capital disclosure. It contributes to the so far limited research using longitudinal approach (Campbell & Rahman, 2010; Wagiciengo & Belal, 2012), since most of previous studies only assessed the frequency (quantity) of IC disclosures for a

single year (Guthrie & Petty, 2000; Brennan, 2001; Beaulieu et al., 2002). In our research, we assess both the quantity and quality of IC disclosures whereas most of previous studies only examined the quantity of disclosures. We also check for the difference in IC disclosure quality in the period before and after the crisis. While prior research often focused on developed countries, our study contributes to research on developing countries (e.g., Goh & Lim, 2004; Ensslin & De Carvalho, 2007; Singh & Kansal, 2011). In addition, we employ several theoretical disclosure frameworks to interpret our research findings. We use the stakeholder and legitimacy theory to explain disclosures of companies as a mechanism employed by management to present the firms as socially responsible institution that operate within the norms and values of the society in return for society's support. Specifically, the stakeholder theory provides a framework for analysing IC disclosure from the perspective of a specific stakeholder group, while the legitimacy theory is used to present IC disclosures as a tool of management to influence the perceptions of stakeholder groups and gain social legitimacy of the company actions. In addition, the political economy of accounting (PEA) theory provides a framework for viewing disclosures as a product of the economic, political and social environment and an attempt to balance interests of various stakeholder groups. The agency and signalling theories are used to present disclosures as a means to reduce information asymmetry and to allow managers to signal their superior business performance.

The chapter is structured as follows. In the first section, we introduce the theoretical framework of voluntary IC disclosure, revealing motivations for companies to disclose their intangible capital base voluntarily, followed by literature review on firms' reporting behaviour. Further, we analyse the quantity and quality of IC disclosures to reveal whether companies enhanced their communication with stakeholders and which stakeholder group was given priority in meeting its information needs. By examining disclosure of each IC category separately, we get an insight into the firms' motivation for disclosures. Furthermore, the quantity and quality of IC categories in five-year period are contrasted to reveal whether high frequency of IC disclosures translates into high quality of IC disclosure. Discussion and conclusion are presented in the final section.

3.2 Theoretical framework of IC voluntary disclosures

Theoretical framework of voluntary IC disclosures is mainly based on the **agency and signalling theory**. The common hypothesis is that the presence of asymmetric information reduces the firms' financial value (Botosan, 1997). In this regard, voluntary intangible disclosures reduce agency costs and allow managers to signal superior performance of companies and consequently differentiate from competitors. Furthermore, voluntary intangible disclosures allow companies to improve forecasting and get cheaper funding (Diamond & Verrechia, 1991; Kateb, 2014). The agency and

signalling theories are based on shareholders' approach, limiting relationship of a company only to its shareholders. Since other stakeholders can also greatly affect company operations and could also be affected in case of company's malfunction, the company's performance should be reflected not only through its financial results but also through its global behaviour (Horvat, 2003; Carroll, 1979). Therefore, voluntary IC disclosure allow the company to demonstrate its corporate social responsibility to different stakeholder groups (Kateb, 2014). Two main theories that justify societal disclosures are the stakeholder theory, which focuses on expectations of stakeholder groups and legitimacy theory, which focuses on expectations of wider society in general (Lu & Abeysekera, 2014).

The **stakeholder theory** allows for consideration of disclosure from the perspective of a particular stakeholder. The interests of individual stakeholder groups differ as well as their power to influence firms' activities and their disclosure practices. Given unequal power relations that may exist between the groups and their impact on the disclosure policy of the firm, the stakeholder theory allows for the extension to the idea of examining disclosure behaviour of companies through the model of bargaining power of different stakeholder groups, mainly employees, owners and managers. The bargaining model describes bargaining positions of main stakeholders as well as the change of their position and bargaining solutions with the impact of external factors. From the bargaining perspective the primary goal of employees is stable employment and higher wage while the interests of owners are primarily directed to maximisation of the companies' profits (Jensen & Meckling, 1976; Demsetz, 1985). In time of crisis companies could preserve a higher level of employment at the expense of lower wages. In addition, with higher investment in employees, companies provide conditions for higher internal flexibility with not much labour adjustments. At the same time, companies promote engagement of workers in the company, including support of employees for innovation (Finegold & Soskice, 1988), which may contribute to fighting the declining demand during the crisis.

There is an assumption that management can balance the conflicting expectations and different level of influence of various stakeholder groups (Williams & Adams, 2013). In this respect, management may use social disclosures to influence the behaviour of relevant stakeholder groups by persuading them that the company is meeting their expectations. To receive the support needed for sustainable development, companies must be perceived as "legitimate", in the sense that companies' actions are congruent with the values of wider society, which is the essence of the **legitimacy theory**. Therefore, the legitimacy may be viewed in terms of companies' relationship with various competing stakeholder groups with conflicting interests. In that sense, companies may use voluntary IC disclosure to show management's real concerns for societal values or to divert community attention from prevailing negative impact of companies' activities (An et al., 2011; Deegan, 2006; Lindblom, 1994; Gray et al.,

1996). According to Abeysekera (2002, 2003) annual reports could be used to ease the tension in social relations between the firm and society rather than to comply with accounting standards and the law. The real purpose of such reporting is not to reflect real position of the firm and to inform different stakeholders on corporate activity but to divert attention of society towards more favourable perspectives (Woodward et al., 1996).

Thus, companies may seek legitimacy by disclosure that: (i) communicate actual changes "in organisational goals, structures, and processes or socially institutionalised practices" (Ashforth and Gibbs, 1990, p.180) or (ii) by disclosures that do not relate to real change but "portray firm's activities so as to appear consistent with social values and expectations" (Ashforth and Gibbs, 1990, p.180). These disclosures may be used to inform companies' stakeholders about the appropriateness of firm's activities or outcomes in order to change and manipulate perceptions of different stakeholders to be more in line with performance of the company (Lindblom, 1994). In such case disclosures may be employed to: (i) identify the issue in question with other actors or values (such as rational efficiency) that have legitimacy status (Ashforth & Gibbs, 1990; Lindblom, 1994) or (ii) divert community attention from the issue of concern. Perceptions of stakeholders may also be manipulated through non-disclosure of information on activities or outcomes, which could undermine legitimacy (Ashforth & Gibbs, 1990). Significant changes that negatively impact key stakeholder groups, like loss of employees' jobs, which is reflected in higher social costs, could challenge the companies' legitimacy.

Longitudinal studies (Adams & Hart, 1998; Adams & McPhail, 2004) found that disclosure patterns over time reflected changes in the broader social, political and economic context. These observations suggest that legitimacy should be supplemented with the **political economy of accounting (PEA) theory,** that allows for consideration of broader societal issues that have an impact on how a company operates, and what and how it reports (Williams & Adams, 2013). In contrast to the legitimacy theory, which sees information disclosure mainly as a reactive act (Gray et al., 1996; Guthrie & Parker, 1989), the PEA theory sees reporting as a proactive act (Cooper & Sherer, 1984; Tinker & Neimark, 1987). The political economy of accounting theory focuses on firms' reporting provided from management's perspective to support powerful groups in the society. It views IC information as a tool for sustaining and legitimising arrangements with current social, economic, and political interest groups, which contribute to private interest of a firm. Considering their expectations, firms proactively provide information from their perspective. Management discloses information to support relevant interest groups in the society in order to influence direction of the debate and to disguise the social conflict (Abeysekera, 2007, 2014). The political economy thus provides a framework within which we can examine whether corporate disclosures attempt to mediate and accommodate various political, economic or other

stakeholders' expectations with the strategy to protect the interests of the capital owners. In addition, the political economy provides the context within which we analyse what Slovenian companies choose to report over the period.

Given different interests of individual stakeholder groups as well as their power to influence firms' activities and disclosure practices, the company needs to establish a balance on the level of disclosure between groups and also within them, so that the satisfaction of information needs of one group doesn't come to the detriment of others (Lu & Abeysekera, 2014). Therefore, with disclosure of information companies need to meet the interests of *employees*, which are mainly directed in information on their stable employment, as well as on degree of their participation in firm's profits, and accordingly the possibility for their social benefits. Furthermore, the current and potential employees are interested in what kind of employees the company employs, education possibilities, technology development that the company may offer, as well as its current and future projects. They are also interested in the employees' health and safety conditions, as well as company's environmental performance. The *community* in general wants to determine whether the company threatens environment and if so, how to restrict or prevent this threat. Another concern of community is the ability of the company to assist in resolving local problems, also in relation to the reduction of the level of unemployment. Existing and potential *customers* are, beside the information on the quality of management, interested in changes the company is planning to implement, how it can satisfy their needs today and how in the future. The quality of management is reflected through its ability to develop the company, its employees and the relationship with customers and through the ability to maintain the stability of its operations by regularly repaying company's loans and supplying its goods. This kind of information is interesting for all stakeholders as their common objective is the growth of the company. On the other side, *government* expects the greatest possible contribution of the company to state's financing in the form of tax payment (Horvat, 2003).

Hence, management uses annual reports to praise employee's innovation, quality, teamwork, and commitment, which are critical components of business success. In addition, it uses annual reports to promote the company's image with customers by highlighting corporate strategy, mission, core values and its financial strength. The company also illustrates customer orientation through showing its activities aimed at improving manufacturing processes to reduce costs, create quality, or enhance service. Further, by highlighting internal measurement of quality, innovation, and commitment, companies send an implicit signal to suppliers about their expectations on the level of desired service. Companies use annual reports to present themselves as proactive members of the community that care about public initiatives like renovation projects, charitable contributions, and programs to help protect the environment. This sort of publicity is valuable because the company that builds the image of good corporate citizen will receive less resistance from local interest groups. Management also uses

annual reports to demonstrate the company's strengths and capabilities in order to enhance the company's reputation, increase the ability of the firm for additional investment, as well as to acquire the best employees (Horvat, 2003).

However, empirical findings show an inconsistent relationship between the extent of disclosure in annual reports and intangible capital performance (Williams, 2001; Slapničar, 2006). According to Slapničar (2006), the volume of reporting on intangible capital doesn't necessary reflect the implementation of management decisions and social or environmental activities in internal policies of companies. This supports the notion that such disclosures are driven primarily by pressure of the public[30] to obtain an agreement to operate from various corporate stakeholders as well as wider society. In that perspective, IC disclosures are seen as a part of the company's dialogue with its stakeholders, through which the company responds to the pressure of different stakeholder groups (Roberts, 1992) and tries to improve their relationship, which allows the company to develop sustainably (An, Davey & Eggleton, 2011; Yi, Harun & Sharma, 2014). On the other hand, the level of disclosure may be increased in time of unstable market conditions. Thus, social, political and economic context within which companies decide to disclose their intangible related information must be considered to understand the reporting towards different interest groups.

With the rise of the amount of information provided, companies also face the rise of disclosure costs, which may act as disincentives for their disclosure (Weil, 2002). Direct costs are related to the costs of collecting, processing and disseminating information, litigation and proprietary (i.e., competitive disadvantage) as well as political costs, which occur when revealed information results in increased competition or government regulation that can potentially damage the firm (Meek et al., 1995; Core, 2001). According to Deegan and Samkin (2009), political costs occur when voluntary IC disclosure attracts unwanted attention from the governmental, supervisory agencies or trade unions. These institutions may impose some costs, such as the costs associated with increased taxes, increased wage claims, etc. Litigation costs may occur when the voluntary IC disclosure may not be considered reliable and consistent as required by accounting standards and rules over the world (Guthrie & Petty, 2000; Yi & Davey, 2010). In the presence of proprietary costs managers are discouraged to disclose commercially sensitive information because it can damage firms' competitive position when used by corporate opponents (Cormier et al., 2005; Marshall & Weetman, 2007). As noticed by Moumen et al. (2015), managers should trade off the positive effects of revealed information against the negative. But, as suggested by Skinner (1994) and Healy et al. (1999), a firm enhances its reputation of a credible discloser when it reveals information to competitors, despite occurring some of proprietary costs. In some cases,

[30] Pressure by different stakeholder groups can be shown through: enforcement of environmental regulation by government, refusals to purchase products by customers, strikes, absenteeism, disloyalty, and loss of employees' motivation, which may bring the company to the edge of survival (Rees, 1995; Slapničar, 2006).

companies are advised to share information with their competitors to coordinate actions in mutual advantage (Darrough, 1993). On the other side, to reduce proprietary costs some companies restrict or provide boiler plate reports (Solomon et al., 2011) just to fill the disclosure gap and not to provide relevant information[31].

We need to stress that all these theories are interrelated and jointly provide a number of motivations for companies to voluntarily disclose their IC information. Some authors confirmed disclosure incentives directly by asking preparers about the reasons for their disclosure decisions or by inferring the reasons from observed disclosures (Beattie & Thomson, 2010). Hence, by examining the disclosure of each IC category separately, we can get an insights into the firms' motivation for their disclosure (Abeysekera & Guthrie, 2004a, 2004b, 2005; Abeysekera, 2014). Therefore, to reveal management disclosure incentives towards various stakeholder groups, we will examine disclosures of each IC category separately in the period from 2006 to 2010. We will interpret the research findings of our study in relation to above mentioned theories and within the context of the studied period characterised by the social, political and economic changes.

3.3 Summary of past studies

In the past two decades, many researchers became interested in firms' reporting behaviour. Table A2.7 summarises studies that provide insights into the state of IC disclosure and factors that influence disclosure practices in some countries. The literature review reveals that most of IC researchers employed content analysis to examine the level of voluntarily disclosed information in corporate annual reports (e.g., Guthrie & Petty, 2000; Brennan, 2001; Bozzolan et al., 2003; Guthrie et al., 2006; Li et al., 2008). These studies assess the level of IC category disclosures and accordingly determine firms' benefits associated with disclosures of individual IC categories using different disclosure theories in explanation of research results. For instance:

Abeysekera and Guthrie (2005) used the political economy of accounting theory to interpret their study findings, which revealed that relational capital is the most frequently reported IC category (44-percent) followed by human (36-percent) and structural capital (20-percent).

Guthrie and Petty (2000) used the legitimacy theory, political economy theory and stakeholder theory to interpret results of the study on the amount and type of reported information. Their study revealed external capital (40-percent) to be the most frequently reported category, with evenly distributed human capital (30-percent) and internal capital disclosure categories (30-percent).

[31] Findings indicate that firms in more concentrated industries, which operate in less rich information environment, face higher proprietary costs and therefore disclose less reliable voluntary disclosures (Moumen et al., 2015).

The agency, stakeholder, signalling and legitimacy theories were used in the study of the quantity and the quality of IC disclosure by Yi and Davey (2010). Results of their study show that external capital was the most frequently reported IC category (46-percent), internal capital was second (30-percent), while human capital was least frequently reported, covering 24-percent of the total IC disclosures. In terms of disclosure quality, human capital revealed the highest quality of disclosure as reflected by its quality score of 0.48, followed by external and internal category with quality scores of 0.44 and 0.40, respectively.

Oliveira, Rodrigues, and Craig (2006) used the signalling theory, agency theory, political cost theory, and legitimacy theory to explain the study results on factors that influence the voluntary disclosure of intangible information in annual reports of 56 companies listed on Euronext Lisbon. Relational capital (33-percent) was the most reported IC category, followed by structural capital (30-percent) and human capital (27-percent).

Oliveras, Gowthorpe, Kasperskaya and Perramon (2008) used legitimacy theory to explain IC reporting in Spain over the period 2000-2002. The longitudinal analysis showed significant increases in levels of disclosure over the studied period with relational (external) capital (59.6-percent) being most often reported compared to a much lower level of disclosure related to human capital (employee) (21.9-percent) and organisational (internal) capital (18.5-percent).

Yi, Harun, and Umesh (2014) examined the trend of voluntary intangible capital disclosure in China over a three-year period (2006, 2008 and 2009), using content analysis of corporate annual reports of 100 top listed Chinese companies. The findings reveal an upward trend of IC disclosures. Human capital was the most highly reported category for 2006, while organisational (internal) capital showed the highest disclosure quality in 2008 and 2009. The least reported category was organisational (internal) capital in 2006, and relational (external) capital in 2008 and 2009.

In most of the studies (Guthrie & Petty, 2000; Yi & Davey, 2010; Yi, Davey & Umesh, 2014; Guthrie, Petty, Ferrier, & Wells, 1999; Oliveira, Rodrigues, & Craig, 2006; Li, Pike & Haniffa, 2008; Vergauwen, Bollen & Oirbans, 2007; Goh & Lim, 2004; Abeysekera & Guthrie, 2005; Bozzolan, Favotto & Ricceri, 2003) results revealed that the most reported IC category in annual reports is relational (external) capital (36-percent to 51-percent of total IC disclosure), organisational (internal) capital disclosure is second (20-percent to 37-percent), and human capital disclosure is third (21-percent to 37-percent) (see IC structure in Table A2.7). Most of these empirical studies also assumed that the extent of disclosures (i.e., quantity) is an adequate measure of disclosure quality. When Yi and Davey (2010) analysed the extent and quality of IC disclosures of 49 listed Chinese companies, they assumed that the frequency of IC

reporting is not equivalent to the quality of IC reporting. That is, the quantity of information disclosed cannot determine the quality of disclosure.

To reveal the level of disclosure the beforementioned studies used annual reports as the main data source. An important advantage of annual reports is that they are regularly produced and hence provide a possibility for comparative analysis of policies across different periods. Annual report is usually divided into two sections. Financial statements, which are statutory required, are usually assigned to the rear section. The front section is devoted to management report, which contains mainly voluntarily disclosed non-statutory information. Management report generally covers 40-percent to 50-percent of annual report (Horvat, 2012) and is intended to convey information on: economic trends, sales and marketing, management discussion and analysis, employees, suppliers, customers, shareholders, investment, R&D, environmental protection activity, corporate social responsibility, and future activity. However, other researchers like García-Meca et al. (2004) used analyst presentations as the main data source. Even though companies have diverse communication channels to voluntarily disclose information, literature reveals that disclosure levels in annual reports are positively correlated to the amount of disclosure provided by other media (Botosan, 1997; Oliveira et al., 2006). Using the amount of voluntary information in annual report can, therefore, serve as a proxy for the amount of disclosure provided by a firm across all media.

Most IC disclosure studies are country specific and focused mainly on one specific accounting year. Such are studies conducted in Australia (Guthrie & Petty, 2000; Guthrie, Petty, Yongvanich, & Ricceri, 2004), Spain (Garcia-Meca, Parra, Larran & Martinez, 2004; Oliveras, Gowthorpe, Kasperskaya & Perramon, 2008), Portugal (Oliveira, Rodrigues, & Craig, 2006), UK (Gray, Kouhy & Lavers, 1995; Li, Pike & Haniffa, 2008), Singapore (Singh & van Der Zahn, 2008), China (Yi & Davey, 2010), Malaysia (Goh & Lim, 2004; Bontis, Keow & Richardson, 2000), Italy (Bozzolan, Favotto & Ricceri 2003), and Canada (Bontis, 2003). Relatively few studies can be found on a longitudinal basis. Such studies were done by Abeysekera and Guthrie (2005), who examined the 2-year trend of IC disclosures in the annual reports of Sri Lanka companies, and by Gray, Kouhy and Lavers (1995), who used content analysis of UK company annual reports over a period of 13 years (1979-1991).

Studies that compare disclosure policies of different countries can also be found. Chau and Gray (2002) examined the association of ownership structure with the voluntary disclosures of listed companies in Hong Kong and Singapore. Arvidsson (2003) compared the level of disclosed IC information between some Nordic countries. Vergauwen and van Alem (2005) analysed IC disclosures in the Netherlands, France and Germany. Vergauwen, Bollen and Oirbans (2007) studied IC disclosures in Sweden, UK, and Danmark.

Relatively little research is done on IC disclosure in developing countries. Goh and Lim (2004), as well as Abeysekera and Guthrie (2005) provide some empirical evidence to IC disclosure in Malaysia and Sri Lanka, respectively. Another study in developing country can be found done by Kamath (2008), which provides insights on the level of IC disclosure of Indian companies.

Results of the above-mentioned studies show that most of the studied companies experienced low level of IC disclosure due to a general lack of companies' ability to measure IC information and due to the lack of an established IC framework for external reporting (Guthrie & Petty, 2000). Nevertheless, they realised the growing importance of intangible capital for the company success but only few of them appear to be proactive in measuring and reporting different forms of intangible capital to various stakeholder groups.

3.4 Research analysis

3.4.1 Data and Methodology

3.4.1.1 Company sample selection and data source

This study was part of the research project called *Analysis of firm-level investment in tangible and intangible capital from the perspective of future competitive advantages of Slovene firms, code J5-4169*. The project was performed at the School of economics and business, University of Ljubljana in the period from 2010 to 2014[32]. During the project, the research group developed questionnaires that addressed various types of intangible capital, i.e. human capital, branding, relational capital, R&D, IT capital, interest groups in the firm[33], in order to capture the entire intangible capital structure of the firm. The questionnaires were tested through personal interviews with CEOs. During the testing, we noticed that in many cases smaller companies did not provide the requested data due to the absence of organisational units that would be able to collect data on intangible capital. Given the lack of record keeping in relation to some types of intangible capital in smaller Slovenian firms, we decided to focus on larger Slovenian manufacturing firms. In contrast to smaller ones, large firms are more capable of exploiting the economies of scale in intangible capital accumulation, can be more effective in the protection of their intangible capital, and thus have a greater incentive to invest in it. Large companies are also more capable of managing the risks related to the IC investment (Arrighetti et al., 2014). They are also more inclined towards a more

[32] The project was performed by the research group led by Janez Prašnikar and financed by the Slovenian Research Agency.

[33] Authors of individual questionnaires are: Tjaša Redek for R&D capital, Matjaž Koman and Gordana Lalović for the field of relational and IT capital, Nada Zupan and Daša Farčnik for HRM capital, Janez Prašnikar and Damjan Voje for social capital, Vesna Žabkar for the field of marketing. Results of the study are published in the book edited by Janez Prašnikar with the title The role of intangible assets in exiting the crisis (2010), where details on the selection process of firms can be found.

thorough disclosure of IC information (Bozzolan, Favotto, & Ricceri, 2003). They are more exposed to the public and thus more under the observation of various stakeholder groups, which may put the pressure on the companies to match their values with that of the society (Lu & Abeysekera, 2014). Accordingly, the pressure to disclose various types of intangible capital information is stronger (Dainelli et al., 2013). Finally, because large firms are more visible and have more resources to sponsor new initiatives, they are likely to possess more intangible capital and to afford disclosure costs easier (Meek, Roberts & Gray, 1995).

We sent questionnaires to 364 largest Slovenian manufacturing companies and received questionnaires from 102 companies, which is a 28-percent response rate. However, not all companies provided answers to all of the questions. For this reason, we included 93 manufacturing companies in the research study that had responded to most of the questions regarding the different types of intangible capital. For these companies, we collected annual reports from their websites for the 2006-2010 period [34]. We used annual reports because the company's various stakeholders consider them an important source of company information. Secondly, the disclosure level in annual reports is positively correlated with the amount of corporate information disclosed to stakeholders by other media.

As a method for data collection, we used content analysis with disclosure index approach, based on which we examined disclosure performance of IC items and categories in terms of the frequency (quantity) and quality of disclosure provided by firms in their annual reports. Results of the frequency and the quality analysis will be discussed in the following sections. In addition, to measure company performance of selected sample firms we used accounting information contained in financial statements of annual reports, published by The Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJPES).

3.4.1.2 Description of the sample companies

In this section, we present performance characteristics of the sample companies over the studied period (2006-2010), which also covers unstable and turbulent years in Slovenian political, social and economic environment. Therefore, to measure the performance of companies we used financial indicators useful in predicting the capacity of the firm to generate profit, productivity and growth. These indicators also represent important drivers of firm's disclosure policy as documented in prior research (Alseed, 2006). We measured profitability by using ROA, ROE, EBIT and EBITDA financial indicators. Since size of the company and profitability are interdependent, we used sales as a

[34] Since in transition countries accounting manipulations are omnipresent and consequently the available secondary data is of questionable quality (Prašnikar et al., 2013, 2014) collected primary data allowed us to conduct a cross analysis with available data from public business and financial reports. Results of the analysis can be found in Chapter 2.

measure of size most closely related to profitability and growth. In addition, we measured the size of the company taking into account Slovenian Companies act-1's measure of size according to which, to be categorised as a big company, average number of employees must be bigger than 250, net revenues from sales must exceed 40,000,000 euros and the value of assets must be bigger than 20,000,000 euros. We used value added per employee as a measure of productivity. A widely held view is that indebted firms have an incentive to voluntarily increase the level of corporate disclosure to fulfil information needs of investors and reduce information asymmetry (Al-Shammari, 2007; Alsaeed, 2006). Therefore, we also included other measures of financial performance like indicators of indebtedness (leverage and net debt) and liquidity[35].

The main characteristics of the sample are summarised in Table 3.1, where we present medians, means and standard deviations of selected firms' performance and size indicators. In the studied period an average firm reported 86,667,741 euros of sales with the mean value of total assets at 89,852,680 euros. Selected companies employ over 500 employees on average (see Table A2.8). As indicated in Table 3.1, the values of performance indicators of our sample companies point to performance deterioration after 2007, reflected in a decrease of productivity and profitability measured as added value per employee, EBIT, EBITDA, ROE, ROA, and sales indicators (sales, ROS, sales growth). We can also notice employment reduction that continues until 2010. The level of indebtedness measured by leverage and net debt indicators increased in the studied period, with a decrease in 2009.

After the crisis, Slovenian companies started to deleverage as economic growth of Slovenian companies before the crisis was mainly based on acquired external funds and corporate borrowing through bank loans (Bole et al., 2013). Between 2004 and 2008 the pre-crisis Slovenia recorded its most extensive private debt accumulation. Banks' business models were based on heavy borrowing on international financial markets and aggressive lending was used to launch the second wave of privatisation (Močnik, 2010; Bembič, 2013; Stanojević, 2014). In 2008, the financial and economic crisis hit Slovenia more than most other EU member states (Vobič et al., 2014). Before the crisis, Slovenia was regarded as "the most prosperous republic within former Yugoslavia" (Dahlgren, 2013, p. 1) and a successful transitional state. After the financial crisis hit Slovenia, it became a "peripheral country" in the EU (Financial Times, 2014). The global crisis made it harder to access international financial markets due to a credit

[35] Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for leverage indicator; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for net debt; Current assets/Current liabilities for liquidity; (Net profit – Net loss)/Average Equity for ROE and (Net profit – Net loss)/Average Assets for ROA. ROS indicator is calculated as Operating profit/Net sales. For added value per employee indicator we used following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

crunch on the wholesale market. Thus, banks in Slovenia had to curtail the supply of credits to their clients on the domestic retail credit market (Bole et al., 2013). On the one hand banks had to deleverage and absorb losses, and on the other hand, they had to re-price risks, thereby becoming more risk-averse, increasing necessary collateral coverage of their credits and also enhancing credit rationing (Communication of the Commission - Temporary Union framework for State aid measures to support access to finance in the current financial and economic crisis, 2011). In such circumstances, also creditworthy businesses suddenly faced problems in gaining access to finance. A sudden stop in financial inflows and the collapse of external real demand changed the booming growth in a spiralling downturn during the post-crisis period. From a seven percent growth in the 2007 pre-crisis year the economy experienced a more than eight percent drop in 2009, followed by a virtual stagnation in the period 2010-2012 (Bole et al., 2013). Post crisis period was also marked by government changes, significant restructuring of power relations within the institutional political arena, vast "all-Slovenian people's uprisings" against the political and economic elite, a wave of organised trade union protests, which expressed their disagreement with mass layoffs, and drastic reduction of material and social situation of employees and unemployed, as well as disagreement with the government measures.

To reduce negative impact of financial crisis and economic downturn on firms' performance, the Slovenian government created a special state aid scheme for suppressing serious disturbances in the economy. At the same time the government significantly increased some of the already existing types of state aid measures like intensified subsidisation for research and development, employment, training, and state aid for rescuing and restructuring (Burger & Rojec, 2018). The combined amount of these measures significantly increased in 2009 and reached €350 million (one percent of GDP), or 51-percent of all subsidies. Compared to other EU member states, Slovenia ranked in the middle, regarding the amount of state aid for the financial sector, but was among the most intensive donors of anti-crisis state aid for the real economy granted under the Temporary Community Framework and especially non-crisis state aid to industry and services in the 2009-2011 period (Dzialo, 2014).

Table 3.1: Descriptive Statistics of companies

Indicator	2006				2007				2008				2009				2010			
	n	Mean	Median	SD	n	Mean	Median	SD	n	Mean	Median	SD	n	Mean	Median	SD	n	Mean	Median	SD
ROA	86	0.04	0.03	0.07	89	0.04	0.03	0.08	92	0.02	0.02	0.07	93	0.01	0.01	0.10	90	0.01	0.02	0.06
ROE	86	0.08	0.06	0.33	89	4.01	0.06	38.87	92	0.11	0.04	0.59	93	-0.03	0.01	0.29	90	-0.13	0.03	1.46
EBIT (EUR)	89	5,256,911	1,155,883	17,161,500	92	5,662,322	1,231,610	18,453,794	93	4,865,588	675,550	21,911,811	93	4,547,344	338,244	22,719,839	90	4,120,883	614,399	21,819,200
EBITDA (EUR)	89	8,677,118	2,854,940	21,762,940	92	9,620,994	2,596,331	25,091,113	93	9,126,673	2,476,504	29,081,512	93	8,855,686	2,245,442	30,166,969	90	8,490,622	2,411,033	29,760,166
VA per employee (EUR)	89	66,357	27,217	237,388.82	92	68,618	30,371	261,655	93	55,856	32,334	114,016	93	49,435	30,999	80,479	90	47,044	35,912	41,063
ROS (%)	89	5.29	3.00	6.15	92	7.11	3.32	17.19	93	6.04	3.27	17.22	93	4.46	2.03	10.00	90	4.30	2.89	5.02
Sales growth (%)	86	12.24	10.35	16.56	89	10.19	9.51	16.10	92	4.63	-0.45	32.42	93	-18.02	-16.98	20.55	90	85.10	10.34	695.18
Sales	89	83,791,732	29,841,282	151,500,635	92	93,000,145	35,056,720	178,783,324	93	91,706,945	37,177,616	177,290,858	93	76,070,223	27,418,870	170,658,327	90	88,782,260	35,598,405	186,236,077
Leverage	89	0.49	0.48	0.21	92	0.52	0.51	0.21	93	0.52	0.52	0.22	93	0.51	0.50	0.22	90	0.53	0.52	0.23
Net debt	89	0.06	0.06	0.30	92	0.08	0.09	0.29	93	0.11	0.13	0.30	93	0.08	0.08	0.29	90	0.12	0.10	0.28
Liquidity	89	1.55	1.36	0.94	92	1.53	1.31	1.00	93	1.52	1.16	1.35	93	1.58	1.19	1.40	90	1.60	1.24	1.52
Total assets (EUR)	89	81,887,509	25,460,106	140,536,789	92	88,819,217	33,098,974	158,715,429	93	92,420,582	37,115,032	175,776,289	93	90,232,292	32,116,995	176,986,963	90	95,740,016	36,003,678	192,537,319
Number of employees	89	563.87	326.00	812.95	92	564.03	325.49	807.03	93	554.27	322.05	822.69	93	500.71	274.40	779.63	90	492.47	258.88	728.92

Source: AJPES (2015) and own calculations.

3.4.1.3 Disclosure index methodology and content analysis

Consistent with prior research, we used content analysis to collect data from annual reports for intangible capital disclosure analyses. To derive patterns in information disclosure, content analysis codifies qualitative and quantitative IC information into predefined categories on the basis of selected criteria (Guthrie, Petty, Yongvanich & Ricceri, 2004). Therefore, content analysis involved reading the annual report's section devoted to management report and coding IC information contained therein in accordance with selected IC items included in disclosure index. Disclosure index is a list of IC items that companies may disclose in corporate annual reports.

To develop the disclosure index, we conducted a literature review on IC disclosures to examine which categories of intangibles and their related items are most frequently discussed. We modified IC disclosure index to the Slovenian context. Namely, in the process of the final selection of IC items we considered IC items covered by questionnaires used in the analysis of intangible capital resources of Slovenian manufacturing companies (see Chapter 1). In addition, selected IC items focus on voluntary information not required by accounting standards or under corporations' law. We included those IC items that all sample firms could choose to disclose. Therefore, the index of IC disclosures consisted of 89 IC items, which are useful to a wide range of users (see Table A2.5). Predefined IC items used in the coding framework raised the objectivity of data.

To classify the gathered information, we used a three-dimension framework used by various researchers in the field of intangible capital disclosures. We classified intangible capital information into one of the following disclosure categories: the organisational capital, relational capital and human capital disclosure category. To keep a degree of comparability, disclosure categories follow the pioneering classification of Edvinsson and Malone's (1997) basic intellectual capital framework.

As a unit of analysis, we used sentences since individual words without a sentence or sentences cannot provide a meaningful context for IC disclosure coding. In the process of coding we also employed some decision rules: we did not code for graphs, pictures, or diagrams; if an intangible capital item was repeated in the report, it was considered only once.

To assess the quantity of voluntary intangible capital disclosure, we performed the frequency analysis of intangible capital items mentioned or described in annual reports of Slovenian manufacturing companies over the five-year period. We measured the quantity of IC disclosure by counting how frequently firms disclosed each intangible capital item in their annual reports. Most frequently reported items are reported by more than 50-percent of companies within the five year period. If more than 90-percent of companies did not report the item, it is characterised as least reported item.

We assessed the quality of IC disclosure with a 4-point IC measurement scale (ranging from 0 to 3) based on prior literature (e.g., Bozzolan, Favotto and Ricceri, 2003; Oliveira, Rodrigues and Craig, 2006; Guthrie et al., 1999; Cormier & Magnan, 2000; Walden & Schwartz, 1997; Firer & Williams, 2005; Schneider & Samkin, 2008)[36]. We assigned a disclosure score to an IC item based on its qualitative or quantitative nature. Some variables are dichotomous (with values 0 indicating the absence and 3 indicating the presence of information) as some intangible capital items in the index are narrative in nature and it is problematic to assign them a quantitative value. Such items were assigned a maximum score of three in case of information disclosure. We must stress that scores ascribed to individual IC items reflect the level of information completeness and do not judge on the content of information in terms of good or bad news. The higher scores assigned to quantitative information compared to qualitative is based on assertion that precise information is more useful in the decision-making process and may enhance management's reporting reputation and credibility (Bottosan, 1997). Table 3.2 demonstrates the scoring criteria.

Table 3.2: Measurement scale of intangible capital disclosure

Type of item disclosure reported in the annual report	**Score**
Non-disclosure	0
Narrative: Reported in qualitative terms	1
Quantitative	2
Trend: Quantitative comparison with previous years	3

Source: Own work.

After the scoring of IC items, the weighting of importance was determined in line with the study of Yi and Davey (2010). The weighting of each IC item reflects the relative importance of related IC category in overall disclosure. Therefore, within each IC disclosure category we allocated equal weights to disclosure scores of IC items in accordance with corresponding frequencies of their related IC disclosure categories (see table 3.3 for frequencies of IC disclosure categories through the studied period). Then, the mean disclosure scores for all intangible capital items were normalised to a scale of zero (0) to one (1) for comparability purpose, following the formula:

$$x_{\substack{mean \\ disclosure \\ score}} = \frac{x_{mean} - x_{min}}{x_{max} - x_{min}} \qquad (1)$$

[36] Previous studies have used quality criteria with different scales, for instance: a three-point scale (0-2) used by Oliveira, Rodrigues, Craig (2006); Bozzolan, Favotto and Ricceri (2003) or a two-point scale (0-1) used by Arvidsson (2003), Chaua and Gray (2002), Oliveras, Gowthorpe, Kasperskaya and Perramon (2008), Goh and Lim (2004), Vergauwen, Bollen and Oirbans (2007), Singh and van der Zahn (2008), Garcia-Meca, Parra, Larran and Martinez (2004).

Disclosure quality refers to the weighted and normalised disclosure score (0-1) achieved by sample companies for each IC item, category and overall IC. Disclosure items with higher disclosure quality are items that managed during the five-year period to achieve and maintain the value of disclosure score above 0.5. If disclosure item achieved the value of disclosure score below 0.05, it is characterised as disclosure item with lower disclosure quality. To reveal whether high frequency of IC disclosures also means high quality of IC disclosures, we contrasted frequency data, as the measure of IC disclosure quantity, with IC disclosure quality scores as the measure of IC disclosure quality.

3.4.2 Results and discussion

3.4.2.1 The quantity of IC disclosure

Frequency analysis revealed that in the studied period Slovenian companies favoured organisational capital reporting, which represents 39-percent of total IC disclosures. Human capital is the least reported category with 28-percent of the total IC disclosure, while relational capital accounts for 33-percent (see Table 3.3 and Table A2.10 for the results of frequency analysis). Our result is in accordance with some international studies showing that, human capital often represents the least frequently reported category (21-percent to 37-percent) (Guthrie & Petty, 2000; Abeysekera & Guthrie, 2005; Bozzolan et al., 2003; Goh & Lim, 2004; Vandemaele, Vergauwen & Smith, 2005; Kateb, 2014; Whiting & Miller, 2008), but it is inconsistent in terms of relational (external) capital. In most of these studies, relational (external) capital disclosure is the most reported IC category in annual reports in terms of frequency of disclosure (36-percent to 51-percent of total IC disclosures), followed by organisational (internal) capital disclosure category (20-percent to 37-percent) (see IC structure in Table A2.7).

Table 3.3: Disclosure of IC categories

Category/Frequency (%)	**2006**	**2007**	**2008**	**2009**	**2010**	**2006-2010**
Relational capital disclosures	33.6	32.3	32	32.7	32.7	32.6
Organisational capital disclosures	39.6	39.5	39.7	38.9	39.1	**39.3**
Human capital disclosures	26.8	28.2	28.3	28.5	28.2	28.1
Category/Average mean disclosure score (0-1)						
Relational capital disclosures	0.15	0.15	0.16	0.17	0.17	0.15
Organisational capital disclosures	0.18	0.18	0.20	0.20	0.20	0.19
HRM disclosures	0.19	0.21	0.22	0.23	0.23	**0.22**

Note: The disclosure score for each IC category represents a mean disclosure score of relevant items. For example, the disclosure score for organisational capital is the average disclosure score of organisational capital items in related year(s).

Source: Own calculations.

3.4.2.1.1 Trend analysis of IC disclosure quantity

To analyse the change in the quantity of voluntary disclosed IC information over the five-year period (2006-2010) we ran a trend regression using equation (2), where independent variable Y is time (measured in years) and dependent variable is disclosure of each IC category and overall IC disclosure. The trend was analysed for human capital, organisational capital and relational capital disclosures, as well as overall IC disclosure.

$$Y_t = \beta_0 + \beta_1 t + \varepsilon_t \quad (2)$$

where, Y_t is independent variable, t is time and ε_t is error term.

From the Table 3.4 below positive and significant trend coefficients have been observed for disclosures of each IC category and overall IC disclosure indicating that the positive trend of IC disclosures exists over the studied period (see Table A2.11 for the output of regression analysis).

Table 3.4: Trend analysis of IC disclosure quantity

IC disclosure	Trend coefficient	Significance
Overall IC disclosure	61.9	0.011
Human capital disclosures	23.0	0.030
Relational capital disclosures	17.8	0.008
Organisational capital disclosures	21.1	0.020

Source: Own calculations.

3.4.2.2 The quality of IC disclosure

If we contrast frequency data as the measure that indicates the quantity of voluntary IC disclosure to IC disclosure quality scores, results of our study reveal that disclosure frequency is not equivalent to the quality of IC reporting, which was also confirmed by some recent studies (Yi & Davey, 2010; Yi, Harun & Sharma, 2014).

In terms of disclosure quality, the highest scoring IC category in the studied period is human capital with an average score of 0.22 (see Table 3.3). It is also the greatest performer in every year of the studied period. The second highest disclosed category is organisational capital with an average score of 0.19. Relational capital is the lowest scoring category with an average score of 0.15. The gap in disclosure quality between the three categories is only 0.07 with scores of 0.22 for human capital as the highest score, to 0.15 for relational capital as the lowest one. In addition, we can notice that the average disclosure quality score for each category of IC (human, organisational and

relational capital) in every year of the studied period is below 0.50 indicating that most of the reported IC attributes are expressed in discursive rather than in numerical terms.

3.4.2.2.1 Trend analysis of IC disclosure quality

To be consistent with prior research (Yi, Harun, & Sharma, 2014; Haji, 2014), we conducted a non-parametric Friedman test using disclosures scores of all intangible capital items achieved in every year of the studied period (2006-2010) in order to assess whether there was an overall statistically significant difference in disclosure quality of intangible capital items over the five years. Tests showed that there was a statistically significant difference in disclosure quality level across the five-year period ($\chi 2(4) = 64{,}008$, $p = 0{,}000$) (see Table A2.12). In addition, we performed Wilcoxon Sign-Rank Test (see Table A2.13) to assess statistically significant differences in disclosure quality of all intangible capital items in between every two years during the studied period (2006-2010). Quality disclosure level of intangible capital items increased significantly between every two years in the period before the crisis (until 2008), after which, further increase of disclosure quality between the years was not statistically significant (see Table 3.5). This could be due to the consequences of financial crises, which may have lowered the growth in intangible capital resources. After 2008, we can notice a decrease of productivity and profitability indicators of the sample companies.

Table 3.5: Disclosure quality change before and after the crises

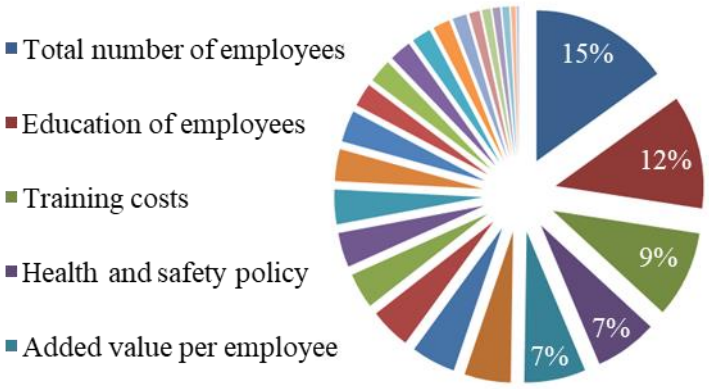
Wilcoxon test	**Significance**
Before the crisis	
2006-2007	0.001
2007-2008	0.000
After the crisis	
2008-2009	0.060
2009-2010	0.459

Source: Own calculations.

3.4.2.3 Most frequently disclosed human capital items with higher quality

In relation to HRM items, frequency analysis revealed that between 2006 and 2010 Slovenian managers reported mostly on total number of employees and their level of education. Together with disclosures on training costs, health and safety policy of the firm as well as added value per employee, these items consist 50-percent of HRM disclosure category (see Figure 3.1).

Figure 3.1: Human capital disclosure frequency in 2006 to 2010 period



Source: Own work.

The most frequently reported HRM items: "employees' number" and "education of employees" also achieved and maintained quality disclosure score above 0.5 in the five-year period (representing eight percent of total HRM items), which puts them into the group of items with higher disclosure quality (see Table A2.15). We can also notice that the item "employees' number" is not only the most highly disclosed item within HRM disclosure category but also across all of the IC disclosure items (see Table A2.14). Also, "education of employees" holds second position among most highly disclosed items within HRM category as well as across overall IC disclosure category.

Items: "work life balance", "newly employed per year", "workers participation in the workplace" were the least reported items within the studied period with disclosure scores below 0.05. HRM item "knowledge transfer" was among the least reported items at the beginning of the studied period, with value 0.022 in 2006, but significantly increased its disclosure quality to 0.065 in 2010. The item "work life balanced" also achieved a substantial increase in its disclosure quality from zero in 2006 to 0.043 in 2010. The following HRM items also achieved a noticeable increase: "full-time and part-time employees" (increase of disclosure quality score from 0.118 to 0.194), "incentive and remuneration system" (increase of disclosure quality score from 0.102 to 0.161), "health and safety policy" (increase of disclosure quality score from 0.312 to 0.473), "training programs for leaders" (increase of disclosure quality score from 0.065 to 0.097), "number of disabled employees" (increase of disclosure quality score from 0.161 to 0.237), »gender – percent of women employees« (increase of disclosure quality score from 0.215 to 0.312, and "newly employed" (increase of disclosure quality score from 0.183 to 0.258).

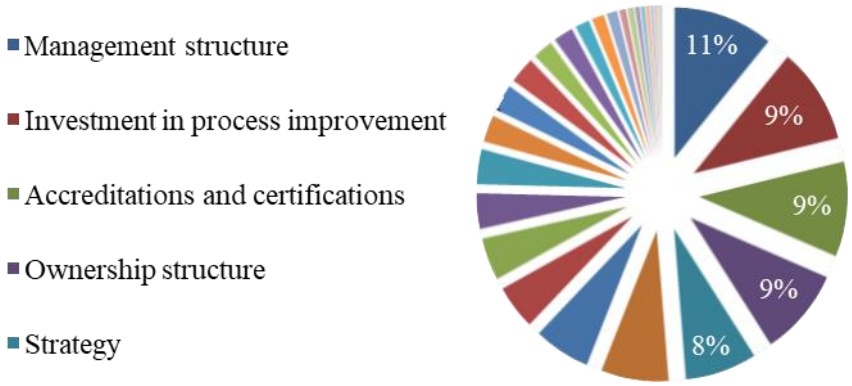
However, two items "number of employees working in different departments" and reported "added value per employee" experienced a downward trend in disclosure quality from 0.108 to 0.075, and from 0.387 to 0.366, respectively.

3.4.2.4 Most frequently disclosed organisational items with higher quality

As regards organisational items, frequency analysis revealed that 49-percent of organisational category consists of the following items: “description of firm's management and ownership structure”, “investment in process improvement”, “accreditations and certifications assessed by the firm as its commitment to the quality of product and process”, as well as the strategy declared (see Figure 3.2) with items: “management and ownership structure” as well as “accreditations and certifications assessed by the firm”, reported by more than 50-percent of companies.

During the period from 2006 to 2010 these organisational items also managed to achieve higher disclosure quality with the disclosure score above 0.5 (which represents 16.6-percent of total organisational items) (see Table A2.16). In addition, within overall IC disclosure category, IC item ”management structure” holds 3rd position with 0.68 disclosure quality score, whereas “accreditations and certifications assessed by the firm” holds 4th place with 0.64 disclosure quality score (see Table A2.14).

Figure 3.2: Organisational capital disclosure frequency in 2006 to 2010 period



Source: Own work.

Among nonreported items we can find: “copyrights”, and “development of new products, which are novelties to global market”. Organisational items that also classify as least reported, with disclosure quality below 0.05, are: “sales revenue derived from new products”, “number of employees in R&D department”, “number of services and products”, and “profile of directors”. Among less reported items we can also find “new product lines” which achieved a noticeable improvement in disclosure score from 0.011 in 2006 to 0.054 in 2010. Similarly, items “awards for R&D activities” and “customer and supplier support - reduced reaction time” managed to increase their disclosure score from zero in 2006 to 0.011 in 2010, and “integrated management system” from 0.022 to 0.043, respectively.

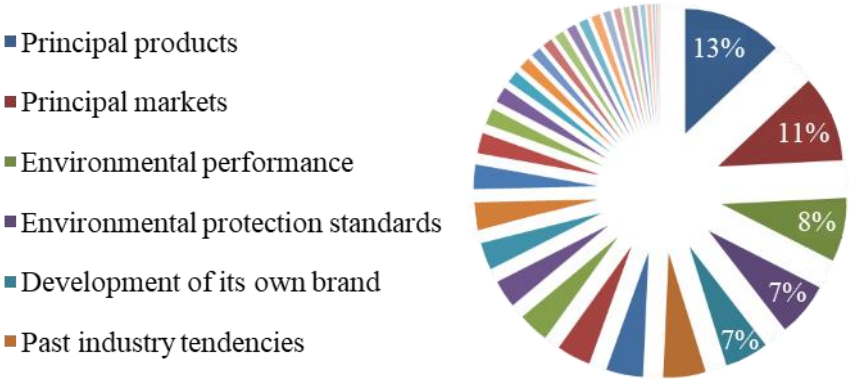
Among other organisational items that managed to improve disclosure quality from 2006 to 2010 we can find: “trademarks” with improvement in disclosure score from 0.011 to 0.065, “finance providers” from 0.054 to 0.108, “description of basic R&D projects” from 0.097 to 0.147, and “awards for innovative products” from 0.086 to 0.129. Despite considerable improvements, disclosure quality of these organisational items cannot be considered high as none of them achieved a disclosure score above 0.5.

On the opposite side, items that experienced a fall in their disclosure quality are: “firm’s capacity for closeness to potential and real customers” from 0.215 to 0.129, “IT system” from 0.201 to 0.129, “number of employees in R&D department” from 0.043 to 0.032, and “participation of employees in internal improvement and technological innovation projects” from 0.290 to 0.269.

3.4.2.5 Most frequently disclosed relational items with higher quality

As regards the frequency of relational capital disclosure items, information on »principal products produced«, »identification of principal markets that buy firm’s product«, »environmental performance including the efficient use of resources, emissions and waste«, »compliance with standards dealing with environmental protection«, »development of its own brands« and »past industry tendencies« accounted for 52-percent of this category (see Figure 3.3). Items “principal product produced”, “identification of principal markets that buy firm’s product”, and »environmental performance including the efficient use of resources, emissions and waste« are reported by more than 50-percent of companies. Between 2006 and 2010, only three items: “principal products produced”, “identification of principal markets that buy firm’s product” and “compliance with standards dealing with environmental protection” (which accounts for nine percent of all relational items) managed to achieve a disclosure quality score above 0.50 (see Table A2.17).

Figure 3.3: Relational capital disclosure frequency in 2006 to 2010 period



Source: Own work.

Among the least reported relational items with low disclosure quality (below 0.022) we find “on-line sale”, “company perception”, and “listed environmental managers”, despite an increase in their disclosure quality over the five-year period. The item “listed environmental managers” increased its disclosure quality from zero in 2006 to 0.022 in 2010 while “company perception” increased from 0.011 to 0.022. The item “CSR” managed to exit the category of items with lowest disclosure quality in 2010 when it achieved the value of 0.065. Other relational items that also classify as least reported items with disclosure quality below 0.05 are: “competitors influence”, “suppliers influence and suggestions”, and “brand architecture” (organised system of brands).

With respect to the items that significantly improved their disclosure score from 2006 to 2010 we can find “relationship with media” from 0.043 to 0.118, “awards related to products and corporate brands” from 0.065 to 0.151, “future industry market tendencies” from 0.054 to 0.108, “long-term relationship with suppliers” from 0.043 to 0.075, and “awards for corporate image” from 0.054 to 0.086.

Items on the downward trend in their disclosure quality are: “competitors’ influence” from 0.043 to 0.011, “types of customers” from 0.201 to 0.122, “corporate brand” from 0.065 to 0.043, “suppliers' impact on business decisions and product development” from 0.054 to 0.043, “existence of communication system” from 0.075 to 0.065, “business partnership” from 0.097 to 0.086, “customers’ impact on business decisions and product development” from 0.097 to 0.086, “principal products produced” from 0.591 to 0.556, and “measurement and report of customer satisfaction” from 0.097 to 0.091.

3.4.2.6 IC disclosure performance in relation to firms’ stakeholders

Our study results confirmed some recent studies (Yi & Davey, 2010; Yi, Harun & Sharma, 2014), which revealed that disclosure frequency is not equivalent to the quality of IC reporting. Our study shows that high frequency of IC disclosures doesn’t necessary translate into high quality of disclosure. Data show that while HRM items are the least reported among IC disclosure categories over the five-year period, they show the highest level of quality when disclosed. Their disclosure quality increased gradually over the studied period.

Given that human capital was the highest scoring category regarding the quality of IC disclosure, this suggests that human capital has the highest value for Slovenian manufacturing companies and is most stakeholder relevant. This result may imply that companies enhanced communication especially with their employees to improve the relationship with this important stakeholder group and to keep good relations with the unions and government as these interest groups may exercise the highest level of influence on managerial decisions. Employees have also been officially recognised as significant and legitimate stakeholders of business in legislation, such as legislation on

occupational health and safety, and equal opportunity (Williams & Adams, 2013). The importance of employees to overall business success was also confirmed with many studies (Berman et al., 1999; Jones, 1995).

In addition, many studies found human resource disclosures to be a significant disclosure category, with some highlighting the importance of analysing them in the broader political, social and economic context. These studies also expressed concern regarding the lack of disclosure on topics such as equal opportunities, employee work-life balance and integration of disadvantaged groups into the labour market. Sensitive areas like redundancies were largely ignored or the cost efficiency of such actions and subsequent profits acquired were stressed (Vountisjarvi, 2006; Williams & Adams, 2013).

Our results revealed that Slovenian companies put the highest emphasis to “the number of employees” and “the level of employees’ education” as the key topics identified based on the frequency and quality of disclosures. Certain HRM items increased substantially their level of disclosure quality over the studied period, such as “full and part time employees” from 0.118 to 0.194, “incentive and remuneration system” from 0.102 to 0.161, “health and safety policy of the firm” from 0.312 to 0.473, “training programs for leaders” from 0.065 to 0.097, and “number of disabled employees” from 0.161 to 0.237. These items represent the key areas of greater importance to companies over the studied period. On the opposite side, the poorest reported items within the studied period; "work life balance", "knowledge transfer", and “workers participation in the workplace”, indicate a lack of disclosure about employees’ cooperation and knowledge sharing at work, and employees’ work-life balance in the labour market, which is in line with some international studies. Nevertheless, results of our previous study (see Chapter 1) show that the better performing companies from our sample use knowledge transfer, employees’ cooperation at workplace, as well as special programs aimed at improving work-life balance of employees as an important resource in the process of value creation, which significantly differentiate them from the worse performing companies.

Literature review shows, that behind the motivation of management to disclose information on company’s number of employees is management’s intention to show how they keep unemployment rate down by promoting the creation of jobs to maintain good relations with the employees, community and government. On the other side, firms usually disclose little about the reduction in employees’ numbers and more on good relations with employees as a strategy to motivate the employees and to keep good relations with the the unions. Good relations with the unions are important to avoid tensions, which can rise in case of reducing employees’ number, since they often oppose it. In such circumstances the aim of disclosures may be to manipulate stakeholders’ perception by diverting attention away from job insecurity as well as social costs of early employee termination, and trying to gain social legitimacy by

stressing desirability and appropriateness of such cost-efficiency measures in subsequent profits generated from such actions (Vuontisjarvi, 2006).

In case of the sample companies' disclosures, we can notice the constant increase of disclosure quality of HRM items with respect to the number of employees and the number of newly employed together with the information on the mode of employment (reflected in item "full and part time employees"). On the other side, disclosure quality of item "terminated contracts" decreased in 2010 despite evident reduction of sample companies' employees, that began after the crisis hit Slovenia in 2008 and continued until 2010 (see Table 3.1).

Drawing on the legitimacy theory, this result might imply that in a period of increased reduction of employees, companies reduced their information on employees' job terminations while increasing information on newly employed. This could be seen as a manipulation with stakeholders' perceptions, as if managers wanted to divert attention away from the job insecurity and social costs of early employee termination. But, we should interpret this result within the framework of stakeholder theory and the bargaining power model taking into account the broader social, political and economic context.

According to Voje (2013), in the post-crisis period the bargaining power of workers increased. To maintain a higher level of employment, companies reacted to financial crises by reducing wages rather than employees. This was also possible due to intensified subsidisation within existing state aid schemes to mitigate employment decline, which appeared as a consequence of recession. Therefore, HRM disclosures should also be explained from the perspective of political economy. Namely, the government provided subsidies to companies for employment (a measure identified with the positive effect on employment growth), R&D, and training. This encouraged companies to invest in employees contributing to reduction of unemployment, which was of critical importance to the economy and at the same time helped companies to fulfil its social responsibility. In addition, significant increase of human capital disclosure quality of items: "full and part-time employees", "incentive and remuneration system", together with "motivation of employees", demonstrate companies' intention to retain their employees. In addition, an increase of disclosure quality of items "newly employed" and "investment in employees training", also in the period after the crisis, may imply that companies not only tried to retain their employees but also invested in them, promoting their engagement in the company. This also includes the support of employees for R&D innovation, which could have positive impact on technological progress as participation of employees advances information processing. This is reflected in the increase of the quality of disclosures also in the post crisis period with respect to some R&D activities, like "product and process development", "new product lines", "extensions of existing product lines", and "new services and products". In addition, among organisational items that managed to increase remarkably their

disclosure quality in the studied period from 2006 to 2010, we can mainly find items related to R&D activities: “trademarks” (increase from 0.011 to 0.065), and “new product lines” (increased from 0.011 to 0.054). Some of them, like “awards for R&D activities” increased their quality from zero disclosure score in 2006 to 0.011 in 2010. Other R&D items with a noticeable increase in their disclosure quality level are: “description of basic R&D projects” from 0.097 to 0.147, and “awards for innovative products” from 0.086 to 0.129.

Since **organisational disclosure category** is first in terms of the quantity and second in terms of the quality disclosure, this might indicate that managers of Slovenian companies considered organisational capital attributes, like R&D activities and production processes, to be rather critical resources for value creation and advantage achieving, and therefore favoured the reporting of this type of information. As the analysis revealed, during the studied period Slovenian manufacturing companies favoured disclosures mainly on compliance of firms with quality and improvement processes in terms of accreditations and certifications the companies assessed, investment in process improvement in terms of improved production processes, logistics, distribution methods, and support services, along with disclosures on the firm’s strategy and structure of management and ownership, as these organisational items are most highly reported items in terms of disclosure quality as well as frequency of disclosures.

In the studied period companies emphasised activities aimed at process improvement to reduce cost and improve quality of products, which points to the firms’ orientation towards productivity issues. We can notice that beside remarkable increase of disclosure quality of items related to R&D activities, companies disclosed a lot on accreditations and certifications assessed as a commitment of the firms to product quality, process improvement, and internal measurement of quality, innovation and commitment. Such disclosures may present Slovenian manufacturing companies as being more efficient in the production of products with a more consistent quality. By disclosing this kind of information, the companies may also indicate their ability to become more productive by taking advantage of relationships with their stakeholders, especially employees. In this respect, the median value added per employee as a measure of productivity increased in the observed period (see Table 3.1), suggesting efficient use of human capital.

This result could also be explained from a perspective of political economy in that companies promote values consistent with government agenda. Namely, by disclosing their increased efficiency companies were showing the resistance to economic recession (supported by intensified subsidies in R&D and employees) mediating the interests of the government and the interest of shareholders since being more efficient makes companies more attractive to investors and capital providers. Management proactively

disclosed this kind of information to support powerful groups in the society, which contribute to private interest of a firm.

Moreover, results of our previous study (see Chapter 1) revealed that better performing companies from our sample show higher intensity of R&D activities regarding the introduction of process innovations, improvements of production process and logistics, as well as number of patents. A significantly higher share of better performing companies invested at least two percent of revenue in R&D. Information on investment in R&D reveals the ability of companies to create new knowledge and consequently achieve superior performance. Better performing companies also stated that employees' participation in formal continuous improvement process significantly contributes to company performance.

Further, managers put a lot of attention to the description of management quality, information often required by all stakeholders to become confident about the firm's capability to maintain stability of its operations and the ability to develop its employees and a relationship with customers. The company also illustrates customer orientation through strategy disclosure, which is one of most reported organisational items. Through the strategy firms signal their values, how they differentiate from others in the marketplace, how they take into account the interests of different stakeholders, etc. (Horvat, 2003). Such information may be disclosed to different stakeholder groups with a motivation to contribute to build empathy towards the firm or to align employees' and organisational goals (Abeyskera, 2014). Among others, strategy information shows management's focus on the company goals and business continuity through the years.

Relational capital is the lowest reported category by Slovenian companies in terms of disclosure quality and second most frequently reported disclosure category. We can observe that firms focused strongly on the disclosure of information on principal products, managing market share, as well as compliance with standards dealing with environmental protection. Only these items reflect higher disclosure quality. In addition, companies also devoted a lot of attention to activities in relation to environmental performance, including the efficient use of resources, emissions and waste, as this item could also be found among more frequently reported items over the period 2006-2010, but with slightly lower disclosure quality. In the studied period Slovenian companies started to put greater attention mainly to disclosure of companies' awards related to products and corporate brands (sizeable increase of disclosure quality score from 0.065 to 0.151 with highest disclosure quality in 2010), and to the relationship with media (increase of disclosure quality score from 0.043 to 0.118, with highest score in 2010). Also, high importance is devoted to company's perception (increase of disclosure quality score from 0.011 to 0.022) and future industry market tendencies (increase of disclosure quality score from 0.054 to 0.108).

Disclosures on principal products and managing market share as well as environmental protection may be used to influence the perception of economic, political and social stakeholders (Abeyskera, 2014). By disclosing market share information firms display their ability to operate profitably as it is one of the indicators to show the value of potential assets obtained through the networks of customers' relations (Horvat, 2003; Dzinkowski, 1998; Abeyskera, 2014). Information on higher market share may on the other side draw the attention of society and encourage them to lobby for greater accountability from such firms for the benefit of society and the environment. By taking actions to protect the environment Slovenian manufacturing firms also present themselves as a proactive member of the community who is fulfilling its social responsibility. With disclosures on environment-friendly behaviour firms get closer to groups for environmental and public protection, creating a socially responsible image of the firm, which appears to operate in accordance with social values and norms. In turn, this could also make firms more attractive to investors and help them attract financial investment. Slovenian companies also reported more frequently on environmental performance in terms of efficient use of resources, emissions and waste, which may enhance firm's environmental legitimacy and positive reputation, and consequently yield competitive advantages, as shown by Cormier and Magnan (2013) and Qiu, Shaukat and Tharyan (2014). With disclosures on brand building activities companies build confidence about the firm by showing their capacity to increase wealth for the investors and thus attract investment (Abeyskera, 2014). However, companies still report a lot on past industry tendencies to describe and discuss factors that influenced business trends.

A lack of disclosure could be noticed on topics like "description of competition", "competitors' influence on the company's business", "development of brand architecture" (organised system of brands), and "corporate reputation building", which consists of information on the measurement of company's perceptions among different publics, even though this item managed to increase substantially its disclosure quality from 0.011 in 2006 to 0.022 in 2010. Nevertheless, the better performing companies from our sample significantly differ from the worse performing companies with regards to measurement capabilities that enable them to develop, support and maintain strong brands and corporate image (see Chapter 1).

3.5 Conclusion

The extent and the quality of IC disclosures shows that Slovenian companies are increasing their level of IC disclosure and soliciting various interest groups. This may indicate, as suggested by agency theory, signalling theory, stakeholder theory, legitimacy theory and political economy of accounting (PEA) theory, that many Slovenian manufacturing companies believe that the disclosure of IC-related

information contained in corporate annual reports would be a helpful means to (i) reduce information asymmetry and (ii) highlight legitimacy to various stakeholders.

With an increase of IC-related information companies improve relationship between various stakeholders and the management of the company, align stakeholders' interests with company performance goals, and enable different stakeholders to better monitor corporate executives and company strategy, which is a basis for survival of organisations and a sustainable development (Yi et al., 2011). In such rich disclosure environment employees are more motivated to contribute their knowledge and abilities towards achieving operational efficiency (Lin et al., 2012) as they have better understanding of the "economic" context of the company. In addition, increased voluntary disclosures have positive influence on trust and confidence in the firm's management by employees and other stakeholders (Vergauwen, Bollen & Oirbans, 2007). Improved relationship with the management further facilitates companies in their wage and employment-setting process, since employees' better understanding of the company leads to more realistic wage demands consistent with government's political agenda (Williams & Adams, 2013).

Furthermore, results of our study confirm some recent studies, which revealed that the disclosure frequency is not equivalent to the quality of IC reporting. While the most commonly reported IC category was organisational capital, human capital was the highest scoring category regarding IC disclosure quality. This result indicates that human capital has the highest value for Slovenian manufacturing companies and is most stakeholder relevant. The highest quality level of human capital disclosures indicates that companies enhanced their stakeholder engagement especially with respect to their employees, which could be explained by the stakeholder theory, suggesting that companies use disclosures to respond to the pressure of key stakeholders. Management of Slovenian manufacturing companies enhanced communication especially with their employees to improve the relationship with this important stakeholder and to keep good relations with unions and government as these interest groups may exercise the highest level of influence on managerial decisions. Moreover, investors put higher value to firms that are seen to be more concerned about their relations with firms' employees and which address their responsibilities towards this important stakeholder.

The overall increase in intangible capital disclosures indicates that reporting is proactive rather than reactive process. This could be observed in the case of information disclosure on environmental protection, which help Slovenian manufacturing firms to present themselves as proactive member of the community. Companies also proactively reported information that creates and promotes their image as being more efficient in production of products with more consistent quality, and in the use of their human capital, which makes them more attractive to investors and capital providers. With information on companies' market share and brand building activities studied companies signalled their ability to operate profitably. This can be in turn explained by

the signalling theory, according to which, a voluntary IC disclosure signals the management's desire to disclose its superior business performance to various stakeholders, and consequently strengthen the reputation of the company and its market position (Pivac, Vuko & Cular, 2017).

In addition, positive reputation of the company was also achieved through disclosure on environment-friendly behaviour of firms, which helps Slovenian manufacturing firms to present them as proactive member of community who takes community initiatives like programs to help protect the environment, which in turn enhances their environmental legitimacy. This sort of publicity is valuable as the company that builds the image of good corporate citizen will also receive less resistance from local interest groups. In turn, this could make firms also more attractive to investors and help them attract financial investment.

Moreover, we could also notice that companies might be trying to achieve their legitimacy by diverting community attention from the prevailing negative impact of reducing the number of employees. Since the study period covers unstable and turbulent years in Slovenia, which was hit by financial and economic crisis, we should interpret these results by taking into account broader social, political and economic context in which companies operated. Namely, HRM disclosures revealed that disclosure quality of items with respect to the number of employees as well as newly employed was constantly increasing during the entire studied period (2006-2010). On the opposite side, disclosure quality of the item related to job terminations decreased in 2010 despite evident reduction of companies' employees that began in 2008 when the crisis hit Slovenia. Drawing on the legitimacy theory, this result might be understood as a manipulation with stakeholders' perceptions. Nevertheless, companies substantially increased the importance to following key areas as suggested by an increase in their disclosure quality over the studied period (2006-2010): number of full time and part time employees, as well as motivation of employees, together with incentive and remuneration system, which might indicate intention of companies to retain their employees. In addition, an increase of disclosure quality of items on newly employed, investment in employees' training, also in the period after the crisis, may imply that companies not only tried to retain their employees but also invested in them. Management promoted the engagement of employees in the R&D innovation, which is also reflected in increased quality of certain items related to R&D activities. In addition, the government provided subsidies to companies for employment, R&D, and training, which encouraged companies to invest in employees. This contributed to reduction of unemployment rates, which was of critical importance to economy, and at the same time, helped companies to fulfil their social responsibility. Thus, companies mediated the interests of the government, employees and shareholders by disclosing information on investments in employees, together with the promotion of a corporate image as being more efficient and thus showing the resistance of companies to economic recession.

This was reflected through disclosures on (i) efficiency in production of products with more consistent quality and (ii) more efficient use of companies' human capital, which could make them more attractive to investors and capital providers.

It should be noted that interest groups are interconnected in some aspects due to an influence they exercise over each other. Furthermore, because of the overlapping perspectives of different disclosure theories, we should consider them jointly to provide more insightful explanations for disclosure policies of the firms.

Although the purpose of an annual report is to reduce the negative effects of information asymmetry (Pivac, Vuko & Cular, 2017), we cannot confirm that Slovenian companies effectively managed to achieve this goal over the studied period (2006-2010). The current level of IC disclosure quality cannot be considered high, given that the overall disclosure quality score on the total IC disclosure for all companies in the sample is 0.18 (see Table A2.14) with only 9-percent of items scoring above 0.50. Additionally, the average disclosure quality score for each category of IC (human, organisational and relational capital) in every year of the studied period is also below 0.50. This result suggests that most of the reported IC attributes are expressed in discursive rather than numerical terms, and that Slovenian manufacturing companies are either unable or unwilling to quantify different forms of intangible capital, which would allow their performance evaluation. This means that our result is consistent with previous research on the level of corporate IC reporting (Yi & Davey, 2010, Yi, Harun, & Sharma, 2014). Based on our overall research findings, we can conclude that, although the level of IC disclosure quality is rather low, the increase of IC disclosure quality extends the usefulness of disclosed IC information and indicates that the Slovenian manufacturing companies' are raising their own awareness and commitment to communicate their intangible capital to various stakeholders.

In addition, frequency analysis of IC category disclosures in the period from 2006 to 2010 also revealed a certain stability in communication policies of the studied firms suggesting that Slovenian firms have a consistent and theoretical framework in which to report intangible capital, which is in line with some previous studies on disclosure behaviour that consequently support the validity of one-year analyses (Gibbins, Richardson, & Waterhouse, 1990; Gray, Javad, Power, & Sinclair, 2001; Dainelli et al., 2013).

This research has some limitations. We focused only on large Slovenian companies, not considering small and medium sized companies, which could lead to an incomplete picture of IC disclosures in Slovenia. We used annual reports as the sole secondary data source while ignoring other media of information disclosure, such as websites. The literature revealed that the amount of voluntary information in an annual report can serve as a proxy for the extent of disclosure provided by a firm across all media. Finally, subjectivity was involved in the development of disclosure index framework

and the coding process although it was widely adopted in prior research. Given the limitations of the study, future research could include also small to medium sized companies and employ more coders to improve reliability of data in the process of coding. Other research approaches such as interview or questionnaire survey could be applied to investigate managers' motivation behind their disclosure decisions.

CONCLUSION

The purpose of this joint conclusion is to summarise the findings of the doctoral dissertation. The first chapter investigated whether the better performing Slovenian manufacturing companies possess a higher share of intangible capital and which intangible resources positively differentiate better performing companies than the worse performing companies. To better understand the intangible resources that generate sustainable competitive advantages and lead to superior performance, we investigated how the human, relational and organisational capital in companies forms distinct profiles of resources. By comparing the resource profiles in the better performing companies with those in the worse performing companies, we discovered a tendency of the better performing companies to invest in their intangible capital and the existence of intangible resources that favourably distinguish the successful from less successful companies.

When examining the resource profile of the better performing Slovenian companies, we found that the group of better performing companies possesses a higher share of human capital primarily in terms of developing teamwork skills in employees and abilities to share their knowledge across the company. A higher share of human capital can also be observed through the implementation of certain HRM practices, such as work-life balance programs and health improvement programs. With respect to the organisational capital, the better performing companies significantly differ from those worse performing in terms of higher intensity of R&D activities. With regard to relational capital of firms, the better performing companies possess a higher share of relational capital in terms of their ability to relate with the customers and manage perceptions regarding the image of the firm. These elements are all associated with better performance according to previous research evidence.

We also examined whether the investment in human resource management, marketing activities, information technology, and research and development differs across the identified resource profiles of Slovenian companies as investment in these areas is considered very important for companies to increase their intangible capital base. We found that the group of better performing companies invests significantly more in employee training. Furthermore, a significantly higher share of companies from this group invest at least two percent of revenue in R&D.

The worse performing companies experience a higher impact of customers on their business decisions, implying that they are more customer responsive, which is mainly a characteristic of market driven companies. In contrast to market driving companies, the market driven companies collect information on their customers to assess their future needs but do not attempt to create or change customers' behaviour. Likewise, a higher share of worse performing companies has a private owner with more than a 50-percent ownership.

The results of the study showed that on average a relatively smaller group of superior performing companies holds a significantly higher share of intangible capital on the majority of analysed intangible resources. These IC resources favourably differentiate them from the worse performing companies and provide them with a base for constructing their respective and different competitive advantages needed for superior performance. Therefore, the findings of the study suggest that firms need to increase their overall level of intangible capital to improve their performance.

In the second chapter of the doctoral dissertation, we investigated whether the better performing Slovenian companies disclose more information on the intangible capital resources. We therefore compared the disclosure policies of better performing companies with the disclosure policies of worse performing companies. The results revealed that on average the better performing companies provide more information on all identified intangible capital resources in their annual reports.

With respect to HRM disclosures, the better performing companies reported statistically significantly more information on the implementation of certain HRM practices such as annual performance appraisals for feedback on past employees' performance and disclosures on absentee rates, which is an indicator of occupational health and safety performance. The better performing companies also demonstrated significantly higher relational capital disclosure scores. Namely, the better performing companies showed higher disclosure scores in relation to the development of corporate brands and corporate identity building, customer satisfaction, long-term relationship with suppliers and their influence on business decisions, and in relation to the compliance of companies with environmental standards.

Regarding the organisational capital disclosures, we found that the groups of companies statistically significantly differ on disclosure of R&D activities. Better performing companies are more informative on the number of services and products as well as product innovations, like modification of existing products and introduction of new product lines. They also disclosed statistically significantly higher level of information on investments in R&D activities, description of the R&D department in relation to the number of R&D employees, and awards related to innovative products. The better performing companies also showed higher disclosure scores regarding information provided on employees' participation in internal improvement and technological

innovation projects. In addition, the better performing companies also statistically significantly differ from the worse performing companies in relation to the level of disclosed information on the relationship with the finance providers, such as banks, which could be indicative of companies' performance. On the other side, the group of worse performing companies differs from the group of the better performing ones with respect to the level of information on the future industry and market tendencies, as this group discusses more on factors that could affect companies' results increasing the accuracy of investors' expectations regarding the firms' future operations.

The results of our disclosure policy study suggest that the worse performing companies might reconsider the efficiency of their disclosure practices in order to ascertain whether they truly disclose the relevant information based on the needs of different stakeholders. Namely, this group provided more information on employee demography, which is not of particular importance to investors in assessing the value of the firm and its performance. However, positive signs can also be observed from their current disclosure policy. They discuss more on the future industry and market tendencies that may either positively or negatively affect the company results. This type of information contributes to the accuracy of investors' expectations regarding future economic prospects of the companies.

The comparison of disclosures from annual reports with disclosures from the questionnaires showed that IC disclosures of the better performing companies actually reflect a higher level of intangible investment. Therefore, it can be concluded that the better performing companies communicate relevant information to various stakeholders. This means that the better performing companies use annual reports to signal the above average quality of the firm to various stakeholders. By reporting more on their intangible capital companies improve transparency not only with potential investors, which lowers the risk of being misevaluated, but also between various stakeholders and the management of the company. This helps companies to align interests of different stakeholders with company performance. Such rich disclosure environment enables various stakeholders to better control corporate executives and company strategy, which is a basis for the survival of organisations and a sustainable development in the society. The results of our study are aligned with the results of some previous empirical studies which found that an increased level of intangible investment can result in a higher level of IC disclosure. In addition, our study results confirmed the positive relationship between the extent of voluntary disclosed IC information and companies' leverage, productivity and size with respect to total assets, average number of employees, and sales.

In the third chapter of the doctoral dissertation, we investigated the quantity and the quality of IC information published in annual reports of companies over a five-year period (2006–2010). By examining the disclosure of each IC category separately, we assessed the motivation of the management behind their IC disclosure and the interest

group that was given most of the attention in meeting its information needs. The results of the study revealed a positive trend of IC disclosures in terms of quantity and quality. As suggested by several theories, many Slovenian manufacturing companies believe that the disclosure of IC-related information in corporate annual reports would be a helpful means to (i) reduce information asymmetry, and (ii) highlight legitimacy to various stakeholders. Voluntary IC disclosures reflect the social, political and economic context of the country in which a company operates. In addition, the management proactively reports IC information to mediate the interests of different stakeholders.

Our findings confirmed some recent studies, which revealed that the disclosure frequency is not equivalent to the quality of IC reporting. While the most highly reported IC category in terms of frequency disclosure was organisational capital, human capital was the highest scoring category regarding the quality of IC disclosures.

To explain different aspects of voluntary disclosure made by Slovenian manufacturing firms we employed a number of theoretical disclosure frameworks because there is no specific theory that could explain the motivation for voluntary IC disclosure. The study results can be explained through the following disclosure theories:

a) If firms focus on disclosure of those IC elements that have the highest value and are most stakeholder relevant, the human capital seems to be the most important IC element for Slovenian manufacturing companies. The highest level of quality achieved by human capital disclosures indicates that, over the years, companies enhanced their stakeholder engagement especially with respect to their employees. This result could be explained by the stakeholder theory, suggesting that companies use disclosures to respond to the pressure of employees and improve their relationship to continue to develop in a sustainable manner.
b) The overall increase in intangible capital indicates that reporting is a proactive rather than a reactive process, which is in line with the framework of political economy of accounting theory. This can be observed in the case of environmental protection disclosure, which helps Slovenian manufacturing firms to present themselves as proactive members of the community. Companies also proactively reported information that creates and promotes their image as being more efficient in (i) production of products with a consistent quality, and (ii) use of human capital, which makes them more attractive to investors and capital providers.
c) Accompanied with information on companies' market share and brand building activities, such disclosures send signals on the ability of companies to operate profitably. This can be explained by signalling theory. A voluntary IC disclosure signals the management's desire to reveal its superior business performance to various stakeholders, and consequently strengthen the reputation of the company and its business position.
d) Companies might be trying to achieve their legitimacy by diverting community attention from the prevailing negative impact of reducing the number of employees.

This result could be explained by means of the legitimacy theory. Since the study period covers unstable and turbulent years in Slovenia. We should interpret the study results by taking into account the broader social, political and economic context in which companies operated. The number of employees in the sample companies decreased in 2009 and 2010 due to the impact of financial crisis. The disclosure quality of information related to job terminations in 2010 decreased, while the disclosure quality of information about the total number of employees as well as newly employed was constantly increasing during the entire studied period. These results may indicate the companies' intention not only to retain employees but also to invest in them. Managements promoted the engagement of employees in R&D innovation, which was also reflected in the increase of disclosure quality of some R&D items. This was supported by the government's subsidies for employment, R&D, and training, which encouraged investments in employees. This contributed to the reduction of unemployment rates, which was of critical importance to the economy, and helped companies to fulfil their social responsibility. By disclosing information on investments made in employees, together with the promotion of a corporate image as being more efficient and thus showing the resistance of companies to economic recession, companies mediated the interests of the government, employees and shareholders.

Although the purpose of an annual report is to reduce negative effects of information asymmetry, our results can hardly confirm that Slovenian companies managed to achieve this goal over the studied period (2006–2010). The level of IC disclosure quality cannot be considered high, given that the overall disclosure quality score on the total IC disclosure of sample companies is significantly below 0.5 (values between 0 and 1). In addition, the average disclosure quality score for each IC category in every year of the studied period is also below 0.5. This result suggests that Slovenian manufacturing companies are either unable or unwilling to quantify different forms of intangible capital which would allow their performance evaluation. This means that our result is consistent with previous research on the level of corporate IC reporting. Based on our overall research findings, we can conclude that the increase of IC disclosure quality extends the usefulness of disclosed IC information and indicates that the Slovenian manufacturing companies are raising their own awareness and commitment to communicate their intangible capital to various stakeholders.

Furthermore, we should address some limitations of our research studies. In the doctoral dissertation, we investigated only individual dimensions of intangible capital resources and related IC disclosures. Since intangible resources exhibit complementarities and enhance firm performance through their interactions, it is hard to empirically identify unique resources and attribute superior performance to specific assets. The exploration of these interactions between and among intangible resources and their contribution to the success of the firm is a challenge for future research. It is therefore not enough only

to disclose individual intangible resources but also to show how these resources and capabilities are applied within the company. Hence, future research could focus on the disclosure of resource interaction to correctly assess and evaluate the company's opportunities to create value.

We used annual reports as the sole secondary data source while ignoring other media of information disclosure, such as websites. Although literature revealed that the amount of voluntary information in an annual report can serve as a proxy for the extent of disclosure provided by a firm across all media. Finally, subjectivity was involved in the development of disclosure index framework and the coding process, although it was widely adopted in prior research as well. These limitations result from the disclosure index approach itself and cannot be resolved with any known methodology. As these limitations apply to all index-based studies, the future research could employ more coders to improve the reliability of data in the coding process. Moreover, other research approaches such as an interview or questionnaire survey could be applied to investigate managers' motivation behind their disclosure decisions.

Furthermore, we focused only on large Slovenian companies, which could lead to an incomplete general picture of IC disclosures in Slovenia. The future research could also include small and medium sized companies. In addition, since the results were obtained from a relatively small sample of manufacturing firms operating in Slovenia, they may not be generalizable beyond the immediate domain. Given that the companies from Croatia, Serbia and Macedonia do not prepare comprehensive annual reports by providing mostly financial information, we hope that the results of our study will raise awareness in companies from the region about the need and willingness to voluntarily disclose intangible capital information and improve their voluntary disclosure practices. Further studies should try to extend the research on voluntary IC disclosure to other countries in the region. The use of our IC disclosure index and the applied scoring system could allow comparison on a wider regional basis.

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APPENDICES

Appendix 1: Summary in Slovenian language / Daljši povzetek disertacije v slovenskem jeziku

V disertaciji proučujemo razmerje med prostovoljnim razkrivanjem informacij o neotipljivem kapitalu v letnih poročilih slovenskih proizvodnih podjetij in poslovno uspešnostjo podjetij, obsegom neotipljivega kapitala, motivacijo managementa za prostovoljno razkrivanje informacij in potrebami glavnih deležnikov podjetja po razkrivanju informacij o neotipljivem kapitalu.

Enotne in splošno sprejete opredelitve pojma neotipljivi kapital ni moč zaslediti. Izraz neotipljivi kapital se pogosto uporablja namesto izraza intelektualni kapital, neopredmetena sredstva ali sredstvo v obliki znanja. Nanaša se predvsem na nematerialnost in »nevidnost« elementov neotipljivega kapitala, na njihovo povezavo z znanjem in na vlogo, ki ga ima neotipljivi kapital kot vir ustvarjanja novega znanja in vzdržnih konkurenčnih prednosti (angl. *sustainable competitive advantages*) podjetja (Moldaschl in Fischer, 2004). Izraz neotipljivi kapital se uporablja predvsem v literaturi s področja poslovodenja, intelektualni kapital v literaturi s področja prava, neopredmetena sredstva v računovodstvu, ekonomisti pa pogosto uporabljajo izraz znanje. Zaradi različnih vidikov uporabe termina v različnih interesnih skupinah je bilo za neotipljivi kapital predlaganih več različnih klasifikacijskih sistemov. Najpogosteje uporabljana klasifikacija neotipljivega kapitala sledi modelu treh vrst oziroma kategorij (Edvinsson in Malone, 1997). Po tem modelu je neotipljivi kapital opredeljen na ravni posameznikov (spretnosti in izkušnje), organizacije (politike, postopki in rutine) in odnosov (z dobavitelji, strankami in drugimi interesnimi skupinami) (Bharadwaj, 2000). V disertaciji sledimo tej klasifikaciji neotipljivega kapitala in ga torej opredeljujemo kot človeški kapital, organizacijski kapital in relacijski kapital.

V zadnjih dveh desetletjih se je povečal pomen neotipljivega kapitala kot vira ustvarjanja vzdržnih konkurenčnih prednosti. Pri večini dejavnosti prispevek neotipljivega kapitala pri ustvarjanju vrednosti in uspešnem poslovanju podjetij celo presega prispevek otipljivega kapitala (Bose in Oh, 2003; Cohen in Kaimenakis, 2007; Kaufmann in Schneider, 2004; St-Pierre in Audet, 2011; Zeghal in Maaloul, 2011). Inovacije, digitalne in komunikacijske tehnologije, družbene mreže in povezave, kakovost ter način organiziranja človeškega kapitala postajajo glavni dejavniki rasti podjetij. Zato podjetja, ki poskušajo doseči boljši poslovni uspeh, poudarjajo pomen obvladovanja neotipljivega kapitala. Uspešna podjetja se od manj uspešnih vse bolj razlikujejo po ustreznosti izbire različnih vrst neotipljivega kapitala in sposobnosti ustvarjanja vzdržnih konkurenčnih prednosti skozi njihovo medsebojno sodelovanje (Lippman in Rumelt, 2003; Youndt, Subramaniam in Snell, 2004).

Vpliv neotipljivega kapitala na poslovno uspešnost sovpada s teorijo virov (angl. *resource based theory*), ki pravi, da mora podjetje za doseganje nadpovprečne uspešnosti učinkovito prepoznati in obvladovati svoje vire neotipljivega kapitala (Penrose, 1959, 1980; Kristandl in Bontis, 2007; Raja Adzrin, Abu Thahir in Maisarah, 2009; Lewicka, 2011). Le z ustvarjanjem strateških virov neotipljivega kapitala lahko

namreč ustvarja vzdržne konkurenčne prednosti, ki mu omogočajo ohranjanje nadpovprečno visoke stopnje uspešnosti (Ahmad in Mushraf, 2011; Sydler et al., 2014). Zato morajo podjetja analizirati lastne vire in kompetence, da bi ugotovila njihov strateški pomen in se uspešno razlikovala od drugih podjetij na trgu (Camelo-Ordaz et al., 2003).

Zaradi vse večjega pomena, ki ga ima neotipljivi kapital za uspeh podjetij, je postalo razkrivanje informacij o neotipljivem kapitalu različnim deležnikom podjetja pomembno. Prostovoljna razkritja imajo vse večjo težo tudi zaradi tega, ker v tradicionalnem računovodskem modelu niso pripoznana vsa neotipljiva sredstva (Beattie in Thomson, 2007). Ta model se osredotoča namreč na preteklo poslovanje in ne upošteva vseh kazalnikov pričakovanega poslovanja, ki zagotavljajo več informacij o neotipljivem kapitalu. Zaradi računovodske zadržanosti je vrednotenje neotipljivega kapitala težavno predvsem zaradi izzivov, povezanih z njihovim prepoznavanjem, merjenjem in kontrolo.

Zaradi nezmožnosti pripoznanja nekaterih vrst neotipljivega kapitala vlagatelji in splošna javnost ne prejemajo popolnih informacij o poslovanju podjetja (Beattie in Thomson, 2007). Zato je lahko prikaz poslovne uspešnosti podjetja nepopoln. Posledice nepopolne računovodske obravnave neotipljivega kapitala se kažejo predvsem v informacijski asimetriji, višjih stroških kapitala in sistematičnem podcenjevanju neotipljivega kapitala ter zaradi tega nezadostnih naložbah vanj (Zeghal in Maaloul, 2011; Lev, 2001; Healy in Palepu, 2001; Botosan in Plumlee, 2002). Z vse večjim pomenom neotipljivega kapitala je razkrivanje informacij o neotipljivem kapitalu postalo izjemno pomembno za pošteno predstavitev vseh aktivnosti podjetja in za ustvarjanje realnejše podlage za ocenjevanje uspešnosti podjetja.

Pregled literature kaže, da podjetja prepoznavajo koristi prostovoljnega razkrivanja informacij o neotipljivem kapitalu. Management razkriva informacije, da bi izboljšal transparentnost poročanja z različnimi deležniki podjetja, s čimer zmanjšuje obstoječo asimetrijo informacij, kar posledično zmanjšuje tveganje napačnega ovrednotenja podjetja (Yi in Davey, 2010; Guthrie in Petty, 2000; Schneider in Samkin, 2008; Vergauwen et al., 2007; Pablos, 2002). Uspešna podjetja s poročanjem o neotipljivem kapitalu premagujejo mehanizem negativne izbire (angl. *adverse selection mechanism*), saj se želijo razlikovati od manj uspešnih na trgu (Pae, 2002; Verrecchia, 1983; Welker, 1995). V literaturi je poudarjen tudi pomen razkritij o neotipljivem kapitalu zaradi učinkovitosti razporejanja sredstev. Poročanje o neotipljivem kapitalu ima vlogo samoanalize, ki podjetjem omogoča prepoznavanje lastnega neotipljivega kapitala in povezav med različnimi vrstami neotipljivega kapitala, pa tudi njegovega prispevka k organizacijski uspešnosti. Podjetja nato lažje ocenijo možnosti notranje in zunanje rasti ter lahko bolje opredelijo svoj strateški položaj, zato je uporaba informacij o neotipljivem kapitalu pomembna tudi za upravljanje in sprejemanje odločitev. Razkritja naj bi odražala vire neotipljivega kapitala, ki se zdijo managerjem pomembni v procesu ustvarjanja vrednosti, zato naj bi bil osnovni motiv poročanja posredovanje signalov o pomembnosti posameznih virov različnim deležnikom podjetja (Vergauwen, Bollen in

Oirbans, 2007). Učinkovitost poročanja je tako odvisna predvsem od interesov poslovodstva in potreb različnih deležnikov podjetja po informacijah, ki jih poslovodstvo mora upoštevati. Deležniki lahko namreč podjetju bodisi pomagajo doseči zastavljene cilje bodisi ustvarijo odpor in otežijo ali celo onemogočijo uresničitev njegovega poslanstva (Hut, 2012).

Podjetja za sporočanje pomembnih informacij različnim deležnikom pogosto uporabljajo letna poročila (Guthrie in Petty, 2000; Yi in Davey, 2010). Vendar pa empirične ugotovitve kažejo neskladno razmerje med obsegom razkritih informacij o neotipljivem kapitalu v letnih poročilih in obsegom neotipljivega kapitala v podjetjih (Williams, 2001; Slapničar, 2006). Zato je eno od vprašanj, ki vzbuja zanimanje v strokovni razpravi o namenu razkrivanja informacij o neotipljivem kapitalu, ali podjetja poročila zares uporabljajo za posredovanje ustreznih informacij deležnikom ali pa jih uporabljajo kot orodje tržnega komuniciranja. V slednjem primeru podjetja s posredovanimi informacijami odvračajo pozornost javnosti in vlagateljev od negativnega vpliva aktivnosti podjetja ali slabega poslovanja.

Zakon o gospodarskih družbah v Sloveniji zahteva, da vsako podjetje, vključno z bankami in zavarovalnicami, pripravlja posamezne in konsolidirane računovodske izkaze v skladu s slovenskimi računovodskimi standardi (Svetovna banka, 2017). Slovenija še ni sprejela nobenih standardov ali pravil, ki bi poleg obveznih razkritij določala vrsto in vsebino razkrivanja prostovoljnih informacij v letnih poročilih.

Glede na pomen neotipljivega kapitala in prostovoljnih razkritij za uspešnost poslovanja podjetij nas v doktorski disertaciji zanima: (1) Ali imajo uspešna slovenska proizvodna podjetja v lasti več neotipljivega kapitala? (2) Kateri viri neotipljivega kapitala pozitivno razlikujejo uspešnejša podjetja od manj uspešnih podjetij? (3) Ali uspešna slovenska proizvodna podjetja prostovoljno razkrivajo več informacij o neotipljivem kapitalu? (4) Kakšne so glavne razlike v politikah poročanja med uspešnimi in manj uspešnimi podjetji? (5) Ali obseg in kakovost poročanja o neotipljivem kapitalu v obdobju 2006–2010 narašča? (6) Kakšna je motivacija vodstva za razkrivanje informacij o neotipljivem kapitalu? (7) Kateri interesni skupini je v obravnavanem obdobju namenjeno največ pozornosti za izpolnjevanje njenih potreb po informacijah?

V doktorski disertaciji so bili uporabljeni primarni in sekundarni podatki. Primarni podatki so bili pridobljeni v okviru raziskovalnega projekta *Analiza investicij v otipljivi in neotipljivi kapital podjetij z vidika graditve konkurenčnih prednosti slovenskih podjetij, šifra J5-4169*. Med izvedbo projekta je raziskovalna skupina razvila vprašalnike za analizo virov neotipljivega kapitala slovenskih proizvodnih podjetij, ki obravnavajo različne vidike neotipljivega kapitala. Testiranje vprašalnikov je pokazalo, da manjša podjetja po večini niso zagotovila zahtevanih podatkov predvsem zaradi pomanjkanja organizacijskih enot, ki bi zbirale podatke o neotipljivem kapitalu. Zato smo se v raziskavi osredotočili na večja slovenska proizvodna podjetja. Velika podjetja namreč lažje izkoriščajo ekonomijo obsega za pridobivanje neotipljivega kapitala in so lahko bolj učinkovita pri zaščiti neotipljivega kapitala ter zato tudi bolj odprta za

investicije v neotipljivi kapital. Bolj kot mala podjetja so tudi pripravljena sprejemati tveganja za investicije v neotipljivi kapital (Arrighetti et al., 2014), poleg tega pa so velika podjetja tudi bolj nagnjena k obsežnejšemu razkrivanju informacij o neotipljivem kapitalu (Bozzolan, Favotto in Ricceri, 2003). Velika podjetja so bolj izpostavljena interesu javnosti in s tem bolj pod nadzorom različnih interesnih skupin, kar jih sili v usklajevanje svojih vrednot z družbenimi vrednotami (Lu in Abeysekera, 2014). Pritisk po razkrivanju različnih vrst informacij o neotipljivem kapitalu je pri teh podjetjih močnejši (Dainelli et al., 2013). V skladu s tem je pričakovati, da bodo velika podjetja imela v lasti več neotipljivega kapitala, saj imajo več sredstev za podpiranje novih pobud in pokrivanje stroškov poročanja kot manjša podjetja (Meek, Roberts in Gray, 1995).

Anketne vprašalnike smo poslali 364 velikim slovenskim proizvodnim podjetjem. V analizo smo vključili 93 podjetij, ki so podala večino odgovorov o različnih vrstah neotipljivega kapitala. Za ta proizvodna podjetja smo zbrali letna poročila za obdobje 2006–2010, iz katerih smo pridobili sekundarne podatke.

Na podlagi analize vseh zbranih podatkov se z rezultati doktorske disertacije izpostavljajo tisti viri neotipljivega kapitala, ki uspešnejša podjetja razlikujejo od manj uspešnih. Da bi dosegla vzdržno konkurenčno prednost, morajo podjetja razumeti, katere ključne kompetence in vire neotipljivega kapitala posedujejo. To razumevanje jim nato omogoča izbiro ustrezne strategije z najboljšim ekonomskim donosom. Razumevanje ključnih virov neotipljivega kapitala z zmožnostjo ustvarjanja vzdržnih konkurenčnih prednosti, ki opredeljujejo uspešna podjetja in njihovo nagnjenost k investiranju v neotipljivi kapital, je lahko ključnega pomena za managerje in oblikovalce politik. Prav tako bi lahko bili rezultati koristni za vse druge deležnike podjetij, tj. za razumevanje razmerja med obsegom prostovoljnih razkritij in uspehom poslovanja podjetja. Rezultati naše študije lahko pomagajo podjetjem razumeti, kako s poročanjem o neotipljivem kapitalu kot pomembnem dejavniku poslovne rasti na najboljši način predstaviti edinstven proces ustvarjanja vrednosti. S poročanjem o neotipljivem kapitalu slovenska proizvodna podjetja dvigujejo raven informacij o podjetju, ki jih razkrivajo svojim notranjim in zunanjim deležnikom. Boljše razumevanje podjetja pa prispeva k boljšemu vrednotenju poslovanja podjetja in k povečanju zvestobe kupcev in dobaviteljev, pa tudi k večji motivaciji zaposlenih, da svoje znanje in sposobnosti uporabljajo za izboljšanje operativne učinkovitosti. Poleg tega ima poročanje o neotipljivem kapitalu vlogo samoanalize, na podlagi katere lahko podjetja lažje in bolj zavestno izberejo ustrezne strategije in ocenijo svoje priložnosti za rast.

Naša študija prispeva k teoretičnim spoznanjem o doseganju vzdržne konkurenčne prednosti na podlagi izkoriščanja neotipljivega kapitala podjetja in nadgrajuje obstoječe študije o prostovoljnih razkritjih informacij o neotipljivem kapitalu. Prav tako preusmerja pozornost z raziskav o dejavnikih, ki vplivajo na prostovoljna razkritja podjetij, na raziskave o razmerju med prostovoljnimi razkritji informacij o neotipljivem kapitalu in uspešnostjo poslovanja podjetij. Prispeva tudi k obstoječi literaturi o

prostovoljnih razkritjih, ki so namenjena različnim notranjim in zunanjim deležnikom, ne samo vlagateljem. Študija prispeva tudi k obstoječim primerjalnim študijam o obsegu in vrstah prostovoljno razkritih informacij o neotipljivem kapitalu v letnih poročilih podjetij, poleg tega pa poskuša obogatiti omejeno število raziskav z uporabo vzdolžnega pristopa (angl. *longitudinal approach*) (Campbell in Rahman, 2010; Wagiciengo in Belal, 2012). Medtem ko je večina preteklih študij ocenjevala le obseg razkritij, smo z našo raziskavo proučili obseg in kakovost razkritij o neotipljivem kapitalu. Predhodne raziskave razkritij o neotipljivem kapitalu se pogosto osredotočajo na razvite države (npr. Goh in Lim, 2004; Ensslin in De Carvalho, 2007; Singh in Kansal, 2011), medtem ko rezultati naše raziskave prispevajo k rezultatom raziskav držav v razvoju.

Disertacija se najprej osredotoča na prisotnost posameznih strateških virov neotipljivega kapitala, primerja profile virov med uspešnejšimi in manj uspešnimi podjetji ter izpostavlja nagnjenost podjetij k investicijam v neotipljivi kapital. V drugem poglavju prikaže razlike v obsegu razkritij med uspešnejšimi in manj uspešnimi podjetji na podlagi analize poročanja slovenskih podjetij. V tretjem poglavju predstavi trend gibanja razkritij o neotipljivem kapitalu z vidika obsega, kakovosti in namena v obdobju 2006–2010. Disertacija se zaključi s skupnim zaključkom.

Ali imajo uspešna podjetja več neotipljivega kapitala: primer Slovenije

V prvem poglavju doktorske disertacije je v skladu s teorijo virov podana predpostavka, da imajo uspešna podjetja v lasti več človeškega, relacijskega in organizacijskega kapitala, ki jim zagotavlja podlago za ustvarjanje različnih konkurenčnih prednosti, potrebnih za doseganje boljšega poslovanja. Analizirali smo razmerje med uspešnostjo poslovanja slovenskih proizvodnih podjetij in obsegom različnih vrst neotipljivega kapitala.

V študiji uporabljamo primarne podatke, pridobljene z anketnimi vprašalniki, za leto 2009, ki obravnavajo različne vidike neotipljivega kapitala, tj. zaposleni (HRM), blagovne znamke, relacijski kapital, raziskave in razvoj (R&R), ekološki kapital, informacijska tehnologija (IT) in interesne skupine. Za razmejitev med bolj in manj uspešnimi podjetji smo uporabili metodo razvrščanja v skupine (angl. *cluster analysis*) na finančnih podatkih za leto 2009. Metoda razvrščanja v skupine je v prvotnem vzorcu 93 podjetij izpostavila štiri podjetja kot morebitno neprimerljiva (angl. *outliers*), zato so bila ta izločena iz nadaljnje obravnave. Na podlagi analize smo oblikovali dve skupini, in sicer skupino uspešnejših in skupino manj uspešnih podjetij.

Z uporabo t-testa smo s podatki iz vprašalnikov preverili razlike med skupinama po organizacijskih značilnostih in deležu neotipljivega kapitala. S primerjavo nabora in obsega posameznih virov med obema skupinama je mogoče ugotoviti nagnjenost podjetij k investicijam v določeno vrsto neotipljivega kapitala ter opredeliti tiste vire neotipljivega kapitala, zaradi katerih se podjetja med seboj razlikujejo po uspešnosti.

Na podlagi rezultatov analize ugotavljamo, da ima sorazmerno manjša skupina uspešnejših podjetij v povprečju statistično značilno večji delež neotipljivega kapitala,

zaradi katerega se pozitivno razlikuje od manj uspešnih podjetij in ki ji omogoča podlago za izgradnjo podjetju lastnih in drugačnih konkurenčnih prednosti, potrebnih za doseganje boljšega poslovanja. Ta skupina podjetij statistično značilno več investira v razvoj človeških in organizacijskih sposobnosti, kar je zelo pomembno z vidika razvoja lastnega neotipljivega kapitala.

V zvezi s človeškim kapitalom se pojavlja razlika pri timskem delu ter usposabljanju in spodbujanju zaposlenih, da svoje znanje delijo z ostalimi. Do razlik prihaja tudi pri izvajanju nekaterih programov, namenjenih zdravju zaposlenih, in vzpostavljanju ravnotežja med službenim in zasebnim življenjem zaposlenih. Po organizacijskem kapitalu se uspešnejša in manj uspešna podjetja statistično značilno razlikujejo v lastniški strukturi ter v vlaganju v raziskovalno-razvojno dejavnost. Uspešna podjetja imajo večji delež raziskovalno-razvojnih dejavnosti, kar se odraža tudi v večjem številu pridobljenih patentov. Kar zadeva relacijski kapital podjetij, ima skupina uspešnejših podjetij bolj razvite sposobnosti upravljanja s podobo podjetja.

Uspešnejša podjetja so strateško usmerjena v razvoj tistih ključnih sposobnosti in kompetenc, ki niso odvisne od znanja posameznih zaposlenih, temveč so del organizacije. Z razvojem delovnih razmer, ki spodbujajo sodelovanje in izmenjavo znanja med zaposlenimi, podjetja krepijo timsko delo in povečujejo soodvisnost med zaposlenimi ter tako ohranjajo znanje v podjetju. Obenem se zaposleni učijo in povečujejo človeški kapital ter ustvarjajo organizacijsko znanje kot temelj organizacijskega učenja in kopičenja znanja v podjetju. Intenzivno usposabljanje zaposlenih prispeva k sprejemanju in osvajanju skupnih vrednot podjetja, kar posledično vpliva na razvoj organizacijskega kapitala. Za ravnanje z viri podjetja je bistvenega pomena tudi ustvarjanje in ohranjanje dobrega ugleda podjetja z namenom privabljanja in ohranjanja kakovostnega kadra. Podjetja z dobrim ugledom imajo zaradi večjega zaupanja v vodstvo podjetja ter njegove izdelke in storitve bolj zveste kupce in dobavitelje, kar prispeva k povečanju prodaje in posledično k večji uspešnosti podjetja.

Pri manj uspešnih podjetij imajo kupci statistično značilno večji vpliv na poslovne odločitve. To je predvsem značilnost tistih podjetij, ki so tudi bolj tržno usmerjena (angl. *market-driven companies*) (Barlow Hills in Shikhar, 2003) in ki o svojih strankah sicer zbirajo informacije za predvidevanje njihovih prihodnjih potreb, vendar pa ne ustvarjajo ali spreminjajo vedenja kupcev. V povprečju je med manj uspešnimi podjetji večji delež takšnih, kjer ima zasebni lastnik več kot 50 odstotkov lastništva (prevladujoči lastniški delež).

Rezultati študije torej kažejo, da bi morala vodstva podjetij nameniti precej pozornosti analiziranju in prepoznavanju ključnih virov neotipljivega kapitala in njihovih vlog v podjetju. Na tak način si lahko v podjetju bolj prizadevajo za razumevanje lastnih prednosti in slabosti, managerji pa lahko učinkoviteje razporejajo sredstva tistim virom neotipljivega kapitala, ki jih je mogoče enostavno spremeniti v znanje in sposobnosti, na katerih podjetje gradi svoje vzdržne konkurenčne prednosti. Izkoriščanje odnosov med posameznimi viri neotipljivega kapitala ustvarja sinergije, ki prispevajo k

ustvarjanju vzdržne ekonomske rente. Ugotovitve naše študije so skladne z ugotovitvami drugih študij, ki podjetjem priporočajo dvig ravni neotipljivega kapitala za izboljšanje uspešnosti poslovanja (Chen et al., 2004; Youndt et al., 2004).

Ali uspešna podjetja prostovoljno razkrivajo več informacij o neotipljivem kapitalu?

V drugem poglavju doktorske disertacije smo analizirali isti vzorec 89 podjetij kot v prvem poglavju. Podana je predpostavka, da skupina uspešnejših podjetij uporablja prostovoljno razkrivanje informacij o neotipljivem kapitalu za posredovanje signalov udeležencem na trgu glede nadpovprečnega poslovanja podjetja, da bi se na tak način razlikovali od ostalih in zmanjšali asimetrijo informacij in s tem agentske stroške. V tej študiji proučujemo politike prostovoljnega poročanja slovenskih proizvodnih podjetij z uporabo dveh ekonomskih teorij: (1) po teoriji agentov (angl. *agency theory*) agenti (managerji) povečujejo stopnjo razkritij svojim principalom (lastnikom) s ciljem zmanjšanja asimetrije informacij in s tem agentskih stroškov; (2) po teoriji signaliziranja (angl. *signalling theory*) uspešnejša podjetja uporabljajo prostovoljno razkrivanje informacij o neotipljivem kapitalu kot signal udeležencem na trgu glede nadpovprečnega poslovanja podjetij, in sicer z namenom razlikovanja od ostalih.

Raziskali smo razmerje med obsegom prostovoljnih razkritij o neotipljivem kapitalu in uspešnostjo podjetja, opredeljeno z nizom kazalnikov, ki so hkrati pomembni dejavniki politike poročanja podjetja, in analizirali glavne razlike v politikah poročanja med uspešnejšimi in manj uspešnimi podjetji. V študiji uporabljamo sekundarne podatke, pridobljene iz letnih poročil podjetij za leto 2009, ki so časovno primerljivi z rezultati študije iz prvega poglavja. Kot metodo zbiranja podatkov smo uporabili analizo vsebine, ki zajema proučitev poslovnega dela letnih poročil in kodiranje vsebine o neotipljivem kapitalu po izbranih postavkah, vključenih v indeks razkritij.

Da bi razvili indeks razkritij, smo pregledali ustrezno literaturo in določili vire neotipljivega kapitala ter z njimi povezane postavke, ki so v literaturi najpogosteje obravnavane. Indeks razkritij sestavlja 89 postavk. Pri končni izbiri postavk neotipljivega kapitala smo upoštevali tudi postavke, vključene v vprašalnike za analizo virov neotipljivega kapitala slovenskih proizvodnih podjetij.

Vsaki postavki neotipljivega kapitala smo glede na naravo podane informacije, tj. opisna ali številska, dodelili oceno razkritja (angl. *disclosure score*) v vrednosti od 0 do 3. Številski informaciji je bila dodeljena višja vrednost ocene, saj je podrobnejša informacija bolj uporabna v procesu odločanja in ima večji učinek na ugled in verodostojnost poročanja (Bottosan, 1997). Z uporabo t-testa smo s podatki iz indeksa razkritij preverili razlike v obsegu razkritih informacij o neotipljivem kapitalu med skupinama.

Na področju razkrivanja HRM vsebin ugotavljamo, da uspešnejša podjetja pogosteje poročajo o izvajanju nekaterih HRM programov, kot so letni pogovori o uspešnosti zaposlenih, ter o stopnji odsotnosti z dela kot kazalniku uspešnosti izvajanja programov o zdravju zaposlenih. Manj uspešna podjetja podajajo več informacij o demografiji

zaposlenih, ki so pri ocenjevanju vrednosti podjetja in njegovega poslovanja manj pomembne, vendar razlika med uspešnejšimi in manj uspešnimi podjetji v tem primeru ni statistično značilna.

Uspešnejša podjetja razkrivajo več informacij o relacijskem kapitalu, zlasti v povezavi z razvojem blagovne znamke in podobe podjetja, zadovoljstvom kupcev, dolgoročnim odnosom z dobavitelji in njihovim vplivom na poslovne odločitve podjetja ter skladnostjo podjetij z okoljskimi standardi. Manj uspešna podjetja podajajo več informacij o prihodnjih panožnih in tržnih gibanjih. Ta skupina podjetij razkriva več informacij o dejavnikih, ki bi lahko ugodno ali neugodno vplivali na poslovanje podjetja v prihodnosti, kar vpliva na večjo točnost napovedovanja prihodnjega poslovanja podjetja.

Na področju organizacijskega kapitala uspešnejša podjetja razkrivajo precej več informacij o številu produktov in storitev ter inovacijah izdelkov, kot so spremembe obstoječih izdelkov in uvedba novih proizvodnih linij. Razkrivajo tudi več informacij o vlaganju v raziskave in razvoj, o opisu oddelka za raziskave in razvoj in o prejetih nagradah za inovativne izdelke. Uspešnejša podjetja poleg tega razkrivajo več informacij tako o sodelovanju zaposlenih v projektih za notranje izboljšave in tehnološke inovacije kot o odnosih z bankami.

Da bi ugotovili, ali podjetja letna poročila uporabljajo za posredovanje ustreznih informacij za zmanjševanje asimetrije informacij ali kot marketinško orodje, smo primerjali informacije, razkrite v letnih poročil in v vprašalnikih. Na podlagi rezultatov ugotavljamo, da uspešnejša podjetja letna poročila uporabljajo za signaliziranje nadpovprečne kakovosti podjetja. Obsežnejše poročanje o neotipljivem kapitalu podjetja zmanjšuje asimetrijo informacij za morebitne vlagatelje, znižuje tveganje napačnega ovrednotenja in izboljšuje transparentnost med managerji ter različnimi deležniki podjetja. Manj uspešna podjetja poročajo manj tudi o tistih neopredmetenih sredstvih, za katere je analiza ključnih virov neotipljivega kapitala pokazala, da jih imajo v lasti v večjem obsegu kot uspešnejša podjetja. Manj uspešna podjetja bi tako morala proučiti učinkovitost svojih praks poročanja z namenom ugotovitve, ali razkrivajo ustrezne informacije za zadovoljitev potreb različnih deležnikov podjetja.

Vzdolžna analiza prostovoljnih razkritij neotipljivega kapitala slovenskih podjetij

V tretjem poglavju disertacije analiziramo obseg, kakovost in vrsto poročanih informacij o neotipljivem kapitalu 93 večjih slovenskih proizvodnih podjetij v obdobju 2006–2010, da bi ugotovili, ali so podjetja v proučevanem obdobju izboljšala transparentnost in komunikacijo z različnimi deležniki. S proučevanjem razkritij o posameznih vrstah neotipljivega kapitala analiziramo motivacijo vodstva za razkrivanje informacij o neotipljivem kapitalu in ugotavljamo, kateri interesni skupini je za izpolnjevanje njenih potreb po informacijah namenjeno največ pozornosti.

Za razlago različnih vidikov prostovoljnega razkrivanja informacij o neotipljivem kapitalu v letnih poročilih podjetij smo uporabili številne teoretične okvirje, saj

univerzalne teorije, ki bi lahko pojasnila motivacijo za prostovoljno razkritje informacij o neotipljivem kapitalu, ni. Najpogosteje uporabljane teorije o prostovoljnem razkrivanju v literaturi so teorija agentov, teorija signalov, teorija virov, teorija deležnikov (angl. *stakeholder theory*), teorija politične ekonomije računovodstva (angl. *political economy of accounting theory*) in teorija legitimnosti (angl. *legitimacy theory*). Teorija agentov in teorija signalov se osredotočata predvsem na poročanje o neotipljivem kapitalu v povezavi s finančno uspešnostjo podjetja. Razkritja informacij o neotipljivem kapitalu so namenjena predvsem ponudnikom kapitala, kot so delničarji in vlagatelji. Druge teorije se osredotočajo bolj na poročanje, ki upošteva tudi potrebe različnih interesnih skupin in družbene vrednote okolja, v katerem podjetje posluje.

V študiji smo uporabili teorijo deležnikov in legitimnosti za razlago razkritij o neotipljivem kapitalu kot mehanizmom, ki ga management uporablja za predstavitev podjetja kot družbeno odgovorne institucije, ki deluje v skladu s standardi in vrednotami družbe, in sicer z namenom pridobitve njene podpore. Teorija deležnikov ponuja okvir za razlago razkritij o neotipljivem kapitalu z vidika pomembnosti posamezne interesne skupine. Teorija legitimnosti predstavlja podlago za predstavitev razkritij o neotipljivem kapitalu kot orodjem, s katerim management vpliva na dojemanje interesnih skupin, tako da si zagotovi legitimnost za svoje delovanje. Teorija politične ekonomije računovodstva omogoča razlago razkritij kot rezultata pogajanj ekonomskega, političnega in družbenega okolja ter kot poskus uravnoteženja interesov različnih interesnih skupin. Teorija agentov in teorija signalov sta uporabljeni pri pojasnilu razkritij kot sredstva za zmanjševanje asimetrije informacij in kot signalov managementa udeležencem na trgu, predvsem za poudarjanje nadpovprečnega poslovanja podjetij.

V študiji uporabljamo sekundarne podatke, pridobljene iz letnih poročil podjetij v obdobju 2006–2010. Da bi proučili obseg, kakovost in vrsto prostovoljnih razkritij neotipljivega kapitala, smo uporabili analizo vsebine in metodologijo indeksa razkritij (glej drugo poglavje). Obseg razkritij smo merili s številom razkritih informacij posamezne postavke o neotipljivem kapitalu. Kakovost razkritij smo merili po naslednjem postopku: 1) vsaki postavki neotipljivega kapitala smo dodelili oceno razkritja (angl. *disclosure score*) s pomočjo 4-stopenjske merilne lestvice (vrednosti od 0 do 3); 2) po opravljenem ocenjevanju posameznih postavk smo na podlagi študije Yi in Davey (2010) vsaki postavki dodelili utež glede na doseženo frekvenco pojavnosti posamezne vrste razkritij v celotnem obsegu razkritij; in 3) povprečni rezultati so bili nazadnje normalizirani na lestvici od nič (0) do ena (1).

Na podlagi rezultatov študije lahko ugotovimo, da sta v obravnavanem obdobju obseg in kakovost razkritih informacij o neotipljivem kapitalu rasla. V skladu s prevladujočimi teorijami rezultat verjetno kaže, da številna slovenska proizvodna podjetja razkritja informacij o neotipljivem kapitalu v letnih poročilih vidijo kot koristno sredstvo tako za zagotavljanje legitimnosti delovanja podjetja kot za zmanjševanje asimetrije informacij in agentskih stroškov. Rezultati so prav tako potrdili dognanja nekaterih novejših raziskav (Yi in Davey, 2010; Yi, Harun in Sharma, 2014), ki so pokazale, da obsega

(pogostosti) razkritij ne moremo enačiti s kakovostjo poročanja o neotipljivem kapitalu. Najpogosteje so razkrite informacije o organizacijskem kapitalu, najvišji rezultat glede kakovosti razkritij pa so dosegle informacije o človeškem kapitalu. To lahko pomeni, da ima človeški kapital za slovenske proizvodne družbe najvišjo vrednost.

Rezultate študije lahko pojasnimo z uporabo obstoječih teorij:

a) Če se podjetja pri razkritjih zares osredotočajo na elemente neotipljivega kapitala z najvišjo vrednostjo zanje, potem je človeški kapital za slovenske proizvodne družbe najpomembnejši element neotipljivega kapitala. Najvišja stopnja kakovosti razkritij človeškega kapitala kaže, da so podjetja v preteklih letih okrepila sodelovanje zlasti z lastnimi zaposlenimi. Ta rezultat lahko razložimo s teorijo deležnikov, po kateri se podjetja odzivajo na pritiske ključnih deležnikov z razkritji. Razkritja izboljšujejo komunikacijo in krepijo odnos z deležniki, ki je nujen za doseganje trajnostnega razvoja podjetja.

b) Trend zviševanja obsega in kakovosti razkritij o neotipljivem kapitalu kaže, da je poročanje bolj proaktivno kot reaktivno, kar je v skladu s politično ekonomijo računovodske teorije. To lahko opazimo predvsem v primeru razkritja: (i) informacij o okoljevarstveni dejavnosti, ki pomaga slovenskim proizvodnim podjetjem predstaviti se kot proaktivni člani skupnosti; ter (ii) informacij, ki ustvarjajo in prenašajo pozitivno podobo o višji proizvodni učinkovitosti, dosledni kakovosti izdelkov in višji učinkovitosti pri uporabi človeškega kapitala, zaradi česar naj bi bila podjetja privlačnejša za morebitne vlagatelje.

c) Omenjena razkritja s podatki o tržnem deležu podjetij in o aktivnostih razvoja blagovnih znamk signalizirajo udeležencem na trgu zmožnost dobičkonosnega poslovanja proučevanih podjetij. Tovrstna razkritja lahko razložimo s teorijo signalov, v skladu s katero managerji s prostovoljnimi razkritji informacij o neotipljivem kapitalu signalizirajo uspešnost poslovanja različnim interesnim skupinam in s tem krepijo ugled ter poslovni položaj podjetja.

d) Podjetja v nekaterih primerih poskušajo ohraniti svojo podobo družbeno odgovorne institucije s preusmeritvijo pozornosti javnosti z negativnega učinka zmanjševanja števila zaposlenih, kar je mogoče utemeljiti s teorijo legitimnosti.

e) Ker obdobje proučevanja zajema tudi manj stabilna leta v Sloveniji, ki jo je takrat prizadela finančna in gospodarska kriza, gre rezultate razumeti znotraj širšega družbenega, političnega in ekonomskega konteksta, v katerem so podjetja delovala. Kljub padcu kakovosti razkritih informacij o prenehanju delovnih razmerij je skozi celotno obdobje proučevanja mogoče opaziti stalen dvig kakovosti razkritih informacij o številu zaposlenih in številu novo zaposlenih. Omenjeni rezultat lahko razlagamo kot namero podjetij, da ohranijo delovna mesta in kot vlaganje v zaposlene s spodbujanjem zaposlovanja. Podjetja so spodbujala zaposlene k sodelovanju v raziskavah in inovacijah, kar lahko pozitivno vpliva na tehnološki napredek. To je razvidno tudi v dvigu kakovosti posameznih informacij o aktivnostih raziskav in razvoja. Državne

subvencije za zaposlovanje, raziskave in razvoj ter usposabljanje zaposlenih so podjetja spodbudila k vlaganju v zaposlene, to pa je prispevalo k manjši brezposelnosti, kar je bilo ključnega pomena za gospodarstvo in hkrati podjetjem pomagalo izpolniti družbeno odgovornost. Podjetja so tako tudi z razkritji izkazovala odpor proti finančni in gospodarski krizi in poskušala zadovoljiti interese države, zaposlenih ter vlagateljev, kar lahko razlagamo s politično ekonomijo računovodske teorije.

Čeprav naj bi bila naloga letnega poročila zmanjšati negativne učinke informacijske asimetrije (Pivac, Vuko in Cular, 2017), na podlagi rezultatov naše raziskave ni mogoče potrditi, da so slovenska proizvodna podjetja v obravnavanem obdobju (2006–2010) uspešno dosegla ta cilj. Obstoječa stopnja kakovosti razkritij informacij o neotipljivem kapitalu ni visoka. To velja za vse proučevane vrste neotipljivega kapitala. Ta rezultat lahko pomeni, da slovenska proizvodna podjetja bodisi ne želijo bodisi ne znajo številčno opredeliti različnih virov neotipljivega kapitala, kar bi izboljšalo njegovo vrednotenje.

Sklep

Na podlagi skupnih ugotovitev doktorske disertacije lahko sklepamo, da imajo uspešnejša podjetja praviloma večji delež neotipljivega kapitala in zato tudi bolj razvite sposobnosti in kompetence. Letna poročila uporabljajo za signaliziranje nadpovprečne kakovosti svojega delovanja različnim interesnim skupinam. S poročanjem o neotipljivem kapitalu podjetja izboljšujejo preglednost poročanja, zmanjšujejo asimetrijo informacij s potencialnimi vlagatelji, zmanjšujejo tveganje morebitnega napačnega vrednotenja podjetja in izboljšujejo zmožnost pridobivanja kapitala. Boljše razumevanje podjetja pa prispeva tudi k povečanju zvestobe kupcev in dobaviteljev, pa tudi k večji motivaciji zaposlenih, da svoje znanje in sposobnosti uporabljajo za izboljšanje operativne učinkovitosti. Prav tako ugotavljamo, da sta v obravnavanem obdobju (2006–2010) obseg in kakovost razkritih informacij o neotipljivem kapitalu rasla. Čeprav obstoječa raven kakovosti razkritih informacij o neotipljivem kapitalu ni visoka, rast kakovosti povečuje korist razkritih informacij in nakazuje začetek zavezanosti in zavedanja slovenskih proizvodnih podjetij o pomenu poročanja informacij o neotipljivem kapitalu različnim deležnikom podjetja. Glede na to, da je bila najvišja raven kakovosti razkrivanja informacij dosežena na področju HRM, ugotavljamo, da so v proučevanem obdobju podjetja izboljšala komunikacijo predvsem s svojimi zaposlenimi, kar kaže na to, da ima človeški kapital za slovenske proizvodne družbe največjo vrednost.

Appendix 2: Outputs of the analyses

Table A2.1: *Cluster analysis for the year 2009*

Descriptive statistics for year 2009									
		N	**Mean**	**SD**	**SE**	**90% Confidence Interval**		**Min**	**Max**
						Lower Bound	Upper Bound		
ROA	1	32	-0.01	0.06	0.01	-0.04	0.01	-0.15	0.08
	2	57	0.03	0.17	0.02	-0.02	0.07	-0.22	1.18
	Total	89	0.01	0.14	0.01	-0.02	0.04	-0.22	1.18
ROE	1	32	-0.08	0.24	0.04	-0.17	0.00	-0.83	0.20
	2	57	-0.00	0.34	0.05	-0.09	0.09	-1.95	1.35
	Total	89	-0.03	0.31	0.03	-0.10	0.04	-1.95	1.35
VA per employee	1	32	**72,652.41**	131,749.58	23,290.26	25,151.62	120,153.20	10,238.43	696,345.00
	2	57	35,970.71	22,345.75	2,959.77	30,041.58	41,899.84	-3,295.10	118,135.44
	Total	89	49,159.63	82,133.16	8,706.10	31,858.10	66,461.17	-3,295.10	696,345.00
EBIT	1	32	1,308,033.38	2,105,703.58	372,239.32	548,846.28	2,067,220.47	0.00	6,113,073.00
	2	57	2,429,781.07	9,907,991.15	1,312,345.49	-199,162.85	5,058,724.99	0.00	74,102,965.00
	Total	89	2,026,456.06	8,020,333.69	850,153.67	336,954.28	3,715,957.83	0.00	74,102,965.00
EBITDA	1	32	4,693,427.63	4,365,327.55	771,688.18	3,119,559.21	6,267,296.04	12,334.00	15,895,659.00
	2	57	4,460,372.77	10,855,761.83	1,437,880.78	1,579,951.44	7,340,794.10	149,726.00	78,305,217.00
	Total	89	4,544,167.78	9,039,883.47	958,225.73	2,639,895.49	6,448,440.06	12,334.00	78,305,217.00
ROS	1	32	5.86	15.87	2.81	0.14	11.58	0.00	85.62
	2	57	3.44	3.82	0.51	2.43	4.46	0.00	16.96
	Total	89	4.31	9.97	1.06	2.21	6.41	0.00	85.62
Sales growth	1	32	-24.87	19.19	3.39	-31.79	-17.95	-64.79	5.40
	2	57	1.27	124.46	16.48	-31.75	34.30	-48.92	911.42
	Total	89	-8.13	100.73	10.68	-29.34	13.09	-64.79	911.42
Sales	1	32	**60,781,272.97**	54,303,530.03	9,599,598.58	41,202,762.58	80,359,783.36	702,238.00	225,921,920.00
	2	57	36,642,002.21	45,352,603.08	6,007,099.03	24,608,336.84	48,675,667.58	3,481,125.00	299,762,368.00
	Total	89	45,321,290.57	49,833,965.57	5,282,389.79	34,823,650.89	55,818,930.26	702,238.00	299,762,368.00
Leverage	1	32	**0.56**	0.21	0.04	0.48	0.64	0.04	1.02
	2	57	0.48	0.22	0.03	0.42	0.54	0.08	0.99
	Total	89	0.51	0.22	0.02	0.46	0.55	0.04	1.02
Net debt	1	32	0.06	0.34	0.06	-0.06	0.18	-0.96	0.62
	2	57	0.09	0.26	0.03	0.02	0.16	-0.45	0.76
	Total	89	0.08	0.29	0.03	0.02	0.14	-0.96	0.76
Liquidity	1	32	1.35	1.74	0.31	0.72	1.98	0.19	10.44
	2	57	1.71	1.20	0.16	1.39	2.03	0.12	6.50
	Total	89	1.58	1.42	0.15	1.28	1.88	0.12	10.44
Total assets	1	32	**80,122,003.25**	83,128,819.77	14,695,238.04	50,150,867.67	110,093,138.83	5,072,738.00	358,347,788.00
	2	57	49,635,502.56	77,852,265.70	10,311,784.50	28,978,515.97	70,292,489.16	5,235,303.00	428,243,426.00
	Total	89	60,596,941.01	80,670,842.34	8,551,092.19	43,603,442.18	77,590,439.85	5,072,738.00	428,243,426.00
Size	1	32	**3.38**	1.43	0.25	2.86	3.89	1.00	5.00
	2	57	2.44	0.68	0.09	2.26	2.62	2.00	5.00
	Total	89	2.78	1.11	0.12	2.54	3.01	1.00	5.00

Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for **leverage indicator**; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for **net debt**; Current assets/Current liabilities for **liquidity**; (Net profit – Net loss)/Average Equity for **ROE** and (Net profit – net loss)/Average Assets for **ROA**. **ROS** indicator is calculated as Operating profit/Net sales. For **added value per employee** indicator we used following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

ANOVA for year 2009						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sign.**
ROA	Between Groups	0.035	1	0.035	1.868	0.175
	Within Groups	1.642	87	0.019		
	Total	1.677	88			

ROE	Between Groups	0.141	1	0.141	1.452	0.231
	Within Groups	8.449	87	0.097		
	Total	8.590	88			
Value added per employee	Between Groups	27,576,155,826.773	1	27,576,155,826.773	4.238	**0.043**
	Within Groups	566,059,140,139.977	87	6,506,426,898.161		
	Total	593,635,295,966.750	88			
EBIT	Between Groups	25,788,447,576,805.500	1	25,788,447,576,805.500	0.398	0.530
	Within Groups	5,634,877,776,219,490.000	87	64,768,710,071,488.400		
	Total	5,660,666,223,796,300.000	88			
EBITDA	Between Groups	1,113,143,435,057.970	1	1,113,143,435,057.970	0.013	0.908
	Within Groups	7,190,202,258,603,580.000	87	82,646,002,972,455.000		
	Total	7,191,315,402,038,640.000	88			
ROS	Between Groups	119.599	1	119.599	1.207	0.275
	Within Groups	8,623.106	87	99.116		
	Total	8,742.706	88			
Sales growth	Between Groups	14,008.834	1	14,008.834	1.387	0.242
	Within Groups	878,822.725	87	10,101.411		
	Total	892,831.558	88			
Sales	Between Groups	11,942,166,430,962,100.000	1	11,942,166,430,962,100.000	5.029	**0.027**
	Within Groups	206,599,156,542,745,000.000	87	2,374,702,948,767,190.000		
	Total	218,541,322,973,708,000.000	88			
Leverage	Between Groups	0.137	1	0.137	2.845	**0.095**
	Within Groups	4.179	87	0.048		
	Total	4.316	88			
Net debt	Between Groups	0.025	1	0.025	0.286	0.594
	Within Groups	7.574	87	0.087		
	Total	7.598	88			
Liquidity	Between Groups	2.663	1	2.663	1.323	0.253
	Within Groups	175.182	87	2.014		
	Total	177.845	88			
Total assets	Between Groups	19,048,026,348,383,000.000	1	19,048,026,348,383,000.000	2.993	**0.087**
	Within Groups	553,637,036,365,228,000.000	87	6,363,644,096,152,040.000		
	Total	572,685,062,713,611,000.000	88			
Size	Between Groups	17.971	1	17.971	17.462	**0.000**
	Within Groups	89.535	87	1.029		
	Total	107.506	88			

Source: AJPES (2015) and own calculations.

Table A2.2: Frequency distribution of companies' activity within the clusters

NACE code	**Cluster**					
	1	**2**	**Total**	**1 (%)**	**2 (%)**	**Descriptor**
C10	2	6	8	6.3	10.5	Manufacture of food products
C11	0	1	1	0.0	1.8	Manufacture of beverages
C13	0	1	1	0.0	1.8	Manufacture of textiles
C14	0	2	2	0.0	3.5	Manufacture of wearing apparel
C15	1	1	2	3.1	1.8	Manufacture of leather and related products
C16	0	5	5	0.0	8.8	Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials
C17	0	5	5	0.0	8.8	Manufacture of paper and paper products
C20	1	6	7	3.1	10.5	Manufacture of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms
C22	1	4	5	3.1	7.0	Manufacture of rubber and plastic products
C23	2	5	7	6.3	8.8	Manufacture of other non-metallic mineral products
C24	4	1	5	12.5	1.8	Manufacture of basic metals
C25	3	1	4	9.4	1.8	Manufacture of fabricated metal products, except machinery and equipment
C26	2	3	5	6.3	5.3	Manufacture of computer, electronic and optical products
C27	3	2	5	9.4	3.5	Manufacture of electrical equipment
C28	2	4	6	6.3	7.0	Manufacture of machinery and equipment n.e.c.

C29	4	2	6	12.5	3.5	Manufacture of motor vehicles, trailers and semi-trailers
C30	0	1	1	0.0	1.8	Manufacture of other transport equipment
C31	1	4	5	3.1	7.0	Manufacture of furniture
C33	1	0	1	3.1	0.0	Repair and installation of machinery and equipment
D35	0	1	1	0.0	1.8	Electricity, gas, steam and air conditioning supply
G45	0	1	1	0.0	1.8	Wholesale and retail trade and repair of motor vehicles and motorcycles
G46	1	0	1	3.1	0.0	Wholesale trade, except of motor vehicles and motorcycles
M70	4	1	5	12.5	1.8	Activities of head offices, management consultancy activities
Total	**32**	**57**	**89**	**100**	**100**	

Source: AJPES (2015) and own calculations.

Table A2.3: *Cluster analysis for the year 2007*

Descriptive statistics for year 2007						**90% Confidence Interval**			
		N	**Mean**	**SD**	**SE**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
ROE	1	57	6.29	48.58	6.43	-6.60	19.18	-10.83	366.42
	2	32	0.06	0.12	0.02	0.01	0.10	-0.44	0.23
	Total	89	4.05	38.87	4.12	-4.14	12.24	-10.83	366.42
ROA	1	57	0.05	0.14	0.02	0.01	0.09	-0.39	0.85
	2	32	0.03	0.05	0.01	0.02	0.05	-0.11	0.13
	Total	89	0.04	0.11	0.01	0.02	0.07	-0.39	0.85
EBIT	1	57	4,038,009.63	7,282,775.33	964,627.16	2,105,629.23	5,970,390.03	0.00	39,617,273.00
	2	32	1,805,837.31	3,279,557.62	579,749.36	623,430.70	2,988,243.92	0.00	14,415,806.00
	Total	89	3,235,430.82	6,221,032.27	659,428.10	1,924,956.04	4,545,905.60	0.00	39,617,273.00
EBITDA	1	57	**7,077,528.42**	9,357,310.99	1,239,406.12	4,594,699.62	9,560,357.22	0.00	50,278,741.00
	2	32	3,133,727.47	4,131,325.57	730,322.08	1,644,225.76	4,623,229.17	379,926.00	19,250,962.00
	Total	89	5,659,532.57	8,084,203.99	856,923.91	3,956,576.37	7,362,488.77	0.00	50,278,741.00
VA per employee	1	57	83,170.12	331,966.99	43,970.10	-4,912.57	171,252.82	0.00	2,528,122.00
	2	32	40,432.03	26,791.50	4,736.11	30,772.66	50,091.40	17,000.37	146,311.43
	Total	89	67,803.62	266,095.54	28,206.07	11,749.98	123,857.26	0.00	2,528,122.00
ROS	1	57	8.03	21.34	2.83	2.37	13.69	0.00	156.36
	2	32	4.68	4.98	0.88	2.88	6.47	0.00	18.33
	Total	89	6.82	17.36	1.84	3.17	10.48	0.00	156.36
Sales growth	1	57	7.91	17.17	2.27	3.36	12.47	-44.14	65.01
	2	32	11.59	13.58	2.40	6.70	16.49	-16.19	51.54
	Total	89	9.24	15.99	1.69	5.87	12.61	-44.14	65.01
sales	1	57	**83,471,536.37**	97,533,340.80	12,918,606.58	57,592,457.64	109,350,615.10	0.00	456,285,184.00
	2	32	28,822,852.28	21,494,124.65	3,799,660.32	21,073,393.96	36,572,310.60	3,459,202.00	111,002,048.00
	Total	89	63,822,571.30	83,137,488.66	8,812,556.17	46,309,467.74	81,335,674.87	0.00	456,285,184.00
Leverage	1	57	0.53	0.22	0.03	0.47	0.59	0.00	0.98
	2	32	0.49	0.21	0.04	0.41	0.56	0.10	0.87
	Total	89	0.52	0.21	0.02	0.47	0.56	0.00	0.98
Net debt	1	57	0.10	0.29	0.04	0.02	0.17	-0.86	0.64
	2	32	0.07	0.30	0.05	-0.04	0.18	-0.78	0.72
	Total	89	0.09	0.29	0.03	0.03	0.15	-0.86	0.72
liquidity	1	57	1.48	0.96	0.13	1.22	1.73	0.00	6.62
	2	32	1.64	1.11	0.20	1.24	2.04	0.43	5.69
	Total	89	1.54	1.01	0.11	1.32	1.75	0.00	6.62
Total assets	1	57	**76,879,870.40**	93,024,703.40	12,321,422.97	52,197,094.20	101,562,646.60	0.00	400,178,166.00
	2	32	31,972,182.28	42,411,700.86	7,497,400.32	16,681,133.51	47,263,231.05	4,591,191.00	234,934,126.00
	Total	89	60,733,285.91	81,302,863.77	8,618,086.32	43,606,650.31	77,859,921.51	0.00	400,178,166.00
Size 1-5	1	57	**3.44**	1.25	0.17	3.11	3.77	0.00	5.00
	2	32	2.00	0.00	0.00	2.00	2.00	2.00	2.00
	Total	89	2.92	1.22	0.13	2.66	3.18	0.00	5.00

Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for **leverage indicator**; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for **net debt**; Current assets/Current liabilities for **liquidity**; (Net profit – Net loss)/Average Equity for **ROE** and (Net profit – net loss)/Average Assets for **ROA**. **ROS** indicator is calculated as Operating profit/Net sales. For **added value per employee** indicator we used following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

ANOVA for year 2007						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sign.**
ROE	Between Groups	797.601	1	797.601	0.525	0.471
	Within Groups	132,150.687	87	1,518.973		
	Total	132,948.287	88			
ROA	Between Groups	0.006	1	0.006	0.426	0.516
	Within Groups	1.153	87	0.013		
	Total	1.158	88			
EBIT	Between Groups	102,115,169,775,299.000	1	102,115,169,775,299.000	2.689	0.105
	Within Groups	3,303,594,165,743,340.000	87	37,972,346,732,682.100		
	Total	3,405,709,335,518,640.000	88			
EBITDA	Between Groups	318,760,722,419,358.000	1	318,760,722,419,358.000	5.105	**0.026**
	Within Groups	5,432,422,437,070,340.000	87	62,441,637,207,705.100		
	Total	5,751,183,159,489,700.000	88			
VA per employee	Between Groups	37,433,906,717.496	1	37,433,906,717.496	0.526	0.470
	Within Groups	6,193,567,853,964.940	87	71,190,435,103.045		
	Total	6,231,001,760,682.440	88			
ROS	Between Groups	230.354	1	230.354	0.763	0.385
	Within Groups	26,276.374	87	302.027		
	Total	26,506.727	88			
Sales growth	Between Groups	277.549	1	277.549	1.087	0.300
	Within Groups	22,219.477	87	255.396		
	Total	22,497.026	88			
Sales	Between Groups	61,206,034,815,348,200.000	1	61,206,034,815,348,200.000	9.734	**0.002**
	Within Groups	547,036,063,036,717,000.000	87	6,287,770,839,502,500.000		
	Total	608,242,097,852,066,000.000	88			
Leverage	Between Groups	0.040	1	0.040	0.877	0.352
	Within Groups	4.015	87	0.046		
	Total	4.055	88			
Net debt	Between Groups	0.014	1	0.014	0.166	0.684
	Within Groups	7.336	87	0.084		
	Total	7.350	88			
Liquidity	Between Groups	0.572	1	0.572	0.559	0.457
	Within Groups	89.081	87	1.024		
	Total	89.653	88			
Total assets	Between Groups	41,331,029,498,141,300.000	1	41,331,029,498,141,300.000	6.654	**0.012**
	Within Groups	540,362,668,283,335,000.000	87	6,211,065,152,682,010.000		
	Total	581,693,697,781,476,000.000	88			
SIZE 1-5	Between Groups	42.414	1	42.414	41.916	**0.000**
	Within Groups	88.035	87	1.012		
	Total	130.449	88			

Source: AJPES (2015) and own calculations.

Table A2.4: *Companies' IC characteristics by clusters*

	Cluster 1			**Cluster 2**			**Sign.**
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	
HRM CAPITAL CATEGORY							
EMPLOYEE TRAINING							
Does your company provide organised training of employees based on identified needs of the company exists? (Y/N)	21	1.00	0.00	34	0.94	0.239	0.266
Do you involve more than half of your employees in your training programs annually? (Y/N)	21	0.57	0.507	34	0.53	0.507	0.766
Do you measure training effectiveness also with other methods not only conducting a	21	**0.71**	0.463	34	0.44	0.504	**0.049**

survey at the end of a training program? (Y/N)							
KNOWLEDGE TRANSFER							
Does your company provide regular on the job training (e.g., apprenticeship, mentorship, job rotation)? (Y/N)	21	1.00	0.000	34	0.94	0.239	0.266
Does your company systematically induce knowledge transfer among employees? (Y/N)	21	**0.90**	0.301	34	0.71	0.462	**0.086**
Do you have successors for most of your key employees, so that they could effectively take on their positions in a short period of time? (Y/N)	21	0.33	.483	34	0.38	0.493	0.720
PERFORMANCE APPRAISALS							
Does the company provide regular performance feedback to its employees? (Y/N)	21	0.71	0.463	34	0.59	0.500	0.354
Does the company conduct annual performance-review meetings for at least key employees? (Y/N)	21	0.81	0.402	34	0.65	0.485	0.204
Does the company conduct annual performance-review meetings effectively and thus significantly contribute to improved performance? (Y/N)	21	0.57	0.507	34	0.44	0.504	0.357
MOTIVATION SYSTEM							
Do you have a system for promotions based on employee performance? (Y/N)	21	0.76	0.436	34	0.65	0.485	0.380
Do you use any other forms of motivation apart from promotion and pay for performance? (Y/N)	21	0.76	0. 436	34	0.65	0. 485	0.380
Is your system for motivation of employees developed in all organisational units? (Y/N)	21	0.76	0. 436	34	0.59	0.500	0.195
TEAMWORK CAPACITY							
Is there a great need for workers to work in work groups because of the nature of the work processes? (Y/N)	32	**1.00**	0.000	53	0.89	0.320	**0.049**
Is cooperation in different teams in individual department (not exclusively performing tasks in the same workplace) a common form of workers' operation? (Y/N)	32	0.84	0.369	53	0.75	0.434	0.336
Is there a strong presence of workers' cooperation between different departments and forming of interdepartmental teams? (Y/N)	32	0.78	0.420	53	0.62	0.489	0.131
CO-OPERATION AMONG EMPLOYEES							
Is there a need for a lot of co-operation among employees to perform their tasks successfully? (Y/N)	20	1.00	0.000	34	0.94	0.239	0.278
Have you systematically introduced teamwork in your company in the last five years? (Y/N)	20	**0.80**	0.410	34	0.56	0.504	**0.076**
Is teamwork the dominating form of work for majority of employees? (Y/N)	20	0.60	0.503	34	0.50	0.508	0.486
WORK-LIFE BALANCE							

Do you have any special programs aimed at improving work-life balance of your employees? (Y/N)	20	**0.40**	0.503	33	0.06	0.242	**0.002**
Are there more than half of employees involved in these programs for improving work-life balance? (Y/N)	20	**0.25**	0.444	34	0.03	0.171	**0.012**
Would you say that the general level of satisfaction has increased, and turnover decreased because of these programs for improving work-life balance? (Y/N)	20	**0.35**	0.489	34	0.03	0.171	**0.001**
HEALTH AND SAFETY PROGRAMMS							
Do you have any special programs for improving employee health (other than those required by law)? (Y/N)	20	**0.85**	0.366	34	0.35	0.485	**0.000**
Are there more than half of employees involved in these health-improvement programs? (Y/N)	20	0.45	0.510	34	0.24	0.431	0.105
Would you say that the general level of health of your employees has improved and sick-leave hours have decreased because of these health-improvement programs? (Y/N)	20	**0.60**	0.503	34	0.26	0.448	**0.014**
UNION ACTIVITY							
Workers in the company are organised in unions.	32	0.94	0.246	53	0.94	0.233	0.912
Exactly one union organisation exists in the firm.	32	0.59	0.499	53	0.72	0.455	0.247
Union leadership(s) is (are) concerned with the question of how the firm should increase productivity and therefore its competitive position.	32	0.22	0.420	53	0.17	0.379	0.581
TRAINING COSTS							
Total costs for training per year.	9	**120,807**	128.221	22	40,484	40.030	**0.012**
	212 EUR per employee			157 EUR per employee			
RELATIONAL CAPITAL CATEGORY							
BRAND RECOGNITION							
Do you develop its own brands (do not participate in finishing operations under foreign brand or private labels for dealers/merchants)? (Y/N)	24	0.67	0.482	41	0.63	0.488	0.795
Does the company develop a corporate brand, in addition to the separate brands for your products / services? (Y/N)	24	0.67	0.482	42	0.64	0.485	0.848
Have you developed brand architecture (organised system of brands, e.g., monolithic/unitary, endorsed/hybrid, freestanding/diversified)? (Y/N)	24	0.54	0.509	41	0.34	0.480	0.118
BRAND VALUE							
Are your company brands legally protected (patents, trademarks)? (Y/N)	24	0.79	0.415	41	0.83	0.381	0.711
Have you between 2006-2009 financed activities to increase brand value, either corporate brands or product/services brands? (Y/N)	24	0.71	0.464	41	0.78	0.419	0.522
Are you measuring brand value, either corporate brands or product/services	24	0.17	0.381	40	0.18	0.385	0.933

brands? (Y/N)							
CORPORATE IMAGE							
Do you manage relationships with the media (corporate management accessibility, openness with the media and support for journalists)? (Y/N)	24	0.88	0.338	41	0.88	0.331	0.972
Are you measuring perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position? (Y/N)	24	**0.42**	0.504	41	0.22	0.419	**0.094**
Are you measuring perceived corporate social responsibility of the company (attitude to the community and fair play in business) among different publics? (Y/N)	24	0.46	0.509	41	0.37	0.488	0.470
Do you have a communication system (e.g., intranet) which provides continuous reporting and transfer of information to responsible? (Y/N)	24	0.88	0.338	42	0.79	0.415	0.373
MARKETING EXPENDITURES							
The share of sales in 2006 set aside for activities to increase the value of brands (including external costs of advertising and marketing activities of advertising agencies, media).	19	0.03	0.06975	31	0.02	0.05536	0.689
The share of sales in 2007 set aside for activities to increase the value of brands (including external costs of advertising and marketing activities of advertising agencies, media).	21	0.03	0.06727	31	0.01	0.02047	0.152
The share of sales in 2008 set aside for activities to increase the value of brands (including external costs of advertising and marketing activities of advertising agencies, media).	22	0.04	0.085	32	0.01	0.020	0.154
The share of sales in 2009 set aside for activities to increase the value of brands (including external costs of advertising and marketing activities of advertising agencies, media).	21	0.04	0.087	32	0.01	0.017	0.111
CUSTOMERS							
NEW CUSTOMERS							
In the period 2006-2008, we carried out activities at all times to attract new customers. (Y/N)	19	1.00	0.000	30	0.90	0.305	0.161
In the period 2006-2008, we obtained (on average) at least 10% of new customers. (Y/N)	19	0.58	0.507	30	0.40	0.498	0.230
In the period 2006-2008, we were mainly making long-term contracts with our new customers. (Y/N)	19	0.26	0.452	30	0.43	0.504	0.237
In the period 2006-2008, we were monitoring the behaviour of our customers with the CRM system. (Y/N)	9	0.00	0.000	12	0.08	0.289	0.400
LOYALTY OF CUSTOMERS							

In the period 2006-2008, (potential) buyers of our products were informed via e-mail and/or other information channels. (Y/N)	10	0.90	0.316	13	0.62	0.506	0.135
In the period 2006-2008, (potential) buyers of our products were able to get access to our products through various distribution channels (Internet, catalogues ...). (Y/N)	10	0.80	0.422	13	0.77	0.439	0.867
In the period 2006-2008, we had customer loyalty program. (Y/N)	10	0.00	0.500	13	0.08	0.277	0.393
In the period 2006-2008, we carried out activities at all times in order to attract new customers. (Y/N)	9	0.89	0.333	13	0.85	0.376	0.787
In the period 2006-2008, our customer loyalty program was increasing on average at 10% (in value). (Y/N)	9	0.11	0.333	13	0.00	0.000	0.238
In the period 2006-2008, the majority of the new members in loyalty program were active. (Y/N)	9	0.00	0.000	13	0.00	0.000	-
CUSTOMERS LONGTERM RELATIONSHIP							
In the period 2006-2008, we had long-term contract with at **least one** of the most important customers. (Y/N)	19	0.95	0.229	30	0.93	0.254	0.846
In the period 2006-2008, we had long-term contract with **majority** of the most important customers. (Y/N)	19	0.53	0.513	30	0.73	0.450	0.144
In the period 2006-2008, we had long-term contract with **all** most important customers. (Y/N)	19	0.11	0.315	30	0.27	0.450	0.179
CUSTOMERS IMPACT							
In period 2006-2008, we regularly met with our customers in order to find about their needs and to plan needed changes. (Y/N)	19	1.00	0.000	30	0.93	0.254	0.260
In period 2006-2008, consumer representatives of our products were engaged in the process of the development of new product. (Y/N)	19	0.68	0.478	30	**0.90**	0.305	**0.059**
In the period 2006-2008, our customers were at least indirectly influencing the decisions in our company. (Y/N)	19	0.89	0.315	30	0.90	0.305	0.954
In the period 2006-2008, our customers were directly influencing the fundamental decisions in our company. (Y/N)	19	0.32	0.478	30	0.47	0.507	0.305
In the period 2006-2008, our customers were dictating us the choice of our suppliers. (Y/N)	19	0.11	0.315	29	0.17	0.384	0.529
CUSTOMERS GRIVIENCES							
In the period 2006-2008, we collected and analyzed opinions, comments and complaints of our customers. (Y/N)	10	0.90	0.316	13	1.00	0.000	0.264
In the period 2006-2008, the top management was informed with opinions, comments and complaints from our customers. (Y/N)	10	0.80	0.422	13	0.85	0.376	0.784
In the period 2006-2008, top management was taking into accounts the opinions,	10	0.80	0.422	13	0.85	0.376	0.784

comments and complaints from our customers when making decisions. (Y/N)							
CUSTOMERS SHARE OF SALES							
The share of sales (based on the value of sales through B2B) of the largest customer in 2006 in %.	14	19.64	12.586	23	30.61	22.958	0.110
The share of sales (based on the value of sales through B2B) of the largest customer in 2007 in %.	14	19.36	10.966	25	29.08	22.594	0.140
The share of sales (based on the value of sales through B2B) of the largest customer in 2008 in %.	15	17.93	10.846	27	24.04	19.905	0.279
The share of sales (based on the value of sales through B2B) of the largest customer in 2009 in %.	16	19.28	11.913	28	28.75	23.758	0.145
SUPPLIERS RELATIONSHIP AND THEIR INFLUENCE							
In the period 2006-2008, we exchanged information with our suppliers. (Y/N)	19	1.00	0.000	31	1.00	0.000	-
In the period 2006-2008, we regularly visited our major suppliers. (Y/N)	19	0.95	0.229	31	0.81	0.402	0.170
In 2006-2008, relations with suppliers stimulated the development of new products or services in our company. (Y/N)	19	0.79	0.419	31	0.77	0.425	0.902
COMPETITION AND COMPETITORS INFLUENCE							
Number of major competitors in your core activities in 2009.	13	10.31	15.440	26	6.81	4.271	0.284
Your market share in your core business in 2009.	14	28.14	27.548	26	23.19	20.189	0.520
Market share of three largest firms in your core business in 2009.	14	57.71	21.638	25	48.64	25.061	0.263
Number of major competitors in your core activities in 2006-2008.	12	10.00	19.306	20	5.3	3.895	0.296
Your market share in your core business in 2006-2008.	13	26.54	28.582	20	17.40	21.434	0.302
Market share of three largest firms in your core business in 2006-2008.	13	53.92	31.090	18	41.50	32.502	0.294
In the period 2006-2008, the activities of our major competitors had an impact on our business. (Y/N)	19	0.79	0.419	29	0.83	0.384	0.747
In period 2006-2008, our company has aggressively responded to the strategic moves of our main competitors. (Y/N)	19	0.58	0.507	29	0.59	0.501	0.961
In the period 2006-2008, at least one company in our core business had more than 20% market share. (Y/N)	19	0.74	0.452	29	0.59	0.501	0.296
ORGANISATIONAL CAPITAL CATEGORY							
INFORMATION SYSTEM							
Did your company in 2009 invest in information technology at least 1% revenue? (Y/N)	20	0.50	0.513	32	0.50	0.508	1.000
Did your company in 2009 invest in information technology at least 2% revenue? (Y/N)	19	0.11	0.315	31	0.10	0.301	0.925
Did your company in 2009 invest in information technology at least 3%	1	0.000	0.000	1	0.000	0.000	0.000

revenue? (Y/N)							
Percentage of revenue invested in IT in 2009.	17	1.41	1.176	31	0.94	0.814	0.105
Percentage of total IT cost used for hardware.	15	33.13	21.034	27	34.22	17.474	0.858
Percentage of total IT cost used for software.	15	41.27	20.772	27	50.85	24.234	0.205
Percentage of total IT cost used for other things like licence costs, IT personnel salaries, IT maintenance…	17	1.47	3.243	31	1.71	3.708	0.825
CORPORATE CULTURE							
Does your company have formally declared values? (Y/N)	20	0.75	0.444	33	0.61	0.496	0.292
Are flexibility and implementing organisational change are explicitly stated as company values? (Y/N)	20	0.70	0.470	33	0.52	0.508	0.193
Would you say that the majority of employees acts in accordance with formally declared company values? (Y/N)	20	0.60	0.503	33	0.52	0.508	0.556
BOARD AND OWNERSHIP STRUCTURE							
The company is privately owned. (Y/N)	32	0.91	0.296	53	0.96	0.237	0.293
The private owner has more than 50 percent share of ownership (dominant ownership share). (Y/N)	32	0.63	0.492	53	**0.79**	0.409	**0.094**
The dominant ownership share is in possession of foreign owners. (Y/N)	32	0.13	0.336	53	0.25	0.434	0.183
Are the workers' representatives in your firm members of the governing bodies (for example the supervisory board and its comities) and are involved in the decision-making process? (Y/N)	32	0.59	0.499	53	0.47	0.504	0.281
ORGANISATIONAL INNOVATION	**(The relevance of following goals in the period 2006-2009 for implementing organisational innovation - scale from 1 to 4).**						
Reduced reaction time for customer or supplier.	19	2.84	0.501	33	2.85	0.442	0.962
Capability for developing new products or procedures.	19	2.58	0.692	34	2.74	0.567	0.378
Improved quality of products or services.	19	2.79	0.535	34	2.88	0.327	0.436
Reduced labour costs per unit.	19	2.68	0.582	34	2.79	0.410	0.426
Improved communication or information exchange internally or with other companies or institutions.	19	2.37	0.831	34	2.44	0.613	0.717
QUALITY AND IMPROVEMENT PROCESS							
Is there a formal continuous improvement process? (Y/N)	21	0.86	0.359	34	0.71	0.462	0.207
Are there more than half of employees involved in a formal continuous improvement process? (Y/N)	21	0.57	0.507	35	0.54	0.505	0.839
Would you say that improvements resulting from this formal process **significantly** contribute to company performance? (Y/N)	21	**0.81**	0.402	34	0.47	0.507	**0.012**
R&D ACTIVITIES	**(The relevance of the following types of new products in the company - scale from 1 to 3)**						
Repositioning	27	1.96	0.808	40	2.03	0.891	0.773
Improving existing products	27	2.37	0.688	40	2.43	0.781	0.769

Extensions to existing product lines	27	2.07	0.958	40	1.90	0.672	0.385
New product lines	27	2.41	0.931	40	2.05	0.959	0.135
New products that are novelties also in global markets	27	1.48	1.122	40	1.28	1.198	0.480
The company introduced a significant number of new products to our relevant market in the past few years. (Y/N)	27	0.89	0.320	40	0.93	0.267	0.618
Did you introduce any significant process innovation in past five years? (Y/N)	27	**0.93**	0.267	40	0.63	0.490	**0.005**
Did you significantly improve the production processes? (Y/N)	27	**0.89**	0.320	40	0.58	0.501	**0.005**
Did you significantly improve the logistics, delivery, distribution of inputs and outputs (products and services)? (Y/N)	27	**0.67**	0.480	40	0.45	0.504	**0.083**
Did you significantly improve support services like maintenance, sales, IT, accounting and other processes in the company? (Y/N)	27	0.70	0.465	40	0.65	0.483	0.652
Number of patents in 2009	27	1.30	3.451	40	0.70	1.990	0.374
Number of patents in 2008	27	1.22	3.457	40	0.58	1.599	0.305
Number of patents in 2007	27	**1.56**	5.221	40	0.15	0.580	**0.095**
Number of patents in 2006	27	1.41	5.235	40	0.45	2.385	0.314
R&D EXPENDITURES							
In 2009 R&D expenditure amounted to at least 1% of revenue.	27	0.85	0.362	40	0.85	0.362	0.984
In 2009 R&D expenditure amounted to at least 2% of revenue.	27	**0.70**	0.465	40	0.45	0.504	**0.041**
In 2009 R&D expenditure amounted to at least 3% of revenue.	27	0.44	0.506	40	0.38	0.490	**0.577**
R&D expenditure in 2006.**	16	3,271,794	4,392,250	28	3,909,702	18,447,175	0.893
R&D expenditure in 2007.	19	2,690,967	4,284,266	27	3,910,156	17,833,810	0.772
R&D expenditure in 2008.	18	2,714,011	3,539,562	29	4,214,300	20,044,869	0.756
R&D expenditure in 2009.	18	2,546,534	2,891,490	29	4,584,084	22,013,898	0.699

Source: SEBLU (2010-2014) and own calculations.

Table A2.5: *List of voluntary disclosure IC items*

HRM DISCLOSURE CATEGORY ITEMS	
Does the company report demographics of its current workforce?	**Disclosure score**
Total number of employees	0 or 3
Full/part time	0 or 3
Number of employees working in the production, distribution, IT, sales and marketing, administration departments	0 or 3
Gender (% of women employees)	0 or 3
Average age	0 or 3
Education	0 or 3
Disabled	0 or 3
Does the company report termination data	
Total number of terminated contracts	0 or 3
Number of terminated open-end or fixed term contracts	0 or 3
Does the company report recruitment data	

Total number of newly employed	0 or 3
Number of newly employed per year for open-end or for fixed term contract	0 or 3
Stuff turnover	
Does the company disclose its stuff turnover rate?	0 - not mentioned 1 - if it mentions employee circulation 2 - if it reports its employee turnover rate 3 - Comparison to previous years – Trend
Absenteeism	
Does the company disclose its absentee rates?	0 - not mentioned 1 - if it mentions absenteeism at work 2 - if it reports absentee rates or average number of work days per employee lost due to sick-leave 3 - Comparison to previous years – Trend
Employee education or training programs	
Does the company disclose the costs for training per year or average hours of training per employee?	0 - not mentioned 1 - if description of training is provided 2 - if costs of training are provided or any of the following indicators: training days per employees, ratio training hours/working hours (per year), training investment (employee/year), ratio training costs/wages 3 - Comparison to previous years – Trend
Knowledge transfer tools	
Does the company reveal its knowledge transfer tools like apprenticeship, mentorship, coaching, job rotation, on the job training-OJT, retirees?	0 or 3
Performance feedback/ annual performance appraisals	
Does the company reveal tools for regular performance feedback to its employees?	0 or 3
Training programs for leaders	
Does the company reveal special training programs for leaders?	0 or 3
Incentives and Remuneration System	
Does the company reveal its incentive* and remuneration system** for its workers?	0 - not mentioned 1 - lists the incentives 2 - Quantified contributions to healthcare, disability, retirement, sport clubs, holiday facilities for its workers 3 - Comparison to previous years – Trend
*monetary incentives are bonus payments for achieving a target, or an increase in budget levels related to the performance output like extra pay in the form of thirteenth salary, Christmas bonus, December payments, profit sharing. Non-monetary incentives could include study leave or enhanced leisure time.	
**compensation in form of salary, bonuses, shares, stock options, and other company benefits like pensions or contributions for retirement benefits, social security, health insurance, vacations, holiday facilities, funding of education, disability income protection, etc.	
Employee motivation policy	
Does the company reveal its system for motivation* of employees?	0 or 3
*based on employee performance or other forms of motivation apart from promotion and pay for performance - using positive reinforcement to motivate employees like selecting the Employee of the Week or negative reinforcement like issuing a written-warning system or threaten employees with termination to get them to perform a certain way.	
Employee satisfaction	
Does the company measure and disclose employee satisfaction?	0 or 3
Value added statement	
Added value per **employee** in the reporting period	0 - not mentioned

	1 - if added value of employees is mentioned 2 - if it is quantified 3 - Comparison to previous years – Trend
Teamwork capacity and employees' co-operation	
Does the company report on workers' participation in the workplace?	0 or 3
Program for work-life balance	
Does the company disclose its programs aimed at improving work-life balance of its employees?	0 or 3
Occupational health and safety programs	
Does the company disclose its health and safety policy?	0 or 3
Union activity	
Does the company disclose whether its employees are organised in unions?	0 or 3
ORGANISATIONAL DISCLOSURE CATEGORY ITEMS	
IT - Infrastructure assets / Information systems	
Does the company disclose details on the development, installation and update of its information systems?	0 - not mentioned 1 – if it mentions development of information system 2 – if investment in computer equipment is quantified 3 - Comparison to previous years – Trend
Corporate culture	
Does the company disclose its mission, vision, values of the company?	0 or 3
Does the company provide a time frame to achieve corporate goals?	0 or 3
Board and ownership structure	
Does the company reveal management structure?	0 or 3
Biographical profile of directors	0 or 3
Does the company reveal ownership structure?	0 or 3
Does the company state whether the workers' representative is the member of the governing bodies (for example the supervisory board and its comities or CEO)?	0 or 3
Management processes	
Does the company report whether it uses integrated management system?	0 or 3
*integrated management system is certified according to the requirements of the system standards, as a foundation for improved quality of products and services, environmental protection and health and safety at work.	
Customer/supplier support	
Does the company state whether it improved customer support in terms of:	
1. reduced reaction time to customer/supplier support, i.e. improved efficiency in attending inquiries,	0 or 3
2. firm capacity for closeness to potential and real customers, i.e. improved no. of national offices, no. of offices abroad?	0 or 3
R&D	
Quality and improvement process	
Does the company state whether it complies with quality and improvement process?	
Firm assess accreditations and certifications	0 or 3
Employees participate in internal improvement and technological innovation projects	0 or 3
R&D department	
Does the company report on its R&D department?	

Description of research projects	0 or 3
No. of employees in R&D department	0 or 3
Does the company report on its R&D activities (product/process development)?	
Number of services/products	0 or 3
Investment in product and process development	0 - not mentioned 1 - if it mentions investment in product and process development 2 - if it quantifies investments 3 - Comparison to previous years – Trend
Investment in process improvement (improvement of production processes, logistics, distribution of inputs and outputs - products and services, support services)	0 - not mentioned 1 – if it mentions investment in process improvement 2 – if it quantifies investments 3 - Comparison to previous years – Trend
Number of new services/products	0 or 3
Improving existing products (modification of existing products)	0 or 3
Extensions to existing product lines	0 or 3
New product lines	0 or 3
New products that are novelties also in global markets	0 or 3
R&D expenditure	
Does the company report on R&D investment?	0 - not mentioned 1 - if it mentions investments in R&D 2 - if investment is quantified 3 - Comparison to previous years – Trend
New product sales	
Does the company reveal percentage of sales revenue derived from new products?	0 - not mentioned 1 - if it mentions sale of new products 2 - if it is quantified 3 - Comparison to previous years – Trend
IC (Patents; Copyrights; Trademarks)	
Does the company report on its intellectual capital protection?	
Patents	0 or 3
Trademarks	0 or 3
Copyrights	0 or 3
Awards for R&D activities	
Awards for R&D activities/Leadership in new technologies	0 or 3
Awards related to innovations/new products (Innovative products)	0 or 3
Financial relations	
Does the company report on its relationships with finance providers, such as banks?	0 or 3
RELATIONAL DISCLOSURE CATEGORY ITEMS	
Brand recognition	
Does the company report on brands?	
Does the company develop its own brands?	0 or 3
Does the company develop a corporate brand, in addition to the separate brands for its products/services?	0 or 3
Does the company developed brand architecture (organised system of brands, e.g., monolithic/unitary, endorsed/hybrid, freestanding/diversified)	0 or 3
Awards for companies' brands	

Awards related to corporate product or corporate brands	0 or 3
Promotion	
Does the company reveal improved promotion of its products/services?	0 - not mentioned 1 - if it reports on marketing activities to increase the value of brands 2 - if advertising expense for corporate campaigns is provided 3 - Comparison to previous years – Trend
Corporate image	
Does the company report on corporate reputation building?	
Does the company **manage relationships with the media** (corporate management accessibility, openness with the media and support for journalists)?	0 or 3
Does the company have a **communication system (e.g., intranet)**, which provides continuous reporting and transfer of information to those responsible?	0 or 3
Does the company **measure perceptions of the company** among different publics in terms of quality of management, product or service quality, innovativeness and financial position?	0 or 3
Awards for corporate image of the company	
Awards related to corporate image or its relations to different publics	0 or 3
CUSTOMERS and MARKETS	
New customers	
Does the company disclose its strategies to attract new customers?	0 - not mentioned 1 - description of strategies to attract new customers 2 - share/number of new customers 3 - Comparison to previous years – Trend
Types of customers	
Does the company disclose different types of customers?	0 - not mentioned 1 - description of customers or different types of customers 2 - share of sales to customers or different types of customers 3 - Comparison to previous years – Trend
Customer loyalty and Long-term relationship with customers	
Does the company disclose its strategies to build long-term relationship with customers and to improve customer loyalty?	0 or 3
Customers' influence and suggestions	
Does the company report on customer's impact on business decisions and product development?	0 or 3
Customer satisfaction	
Does the company measure customer satisfaction with the questionnaires and report its results?	0 - not mentioned 1 - if it reports on the level of satisfaction 2 - if the customer satisfaction measurement results are provided 3 - Comparison to previous years – Trend
Rate, costs of grievances	
Does the company disclose the rate or the cost of grievances?	0 - not mentioned 1- if it reports on grievances 2 - if the rate or the cost of grievances are provided 3 - Comparison to previous years – Trend

Market share by products	
Does the company reveal information on principal products produced and market share of a company for its products?*	0 - not mentioned 1 – if it provides description of principal products 2 – if it provides market share by products 3 - Comparison to previous years – Trend
*In case that report provides information on market share more than once (if the firm operates in more than one line of business), only the first instance of disclosure is counted.	
Principal markets	
Does the company identify principal markets that buy its products?	0 - not mentioned 1 - if it lists the principal markets that buy the firm's product 2 - if this is quantified, e.g., % of sales to each market 3 - Comparison to previous years – Trend
Industry tendencies	
Discussion on past industry tendencies	0 or 3
Discussion on future industry tendencies	0 or 3
Distribution/sales channels	
Does the company report on how its service and products reach its customers?	0 or 3
Does the company provide on-line sale?	0 or 3
Business and research partnering	
Does the company report on its business collaborations/partnerships?	0 or 3
Does the company report on its research collaborations?	0 or 3
SUPPLIERS	
Long-term relationship with suppliers	
Does the company disclose its strategies to build long-term relationship with suppliers?	0 or 3
*in terms of exchanged information, visits or annual meetings with suppliers, organised events like Days of suppliers.	
Suppliers influence and suggestions	
Does the company report on suppliers' impact on business decisions and product development?	0 or 3
COMPETITORS	
Competition	
Does the company report on its competitive environment?	0 - not mentioned 1 - if it mentions the competitors 2 - intensity of competition is quantified, e.g., number of major competitors or the market share of the largest firms in the industry is provided 3 - Comparison to previous years – Trend
Competitors influence	
Does the company report on the impact of competition on the company's business?	0 - not mentioned 1 - if it reports on the impact of competitors on the current or future business/profit 2 - if this impact is quantified 3 - Comparison to previous years – Trend
Environmental activities	
Compliance with environmental standards	
Does the company state whether it complies with standards dealing with environmental protection?	0 or 3
Environmental considerations with product development and supply chain management	
Does the company integrate environmental aspects into its product development and supply chain management?	0 or 3
CSR and community involvement	

Does the company report on its community involvement (Donations …)?	0 - not mentioned 1 - if it reveals its CSR policy and initiatives 2 - if its social contribution activities are quantified 3 - Comparison to previous years – Trend
Does the company report on its environmental activities in the field of social responsibility (programs for reduction of light use, electricity use, etc.)?	0 - not mentioned 1 - if it reveals its CSR policy and initiatives in the environmental field 2 - if its social contribution activities are quantified 3 - Comparison to previous years – Trend
Report on environmental performance	
Does the company report on its environmental performance including the efficient use of resources, emissions and waste?	0 - not mentioned 1 - if it mentions environmental initiatives and activities to improve environment 2 – if it reports on reduction of carbon emissions, waste management, energy efficiency indicators 3 - Comparison to previous years – Trend
Report on energy and water consumption	
Does the company report on energy and water consumption?	0 - not mentioned 1 - if it mentions electricity and water consumption 2 - if it quantifies its electricity and water consumption 3 - Comparison to previous years – Trend
Listed environmental departments or managers	
Does the company disclose the names of individuals or department responsible for environmental management and compliance?	0 or 3

Source: Own work.

Table A2.6: HRM, organisational and relational disclosures by clusters

HRM DISCLOSURE ANALYSIS									
Descriptive statistic for year 2009		**N**	**Mean**	**SD**	**SE**	**90% Confidence Interval**		**Min**	**Max**
						Lower Bound	**Upper Bound**		
Total number of employees	1	32	2.63	1.008	0.178	2.26	2.99	0	3
	2	57	2.84	0.676	0.090	2.66	3.02	0	3
	Total	89	2.76	0.812	0.086	2.59	2.94	0	3
Full/part time	1	32	0.47	1.107	0.196	0.07	0.87	0	3
	2	57	0.63	1.234	0.163	0.30	0.96	0	3
	Total	89	0.57	1.186	0.126	0.32	0.82	0	3
Number of employees working in the production, distribution, IT, sales and marketing, administration departments	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.32	0.929	0.123	0.07	0.56	0	3
	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Gender (% of women employees)	1	32	0.94	1.413	0.250	0.43	1.45	0	3
	2	57	1.05	1.444	0.191	0.67	1.44	0	3
	Total	89	1.01	1.426	0.151	0.71	1.31	0	3
Average age	1	32	1.03	1.448	0.256	0.51	1.55	0	3
	2	57	0.95	1.407	0.186	0.57	1.32	0	3
	Total	89	0.98	1.414	0.150	0.68	1.28	0	3
Education	1	32	2.06	1.413	0.250	1.55	2.57	0	3
	2	57	2.47	1.151	0.152	2.17	2.78	0	3
	Total	89	2.33	1.259	0.133	2.06	2.59	0	3
Disabled	1	32	0.84	1.370	0.242	0.35	1.34	0	3
	2	57	0.74	1.303	0.173	0.39	1.08	0	3

	Total	89	0.78	1.321	0.140	0.50	1.05	0	3
Total number of terminated contracts	1	32	0.84	1.370	0.242	0.35	1.34	0	3
	2	57	0.95	1.407	0.186	0.57	1.32	0	3
	Total	89	0.91	1.387	0.147	0.62	1.20	0	3
Number of terminated open-end or fixed term contracts	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.63	1.234	0.163	0.30	0.96	0	3
	Total	89	0.51	1.129	0.120	0.27	0.74	0	3
Total number of newly employed	1	32	0.66	1.260	0.223	0.20	1.11	0	3
	2	57	0.74	1.303	0.173	0.39	1.08	0	3
	Total	89	0.71	1.281	0.136	0.44	0.98	0	3
Number of newly employed per year for open-end or for fixed term contract	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.16	0.676	0.090	-0.02	0.34	0	3
	Total	89	0.10	0.544	0.058	-0.01	0.22	0	3
Does the company disclose its stuff turnover rate (external and internal)?	1	32	0.13	0.554	0.098	-0.07	0.32	0	3
	2	57	0.23	0.627	0.083	0.06	0.39	0	2
	Total	89	0.19	0.601	0.064	0.06	0.32	0	3
Does the company disclose its absentee rates?	1	32	0.91	1.254	0.222	0.45	1.36	0	3
	2	57	0.46	0.946	0.125	0.21	0.71	0	3
	Total	89	0.62	1.082	0.115	0.39	0.85	0	3
Does the company disclose the costs for training per year or average hours of training per employee?	1	32	0.94	0.914	0.162	0.61	1.27	0	2
	2	57	0.82	0.869	0.115	0.59	1.06	0	3
	Total	89	0.87	0.882	0.093	0.68	1.05	0	3
Does the company reveal its knowledge transfer tools like apprenticeship, mentorship, coaching, job rotation?	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.10	0.544	0.058	-0.01	0.22	0	3
Does the firm reveal tools for regular performance feedback to employees?	1	32	0.56	1.190	0.210	0.13	0.99	0	3
	2	57	0.16	0.676	0.090	-0.02	0.34	0	3
	Total	89	0.30	0.910	0.096	0.11	0.49	0	3
Does the company reveal special training programs for leaders?	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.10	0.544	0.058	-0.01	0.22	0	3
Does the company reveal its incentive* and remuneration system** for its workers?	1	32	0.25	0.568	0.100	0.05	0.45	0	2
	2	57	0.28	0.620	0.082	0.12	0.45	0	2
	Total	89	0.27	0.599	0.063	0.14	0.40	0	2
Does the company reveal its system for motivation* of employees?	1	32	0.06	0.354	0.063	-0.06	0.19	0	2
	2	57	0.04	0.265	0.035	-0.04	0.11	0	2
	Total	89	0.04	0.298	0.032	-0.02	0.11	0	2
Does the company measure and disclose employee satisfaction?	1	32	0.16	0.574	0.101	-0.05	0.36	0	3
	2	57	0.12	0.381	0.050	0.02	0.22	0	2
	Total	89	0.13	0.457	0.048	0.04	0.23	0	3
Added value per employee in the reporting period	1	32	1.03	1.448	0.256	0.51	1.55	0	3
	2	57	1.09	1.405	0.186	0.71	1.46	0	3
	Total	89	1.07	1.413	0.150	0.77	1.36	0	3
Does the company report on workers' participation in the workplace?	1	32	0.09	0.530	0.094	-0.10	0.28	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.10	0.544	0.058	-0.01	0.22	0	3
Does the company disclose its programs aimed at improving work-life balance of its employees?	1	32	0.09	0.530	0.094	-0.10	0.28	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.07	0.447	0.047	-0.03	0.16	0	3
Does the company disclose its health and safety policy?	1	32	1.69	1.512	0.267	1.14	2.23	0	3
	2	57	1.16	1.473	0.195	0.77	1.55	0	3
	Total	89	1.35	1.501	0.159	1.03	1.66	0	3
Does the company disclose whether its employees are organised in unions?	1	32	0.66	1.260	0.223	0.20	1.11	0	3
	2	57	0.47	1.104	0.146	0.18	0.77	0	3
	Total	89	0.54	1.159	0.123	0.30	0.78	0	3

ANOVA for year 2009		Sum of Squares	df	Mean Square	F	Sign.
Total number of employees	Between Groups	0.966	1	0.966	1.472	0.228
	Within Groups	57.079	87	0.656		
	Total	58.045	88			
Full/part time	Between Groups	0.543	1	0.543	0.384	0.537
	Within Groups	123.232	87	1.416		
	Total	123.775	88			
Number of employees working in the production, distribution, IT, sales and marketing, administration departments	Between Groups	0.337	1	0.337	0.450	0.504
	Within Groups	65.191	87	0.749		
	Total	65.528	88			
Gender (% of women employees)	Between Groups	0.272	1	0.272	0.132	0.717
	Within Groups	178.717	87	2.054		
	Total	178.989	88			
Average age	Between Groups	0.144	1	0.144	0.071	0.790
	Within Groups	175.811	87	2.021		
	Total	175.955	88			
Education	Between Groups	3.465	1	3.465	2.215	0.140
	Within Groups	136.086	87	1.564		
	Total	139.551	88			
Disabled	Between Groups	0.234	1	0.234	0.133	0.716
	Within Groups	153.271	87	1.762		
	Total	153.506	88			
Total number of terminated contracts	Between Groups	0.220	1	0.220	0.113	0.737
	Within Groups	169.061	87	1.943		
	Total	169.281	88			
Number of terminated open-end or fixed term contracts	Between Groups	2.515	1	2.515	1.994	0.161
	Within Groups	109.732	87	1.261		
	Total	112.247	88			
Total number of newly employed	Between Groups	0.133	1	0.133	0.080	0.778
	Within Groups	144.271	87	1.658		
	Total	144.404	88			
Number of newly employed per year for open-end or for fixed term contract	Between Groups	0.511	1	0.511	1.738	0.191
	Within Groups	25.579	87	0.294		
	Total	26.090	88			
Does the company disclose its stuff turnover rate (external and internal)?	Between Groups	0.218	1	0.218	0.601	0.440
	Within Groups	31.535	87	0.362		
	Total	31.753	88			
Does the company disclose its absentee rates?	Between Groups	4.152	1	4.152	3.654	**0.059**
	Within Groups	98.859	87	1.136		
	Total	103.011	88			
Does the company disclose the costs for training per year or average hours of training per employee?	Between Groups	0.261	1	0.261	0.334	0.565
	Within Groups	68.121	87	0.783		
	Total	68.382	88			
Does the company reveal its knowledge transfer tools like apprenticeship, mentorship, coaching, job rotation, on the job training?	Between Groups	0.373	1	0.373	1.261	0.265
	Within Groups	25.717	87	0.296		
	Total	26.090	88			
Does the company reveal tools for regular performance feedback to its employees?	Between Groups	3.355	1	3.355	4.203	**0.043**
	Within Groups	69.454	87	0.798		
	Total	72.809	88			
Does the company reveal special training programs for leaders?	Between Groups	0.373	1	0.373	1.261	0.265
	Within Groups	25.717	87	0.296		
	Total	26.090	88			
Does the company reveal its incentive* and	Between Groups	0.019	1	0.019	0.053	0.818

remuneration system** for its workers?	Within Groups	31.509	87	0.362		
	Total	31.528	88			
Does the company reveal its system for motivation* of employees?	Between Groups	0.015	1	0.015	0.172	0.680
	Within Groups	7.805	87	0.090		
	Total	7.820	88			
Does the company measure and disclose employee satisfaction?	Between Groups	0.023	1	0.023	0.109	0.743
	Within Groups	18.359	87	0.211		
	Total	18.382	88			
Added value per employee in the reporting period	Between Groups	0.065	1	0.065	0.032	0.858
	Within Groups	175.530	87	2.018		
	Total	175.596	88			
Does the company report on workers' participation in the workplace?	Between Groups	0.003	1	0.003	0.009	0.924
	Within Groups	26.087	87	0.300		
	Total	26.090	88			
Does the company disclose its programs aimed at improving work-life balance of its employees?	Between Groups	0.035	1	0.035	0.172	0.680
	Within Groups	17.561	87	0.202		
	Total	17.596	88			
Does the company disclose its health and safety policy?	Between Groups	5.748	1	5.748	2.599	0.111
	Within Groups	192.454	87	2.212		
	Total	198.202	88			
Does the company disclose whether its employees are organised in unions?	Between Groups	0.683	1	0.683	0.506	0.479
	Within Groups	117.429	87	1.350		
	Total	118.112	88			

ORGANISATIONAL CAPITAL DISCLOSURE ANALYSIS									
Descriptive statistics for year 2009		**N**	**Mean**	**SD**	**SE**	**90% Confidence Interval**		**Min**	**Max**
						Lower Bound	**Upper Bound**		
Does the company disclose details on the development, application and impact of its information systems?	1	32	0.53	0.915	0.162	0.20	0.86	0	3
	2	57	0.46	0.600	0.079	0.30	0.62	0	2
	Total	89	0.48	0.725	0.077	0.33	0.64	0	3
Does the company disclose its mission, vision, values of the company?	1	32	1.59	1.521	0.269	1.05	2.14	0	3
	2	57	1.47	1.513	0.200	1.07	1.88	0	3
	Total	89	1.52	1.508	0.160	1.20	1.83	0	3
Does the company provide a time frame to achieve corporate goals?	1	32	0.56	1.190	0.210	0.13	0.99	0	3
	2	57	0.42	1.051	0.139	0.14	0.70	0	3
	Total	89	0.47	1.098	0.116	0.24	0.70	0	3
Does the company reveal management structure?	1	32	1.97	1.448	0.256	1.45	2.49	0	3
	2	57	2.16	1.360	0.180	1.80	2.52	0	3
	Total	89	2.09	1.387	0.147	1.80	2.38	0	3
Biographical profile of directors?	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.00	0.000	0.000	0.00	0.00	0	0
Does the company reveal ownership/shareholder structure?	1	32	1.88	1.476	0.261	1.34	2.41	0	3
	2	57	1.84	1.473	0.195	1.45	2.23	0	3
	Total	89	1.85	1.466	0.155	1.55	2.16	0	3
Does the company state whether the workers' representative is the member of the governing bodies (for example the supervisory board and its comities or CEO)?	1	32	1.13	1.476	0.261	0.59	1.66	0	3
	2	57	0.79	1.333	0.177	0.44	1.14	0	3
	Total	89	0.91	1.387	0.147	0.62	1.20	0	3
Does the company report whether it	1	32	0.09	0.530	0.094	-0.10	0.28	0	3

uses integrated management system?	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.03	0.318	0.034	-0.03	0.10	0	3
Reduced reaction time to customer/supplier support, i.e. improved efficiency in attending inquiries…	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.03	0.318	0.034	-0.03	0.10	0	3
Firm capacity for closeness to potential and real customers.	1	32	0.47	1.107	0.196	0.07	0.87	0	3
	2	57	0.32	0.929	0.123	0.07	0.56	0	3
	Total	89	0.37	0.993	0.105	0.16	0.58	0	3
Firm assesses accreditations and certifications	1	32	2.06	1.413	0.250	1.55	2.57	0	3
	2	57	2.00	1.427	0.189	1.62	2.38	0	3
	Total	89	2.02	1.414	0.150	1.72	2.32	0	3
Employees participate in internal improvement and technological innovation projects	1	32	1.13	1.476	0.261	0.59	1.66	0	3
	2	57	0.63	1.234	0.163	0.30	0.96	0	3
	Total	89	0.81	1.339	0.142	0.53	1.09	0	3
Description of basic R&D projects	1	32	0.69	1.256	0.222	0.23	1.14	0	3
	2	57	0.32	0.929	0.123	0.07	0.56	0	3
	Total	89	0.45	1.066	0.113	0.22	0.67	0	3
Number of employees in R&D department	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.07	0.447	0.047	-0.03	0.16	0	3
Number of services/products	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.07	0.447	0.047	-0.03	0.16	0	3
Investment in product and process development	1	32	0.56	0.504	0.089	0.38	0.74	0	1
	2	57	0.47	0.570	0.076	0.32	0.62	0	2
	Total	89	0.51	0.546	0.058	0.39	0.62	0	2
Investment in process improvement (improvement of production processes, logistics, distribution of inputs and outputs - products and services, support services like maintenance, sales, IT, accounting and other processes in the company)	1	32	1.03	0.933	0.165	0.69	1.37	0	2
	2	57	1.02	0.896	0.119	0.78	1.26	0	2
	Total	89	1.02	0.904	0.096	0.83	1.21	0	2
Number of new services/products	1	32	0.47	1.107	0.196	0.07	0.87	0	3
	2	57	0.68	1.270	0.168	0.35	1.02	0	3
	Total	89	0.61	1.212	0.128	0.35	0.86	0	3
Improving existing products (modification of existing products)	1	32	1.03	1.448	0.256	0.51	1.55	0	3
	2	57	0.47	1.104	0.146	0.18	0.77	0	3
	Total	89	0.67	1.259	0.133	0.41	0.94	0	3
Extensions of existing product lines	1	32	0.66	1.260	0.223	0.20	1.11	0	3
	2	57	0.63	1.234	0.163	0.30	0.96	0	3
	Total	89	0.64	1.236	0.131	0.38	0.90	0	3
New product lines	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.13	0.625	0.066	0.00	0.27	0	3
New products that are novelties also in global markets	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.00	0.000	0.000	0.00	0.00	0	0
Does the company report on R&D investment?	1	32	0.44	0.948	0.168	0.10	0.78	0	3
	2	57	0.16	0.591	0.078	0.00	0.31	0	3
	Total	89	0.26	0.747	0.079	0.10	0.42	0	3
Does the company reveal percentage of sales revenue derived from new	1	32	0.19	0.592	0.105	-0.03	0.40	0	2
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3

products?	Total	89	0.10	0.478	0.051	0.00	0.20	0	3
Patents	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.16	0.676	0.090	-0.02	0.34	0	3
	Total	89	0.17	0.695	0.074	0.02	0.31	0	3
Trademarks	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.13	0.625	0.066	0.00	0.27	0	3
Copyrights	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.00	0.000	0.000	0.00	0.00	0	0
Awards for R&D activities/Leadership in new technologies	1	32	0.09	0.530	0.094	-0.10	0.28	0	3
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.03	0.318	0.034	-0.03	0.10	0	3
Awards related to innovations/new products (Innovative products)	1	32	0.66	1.260	0.223	0.20	1.11	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.30	0.910	0.096	0.11	0.49	0	3
Does the company report on its relationships with finance providers, such as banks?	1	32	0.75	1.320	0.233	0.27	1.23	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.34	0.953	0.101	0.14	0.54	0	3

ANOVA for year 2009		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sign.**
Does the company disclose details on the development, application and impact of its information systems?	Between Groups	0.116	1	0.116	0.218	0.642
	Within Groups	46.109	87	0.530		
	Total	46.225	88			
Does the company disclose its mission, vision, values of the company?	Between Groups	0.295	1	0.295	0.129	0.721
	Within Groups	199.929	87	2.298		
	Total	200.225	88			
Does the company provide a time frame to achieve corporate goals?	Between Groups	0.410	1	0.410	0.337	0.563
	Within Groups	105.770	87	1.216		
	Total	106.180	88			
Does the company reveal management structure?	Between Groups	0.733	1	0.733	0.378	0.540
	Within Groups	168.548	87	1.937		
	Total	169.281	88			
Biographical profile of directors?	Between Groups	0.000	1	0.000		
	Within Groups	0.000	87	0.000		
	Total	0.000	88			
Does the company reveal ownership/shareholder structure?	Between Groups	0.022	1	0.022	0.010	0.920
	Within Groups	189.079	87	2.173		
	Total	189.101	88			
Does the company state whether the workers' representative is the member of the governing bodies (for example the supervisory board and its comities or CEO)?	Between Groups	2.307	1	2.307	1.202	0.276
	Within Groups	166.974	87	1.919		
	Total	169.281	88			
Does the company report whether it uses integrated management system?	Between Groups	0.180	1	0.180	1.797	0.184
	Within Groups	8.719	87	0.100		
	Total	8.899	88			
Reduced reaction time to customer/supplier support, i.e. improved efficiency in attending inquiries,	Between Groups	0.057	1	0.057	0.559	0.457
	Within Groups	8.842	87	0.102		
	Total	8.899	88			
Firm capacity for closeness to potential and real customers?	Between Groups	0.480	1	0.480	0.483	0.489
	Within Groups	86.285	87	0.992		
	Total	86.764	88			

Firm assess accreditations and certifications	Between Groups	0.080	1	0.080	0.040	0.843
	Within Groups	175.875	87	2.022		
	Total	175.955	88			
Employees participate in internal improvement and technological innovation projects	Between Groups	4.990	1	4.990	2.842	**0.095**
	Within Groups	152.763	87	1.756		
	Total	157.753	88			
Description of basic R&D projects	Between Groups	2.832	1	2.832	2.535	0.115
	Within Groups	97.191	87	1.117		
	Total	100.022	88			
Number of employees in R&D department	Between Groups	0.721	1	0.721	3.715	**0.057**
	Within Groups	16.875	87	0.194		
	Total	17.596	88			
Number of services/products	Between Groups	0.721	1	0.721	3.715	**0.057**
	Within Groups	16.875	87	0.194		
	Total	17.596	88			
Investment in product and process development	Between Groups	0.162	1	0.162	0.539	0.465
	Within Groups	26.086	87	0.300		
	Total	26.247	88			
Investment in process improvement (improvement of production processes, logistics, distribution of inputs and outputs - products and services, support services like maintenance, sales, IT, accounting etc.)	Between Groups	0.004	1	0.004	0.005	0.946
	Within Groups	71.951	87	0.827		
	Total	71.955	88			
Number of new services/products	Between Groups	0.951	1	0.951	0.645	0.424
	Within Groups	128.285	87	1.475		
	Total	129.236	88			
Improving existing products (modification of existing products)	Between Groups	6.371	1	6.371	4.162	**0.044**
	Within Groups	133.179	87	1.531		
	Total	139.551	88			
Extensions to existing product lines	Between Groups	0.012	1	0.012	0.008	0.929
	Within Groups	134.482	87	1.546		
	Total	134.494	88			
New product lines	Between Groups	1.071	1	1.071	2.798	**0.098**
	Within Groups	33.311	87	0.383		
	Total	34.382	88			
New products that are novelties also in global markets	Between Groups	0.000	1	0.000		
	Within Groups	0.000	87	0.000		
	Total	0.000	88			
Does the company report on R&D investment?	Between Groups	1.602	1	1.602	2.937	**0.090**
	Within Groups	47.454	87	0.545		
	Total	49.056	88			
Does the company reveal percentage of sales revenue derived from new products?	Between Groups	0.373	1	0.373	1.645	0.203
	Within Groups	19.717	87	0.227		
	Total	20.090	88			
Patents	Between Groups	0.018	1	0.018	0.037	0.848
	Within Groups	42.454	87	0.488		
	Total	42.472	88			
Trademarks	Between Groups	0.139	1	0.139	0.352	0.554
	Within Groups	34.243	87	0.394		
	Total	34.382	88			
Copyrights	Between Groups	0.000	1	0.000		
	Within Groups	0.000	87	0.000		
	Total	0.000	88			
Awards for R&D activities/Leadership in	Between Groups	0.180	1	0.180	1.797	0.184

new technologies	Within Groups	8.719	87	0.100		
	Total	8.899	88			
Awards related to innovations/new products (Innovative products)	Between Groups	6.222	1	6.222	8.129	**0.005**
	Within Groups	66.587	87	0.765		
	Total	72.809	88			
Does the company report on its relationships with finance providers, such as banks?	Between Groups	8.519	1	8.519	10.385	**0.002**
	Within Groups	71.368	87	0.820		
	Total	79.888	88			

RELATIONAL CAPITAL DISCLOSURE ANALYSIS									
Descriptive statistics for year 2009		**N**	**Mean**	**SD**	**SE**	**90% Confidence Interval**		**Min**	**Max**
						Lower Bound	**Upper Bound**		
Does the company develop its own brands?	1	32	1.31	1.512	0.267	0.77	1.86	0	3
	2	57	1.00	1.427	0.189	0.62	1.38	0	3
	Total	89	1.11	1.457	0.154	0.81	1.42	0	3
Does the company develop a corporate brand, in addition to the separate brands for its products / services?	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.13	0.625	0.066	0.00	0.27	0	3
Does the company developed brand architecture (organised system of brands, e.g., monolithic/unitary, endorsed/hybrid, freestanding/diversified)	1	32	0.09	0.530	0.094	-0.10	0.28	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.10	0.544	0.058	-0.01	0.22	0	3
Awards related to corporate product or corporate brands	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.26	0.856	0.113	0.04	0.49	0	3
	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Does the company reveal improved promotion of its products/services?	1	32	0.22	0.553	0.098	0.02	0.42	0	2
	2	57	0.25	0.544	0.072	0.10	0.39	0	2
	Total	89	0.24	0.544	0.058	0.12	0.35	0	2
Does the company manage relationships with the media (corporate management accessibility, openness with the media and support for journalists)?	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.21	0.773	0.102	0.01	0.42	0	3
	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Does the company have a communication system, which provides continuous reporting and transfer of information to those responsible?	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.20	0.756	0.080	0.04	0.36	0	3
Does the company measure perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position?	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.07	0.447	0.047	-0.03	0.16	0	3
Awards related to corporate image or its relations to different publics	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.20	0.756	0.080	0.04	0.36	0	3
Does the company disclose its strategies to attract new customers (like fairs)?	1	32	0.50	0.718	0.127	0.24	0.76	0	2
	2	57	0.35	0.582	0.077	0.20	0.51	0	2
	Total	89	0.40	0.635	0.067	0.27	0.54	0	2
Does the company disclose different types of customers?	1	32	0.47	0.842	0.149	0.17	0.77	0	3
	2	57	0.35	0.719	0.095	0.16	0.54	0	3
	Total	89	0.39	0.763	0.081	0.23	0.55	0	3
Does the company disclose its strategies to build long-term relationship with	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.21	0.773	0.102	0.01	0.42	0	3

customers and improve customer loyalty?	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Does the company report on customer's impact on business decisions and product development?	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.21	0.773	0.102	0.01	0.42	0	3
	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Does the company measure customer satisfaction with the questionnaires and report its results?	1	32	0.41	0.756	0.134	0.13	0.68	0	3
	2	57	0.11	0.409	0.054	0.00	0.21	0	2
	Total	89	0.21	0.574	0.061	0.09	0.33	0	3
Does the company disclose the rate or the cost of grievances?	1	32	0.47	0.879	0.155	0.15	0.79	0	3
	2	57	0.42	0.865	0.115	0.19	0.65	0	3
	Total	89	0.44	0.865	0.092	0.26	0.62	0	3
Does the company reveal information on principal products produced and market share of a company for its products?	1	32	1.66	0.937	0.166	1.32	1.99	0	3
	2	57	1.77	0.964	0.128	1.52	2.03	0	3
	Total	89	1.73	0.951	0.101	1.53	1.93	0	3
Does the company identify principal markets that buy its products?	1	32	1.81	1.091	0.193	1.42	2.21	0	3
	2	57	1.74	1.173	0.155	1.43	2.05	0	3
	Total	89	1.76	1.138	0.121	1.52	2.00	0	3
Does the company discuss past industry or/and market tendencies?	1	32	1.03	1.448	0.256	0.51	1.55	0	3
	2	57	1.26	1.494	0.198	0.87	1.66	0	3
	Total	89	1.18	1.474	0.156	0.87	1.49	0	3
Does the company discuss future industry or/and market tendencies?	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.26	0.856	0.113	0.04	0.49	0	3
	Total	89	0.17	0.695	0.074	0.02	0.31	0	3
Does the company report on how its service and products reach its customers?	1	32	0.94	1.413	0.250	0.43	1.45	0	3
	2	57	0.79	1.333	0.177	0.44	1.14	0	3
	Total	89	0.84	1.356	0.144	0.56	1.13	0	3
Does the company provide on-line sale?	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.03	0.318	0.034	-0.03	0.10	0	3
Does the company report on its business collaborations/partnerships?	1	32	0.38	1.008	0.178	0.01	0.74	0	3
	2	57	0.21	0.773	0.102	0.01	0.42	0	3
	Total	89	0.27	0.863	0.091	0.09	0.45	0	3
Does the company report on its research collaborations?	1	32	0.66	1.260	0.223	0.20	1.11	0	3
	2	57	0.84	1.360	0.180	0.48	1.20	0	3
	Total	89	0.78	1.321	0.140	0.50	1.05	0	3
Does the company disclose its strategies to build long-term relationship with suppliers? *in terms information exchange, visits or annual meetings with suppliers, organised events like Days of suppliers	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.05	0.397	0.053	-0.05	0.16	0	3
	Total	89	0.13	0.625	0.066	0.00	0.27	0	3
Does the company report on suppliers' impact on business decisions and product development?	1	32	0.19	0.738	0.130	-0.08	0.45	0	3
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.07	0.447	0.047	-0.03	0.16	0	3
Does the company report on its competitive environment?	1	32	0.16	0.369	0.065	0.02	0.29	0	1
	2	57	0.05	0.294	0.039	-0.03	0.13	0	2
	Total	89	0.09	0.325	0.034	0.02	0.16	0	2
Does the company report on the impact of competition on the company's business?	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.02	0.132	0.018	-0.02	0.05	0	1
	Total	89	0.01	0.106	0.011	-0.01	0.03	0	1
Does the company state whether it complies with standards dealing with environmental protection?	1	32	1.97	1.448	0.256	1.45	2.49	0	3
	2	57	1.21	1.485	0.197	0.82	1.60	0	3
	Total	89	1.48	1.508	0.160	1.17	1.80	0	3
Does the company integrate environmental aspects into its product	1	32	0.56	1.190	0.210	0.13	0.99	0	3
	2	57	0.42	1.051	0.139	0.14	0.70	0	3

development and supply chain management?	Total	89	0.47	1.098	0.116	0.24	0.70	0	3
Does the company report on its community involvement?	1	32	0.50	0.672	0.119	0.26	0.74	0	2
	2	57	0.35	0.582	0.077	0.20	0.51	0	2
	Total	89	0.40	0.616	0.065	0.27	0.53	0	2
Does the company report on its environmental activities in the field of social responsibility (CSR)?	1	32	0.28	0.888	0.157	-0.04	0.60	0	3
	2	57	0.11	0.557	0.074	-0.04	0.25	0	3
	Total	89	0.17	0.695	0.074	0.02	0.31	0	3
Does the company report on its environmental performance including the efficient use of resources, emissions and waste?	1	32	1.00	1.107	0.196	0.60	1.40	0	3
	2	57	0.82	0.889	0.118	0.59	1.06	0	3
	Total	89	0.89	0.970	0.103	0.68	1.09	0	3
Does the company report on energy and water consumption?	1	32	0.47	1.016	0.180	0.10	0.83	0	3
	2	57	0.42	0.925	0.122	0.18	0.67	0	3
	Total	89	0.44	0.953	0.101	0.24	0.64	0	3
Does the company disclose the names of individuals or department responsible for environmental management and compliance?	1	32	0.00	0.000	0.000	0.00	0.00	0	0
	2	57	0.00	0.000	0.000	0.00	0.00	0	0
	Total	89	0.00	0.000	0.000	0.00	0.00	0	0

ANOVA for year 2009		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sign.**
Does the company develop its own brands?	Between Groups	2.001	1	2.001	0.942	0.334
	Within Groups	184.875	87	2.125		
	Total	186.876	88			
Does the company develop a corporate brand, in addition to the separate brands for its products / services?	Between Groups	1.071	1	1.071	2.798	**0.098**
	Within Groups	33.311	87	0.383		
	Total	34.382	88			
Does the company developed brand architecture (organised system of brands, e.g., monolithic/unitary, endorsed/hybrid, freestanding/diversified)	Between Groups	0.003	1	0.003	0.009	0.924
	Within Groups	26.087	87	0.300		
	Total	26.090	88			
Awards related to corporate product or corporate brands	Between Groups	0.007	1	0.007	0.009	0.925
	Within Groups	65.521	87	0.753		
	Total	65.528	88			
Does the company reveal improved promotion of its products/services? 0_3	Between Groups	0.015	1	0.015	0.049	0.825
	Within Groups	26.030	87	0.299		
	Total	26.045	88			
Does the company manage relationships with the media (corporate management accessibility, openness to the media and support for journalists)?	Between Groups	0.554	1	0.554	0.742	0.391
	Within Groups	64.974	87	0.747		
	Total	65.528	88			
Does the company have a communication system (e.g., intranet), which provides continuous reporting and transfer of information to those responsible?	Between Groups	1.491	1	1.491	2.655	0.107
	Within Groups	48.868	87	0.562		
	Total	50.360	88			
Does the company measure perceptions about the company of different publics in terms of quality of management, product or service quality, innovativeness and financial position?	Between Groups	0.721	1	0.721	3.715	**0.057**
	Within Groups	16.875	87	0.194		
	Total	17.596	88			
Awards related to corporate image or its relations to different publics	Between Groups	1.491	1	1.491	2.655	0.107
	Within Groups	48.868	87	0.562		
	Total	50.360	88			
Does the company disclose its strategies to attract new customers (like fairs)?	Between Groups	0.456	1	0.456	1.133	0.290
	Within Groups	34.982	87	0.402		
	Total	35.438	88			

Does the company disclose different types of customers?	Between Groups	0.285	1	0.285	0.486	0.487
	Within Groups	50.951	87	0.586		
	Total	51.236	88			
Does the company disclose its strategies to build long-term relationship with customers and to improve customer loyalty?	Between Groups	0.554	1	0.554	0.742	0.391
	Within Groups	64.974	87	0.747		
	Total	65.528	88			
Does the company report on customer's impact on business decisions and product development?	Between Groups	0.554	1	0.554	0.742	0.391
	Within Groups	64.974	87	0.747		
	Total	65.528	88			
Does the company measure customer satisfaction with the questionnaires and report its results?	Between Groups	1.857	1	1.857	5.963	**0.017**
	Within Groups	27.087	87	0.311		
	Total	28.944	88			
Does the company disclose the rate or the cost of grievances?	Between Groups	0.047	1	0.047	0.062	0.805
	Within Groups	65.863	87	0.757		
	Total	65.910	88			
Does the company reveal information on principal products produced and market share of a company for its products?	Between Groups	0.274	1	0.274	0.301	0.585
	Within Groups	79.254	87	0.911		
	Total	79.528	88			
Does the company identify principal markets that buy its products?	Between Groups	0.117	1	0.117	0.090	0.765
	Within Groups	113.928	87	1.310		
	Total	114.045	88			
Does the company discuss past industry or/and market tendencies?	Between Groups	1.102	1	1.102	0.505	0.479
	Within Groups	190.021	87	2.184		
	Total	191.124	88			
Does the company discuss future industry or/and market tendencies?	Between Groups	1.419	1	1.419	3.008	**0.086**
	Within Groups	41.053	87	0.472		
	Total	42.472	88			
Does the company report on how its service and products reach its customers?	Between Groups	0.449	1	0.449	0.242	0.624
	Within Groups	161.349	87	1.855		
	Total	161.798	88			
Does the company provide on-line sale?	Between Groups	0.057	1	0.057	0.559	0.457
	Within Groups	8.842	87	0.102		
	Total	8.899	88			
Does the company report on its business collaborations/partnerships?	Between Groups	0.554	1	0.554	0.742	0.391
	Within Groups	64.974	87	0.747		
	Total	65.528	88			
Does the company report on its research collaborations?	Between Groups	0.708	1	0.708	0.403	0.527
	Within Groups	152.798	87	1.756		
	Total	153.506	88			
Does the company disclose its strategies to build long-term relationship with suppliers? *in terms of information exchange, visits or annual meetings with suppliers, organise events	Between Groups	1.071	1	1.071	2.798	**0.098**
	Within Groups	33.311	87	0.383		
	Total	34.382	88			
Does the company report on suppliers' impact on business decisions and product development?	Between Groups	0.721	1	0.721	3.715	**0.057**
	Within Groups	16.875	87	0.194		
	Total	17.596	88			
Does the company report on its competitive environment?	Between Groups	0.220	1	0.220	2.113	0.150
	Within Groups	9.061	87	0.104		
	Total	9.281	88			
Does the company report on the impact of competition on the company’s business?	Between Groups	0.006	1	0.006	0.559	0.457
	Within Groups	0.982	87	0.011		
	Total	0.989	88			
Does the company state whether it complies with standards dealing with environmental protection?	Between Groups	11.782	1	11.782	5.440	**0.022**
	Within Groups	188.442	87	2.166		

	Total	200.225	88			
Does the company integrate environmental aspects into its product development and supply chain management?	Between Groups	0.410	1	0.410	0.337	0.563
	Within Groups	105.770	87	1.216		
	Total	106.180	88			
Does the company report on its community involvement?	Between Groups	0.456	1	0.456	1.202	0.276
	Within Groups	32.982	87	0.379		
	Total	33.438	88			
Does the company report on its environmental activities in the field of social responsibility?	Between Groups	0.635	1	0.635	1.320	0.254
	Within Groups	41.837	87	0.481		
	Total	42.472	88			
Does the company report on its environmental performance including the efficient use of resources, emissions and waste?	Between Groups	0.631	1	0.631	0.667	0.416
	Within Groups	82.246	87	0.945		
	Total	82.876	88			
Does the company report on energy and water consumption?	Between Groups	0.047	1	0.047	0.051	0.822
	Within Groups	79.863	87	0.918		
	Total	79.910	88			
Does the company disclose the names of individuals or department responsible for environmental management and compliance?	Between Groups	0.000	1	0.000		
	Within Groups	0.000	87	0.000		
	Total	0.000	88			

Source: AJPES (2015) and own calculations.

Table A2.7: Summary of disclosure studies

Author	Study objective	1) Research theory; 2) Country; 3) Sample size; 4) Method	IC framework	1) Scoring scale; 2) Weighted measurement; 3) IC structure
Guthrie and Petty (2000)	To assess the amount and type of reported information and to investigate the type of measurement and management of three IC elements.	1) Legitimacy theory, classical political economy theory and stakeholder theory 2) Australia 3) 20 largest listed companies 4) Content analysis	Sveiby's framework (1997): internal structure; external structure; and employee competence.	1) NA 2) NA 3) Human capital 30% Internal capital 30% External capital 40%
Guthrie, Petty, Yongvanich, Ricceri (2004)	To review the use of content analysis as a research method in understanding ICR	1) Stakeholder and legitimacy theory	IC framework developed by Brooking (1996) and modified by the Australian society of CPAS and the Society of management accountants of Canada (1999, p. 14) was combined with the Guthrie and Petty (2000) framework	1) not relevant 2) not relevant 3) Not computed
Yi, Davey and Eggleton (2011)	To construct a comprehensive theoretical framework for interpreting voluntary IC disclosure practices by organisations	1) Agency, stakeholder, signalling and legitimacy theory.	Intellectual capital composed of three elements: (1) internal; (2) external; and (3) human capital.	1) not relevant 2) not relevant 3) Not computed
Guthrie, Petty, Ferrier, Wells (1999)	Overall assessment of the extent of intellectual capital reporting	2) Australia 3) 20 Australian listed companies 4) Content analysis	Sveiby's framework: internal structures (organisational capital), external structures (customer/relational capital) and employee competence (HRM)	1) 0-3 2) NO 3) Human capital 30% Internal capital 30% External capital 40%
Garcia-Meca, Parra, Larran and Marti´Nez (2004)	To assess disclosed IC information in presentations to sell-side analysts and the influences on these disclosures.	2) Spain 3) 257 listed Spanish companies 4) Disclosure index	Bukh's et al. framework (2001): human capital, customers, processes, technology, research, development and innovation, and strategy	1) 0-1 2) NO 3) Human capital 26.7%; Customers 18.3%; Technology 5.6%; Processes 12.7%; Strategy 26.8; R&D 9.9%
Oliveira, Rodrigues, Craig (2006)	To identify factors that influence the voluntary disclosure of intangibles information in annual reports	1) Signalling theory, agency theory, political cost theory, legitimacy theory 2) Portugal 3) 56 companies listed on Euronext	Framework adopted from the work of Stewart (1999), Sveiby (1999), Meritum (2002) together with the IC attributes presented by Brooking	1) 0-2 2) NO 3) Relational capital 33% Structural capital 30%

		Lisbon 4) Content analysis and disclosure index	(1997): human capital, structural capital and relational capital	Human capital 27%
Li, Pike and Haniffa (2008)	To investigate association between the extent of IC disclosures and variety of impact factors	2) UK 3) 100 UK listed firms 4) Content analysis and disclosure index	Sveiby's framework: human capital, structural capital and relational capital	1) Word counting 2) NO 3) Relational capital 38%; Structural capital 34%; Human capital 28 %
Singh and van der Zahn (2008)	To investigate association between the extent of IC disclosures and three potential explanatory determinants: ownership retention, proprietary costs and corporate governance structure.	2) Singapore 3) 444 IPOs listing on the Singapore stock exchange (SGX) 4) Disclosure index	Six categories based upon prior research (Williams, 2001; Beaulieu et al., 2002; Bukh et al., 2005a): human resources, customers, information technology, processes, R&D and strategic statements	1) 0-1 2) NO 3) Human Resources 37%, Customers, Information 11.5%, Technology 2.8%, Processes 12.5%, R&D 10.7%, and Strategic statements 25.1%
Vergauwen, Bollen and Oirbans (2007)	To study the relationship between IC disclosures and the relative importance of intangible assets as company value drivers.	2) Sweden, UK, Denmark 3) 50 firms 4) Content analysis performed electronically	Bontis (2002) and Guthrie and Petty (2000) framework.	1) 0-1 2) NO 3) Relational capital 46%; Human capital 32%; Structural capital 22.2%
Yi and Davey (2010)	To define the extent and quality of IC disclosure	2) China 3) 49 dual-listed companies in china 4) Disclosure index and content analysis	Sveiby's (1997) and Bontis' (1998) framework: internal structure, external structure and employee competence. Final list of IC items is adapted from Schneider and Samkin (2008).	1) 0-6 2) YES 3) External capital 46%; Internal capital 30%; Human capital 24%
Yi, Harun and Umesh (2014)	To examine the trend of voluntary intellectual capital (IC) disclosure in China over a three-year period (2006, 2008 and 2009).	1) Resource-based, agency, stakeholder and legitimacy theory 2) China 3) 100 top listed A-share Chinese companies 4) Content analysis	the three-element model comprising internal structure, external structure and human competence developed by Sveiby (1997)	1) 0-4 2) yes 3) Internal capital (disclosure scores: 0.44, 0.72, 0.79 for 2006, 2008 and 2009) External capital (0.45, 0.59, 0.67); Human capital (0.46, 0.71, 0.76)
	To provide a holistic model for IC reporting	2) Asia, Middle East, Europe (Austria, Denmark, India, Israel, Korea, Spain and Sweden)	Human capital, structural capital, relational capital	1) not relevant 2) not relevant 3) Not computed

		4) IC and knowledge management survey and in-depth case analysis of the IC reports of participating firms.		
Gray, Kouhy and Lavers (1995)	To provide and interpret data about some of the UK's CSR.	1) Political economy, legitimacy and stakeholder theories 2) UK 3) The database contains: a haphazard sample of companies from 1979-1987; and a sample consisting of the top 100 UK companies for 1988-1991 4) Content analysis	CSR related items	1) NA 2) NA 3) Not computed
Vergauwen and van Alem (2005)	To investigate current IC disclosure practice in three European countries.	2) The Netherlands, France and Germany 3) 89 companies 4) Content analysis performed electronically	The list of IC related terms used by Bontis (2002) categorised within human capital, structural capital, relational capital categories	1) "Hits" refer to any time any search term is found in the annual report, whereas "terms" refer to the total number of search terms that can be found in one report. 2) NO 3) Not computed
Bontis, Keow and Richardson (2000)	To investigate IC elements and their inter-relationships within two industry sectors in Malaysia.	2) Malaysia 3) 107 part-time mba students from Kuala Lumpur and Seremban (Malaysia). 4) Survey on company's IC	Definition of human, structural and customer capital based upon previous research by Brooking, Roos, Stewart and Bontis.	3) Not computed
Bontis (2003)	To investigate ICD policies	2) Canada 3) 10,000 corporations 4) Content analysis performed electronically	A list of IC realted terms based on the review of several IC books and articles	1) NO 2) NO 3) Not computed
Goh and Lim (2004)	To examine the quality and quantity of IC disclosure practices	2) Malaysia 3) 20 profit-making public listed companies in Malaysia 4) Content analysis	Sveiby's framework: internal capital, external capital and employee competence.	1) 0-1 2) NO 3) Relational Capital 41% Structural Capital 37% Human Capital 22%
Oliveras,	To report upon development of IC	1) Legitimacy theory	The list of IC terms based on Guthrie	1) 0-1

Gowthorpe, Kasperskaya and Perramon (2008)	reporting in Spain.	2) Spain 3) 12 Spanish listed companies 4) Content analysis performed electronically using the "Concordance" software	and Petty (2000) framework categorised within the internal (structural) capital, external (customer/relational capital), and employee competences (human capital) categories.	2) NO 3) External Capital (59.6%) Internal Capital (18.5) Human Capital (21.9%)
Abeysekera and Guthrie (2005)	To examine the 2-year trend of IC identification and codification in the annual reports	1) The political economy of accounting theory and the legitimacy theory 2) Sri Lanka 3) 30 firms listed on the Colombo stock exchange 4) Content analysis	Sveiby 's (1997) framework: internal structure, external structure and employee competence.	1) '−1' represents an intellectual liability item, '0' not an intellectual item, and '1' an intellectual asset item. 2) NO 3) Relational Capital 44% Structural Capital 20% Human Capital 36%
Bozzolan, Favotto and Ricceri (2003)	To examine the amount and content of voluntary IC disclosure and define factors that influence voluntary reporting behaviour.	1) Agency theory, signalling theory 2) Italy 3) 30 firms listed in the Italian stock exchange 4) Content analysis	Modified Guthrie and Petty (2000b) framework: internal structure, external structure, human capital.	1) 0-2 2) NO 3) Relational Capital 49% Structural Capital 30% Human Capital 21%
Chaua and Gray (2002)	To examine the association of ownership structure with the voluntary disclosures of listed companies in the Asian settings of Hong Kong and Singapore	1) Agency theory 2) Hong Kong and Singapore 3) 60 companies from Hong Kong and 62 from Singapore 4) Disclosure index	Meek et al. (1995) framework: strategic information, nonfinancial information and financial information	1) 0-1 2) NO 3) Hong Kong companies 9.77% in the case of financial information to 18.49% for strategic information, with nonfinancial information in between at 10.45% or the Singapore companies, the voluntary mean disclosure in 1997 varied from 10.68% for financial information to 16.76% for nonfinancial information, with strategic information in between at 16.00%.

Arvidsson (2003)	To analyse the extent of disclosure on intangibles and to identify company related factors, which explain the extent of disclosure.	2) Danish, Finnish, Icelandic, Norwegian or Swedish companies 3) 36 companies (19 Swedish, 11 Danish, 4 Norwegian and 2 Finnish) 4) Disclosure index	Human, relational, organisational, R&D, environmental/social category	1) 0-1 2) NO 3) All four Nordic sub-samples disclose most information related to R&D, followed by Relational and Organisational. Human and Environment/Social appear to be less prioritised disclosure categories.
Botossan (1997)	To examine the association between disclosure level and the cost of equity capital.	3) 122 manufacturing companies 4) Disclosure index	Meek et al. (1995) framework: Background Information, Ten- or Five-Year Summary of Historical Results, Key Non-Financial Statistics, Projected Information, Management Discussion and Analysis.	1) Subjective scoring with quantitative information being weighted more heavily than qualitative information because of its more useful informative character. 2) YES 3) Not computed
Kamath (2010)	To analyse the Value Added Intellectual Coefficient (VAIC) for measuring value-based performance of the Indian banking sector for 2000-2004.	2) India 3) 98 commercial banks 4) Not relevant	Not relevant	1) Not relevant 2) Not relevant 3) Not relevant

Source: Own work.

Table A2.8: Descriptive statistics of companies for the period 2006-2010

	N		Mean	Median	SD	Min	Max
	Valid	Missing					
ROA	450	15	0.02	0.02	0.08	-0.39	0.80
ROE	450	15	0.80	0.05	17.30	-13.59	366.42
EBIT (EUR)	457	8	4,890,768.02	733,620.00	20,469,819.27	0.00	208,515,664.00
EBITDA (EUR)	457	8	8,958,228.87	2,501,384.00	27,281,682.01	9,562.00	266,750,917.00
VA per employee (EUR)	457	8	57,428.77	31,516.35	169,918.27	-3,295.10	2,528,122.00
ROS (%)	457	8	5.44	2.95	12.34	0.00	163.24
Sales growth (%)	450	15	18.60	2.81	312.13	-83.51	6,602.29
Sales (EUR)	457	8	86,667,741.45	33,237,664.00	172,724,371.25	555,323.00	1,320,449,708.00
Leverage	457	8	0.51	0.50	0.22	0.04	1.28
Net debt	457	8	0.09	0.10	0.29	-0.96	0.99
Liquidity	457	8	1.56	1.25	1.26	0.07	12.25
Total assets (EUR)	457	8	89,852,680.96	33,320,576.70	169,257,710.84	3,978,559.51	1,446,311,426.00
Employees	457	8	535.03	293.00	788.29	1.00	5,761.09

Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for **leverage indicator**; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for **net debt**; Current assets/Current liabilities for **liquidity**; (Net profit – Net loss)/Average Equity for **ROE** and (Net profit – net loss)/Average Assets for **ROA**. **ROS** indicator is calculated as Operating profit/Net sales. For **added value per employee** indicator we used following formula: value added (gross operating returns – costs of merchandise, material and services – other operating expenses)/average number of employees.

Source: AJPES (2015) and own calculations.

Table A2.9: Descriptive statistics of companies by specific year in 2006-2010

		2006	2007	2008	2009	2010
				ROA		
N	Valid	86	89	92	93	90
	Missing	7	4	1	0	3
Mean		0.04	0.04	0.02	0.01	0.01
Median		0.03	0.03	0.02	0.01	0.02
SD		0.07	0.08	0.07	0.10	0.06
Min		-0.31	-0.39	-0.32	-0.22	-0.33
Max		0.20	0.31	0.20	0.80	0.12
				ROE		
N	Valid	86	89	92	93	90
	Missing	7	4	1	0	3
Mean		0.08	4.01	0.11	-0.03	-0.13
Median		0.06	0.06	0.04	0.01	0.03
SD		0.33	38.87	0.59	0.29	1.46
Min		-1.39	-10.83	-1.24	-1.95	-13.59
Max		2.18	366.42[37]	4.74	0.92	1.19
				EBIT (EUR)		
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		5,256,911.30	5,662,322.00	4,865,588.17	4,547,344.30	4,120,883.74
Median		1,155,883.83	1,231,610.00	675,550.00	338,244.00	614,399.50

[37] The mean and maximum value of ROE is unusually high in 2007, driven by positive capital of Novem Car, which was negative in 2006.

SD		17,161,500.44	18,453,794.50	21,911,811.82	22,719,839.29	21,819,200.85
Min		0	0	0	0	0
Max		154,674,586.88	166,896,447.00	208,515,664.00	206,510,482.00	206,015,629.00
		EBITDA (EUR)				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		8,677,118.91	9,620,994.90	9,126,673.78	8,855,686.14	8,490,622.28
Median		2,854,940.74	2,596,331.00	2,476,504.00	2,245,442.00	2,411,033.50
SD		21,762,940.72	25,091,113.16	29,081,512.35	30,166,969.99	29,760,166.04
Min		19,278.92	12,815.00	9,562.00	12,334.00	42,563.00
Max		190,867,901.85	211,280,247.00	260,244,496.00	265,305,474.00	266,750,917.00
		VA per employee (EUR)				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		66,357.81	68,618.52	55,856.97	49,435.67	47,044.23
Median		27,217.93	30,371.90	32,334.13	30,999.25	35,912.13
SD		237,388.82	261,655.72	114,016.88	80,479.45	41,063.45
Min		10,270.33	10,875.59	8,663.54	-3,295.10	10,257.31
Max		2,239,980.80	2,528,122.00	1,046,654.00	696,345.00	261,182.00
		ROS (%)				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		5.29	7.11	6.04	4.46	4.30
Median		3.00	3.32	3.27	2.03	2.89
SD		6.15	17.19	17.22	10.00	5.02
Min		0	0	0	0	0
Max		34.25	156.36	163.24	85.62	24.20
		Sales growth (%)				
N	Valid	86	89	92	93	90
	Missing	7	4	1	0	3
Mean		12.24	10.19	4.63	-18.02	85.10[38]
Median		10.35	9.51	-0.45	-16.98	10.34
SD		16.56	16.10	32.42	20.55	695.18
Min		-52.25	-44.14	-83.51	-64.79	-56.25
Max		60.32	65.01	204.13	105.95	6,602.29
		Sales (EUR)				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		83,791,732.59	93,000,145.89	91,706,945.94	76,070,223.62	88,782,260.54
Median		29,841,282.76	35,056,720.00	37,177,616.00	27,418,870.00	35,598,405.00
SD		151,500,635.04	178,783,324.03	177,290,858.16	170,658,327.52	186,236,077.17
Min		1,218,498.58	1,181,922.00	1,477,056.00	702,238.00	555,323.00
Max		1,003,792,288.43	1,247,671,040.00	1,211,501,568.00	1,282,563,840.00	1,320,449,708.00
		Leverage				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		0.49	0.52	0.52	0.51	0.53
Median		0.48	0.51	0.52	0.50	0.52
SD		0.21	0.21	0.22	0.22	0.23
Min		0.06	0.10	0.05	0.04	0.04
Max		1.20	0.98	1.10	1.02	1.28
		Net debt				

[38] Elan reported high sales growth in 2010, which influenced average sales growth in the given year.

N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		0.06	0.08	0.11	0.08	0.12
Median		0.06	0.09	0.13	0.08	0.10
SD		0.30	0.29	0.30	0.29	0.28
Min		-0.92	-0.86	-0.88	-0.96	-0.52
Max		0.99	0.72	0.69	0.76	0.85
		Liquidity				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		1.55	1.53	1.52	1.58	1.60
Median		1.36	1.31	1.16	1.19	1.24
SD		0.94	1.00	1.35	1.40	1.52
Min		0.10	0.14	0.16	0.12	0.07
Max		4.96	6.62	10.54	10.44	12.25
		Total assets (EUR)				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		81,887,509.12	88,819,217.36	92,420,582.47	90,232,292.48	95,740,016.86
Median		25,460,106.83	33,098,974.50	37,115,032.00	32,116,995.00	36,003,678.50
SD		140,536,789.65	158,715,429.04	175,776,289.44	176,986,963.31	192,537,319.97
Min		3,978,559.51	3,979,776.00	4,012,830.00	5,072,738.00	4,592,680.00
Max		854,286,296.11	1,057,257,504.00	1,224,391,488.00	1,312,938,912.00	1,446,311,426.00
		Employees number				
N	Valid	89	92	93	93	90
	Missing	4	1	0	0	3
Mean		563.87	564.03	554.27	500.71	492.47
Median		326.00	325.49	322.05	274.40	258.88
SD		812.95	807.03	822.69	779.63	728.92
Min		1.00	1.00	1.00	1.00	1.00
Max		5,761.09	5,455.76	5,467.16	5,066.68	4,648.07

Definition of indicators used in the analysis: Debt (long-term liabilities + short-term liabilities)/(Equity + Liabilities) for **leverage indicator**; ((Long-term liabilities + short-term liabilities) – (Long-term accounts receivable – short-term accounts receivable) – Long-term investments – Short-term investments – Cash)/(Equity + Labilities) for **net debt**; Current assets/Current liabilities for **liquidity**; (Net profit – Net loss)/Average Equity for **ROE** and (Net profit – net loss)/Average Assets for **ROA**. **ROS** indicator is calculated as Operating profit/Net sales. For **added value per employee** indicator we used following formula: value added (gross operating returns – costs of merchandise, metrical and services – other operating expenses)/average number of employees.

Source: AJPES (2015) and own calculations.

Table A2.10: Frequency of IC disclosures in the period 2006-2010

DISCLOSURE OF RELATIONAL CAPITAL ATRIBUTES								
IC item	**Score**	**Year**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company develop its own brands?	0	Count	59	56	54	57	56	282
		% within IC item	20.90%	19.90%	19.10%	20.20%	19.90%	100.00%
		% within Year	63.40%	60.20%	58.10%	61.30%	60.20%	60.60%
		% of Total	12.70%	12.00%	11.60%	12.30%	12.00%	60.60%
	3	Count	34	37	39	36	37	183
		% within IC item	18.60%	20.20%	21.30%	19.70%	20.20%	100.00%
		% within Year	36.60%	39.80%	41.90%	38.70%	39.80%	39.40%
		% of Total	7.30%	8.00%	8.40%	7.70%	8.00%	39.40%

	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company develop a corporate brand, in addition to the separate brands for its products?	0	Count	87	88	88	89	89	441
		% within IC item	19.70%	20.00%	20.00%	20.20%	20.20%	100.00%
		% within Year	93.50%	94.60%	94.60%	95.70%	95.70%	94.80%
		% of Total	18.70%	18.90%	18.90%	19.10%	19.10%	94.80%
	3	Count	6	5	5	4	4	24
		% within IC item	25.00%	20.80%	20.80%	16.70%	16.70%	100.00%
		% within Year	6.50%	5.40%	5.40%	4.30%	4.30%	5.20%
		% of Total	1.30%	1.10%	1.10%	0.90%	0.90%	5.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company developed brand architecture (organised system of brands e.g., monolithic/ unitary, endorsed/ hybrid, freestanding/ diversified)	0	Count	90	90	90	90	89	449
		% within IC item	20.00%	20.00%	20.00%	20.00%	19.80%	100.00%
		% within Year	96.80%	96.80%	96.80%	96.80%	95.70%	96.60%
		% of Total	19.40%	19.40%	19.40%	19.40%	19.10%	96.60%
	3	Count	3	3	3	3	4	16
		% within IC item	18.80%	18.80%	18.80%	18.80%	25.00%	100.00%
		% within Year	3.20%	3.20%	3.20%	3.20%	4.30%	3.40%
		% of Total	0.60%	0.60%	0.60%	0.60%	0.90%	3.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Awards related to corporate product or corporate brands	0	Count	87	87	80	84	79	417
		% within IC item	20.90%	20.90%	19.20%	20.10%	18.90%	100.00%
		% within Year	93.50%	93.50%	86.00%	90.30%	84.90%	89.70%
		% of Total	18.70%	18.70%	17.20%	18.10%	17.00%	89.70%
	3	Count	6	6	13	9	14	48
		% within IC item	12.50%	12.50%	27.10%	18.80%	29.20%	100.00%
		% within Year	6.50%	6.50%	14.00%	9.70%	15.10%	10.30%
		% of Total	1.30%	1.30%	2.80%	1.90%	3.00%	10.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the	0	Count	74	77	77	76	75	379

company reveal improved promotion of its products/ services?		% within IC item	19.50%	20.30%	20.30%	20.10%	19.80%	100.00%
		% within Year	79.60%	82.80%	82.80%	81.70%	80.60%	81.50%
		% of Total	15.90%	16.60%	16.60%	16.30%	16.10%	81.50%
	1	Count	14	13	13	11	12	63
		% within IC item	22.20%	20.60%	20.60%	17.50%	19.00%	100.00%
		% within Year	15.10%	14.00%	14.00%	11.80%	12.90%	13.50%
		% of Total	3.00%	2.80%	2.80%	2.40%	2.60%	13.50%
	2	Count	4	3	3	5	6	21
		% within IC item	19.00%	14.30%	14.30%	23.80%	28.60%	100.00%
		% within Year	4.30%	3.20%	3.20%	5.40%	6.50%	4.50%
		% of Total	0.90%	0.60%	0.60%	1.10%	1.30%	4.50%
	3	Count	1	0	0	1	0	2
		% within IC item	50.00%	0.00%	0.00%	50.00%	0.00%	100.00%
		% within Year	1.10%	0.00%	0.00%	1.10%	0.00%	0.40%
		% of Total	0.20%	0.00%	0.00%	0.20%	0.00%	0.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company manage relationships with the media (corporate management accessibility, openness with the media and support for journalists)?	0	Count	89	88	85	83	82	427
		% within IC item	20.80%	20.60%	19.90%	19.40%	19.20%	100.00%
		% within Year	95.70%	94.60%	91.40%	89.20%	88.20%	91.80%
		% of Total	19.10%	18.90%	18.30%	17.80%	17.60%	91.80%
	3	Count	4	5	8	10	11	38
		% within IC item	10.50%	13.20%	21.10%	26.30%	28.90%	100.00%
		% within Year	4.30%	5.40%	8.60%	10.80%	11.80%	8.20%
		% of Total	0.90%	1.10%	1.70%	2.20%	2.40%	8.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company have a communication system (intranet), which provides continuous reporting and transfer of information to those responsible?	0	Count	86	84	83	85	87	425
		% within IC item	20.20%	19.80%	19.50%	20.00%	20.50%	100.00%
		% within Year	92.50%	90.30%	89.20%	91.40%	93.50%	91.40%
		% of Total	18.50%	18.10%	17.80%	18.30%	18.70%	91.40%
	3	Count	7	9	10	8	6	40
		% within IC item	17.50%	22.50%	25.00%	20.00%	15.00%	100.00%
		% within Year	7.50%	9.70%	10.80%	8.60%	6.50%	8.60%
		% of Total	1.50%	1.90%	2.20%	1.70%	1.30%	8.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%

		Year	2006	2007	2008	2009	2010	Total
Does the company measure perceptions of the company among different publics in terms of quality of management, product or service quality, innovativeness and financial position?	0	Count	92	92	92	91	91	458
		% within IC item	20.10%	20.10%	20.10%	19.90%	19.90%	100.00%
		% within Year	98.90%	98.90%	98.90%	97.80%	97.80%	98.50%
		% of Total	19.80%	19.80%	19.80%	19.60%	19.60%	98.50%
	3	Count	1	1	1	2	2	7
		% within IC item	14.30%	14.30%	14.30%	28.60%	28.60%	100.00%
		% within Year	1.10%	1.10%	1.10%	2.20%	2.20%	1.50%
		% of Total	0.20%	0.20%	0.20%	0.40%	0.40%	1.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Awards related to corporate image or its relations to different publics	0	Count	88	86	85	85	85	429
		% within IC item	20.50%	20.00%	19.80%	19.80%	19.80%	100.00%
		% within Year	94.60%	92.50%	91.40%	91.40%	91.40%	92.30%
		% of Total	18.90%	18.50%	18.30%	18.30%	18.30%	92.30%
	3	Count	5	7	8	8	8	36
		% within IC item	13.90%	19.40%	22.20%	22.20%	22.20%	100.00%
		% within Year	5.40%	7.50%	8.60%	8.60%	8.60%	7.70%
		% of Total	1.10%	1.50%	1.70%	1.70%	1.70%	7.70%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its strategies to attract new customers (like fairs)?	0	Count	67	75	71	62	61	336
		% within IC item	19.90%	22.30%	21.10%	18.50%	18.20%	100.00%
		% within Year	72.00%	80.60%	76.30%	66.70%	65.60%	72.30%
		% of Total	14.40%	16.10%	15.30%	13.30%	13.10%	72.30%
	1	Count	21	14	19	23	26	103
		% within IC item	20.40%	13.60%	18.40%	22.30%	25.20%	100.00%
		% within Year	22.60%	15.10%	20.40%	24.70%	28.00%	22.20%
		% of Total	4.50%	3.00%	4.10%	4.90%	5.60%	22.20%
	2	Count	5	4	3	8	6	26
		% within IC item	19.20%	15.40%	11.50%	30.80%	23.10%	100.00%
		% within Year	5.40%	4.30%	3.20%	8.60%	6.50%	5.60%
		% of Total	1.10%	0.90%	0.60%	1.70%	1.30%	5.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the	0	Count	57	67	79	69	76	348

company disclose different types of customers?		% within IC item	16.40%	19.30%	22.70%	19.80%	21.80%	100.00%
		% within Year	61.30%	72.00%	84.90%	74.20%	81.70%	74.80%
		% of Total	12.30%	14.40%	17.00%	14.80%	16.30%	74.80%
	1	Count	19	9	6	11	4	49
		% within IC item	38.80%	18.40%	12.20%	22.40%	8.20%	100.00%
		% within Year	20.40%	9.70%	6.50%	11.80%	4.30%	10.50%
		% of Total	4.10%	1.90%	1.30%	2.40%	0.90%	10.50%
	2	Count	14	16	3	11	9	53
		% within IC item	26.40%	30.20%	5.70%	20.80%	17.00%	100.00%
		% within Year	15.10%	17.20%	3.20%	11.80%	9.70%	11.40%
		% of Total	3.00%	3.40%	0.60%	2.40%	1.90%	11.40%
	3	Count	3	1	5	2	4	15
		% within IC item	20.00%	6.70%	33.30%	13.30%	26.70%	100.00%
		% within Year	3.20%	1.10%	5.40%	2.20%	4.30%	3.20%
		% of Total	0.60%	0.20%	1.10%	0.40%	0.90%	3.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its strategies to build long-term relationship with customers and to improve customer loyalty?	0	Count	82	82	86	84	79	413
		% within IC item	19.90%	19.90%	20.80%	20.30%	19.10%	100.00%
		% within Year	88.20%	88.20%	92.50%	90.30%	84.90%	88.80%
		% of Total	17.60%	17.60%	18.50%	18.10%	17.00%	88.80%
	3	Count	11	11	7	9	14	52
		% within IC item	21.20%	21.20%	13.50%	17.30%	26.90%	100.00%
		% within Year	11.80%	11.80%	7.50%	9.70%	15.10%	11.20%
		% of Total	2.40%	2.40%	1.50%	1.90%	3.00%	11.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on customer's impact on business decisions and product development?	0	Count	84	85	85	85	85	424
		% within IC item	19.80%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	90.30%	91.40%	91.40%	91.40%	91.40%	91.20%
		% of Total	18.10%	18.30%	18.30%	18.30%	18.30%	91.20%
	3	Count	9	8	8	8	8	41
		% within IC item	22.00%	19.50%	19.50%	19.50%	19.50%	100.00%
		% within Year	9.70%	8.60%	8.60%	8.60%	8.60%	8.80%
		% of Total	1.90%	1.70%	1.70%	1.70%	1.70%	8.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%

		Year	2006	2007	2008	2009	2010	Total
Does the company measure customer satisfaction with the questionnaires and report its results?	0	Count	79	81	77	79	80	396
		% within IC item	19.90%	20.50%	19.40%	19.90%	20.20%	100.00%
		% within Year	84.90%	87.10%	82.80%	84.90%	86.00%	85.20%
		% of Total	17.00%	17.40%	16.60%	17.00%	17.20%	85.20%
	1	Count	10	10	12	9	9	50
		% within IC item	20.00%	20.00%	24.00%	18.00%	18.00%	100.00%
		% within Year	10.80%	10.80%	12.90%	9.70%	9.70%	10.80%
		% of Total	2.20%	2.20%	2.60%	1.90%	1.90%	10.80%
	2	Count	4	2	2	4	4	16
		% within IC item	25.00%	12.50%	12.50%	25.00%	25.00%	100.00%
		% within Year	4.30%	2.20%	2.20%	4.30%	4.30%	3.40%
		% of Total	0.90%	0.40%	0.40%	0.90%	0.90%	3.40%
	3	Count	0	0	2	1	0	3
		% within IC item	0.00%	0.00%	66.70%	33.30%	0.00%	100.00%
		% within Year	0.00%	0.00%	2.20%	1.10%	0.00%	0.60%
		% of Total	0.00%	0.00%	0.40%	0.20%	0.00%	0.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose the rate or the cost of grievances?	0	Count	74	68	69	70	69	350
		% within IC item	21.10%	19.40%	19.70%	20.00%	19.70%	100.00%
		% within Year	79.60%	73.10%	74.20%	75.30%	74.20%	75.30%
		% of Total	15.90%	14.60%	14.80%	15.10%	14.80%	75.30%
	1	Count	10	12	12	11	14	59
		% within IC item	16.90%	20.30%	20.30%	18.60%	23.70%	100.00%
		% within Year	10.80%	12.90%	12.90%	11.80%	15.10%	12.70%
		% of Total	2.20%	2.60%	2.60%	2.40%	3.00%	12.70%
	2	Count	6	10	8	7	7	38
		% within IC item	15.80%	26.30%	21.10%	18.40%	18.40%	100.00%
		% within Year	6.50%	10.80%	8.60%	7.50%	7.50%	8.20%
		% of Total	1.30%	2.20%	1.70%	1.50%	1.50%	8.20%
	3	Count	3	3	4	5	3	18
		% within IC item	16.70%	16.70%	22.20%	27.80%	16.70%	100.00%
		% within Year	3.20%	3.20%	4.30%	5.40%	3.20%	3.90%
		% of Total	0.60%	0.60%	0.90%	1.10%	0.60%	3.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal	0	Count	11	9	7	8	12	47
		% within IC item	23.40%	19.10%	14.90%	17.00%	25.50%	100.00%

information on principal products produced and market share of a company for its products?		% within Year	11.80%	9.70%	7.50%	8.60%	12.90%	10.10%
		% of Total	2.40%	1.90%	1.50%	1.70%	2.60%	10.10%
	1	Count	28	31	29	31	30	149
		% within IC item	18.80%	20.80%	19.50%	20.80%	20.10%	100.00%
		% within Year	30.10%	33.30%	31.20%	33.30%	32.30%	32.00%
		% of Total	6.00%	6.70%	6.20%	6.70%	6.50%	32.00%
	2	Count	25	27	30	27	28	137
		% within IC item	18.20%	19.70%	21.90%	19.70%	20.40%	100.00%
		% within Year	26.90%	29.00%	32.30%	29.00%	30.10%	29.50%
		% of Total	5.40%	5.80%	6.50%	5.80%	6.00%	29.50%
	3	Count	29	26	27	27	23	132
		% within IC item	22.00%	19.70%	20.50%	20.50%	17.40%	100.00%
		% within Year	31.20%	28.00%	29.00%	29.00%	24.70%	28.40%
		% of Total	6.20%	5.60%	5.80%	5.80%	4.90%	28.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company identify principal markets that buy its products?	0	Count	24	18	19	19	21	101
		% within IC item	23.80%	17.80%	18.80%	18.80%	20.80%	100.00%
		% within Year	25.80%	19.40%	20.40%	20.40%	22.60%	21.70%
		% of Total	5.20%	3.90%	4.10%	4.10%	4.50%	21.70%
	1	Count	11	15	11	14	22	73
		% within IC item	15.10%	20.50%	15.10%	19.20%	30.10%	100.00%
		% within Year	11.80%	16.10%	11.80%	15.10%	23.70%	15.70%
		% of Total	2.40%	3.20%	2.40%	3.00%	4.70%	15.70%
	2	Count	36	35	37	28	23	159
		% within IC item	22.60%	22.00%	23.30%	17.60%	14.50%	100.00%
		% within Year	38.70%	37.60%	39.80%	30.10%	24.70%	34.20%
		% of Total	7.70%	7.50%	8.00%	6.00%	4.90%	34.20%
	3	Count	22	25	26	32	27	132
		% within IC item	16.70%	18.90%	19.70%	24.20%	20.50%	100.00%
		% within Year	23.70%	26.90%	28.00%	34.40%	29.00%	28.40%
		% of Total	4.70%	5.40%	5.60%	6.90%	5.80%	28.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company discuss past industry or/and market tendencies?	0	Count	62	61	58	54	52	287
		% within IC item	21.60%	21.30%	20.20%	18.80%	18.10%	100.00%
		% within Year	66.70%	65.60%	62.40%	58.10%	55.90%	61.70%
		% of Total	13.30%	13.10%	12.50%	11.60%	11.20%	61.70%
	3	Count	31	32	35	39	41	178

		% within IC item	17.40%	18.00%	19.70%	21.90%	23.00%	100.00%
		% within Year	33.30%	34.40%	37.60%	41.90%	44.10%	38.30%
		% of Total	6.70%	6.90%	7.50%	8.40%	8.80%	38.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company discuss future industry or/and market tendencies?	0	Count	88	90	89	85	83	435
		% within IC item	20.20%	20.70%	20.50%	19.50%	19.10%	100.00%
		% within Year	94.60%	96.80%	95.70%	91.40%	89.20%	93.50%
		% of Total	18.90%	19.40%	19.10%	18.30%	17.80%	93.50%
	3	Count	5	3	4	8	10	30
		% within IC item	16.70%	10.00%	13.30%	26.70%	33.30%	100.00%
		% within Year	5.40%	3.20%	4.30%	8.60%	10.80%	6.50%
		% of Total	1.10%	0.60%	0.90%	1.70%	2.20%	6.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on how its service and products reach its customers?	0	Count	66	63	65	66	62	322
		% within IC item	20.50%	19.60%	20.20%	20.50%	19.30%	100.00%
		% within Year	71.00%	67.70%	69.90%	71.00%	66.70%	69.20%
		% of Total	14.20%	13.50%	14.00%	14.20%	13.30%	69.20%
	3	Count	27	30	28	27	31	143
		% within IC item	18.90%	21.00%	19.60%	18.90%	21.70%	100.00%
		% within Year	29.00%	32.30%	30.10%	29.00%	33.30%	30.80%
		% of Total	5.80%	6.50%	6.00%	5.80%	6.70%	30.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company provide on-line sale?	0	Count	93	93	93	92	93	464
		% within IC item	20.00%	20.00%	20.00%	19.80%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	98.90%	100.00%	99.80%
		% of Total	20.00%	20.00%	20.00%	19.80%	20.00%	99.80%
	3	Count	0	0	0	1	0	1
		% within IC item	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%
		% within Year	0.00%	0.00%	0.00%	1.10%	0.00%	0.20%
		% of Total	0.00%	0.00%	0.00%	0.20%	0.00%	0.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	2006	2007	2008	2009	2010	Total
Does the company report on its business collaborations/ partnerships?	0	Count	84	88	86	85	85	428
		% within IC item	19.60%	20.60%	20.10%	19.90%	19.90%	100.00%
		% within Year	90.30%	94.60%	92.50%	91.40%	91.40%	92.00%
		% of Total	18.10%	18.90%	18.50%	18.30%	18.30%	92.00%
	3	Count	9	5	7	8	8	37
		% within IC item	24.30%	13.50%	18.90%	21.60%	21.60%	100.00%
		% within Year	9.70%	5.40%	7.50%	8.60%	8.60%	8.00%
		% of Total	1.90%	1.10%	1.50%	1.70%	1.70%	8.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its research collaborations?	0	Count	77	72	71	68	74	362
		% within IC item	21.30%	19.90%	19.60%	18.80%	20.40%	100.00%
		% within Year	82.80%	77.40%	76.30%	73.10%	79.60%	77.80%
		% of Total	16.60%	15.50%	15.30%	14.60%	15.90%	77.80%
	3	Count	16	21	22	25	19	103
		% within IC item	15.50%	20.40%	21.40%	24.30%	18.40%	100.00%
		% within Year	17.20%	22.60%	23.70%	26.90%	20.40%	22.20%
		% of Total	3.40%	4.50%	4.70%	5.40%	4.10%	22.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its strategies to build long-term relationship with suppliers? * exchanged information, visits or annual meetings with suppliers, organised events like Days of suppliers	0	Count	89	88	88	86	86	437
		% within IC item	20.40%	20.10%	20.10%	19.70%	19.70%	100.00%
		% within Year	95.70%	94.60%	94.60%	92.50%	92.50%	94.00%
		% of Total	19.10%	18.90%	18.90%	18.50%	18.50%	94.00%
	3	Count	4	5	5	7	7	28
		% within IC item	14.30%	17.90%	17.90%	25.00%	25.00%	100.00%
		% within Year	4.30%	5.40%	5.40%	7.50%	7.50%	6.00%
		% of Total	0.90%	1.10%	1.10%	1.50%	1.50%	6.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on suppliers'	0	Count	88	90	88	90	89	445
		% within IC item	19.80%	20.20%	19.80%	20.20%	20.00%	100.00%
		% within Year	94.60%	96.80%	94.60%	96.80%	95.70%	95.70%

impact on business decisions and product development?		% of Total	18.90%	19.40%	18.90%	19.40%	19.10%	95.70%
	3	Count	5	3	5	3	4	20
		% within IC item	25.00%	15.00%	25.00%	15.00%	20.00%	100.00%
		% within Year	5.40%	3.20%	5.40%	3.20%	4.30%	4.30%
		% of Total	1.10%	0.60%	1.10%	0.60%	0.90%	4.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its competitive environment?	0	Count	86	84	85	86	85	426
		% within IC item	20.20%	19.70%	20.00%	20.20%	20.00%	100.00%
		% within Year	92.50%	90.30%	91.40%	92.50%	91.40%	91.60%
		% of Total	18.50%	18.10%	18.30%	18.50%	18.30%	91.60%
	1	Count	5	8	5	6	5	29
		% within IC item	17.20%	27.60%	17.20%	20.70%	17.20%	100.00%
		% within Year	5.40%	8.60%	5.40%	6.50%	5.40%	6.20%
		% of Total	1.10%	1.70%	1.10%	1.30%	1.10%	6.20%
	2	Count	2	1	3	1	3	10
		% within IC item	20.00%	10.00%	30.00%	10.00%	30.00%	100.00%
		% within Year	2.20%	1.10%	3.20%	1.10%	3.20%	2.20%
		% of Total	0.40%	0.20%	0.60%	0.20%	0.60%	2.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on the impact of competition on the company's business?	0	Count	89	90	92	92	92	455
		% within IC item	19.60%	19.80%	20.20%	20.20%	20.20%	100.00%
		% within Year	95.70%	96.80%	98.90%	98.90%	98.90%	97.80%
		% of Total	19.10%	19.40%	19.80%	19.80%	19.80%	97.80%
	1	Count	4	3	1	1	1	10
		% within IC item	40.00%	30.00%	10.00%	10.00%	10.00%	100.00%
		% within Year	4.30%	3.20%	1.10%	1.10%	1.10%	2.20%
		% of Total	0.90%	0.60%	0.20%	0.20%	0.20%	2.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company state whether it complies with standards dealing with	0	Count	53	48	46	45	46	238
		% within IC item	22.30%	20.20%	19.30%	18.90%	19.30%	100.00%
		% within Year	57.00%	51.60%	49.50%	48.40%	49.50%	51.20%
		% of Total	11.40%	10.30%	9.90%	9.70%	9.90%	51.20%
	3	Count	40	45	47	48	47	227

environmental protection?		% within IC item	17.60%	19.80%	20.70%	21.10%	20.70%	100.00%
		% within Year	43.00%	48.40%	50.50%	51.60%	50.50%	48.80%
		% of Total	8.60%	9.70%	10.10%	10.30%	10.10%	48.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company integrate environmental aspects into its product development and supply chain management?	0	Count	83	82	80	76	78	399
		% within IC item	20.80%	20.60%	20.10%	19.00%	19.50%	100.00%
		% within Year	89.20%	88.20%	86.00%	81.70%	83.90%	85.80%
		% of Total	17.80%	17.60%	17.20%	16.30%	16.80%	85.80%
	3	Count	10	11	13	17	15	66
		% within IC item	15.20%	16.70%	19.70%	25.80%	22.70%	100.00%
		% within Year	10.80%	11.80%	14.00%	18.30%	16.10%	14.20%
		% of Total	2.20%	2.40%	2.80%	3.70%	3.20%	14.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its community involvement?	0	Count	64	64	64	59	59	310
		% within IC item	20.60%	20.60%	20.60%	19.00%	19.00%	100.00%
		% within Year	68.80%	68.80%	68.80%	63.40%	63.40%	66.70%
		% of Total	13.80%	13.80%	13.80%	12.70%	12.70%	66.70%
	1	Count	22	21	21	27	26	117
		% within IC item	18.80%	17.90%	17.90%	23.10%	22.20%	100.00%
		% within Year	23.70%	22.60%	22.60%	29.00%	28.00%	25.20%
		% of Total	4.70%	4.50%	4.50%	5.80%	5.60%	25.20%
	2	Count	7	8	8	7	8	38
		% within IC item	18.40%	21.10%	21.10%	18.40%	21.10%	100.00%
		% within Year	7.50%	8.60%	8.60%	7.50%	8.60%	8.20%
		% of Total	1.50%	1.70%	1.70%	1.50%	1.70%	8.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its environmental activities in the field of social responsibility?	0	Count	89	89	89	88	87	442
		% within IC item	20.10%	20.10%	20.10%	19.90%	19.70%	100.00%
		% within Year	95.70%	95.70%	95.70%	94.60%	93.50%	95.10%
		% of Total	19.10%	19.10%	19.10%	18.90%	18.70%	95.10%
	3	Count	4	4	4	5	6	23
		% within IC item	17.40%	17.40%	17.40%	21.70%	26.10%	100.00%
		% within Year	4.30%	4.30%	4.30%	5.40%	6.50%	4.90%

		% of Total	0.90%	0.90%	0.90%	1.10%	1.30%	4.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its environmental performance including the efficient use of resources, emissions and waste?	0	Count	45	43	38	35	36	197
		% within IC item	22.80%	21.80%	19.30%	17.80%	18.30%	100.00%
		% within Year	48.40%	46.20%	40.90%	37.60%	38.70%	42.40%
		% of Total	9.70%	9.20%	8.20%	7.50%	7.70%	42.40%
	1	Count	39	40	42	42	43	206
		% within IC item	18.90%	19.40%	20.40%	20.40%	20.90%	100.00%
		% within Year	41.90%	43.00%	45.20%	45.20%	46.20%	44.30%
		% of Total	8.40%	8.60%	9.00%	9.00%	9.20%	44.30%
	2	Count	3	2	2	1	2	10
		% within IC item	30.00%	20.00%	20.00%	10.00%	20.00%	100.00%
		% within Year	3.20%	2.20%	2.20%	1.10%	2.20%	2.20%
		% of Total	0.60%	0.40%	0.40%	0.20%	0.40%	2.20%
	3	Count	6	8	11	15	12	52
		% within IC item	11.50%	15.40%	21.20%	28.80%	23.10%	100.00%
		% within Year	6.50%	8.60%	11.80%	16.10%	12.90%	11.20%
		% of Total	1.30%	1.70%	2.40%	3.20%	2.60%	11.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on energy and water consumption?	0	Count	69	70	69	71	72	351
		% within IC item	19.70%	19.90%	19.70%	20.20%	20.50%	100.00%
		% within Year	74.20%	75.30%	74.20%	76.30%	77.40%	75.50%
		% of Total	14.80%	15.10%	14.80%	15.30%	15.50%	75.50%
	1	Count	11	8	7	8	7	41
		% within IC item	26.80%	19.50%	17.10%	19.50%	17.10%	100.00%
		% within Year	11.80%	8.60%	7.50%	8.60%	7.50%	8.80%
		% of Total	2.40%	1.70%	1.50%	1.70%	1.50%	8.80%
	2	Count	7	5	4	2	2	20
		% within IC item	35.00%	25.00%	20.00%	10.00%	10.00%	100.00%
		% within Year	7.50%	5.40%	4.30%	2.20%	2.20%	4.30%
		% of Total	1.50%	1.10%	0.90%	0.40%	0.40%	4.30%
	3	Count	6	10	13	12	12	53
		% within IC item	11.30%	18.90%	24.50%	22.60%	22.60%	100.00%
		% within Year	6.50%	10.80%	14.00%	12.90%	12.90%	11.40%
		% of Total	1.30%	2.20%	2.80%	2.60%	2.60%	11.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%

		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose the names of individuals or department responsible for environmental management and compliance?	0	Count	93	92	91	92	91	459
		% within IC item	20.30%	20.00%	19.80%	20.00%	19.80%	100.00%
		% within Year	100.00%	98.90%	97.80%	98.90%	97.80%	98.70%
		% of Total	20.00%	19.80%	19.60%	19.80%	19.60%	98.70%
	3	Count	0	1	2	1	2	6
		% within IC item	0.00%	16.70%	33.30%	16.70%	33.30%	100.00%
		% within Year	0.00%	1.10%	2.20%	1.10%	2.20%	1.30%
		% of Total	0.00%	0.20%	0.40%	0.20%	0.40%	1.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
Total number of disclosures			**614**	**622**	**643**	**676**	**676**	**3,231**

DISCLOSURE PERFORMANCE OF ORGANISATIONAL CAPITAL ATRIBUTES								
IC item	**Score**	**Year**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose details on the development, application and impact of its information systems?	0	Count	51	53	58	58	64	284
		% within IC item	18.00%	18.70%	20.40%	20.40%	22.50%	100.00%
		% within Year	54.80%	57.00%	62.40%	62.40%	68.80%	61.10%
		% of Total	11.00%	11.40%	12.50%	12.50%	13.80%	61.10%
	1	Count	29	32	26	27	23	137
		% within IC item	21.20%	23.40%	19.00%	19.70%	16.80%	100.00%
		% within Year	31.20%	34.40%	28.00%	29.00%	24.70%	29.50%
		% of Total	6.20%	6.90%	5.60%	5.80%	4.90%	29.50%
	2	Count	12	7	8	6	5	38
		% within IC item	31.60%	18.40%	21.10%	15.80%	13.20%	100.00%
		% within Year	12.90%	7.50%	8.60%	6.50%	5.40%	8.20%
		% of Total	2.60%	1.50%	1.70%	1.30%	1.10%	8.20%
	3	Count	1	1	1	2	1	6
		% within IC item	16.70%	16.70%	16.70%	33.30%	16.70%	100.00%
		% within Year	1.10%	1.10%	1.10%	2.20%	1.10%	1.30%
		% of Total	0.20%	0.20%	0.20%	0.40%	0.20%	1.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its mission, vision,	0	Count	54	47	46	44	44	235
		% within IC item	23.00%	20.00%	19.60%	18.70%	18.70%	100.00%
		% within Year	58.10%	50.50%	49.50%	47.30%	47.30%	50.50%
		% of Total	11.60%	10.10%	9.90%	9.50%	9.50%	50.50%

values of the company?	3	Count	39	46	47	49	49	230
		% within IC item	17.00%	20.00%	20.40%	21.30%	21.30%	100.00%
		% within Year	41.90%	49.50%	50.50%	52.70%	52.70%	49.50%
		% of Total	8.40%	9.90%	10.10%	10.50%	10.50%	49.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company provide a time frame to achieve corporate goals?	0	Count	78	78	76	76	72	380
		% within IC item	20.50%	20.50%	20.00%	20.00%	18.90%	100.00%
		% within Year	83.90%	83.90%	81.70%	81.70%	77.40%	81.70%
		% of Total	16.80%	16.80%	16.30%	16.30%	15.50%	81.70%
	3	Count	15	15	17	17	21	85
		% within IC item	17.60%	17.60%	20.00%	20.00%	24.70%	100.00%
		% within Year	16.10%	16.10%	18.30%	18.30%	22.60%	18.30%
		% of Total	3.20%	3.20%	3.70%	3.70%	4.50%	18.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal management structure?	0	Count	33	28	28	27	28	144
		% within IC item	22.90%	19.40%	19.40%	18.80%	19.40%	100.00%
		% within Year	35.50%	30.10%	30.10%	29.00%	30.10%	31.00%
		% of Total	7.10%	6.00%	6.00%	5.80%	6.00%	31.00%
	3	Count	60	65	65	66	65	321
		% within IC item	18.70%	20.20%	20.20%	20.60%	20.20%	100.00%
		% within Year	64.50%	69.90%	69.90%	71.00%	69.90%	69.00%
		% of Total	12.90%	14.00%	14.00%	14.20%	14.00%	69.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Biographical profile of directors?	0	Count	92	92	92	91	91	458
		% within IC item	20.10%	20.10%	20.10%	19.90%	19.90%	100.00%
		% within Year	98.90%	98.90%	98.90%	97.80%	97.80%	98.50%
		% of Total	19.80%	19.80%	19.80%	19.60%	19.60%	98.50%
	3	Count	1	1	1	2	2	7
		% within IC item	14.30%	14.30%	14.30%	28.60%	28.60%	100.00%
		% within Year	1.10%	1.10%	1.10%	2.20%	2.20%	1.50%
		% of Total	0.20%	0.20%	0.20%	0.40%	0.40%	1.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%

		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal ownership/ shareholder structure?	0	Count	40	41	39	34	34	188
		% within IC item	21.30%	21.80%	20.70%	18.10%	18.10%	100.00%
		% within Year	43.00%	44.10%	41.90%	36.60%	36.60%	40.40%
		% of Total	8.60%	8.80%	8.40%	7.30%	7.30%	40.40%
	3	Count	53	52	54	59	59	277
		% within IC item	19.10%	18.80%	19.50%	21.30%	21.30%	100.00%
		% within Year	57.00%	55.90%	58.10%	63.40%	63.40%	59.60%
		% of Total	11.40%	11.20%	11.60%	12.70%	12.70%	59.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company state whether the workers' representative is the member of the governing bodies (for example the supervisory board and its comities or CEO)?	0	Count	66	69	63	63	63	324
		% within IC item	20.40%	21.30%	19.40%	19.40%	19.40%	100.00%
		% within Year	71.00%	74.20%	67.70%	67.70%	67.70%	69.70%
		% of Total	14.20%	14.80%	13.50%	13.50%	13.50%	69.70%
	3	Count	27	24	30	30	30	141
		% within IC item	19.10%	17.00%	21.30%	21.30%	21.30%	100.00%
		% within Year	29.00%	25.80%	32.30%	32.30%	32.30%	30.30%
		% of Total	5.80%	5.20%	6.50%	6.50%	6.50%	30.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report whether it uses integrated management system?	0	Count	91	92	91	91	89	454
		% within IC item	20.00%	20.30%	20.00%	20.00%	19.60%	100.00%
		% within Year	97.80%	98.90%	97.80%	97.80%	95.70%	97.60%
		% of Total	19.60%	19.80%	19.60%	19.60%	19.10%	97.60%
	3	Count	2	1	2	2	4	11
		% within IC item	18.20%	9.10%	18.20%	18.20%	36.40%	100.00%
		% within Year	2.20%	1.10%	2.20%	2.20%	4.30%	2.40%
		% of Total	0.40%	0.20%	0.40%	0.40%	0.90%	2.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Reduced reaction time to customer/	0	Count	93	93	90	91	92	459
		% within IC item	20.30%	20.30%	19.60%	19.80%	20.00%	100.00%
		% within Year	100.00%	100.00%	96.80%	97.80%	98.90%	98.70%

supplier support, i.e. improved efficiency in attending inquiries		% of Total	20.00%	20.00%	19.40%	19.60%	19.80%	98.70%
	3	Count	0	0	3	2	1	6
		% within IC item	0.00%	0.00%	50.00%	33.30%	16.70%	100.00%
		% within Year	0.00%	0.00%	3.20%	2.20%	1.10%	1.30%
		% of Total	0.00%	0.00%	0.60%	0.40%	0.20%	1.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Firm capacity for closeness to potential and real customers?	0	Count	73	75	73	79	81	381
		% within IC item	19.20%	19.70%	19.20%	20.70%	21.30%	100.00%
		% within Year	78.50%	80.60%	78.50%	84.90%	87.10%	81.90%
		% of Total	15.70%	16.10%	15.70%	17.00%	17.40%	81.90%
	3	Count	20	18	20	14	12	84
		% within IC item	23.80%	21.40%	23.80%	16.70%	14.30%	100.00%
		% within Year	21.50%	19.40%	21.50%	15.10%	12.90%	18.10%
		% of Total	4.30%	3.90%	4.30%	3.00%	2.60%	18.10%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Firm assesses accreditations and certifications	0	Count	42	32	30	29	31	164
		% within IC item	25.60%	19.50%	18.30%	17.70%	18.90%	100.00%
		% within Year	45.20%	34.40%	32.30%	31.20%	33.30%	35.30%
		% of Total	9.00%	6.90%	6.50%	6.20%	6.70%	35.30%
	3	Count	51	61	63	64	62	301
		% within IC item	16.90%	20.30%	20.90%	21.30%	20.60%	100.00%
		% within Year	54.80%	65.60%	67.70%	68.80%	66.70%	64.70%
		% of Total	11.00%	13.10%	13.50%	13.80%	13.30%	64.70%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Employees participate in internal improvement and technological innovation projects	0	Count	66	67	64	65	68	330
		% within IC item	20.00%	20.30%	19.40%	19.70%	20.60%	100.00%
		% within Year	71.00%	72.00%	68.80%	69.90%	73.10%	71.00%
		% of Total	14.20%	14.40%	13.80%	14.00%	14.60%	71.00%
	3	Count	27	26	29	28	25	135
		% within IC item	20.00%	19.30%	21.50%	20.70%	18.50%	100.00%
		% within Year	29.00%	28.00%	31.20%	30.10%	26.90%	29.00%
		% of Total	5.80%	5.60%	6.20%	6.00%	5.40%	29.00%
	Total	Count	93	93	93	93	93	465

		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Description of basic R&D projects	0	Count	84	82	79	77	78	400
		% within IC item	21.00%	20.50%	19.80%	19.30%	19.50%	100.00%
		% within Year	90.30%	88.20%	84.90%	82.80%	83.90%	86.00%
		% of Total	18.10%	17.60%	17.00%	16.60%	16.80%	86.00%
	1	Count	0	1	1	1	2	5
		% within IC item	0.00%	20.00%	20.00%	20.00%	40.00%	100.00%
		% within Year	0.00%	1.10%	1.10%	1.10%	2.20%	1.10%
		% of Total	0.00%	0.20%	0.20%	0.20%	0.40%	1.10%
	3	Count	9	10	13	15	13	60
		% within IC item	15.00%	16.70%	21.70%	25.00%	21.70%	100.00%
		% within Year	9.70%	10.80%	14.00%	16.10%	14.00%	12.90%
		% of Total	1.90%	2.20%	2.80%	3.20%	2.80%	12.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Number of employees in R&D department	0	Count	89	89	92	91	90	451
		% within IC item	19.70%	19.70%	20.40%	20.20%	20.00%	100.00%
		% within Year	95.70%	95.70%	98.90%	97.80%	96.80%	97.00%
		% of Total	19.10%	19.10%	19.80%	19.60%	19.40%	97.00%
	3	Count	4	4	1	2	3	14
		% within IC item	28.60%	28.60%	7.10%	14.30%	21.40%	100.00%
		% within Year	4.30%	4.30%	1.10%	2.20%	3.20%	3.00%
		% of Total	0.90%	0.90%	0.20%	0.40%	0.60%	3.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Number of services/ products	0	Count	91	91	90	91	91	454
		% within IC item	20.00%	20.00%	19.80%	20.00%	20.00%	100.00%
		% within Year	97.80%	97.80%	96.80%	97.80%	97.80%	97.60%
		% of Total	19.60%	19.60%	19.40%	19.60%	19.60%	97.60%
	3	Count	2	2	3	2	2	11
		% within IC item	18.20%	18.20%	27.30%	18.20%	18.20%	100.00%
		% within Year	2.20%	2.20%	3.20%	2.20%	2.20%	2.40%
		% of Total	0.40%	0.40%	0.60%	0.40%	0.40%	2.40%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Investment in product and process development	0	Count	54	51	49	48	48	250
		% within IC item	21.60%	20.40%	19.60%	19.20%	19.20%	100.00%
		% within Year	58.10%	54.80%	52.70%	51.60%	51.60%	53.80%
		% of Total	11.60%	11.00%	10.50%	10.30%	10.30%	53.80%
	1	Count	35	40	42	43	42	202
		% within IC item	17.30%	19.80%	20.80%	21.30%	20.80%	100.00%
		% within Year	37.60%	43.00%	45.20%	46.20%	45.20%	43.40%
		% of Total	7.50%	8.60%	9.00%	9.20%	9.00%	43.40%
	2	Count	4	2	2	2	3	13
		% within IC item	30.80%	15.40%	15.40%	15.40%	23.10%	100.00%
		% within Year	4.30%	2.20%	2.20%	2.20%	3.20%	2.80%
		% of Total	0.90%	0.40%	0.40%	0.40%	0.60%	2.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Investment in process improvement (improvement of production, logistics, distribution of inputs and outputs - products and services, support services like maintenance, sales, IT, accounting and other processes in the company)	0	Count	33	30	32	35	31	161
		% within IC item	20.50%	18.60%	19.90%	21.70%	19.30%	100.00%
		% within Year	35.50%	32.30%	34.40%	37.60%	33.30%	34.60%
		% of Total	7.10%	6.50%	6.90%	7.50%	6.70%	34.60%
	1	Count	17	21	20	18	24	100
		% within IC item	17.00%	21.00%	20.00%	18.00%	24.00%	100.00%
		% within Year	18.30%	22.60%	21.50%	19.40%	25.80%	21.50%
		% of Total	3.70%	4.50%	4.30%	3.90%	5.20%	21.50%
	2	Count	43	42	41	40	38	204
		% within IC item	21.10%	20.60%	20.10%	19.60%	18.60%	100.00%
		% within Year	46.20%	45.20%	44.10%	43.00%	40.90%	43.90%
		% of Total	9.20%	9.00%	8.80%	8.60%	8.20%	43.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Number of new services/ products	0	Count	79	80	75	74	72	380
		% within IC item	20.80%	21.10%	19.70%	19.50%	18.90%	100.00%
		% within Year	84.90%	86.00%	80.60%	79.60%	77.40%	81.70%
		% of Total	17.00%	17.20%	16.10%	15.90%	15.50%	81.70%
	3	Count	14	13	18	19	21	85
		% within IC item	16.50%	15.30%	21.20%	22.40%	24.70%	100.00%
		% within Year	15.10%	14.00%	19.40%	20.40%	22.60%	18.30%
		% of Total	3.00%	2.80%	3.90%	4.10%	4.50%	18.30%
	Total	Count	93	93	93	93	93	465

		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Improving existing products (modification of existing products)	0	Count	75	71	67	71	71	355
		% within IC item	21.10%	20.00%	18.90%	20.00%	20.00%	100.00%
		% within Year	80.60%	76.30%	72.00%	76.30%	76.30%	76.30%
		% of Total	16.10%	15.30%	14.40%	15.30%	15.30%	76.30%
	3	Count	18	22	26	22	22	110
		% within IC item	16.40%	20.00%	23.60%	20.00%	20.00%	100.00%
		% within Year	19.40%	23.70%	28.00%	23.70%	23.70%	23.70%
		% of Total	3.90%	4.70%	5.60%	4.70%	4.70%	23.70%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Extensions to existing product lines	0	Count	71	71	72	71	67	352
		% within IC item	20.20%	20.20%	20.50%	20.20%	19.00%	100.00%
		% within Year	76.30%	76.30%	77.40%	76.30%	72.00%	75.70%
		% of Total	15.30%	15.30%	15.50%	15.30%	14.40%	75.70%
	3	Count	22	22	21	22	26	113
		% within IC item	19.50%	19.50%	18.60%	19.50%	23.00%	100.00%
		% within Year	23.70%	23.70%	22.60%	23.70%	28.00%	24.30%
		% of Total	4.70%	4.70%	4.50%	4.70%	5.60%	24.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
New product lines	0	Count	92	92	91	88	88	451
		% within IC item	20.40%	20.40%	20.20%	19.50%	19.50%	100.00%
		% within Year	98.90%	98.90%	97.80%	94.60%	94.60%	97.00%
		% of Total	19.80%	19.80%	19.60%	18.90%	18.90%	97.00%
	3	Count	1	1	2	5	5	14
		% within IC item	7.10%	7.10%	14.30%	35.70%	35.70%	100.00%
		% within Year	1.10%	1.10%	2.20%	5.40%	5.40%	3.00%
		% of Total	0.20%	0.20%	0.40%	1.10%	1.10%	3.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
New products that are	0	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%

novelties also in global markets		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on R&D investment?	0	Count	79	80	83	81	79	402
		% within IC item	19.70%	19.90%	20.60%	20.10%	19.70%	100.00%
		% within Year	84.90%	86.00%	89.20%	87.10%	84.90%	86.50%
		% of Total	17.00%	17.20%	17.80%	17.40%	17.00%	86.50%
	2	Count	13	11	8	9	12	53
		% within IC item	24.50%	20.80%	15.10%	17.00%	22.60%	100.00%
		% within Year	14.00%	11.80%	8.60%	9.70%	12.90%	11.40%
		% of Total	2.80%	2.40%	1.70%	1.90%	2.60%	11.40%
	3	Count	1	2	2	3	2	10
		% within IC item	10.00%	20.00%	20.00%	30.00%	20.00%	100.00%
		% within Year	1.10%	2.20%	2.20%	3.20%	2.20%	2.20%
		% of Total	0.20%	0.40%	0.40%	0.60%	0.40%	2.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal percentage of sales revenue derived from new products?	0	Count	90	88	91	88	88	445
		% within IC item	20.20%	19.80%	20.40%	19.80%	19.80%	100.00%
		% within Year	96.80%	94.60%	97.80%	94.60%	94.60%	95.70%
		% of Total	19.40%	18.90%	19.60%	18.90%	18.90%	95.70%
	2	Count	1	4	1	4	4	14
		% within IC item	7.10%	28.60%	7.10%	28.60%	28.60%	100.00%
		% within Year	1.10%	4.30%	1.10%	4.30%	4.30%	3.00%
		% of Total	0.20%	0.90%	0.20%	0.90%	0.90%	3.00%
	3	Count	2	1	1	1	1	6
		% within IC item	33.30%	16.70%	16.70%	16.70%	16.70%	100.00%
		% within Year	2.20%	1.10%	1.10%	1.10%	1.10%	1.30%
		% of Total	0.40%	0.20%	0.20%	0.20%	0.20%	1.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Patents	0	Count	87	88	84	87	85	431
		% within IC item	20.20%	20.40%	19.50%	20.20%	19.70%	100.00%
		% within Year	93.50%	94.60%	90.30%	93.50%	91.40%	92.70%
		% of Total	18.70%	18.90%	18.10%	18.70%	18.30%	92.70%

	3	Count	6	5	9	6	8	34
		% within IC item	17.60%	14.70%	26.50%	17.60%	23.50%	100.00%
		% within Year	6.50%	5.40%	9.70%	6.50%	8.60%	7.30%
		% of Total	1.30%	1.10%	1.90%	1.30%	1.70%	7.30%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Trademarks	0	Count	92	90	87	88	87	444
		% within IC item	20.70%	20.30%	19.60%	19.80%	19.60%	100.00%
		% within Year	98.90%	96.80%	93.50%	94.60%	93.50%	95.50%
		% of Total	19.80%	19.40%	18.70%	18.90%	18.70%	95.50%
	3	Count	1	3	6	5	6	21
		% within IC item	4.80%	14.30%	28.60%	23.80%	28.60%	100.00%
		% within Year	1.10%	3.20%	6.50%	5.40%	6.50%	4.50%
		% of Total	0.20%	0.60%	1.30%	1.10%	1.30%	4.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	2006	2007	2008	2009	2010	Total
Copyrights	0	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Awards for R&D activities/ leadership in new technologies	0	Count	93	90	92	91	92	458
		% within IC item	20.30%	19.70%	20.10%	19.90%	20.10%	100.00%
		% within Year	100.00%	96.80%	98.90%	97.80%	98.90%	98.50%
		% of Total	20.00%	19.40%	19.80%	19.60%	19.80%	98.50%
	3	Count	0	3	1	2	1	7
		% within IC item	0.00%	42.90%	14.30%	28.60%	14.30%	100.00%
		% within Year	0.00%	3.20%	1.10%	2.20%	1.10%	1.50%
		% of Total	0.00%	0.60%	0.20%	0.40%	0.20%	1.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Awards related	0	Count	85	88	83	82	81	419

to innovations/ new products (Innovative products)		% within IC item	20.30%	21.00%	19.80%	19.60%	19.30%	100.00%
		% within Year	91.40%	94.60%	89.20%	88.20%	87.10%	90.10%
		% of Total	18.30%	18.90%	17.80%	17.60%	17.40%	90.10%
	3	Count	8	5	10	11	12	46
		% within IC item	17.40%	10.90%	21.70%	23.90%	26.10%	100.00%
		% within Year	8.60%	5.40%	10.80%	11.80%	12.90%	9.90%
		% of Total	1.70%	1.10%	2.20%	2.40%	2.60%	9.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on its relationships with finance providers, such as banks?	0	Count	88	86	85	83	83	425
		% within IC item	20.70%	20.20%	20.00%	19.50%	19.50%	100.00%
		% within Year	94.60%	92.50%	91.40%	89.20%	89.20%	91.40%
		% of Total	18.90%	18.50%	18.30%	17.80%	17.80%	91.40%
	3	Count	5	7	8	10	10	40
		% within IC item	12.50%	17.50%	20.00%	25.00%	25.00%	100.00%
		% within Year	5.40%	7.50%	8.60%	10.80%	10.80%	8.60%
		% of Total	1.10%	1.50%	1.70%	2.20%	2.20%	8.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal its history?	0	Count	68	69	66	65	64	332
		% within IC item	20.50%	20.80%	19.90%	19.60%	19.30%	100.00%
		% within Year	73.10%	74.20%	71.00%	69.90%	68.80%	71.40%
		% of Total	14.60%	14.80%	14.20%	14.00%	13.80%	71.40%
	3	Count	25	24	27	28	29	133
		% within IC item	18.80%	18.00%	20.30%	21.10%	21.80%	100.00%
		% within Year	26.90%	25.80%	29.00%	30.10%	31.20%	28.60%
		% of Total	5.40%	5.20%	5.80%	6.00%	6.20%	28.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Description of the company and its major activities	0	Count	23	18	16	17	18	92
		% within IC item	25.00%	19.60%	17.40%	18.50%	19.60%	100.00%
		% within Year	24.70%	19.40%	17.20%	18.30%	19.40%	19.80%
		% of Total	4.90%	3.90%	3.40%	3.70%	3.90%	19.80%
	3	Count	70	75	77	76	75	373
		% within IC item	18.80%	20.10%	20.60%	20.40%	20.10%	100.00%
		% within Year	75.30%	80.60%	82.80%	81.70%	80.60%	80.20%

		% of Total	15.10%	16.10%	16.60%	16.30%	16.10%	80.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Is annual report easily available on internet?	0	Count	6	3	2	3	5	19
		% within IC item	31.60%	15.80%	10.50%	15.80%	26.30%	100.00%
		% within Year	6.50%	3.20%	2.20%	3.20%	5.40%	4.10%
		% of Total	1.30%	0.60%	0.40%	0.60%	1.10%	4.10%
	3	Count	87	90	91	90	88	446
		% within IC item	19.50%	20.20%	20.40%	20.20%	19.70%	100.00%
		% within Year	93.50%	96.80%	97.80%	96.80%	94.60%	95.90%
		% of Total	18.70%	19.40%	19.60%	19.40%	18.90%	95.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
Total number of disclosures			**725**	**759**	**797**	**804**	**808**	**3,893**

DISCLOSURE PERFORMANCE OF HRM CAPITAL ATRIBUTES								
IC item	**Score**	**Year**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Total number of employees	0	Count	11	9	8	7	9	44
		% within IC item	25.00%	20.50%	18.20%	15.90%	20.50%	100.00%
		% within Year	11.80%	9.70%	8.60%	7.50%	9.70%	9.50%
		% of Total	2.40%	1.90%	1.70%	1.50%	1.90%	9.50%
	3	Count	82	84	85	86	84	421
		% within IC item	19.50%	20.00%	20.20%	20.40%	20.00%	100.00%
		% within Year	88.20%	90.30%	91.40%	92.50%	90.30%	90.50%
		% of Total	17.60%	18.10%	18.30%	18.50%	18.10%	90.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Full/part time	0	Count	82	82	80	76	75	395
		% within IC item	20.80%	20.80%	20.30%	19.20%	19.00%	100.00%
		% within Year	88.20%	88.20%	86.00%	81.70%	80.60%	84.90%
		% of Total	17.60%	17.60%	17.20%	16.30%	16.10%	84.90%
	3	Count	11	11	13	17	18	70
		% within IC item	15.70%	15.70%	18.60%	24.30%	25.70%	100.00%
		% within Year	11.80%	11.80%	14.00%	18.30%	19.40%	15.10%
		% of Total	2.40%	2.40%	2.80%	3.70%	3.90%	15.10%
	Total	Count	93	93	93	93	93	465

		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	2006	2007	2008	2009	2010	Total
Number of employees working in the production, distribution, IT, sales and marketing, administration departments	0	Count	83	85	85	84	86	423
		% within IC item	19.60%	20.10%	20.10%	19.90%	20.30%	100.00%
		% within Year	89.20%	91.40%	91.40%	90.30%	92.50%	91.00%
		% of Total	17.80%	18.30%	18.30%	18.10%	18.50%	91.00%
	3	Count	10	8	8	9	7	42
		% within IC item	23.80%	19.00%	19.00%	21.40%	16.70%	100.00%
		% within Year	10.80%	8.60%	8.60%	9.70%	7.50%	9.00%
		% of Total	2.20%	1.70%	1.70%	1.90%	1.50%	9.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Gender (% of women employees)	0	Count	73	72	63	59	64	331
		% within IC item	22.10%	21.80%	19.00%	17.80%	19.30%	100.00%
		% within Year	78.50%	77.40%	67.70%	63.40%	68.80%	71.20%
		% of Total	15.70%	15.50%	13.50%	12.70%	13.80%	71.20%
	3	Count	20	21	30	34	29	134
		% within IC item	14.90%	15.70%	22.40%	25.40%	21.60%	100.00%
		% within Year	21.50%	22.60%	32.30%	36.60%	31.20%	28.80%
		% of Total	4.30%	4.50%	6.50%	7.30%	6.20%	28.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
Average age		**Year**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
	0	Count	69	67	63	60	66	325
		% within IC item	21.20%	20.60%	19.40%	18.50%	20.30%	100.00%
		% within Year	74.20%	72.00%	67.70%	64.50%	71.00%	69.90%
		% of Total	14.80%	14.40%	13.50%	12.90%	14.20%	69.90%
	3	Count	24	26	30	33	27	140
		% within IC item	17.10%	18.60%	21.40%	23.60%	19.30%	100.00%
		% within Year	25.80%	28.00%	32.30%	35.50%	29.00%	30.10%
		% of Total	5.20%	5.60%	6.50%	7.10%	5.80%	30.10%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Education	0	Count	29	26	26	20	25	126
		% within IC item	23.00%	20.60%	20.60%	15.90%	19.80%	100.00%

		% within Year	31.20%	28.00%	28.00%	21.50%	26.90%	27.10%
		% of Total	6.20%	5.60%	5.60%	4.30%	5.40%	27.10%
	3	Count	64	67	67	73	68	339
		% within IC item	18.90%	19.80%	19.80%	21.50%	20.10%	100.00%
		% within Year	68.80%	72.00%	72.00%	78.50%	73.10%	72.90%
		% of Total	13.80%	14.40%	14.40%	15.70%	14.60%	72.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Disabled	0	Count	78	70	71	69	71	359
		% within IC item	21.70%	19.50%	19.80%	19.20%	19.80%	100.00%
		% within Year	83.90%	75.30%	76.30%	74.20%	76.30%	77.20%
		% of Total	16.80%	15.10%	15.30%	14.80%	15.30%	77.20%
	3	Count	15	23	22	24	22	106
		% within IC item	14.20%	21.70%	20.80%	22.60%	20.80%	100.00%
		% within Year	16.10%	24.70%	23.70%	25.80%	23.70%	22.80%
		% of Total	3.20%	4.90%	4.70%	5.20%	4.70%	22.80%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Total number of terminated contracts	0	Count	76	74	73	66	73	362
		% within IC item	21.00%	20.40%	20.20%	18.20%	20.20%	100.00%
		% within Year	81.70%	79.60%	78.50%	71.00%	78.50%	77.80%
		% of Total	16.30%	15.90%	15.70%	14.20%	15.70%	77.80%
	3	Count	17	19	20	27	20	103
		% within IC item	16.50%	18.40%	19.40%	26.20%	19.40%	100.00%
		% within Year	18.30%	20.40%	21.50%	29.00%	21.50%	22.20%
		% of Total	3.70%	4.10%	4.30%	5.80%	4.30%	22.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Number of terminated open-end or fixed term contracts	0	Count	84	81	82	78	82	407
		% within IC item	20.60%	19.90%	20.10%	19.20%	20.10%	100.00%
		% within Year	90.30%	87.10%	88.20%	83.90%	88.20%	87.50%
		% of Total	18.10%	17.40%	17.60%	16.80%	17.60%	87.50%
	3	Count	9	12	11	15	11	58
		% within IC item	15.50%	20.70%	19.00%	25.90%	19.00%	100.00%
		% within Year	9.70%	12.90%	11.80%	16.10%	11.80%	12.50%
		% of Total	1.90%	2.60%	2.40%	3.20%	2.40%	12.50%

	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Total number of newly employed	0	Count	76	74	72	71	69	362
		% within IC item	21.00%	20.40%	19.90%	19.60%	19.10%	100.00%
		% within Year	81.70%	79.60%	77.40%	76.30%	74.20%	77.80%
		% of Total	16.30%	15.90%	15.50%	15.30%	14.80%	77.80%
	3	Count	17	19	21	22	24	103
		% within IC item	16.50%	18.40%	20.40%	21.40%	23.30%	100.00%
		% within Year	18.30%	20.40%	22.60%	23.70%	25.80%	22.20%
		% of Total	3.70%	4.10%	4.50%	4.70%	5.20%	22.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Number of newly employed per year for open-end or for fixed term contract	0	Count	90	91	90	90	90	451
		% within IC item	20.00%	20.20%	20.00%	20.00%	20.00%	100.00%
		% within Year	96.80%	97.80%	96.80%	96.80%	96.80%	97.00%
		% of Total	19.40%	19.60%	19.40%	19.40%	19.40%	97.00%
	3	Count	3	2	3	3	3	14
		% within IC item	21.40%	14.30%	21.40%	21.40%	21.40%	100.00%
		% within Year	3.20%	2.20%	3.20%	3.20%	3.20%	3.00%
		% of Total	0.60%	0.40%	0.60%	0.60%	0.60%	3.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its stuff turnover rate (external and internal)?	0	Count	83	82	83	83	83	414
		% within IC item	20.00%	19.80%	20.00%	20.00%	20.00%	100.00%
		% within Year	89.20%	88.20%	89.20%	89.20%	89.20%	89.00%
		% of Total	17.80%	17.60%	17.80%	17.80%	17.80%	89.00%
	1	Count	3	5	2	2	2	14
		% within IC item	21.40%	35.70%	14.30%	14.30%	14.30%	100.00%
		% within Year	3.20%	5.40%	2.20%	2.20%	2.20%	3.00%
		% of Total	0.60%	1.10%	0.40%	0.40%	0.40%	3.00%
	2	Count	6	5	7	6	6	30
		% within IC item	20.00%	16.70%	23.30%	20.00%	20.00%	100.00%
		% within Year	6.50%	5.40%	7.50%	6.50%	6.50%	6.50%
		% of Total	1.30%	1.10%	1.50%	1.30%	1.30%	6.50%
	3	Count	1	1	1	2	2	7
		% within IC item	14.30%	14.30%	14.30%	28.60%	28.60%	100.00%

		% within Year	1.10%	1.10%	1.10%	2.20%	2.20%	1.50%
		% of Total	0.20%	0.20%	0.20%	0.40%	0.40%	1.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its absentee rates?	0	Count	70	69	66	68	69	342
		% within IC item	20.50%	20.20%	19.30%	19.90%	20.20%	100.00%
		% within Year	75.30%	74.20%	71.00%	73.10%	74.20%	73.50%
		% of Total	15.10%	14.80%	14.20%	14.60%	14.80%	73.50%
	1	Count	5	5	2	3	0	15
		% within IC item	33.30%	33.30%	13.30%	20.00%	0.00%	100.00%
		% within Year	5.40%	5.40%	2.20%	3.20%	0.00%	3.20%
		% of Total	1.10%	1.10%	0.40%	0.60%	0.00%	3.20%
	2	Count	11	9	13	12	12	57
		% within IC item	19.30%	15.80%	22.80%	21.10%	21.10%	100.00%
		% within Year	11.80%	9.70%	14.00%	12.90%	12.90%	12.30%
		% of Total	2.40%	1.90%	2.80%	2.60%	2.60%	12.30%
	3	Count	7	10	12	10	12	51
		% within IC item	13.70%	19.60%	23.50%	19.60%	23.50%	100.00%
		% within Year	7.50%	10.80%	12.90%	10.80%	12.90%	11.00%
		% of Total	1.50%	2.20%	2.60%	2.20%	2.60%	11.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose the costs for training per year or average hours of training per employee?	0	Count	47	43	40	39	37	206
		% within IC item	22.80%	20.90%	19.40%	18.90%	18.00%	100.00%
		% within Year	50.50%	46.20%	43.00%	41.90%	39.80%	44.30%
		% of Total	10.10%	9.20%	8.60%	8.40%	8.00%	44.30%
	1	Count	14	19	24	26	23	106
		% within IC item	13.20%	17.90%	22.60%	24.50%	21.70%	100.00%
		% within Year	15.10%	20.40%	25.80%	28.00%	24.70%	22.80%
		% of Total	3.00%	4.10%	5.20%	5.60%	4.90%	22.80%
	2	Count	31	29	27	26	31	144
		% within IC item	21.50%	20.10%	18.80%	18.10%	21.50%	100.00%
		% within Year	33.30%	31.20%	29.00%	28.00%	33.30%	31.00%
		% of Total	6.70%	6.20%	5.80%	5.60%	6.70%	31.00%
	3	Count	1	2	2	2	2	9
		% within IC item	11.10%	22.20%	22.20%	22.20%	22.20%	100.00%
		% within Year	1.10%	2.20%	2.20%	2.20%	2.20%	1.90%
		% of Total	0.20%	0.40%	0.40%	0.40%	0.40%	1.90%
	Total	Count	93	93	93	93	93	465

		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal its knowledge transfer tools like apprenticeship, mentorship, coaching, job rotation, on the job training-OJT, retirees?	0	Count	91	87	89	89	87	443
		% within IC item	20.50%	19.60%	20.10%	20.10%	19.60%	100.00%
		% within Year	97.80%	93.50%	95.70%	95.70%	93.50%	95.30%
		% of Total	19.60%	18.70%	19.10%	19.10%	18.70%	95.30%
	3	Count	2	6	4	4	6	22
		% within IC item	9.10%	27.30%	18.20%	18.20%	27.30%	100.00%
		% within Year	2.20%	6.50%	4.30%	4.30%	6.50%	4.70%
		% of Total	0.40%	1.30%	0.90%	0.90%	1.30%	4.70%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal tools for regular performance feedback to its employees?	0	Count	80	78	78	81	78	395
		% within IC item	20.30%	19.70%	19.70%	20.50%	19.70%	100.00%
		% within Year	86.00%	83.90%	83.90%	87.10%	83.90%	84.90%
		% of Total	17.20%	16.80%	16.80%	17.40%	16.80%	84.90%
	3	Count	13	15	15	12	15	70
		% within IC item	18.60%	21.40%	21.40%	17.10%	21.40%	100.00%
		% within Year	14.00%	16.10%	16.10%	12.90%	16.10%	15.10%
		% of Total	2.80%	3.20%	3.20%	2.60%	3.20%	15.10%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal special training programs for leaders?	0	Count	87	87	87	88	84	433
		% within IC item	20.10%	20.10%	20.10%	20.30%	19.40%	100.00%
		% within Year	93.50%	93.50%	93.50%	94.60%	90.30%	93.10%
		% of Total	18.70%	18.70%	18.70%	18.90%	18.10%	93.10%
	3	Count	6	6	6	5	9	32
		% within IC item	18.80%	18.80%	18.80%	15.60%	28.10%	100.00%
		% within Year	6.50%	6.50%	6.50%	5.40%	9.70%	6.90%
		% of Total	1.30%	1.30%	1.30%	1.10%	1.90%	6.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal	0	Count	78	75	72	74	71	370
		% within IC item	21.10%	20.30%	19.50%	20.00%	19.20%	100.00%

its incentive and remuneration system for its workers?		% within Year	83.90%	80.60%	77.40%	79.60%	76.30%	79.60%
		% of Total	16.80%	16.10%	15.50%	15.90%	15.30%	79.60%
	1	Count	11	12	13	12	14	62
		% within IC item	17.70%	19.40%	21.00%	19.40%	22.60%	100.00%
		% within Year	11.80%	12.90%	14.00%	12.90%	15.10%	13.30%
		% of Total	2.40%	2.60%	2.80%	2.60%	3.00%	13.30%
	2	Count	4	6	8	7	8	33
		% within IC item	12.10%	18.20%	24.20%	21.20%	24.20%	100.00%
		% within Year	4.30%	6.50%	8.60%	7.50%	8.60%	7.10%
		% of Total	0.90%	1.30%	1.70%	1.50%	1.70%	7.10%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company reveal its system for motivation of employees?	0	Count	88	87	88	89	87	439
		% within IC item	20.00%	19.80%	20.00%	20.30%	19.80%	100.00%
		% within Year	94.60%	93.50%	94.60%	95.70%	93.50%	94.40%
		% of Total	18.90%	18.70%	18.90%	19.10%	18.70%	94.40%
	1	Count	1	2	0	0	0	3
		% within IC item	33.30%	66.70%	0.00%	0.00%	0.00%	100.00%
		% within Year	1.10%	2.20%	0.00%	0.00%	0.00%	0.60%
		% of Total	0.20%	0.40%	0.00%	0.00%	0.00%	0.60%
	2	Count	4	4	5	4	6	23
		% within IC item	17.40%	17.40%	21.70%	17.40%	26.10%	100.00%
		% within Year	4.30%	4.30%	5.40%	4.30%	6.50%	4.90%
		% of Total	0.90%	0.90%	1.10%	0.90%	1.30%	4.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company measure and disclose employee satisfaction?	0	Count	80	80	78	82	79	399
		% within IC item	20.10%	20.10%	19.50%	20.60%	19.80%	100.00%
		% within Year	86.00%	86.00%	83.90%	88.20%	84.90%	85.80%
		% of Total	17.20%	17.20%	16.80%	17.60%	17.00%	85.80%
	1	Count	7	8	8	8	7	38
		% within IC item	18.40%	21.10%	21.10%	21.10%	18.40%	100.00%
		% within Year	7.50%	8.60%	8.60%	8.60%	7.50%	8.20%
		% of Total	1.50%	1.70%	1.70%	1.70%	1.50%	8.20%
	2	Count	5	3	6	2	5	21
		% within IC item	23.80%	14.30%	28.60%	9.50%	23.80%	100.00%
		% within Year	5.40%	3.20%	6.50%	2.20%	5.40%	4.50%
		% of Total	1.10%	0.60%	1.30%	0.40%	1.10%	4.50%
	3	Count	1	2	1	1	2	7

		% within IC item	14.30%	28.60%	14.30%	14.30%	28.60%	100.00%
		% within Year	1.10%	2.20%	1.10%	1.10%	2.20%	1.50%
		% of Total	0.20%	0.40%	0.20%	0.20%	0.40%	1.50%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Added value per employee in the reporting period	0	Count	55	53	55	59	57	279
		% within IC item	19.70%	19.00%	19.70%	21.10%	20.40%	100.00%
		% within Year	59.10%	57.00%	59.10%	63.40%	61.30%	60.00%
		% of Total	11.80%	11.40%	11.80%	12.70%	12.30%	60.00%
	1	Count	1	2	1	0	0	4
		% within IC item	25.00%	50.00%	25.00%	0.00%	0.00%	100.00%
		% within Year	1.10%	2.20%	1.10%	0.00%	0.00%	0.90%
		% of Total	0.20%	0.40%	0.20%	0.00%	0.00%	0.90%
	2	Count	4	5	5	4	6	24
		% within IC item	16.70%	20.80%	20.80%	16.70%	25.00%	100.00%
		% within Year	4.30%	5.40%	5.40%	4.30%	6.50%	5.20%
		% of Total	0.90%	1.10%	1.10%	0.90%	1.30%	5.20%
	3	Count	33	33	32	30	30	158
		% within IC item	20.90%	20.90%	20.30%	19.00%	19.00%	100.00%
		% within Year	35.50%	35.50%	34.40%	32.30%	32.30%	34.00%
		% of Total	7.10%	7.10%	6.90%	6.50%	6.50%	34.00%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company report on workers' participation in the workplace?	0	Count	89	88	88	89	88	442
		% within IC item	20.10%	19.90%	19.90%	20.10%	19.90%	100.00%
		% within Year	95.70%	94.60%	94.60%	95.70%	94.60%	95.10%
		% of Total	19.10%	18.90%	18.90%	19.10%	18.90%	95.10%
	3	Count	4	5	5	4	5	23
		% within IC item	17.40%	21.70%	21.70%	17.40%	21.70%	100.00%
		% within Year	4.30%	5.40%	5.40%	4.30%	5.40%	4.90%
		% of Total	0.90%	1.10%	1.10%	0.90%	1.10%	4.90%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its	0	Count	93	92	92	91	89	457
		% within IC item	20.40%	20.10%	20.10%	19.90%	19.50%	100.00%
		% within Year	100.00%	98.90%	98.90%	97.80%	95.70%	98.30%

programs aimed at improving work-life balance of its employees?		% of Total	20.00%	19.80%	19.80%	19.60%	19.10%	98.30%
	3	Count	0	1	1	2	4	8
		% within IC item	0.00%	12.50%	12.50%	25.00%	50.00%	100.00%
		% within Year	0.00%	1.10%	1.10%	2.20%	4.30%	1.70%
		% of Total	0.00%	0.20%	0.20%	0.40%	0.90%	1.70%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose its health and safety policy?	0	Count	64	59	55	49	49	276
		% within IC item	23.20%	21.40%	19.90%	17.80%	17.80%	100.00%
		% within Year	68.80%	63.40%	59.10%	52.70%	52.70%	59.40%
		% of Total	13.80%	12.70%	11.80%	10.50%	10.50%	59.40%
	3	Count	29	34	38	44	44	189
		% within IC item	15.30%	18.00%	20.10%	23.30%	23.30%	100.00%
		% within Year	31.20%	36.60%	40.90%	47.30%	47.30%	40.60%
		% of Total	6.20%	7.30%	8.20%	9.50%	9.50%	40.60%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		Year	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Does the company disclose whether its employees are organised in unions?	0	Count	78	71	73	75	74	371
		% within IC item	21.00%	19.10%	19.70%	20.20%	19.90%	100.00%
		% within Year	83.90%	76.30%	78.50%	80.60%	79.60%	79.80%
		% of Total	16.80%	15.30%	15.70%	16.10%	15.90%	79.80%
	3	Count	15	22	20	18	19	94
		% within IC item	16.00%	23.40%	21.30%	19.10%	20.20%	100.00%
		% within Year	16.10%	23.70%	21.50%	19.40%	20.40%	20.20%
		% of Total	3.20%	4.70%	4.30%	3.90%	4.10%	20.20%
	Total	Count	93	93	93	93	93	465
		% within IC item	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
		% within Year	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	20.00%	20.00%	20.00%	20.00%	20.00%	100.00%
Total number of disclosures			**491**	**543**	**568**	**589**	**583**	**2,774**
Overall total number of disclosures			**1,830**	**1,924**	**2,008**	**2,069**	**2,067**	**9,898**

Source: Own calculations.

Table A2.11: Trend regression analysis

OVERALL DISCLOSURE FREQUENCY

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	year[b]	.	Enter
a. Dependent Variable: overall disclosure frequency			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.956[a]	.914	.886	34.608
a. Predictors: (Constant), year				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sign.
1	Regression	38,316.100	1	38,316.100	31.991	.011[b]
	Residual	3,593.100	3	1,197.700		
	Total	41,909.200	4			
a. Dependent Variable: overall disclosure frequency						
b. Predictors: (Constant), year						

Coefficients[a]						
Model		Unstandardized Coefficients		Stand. Coeff.	t	Sign.
		B	Std. Error	Beta		
1	(Constant)	-122,315.600	21,975.453		-5.566	.011
	year	61.900	10.944	.956	5.656	.011
a. Dependent Variable: overall disclosure frequency						

Source: Own calculations.

RELATIONAL CAPITAL DISCLOSURES

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	year[b]	.	Enter
a. Dependent Variable: relational capital disclosures			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964[a]	.929	.906	8.952
a. Predictors: (Constant), year				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sign.
1	Regression	3,168.400	1	3,168.400	39.539	.008[b]
	Residual	240.400	3	80.133		
	Total	3,408.800	4			
a. Dependent Variable: relational capital disclosures						
b. Predictors: (Constant), year						

Coefficients[a]						
Model		Unstandardized Coefficients		Stand. Coeff.	t	Sign.
		B	Std. Error	Beta		
1	(Constant)	-35,096.200	5,684.214		-6.174	.009
	year	17.800	2.831	.964	6.288	.008
a. Dependent Variable: relational capital disclosures						

Source: Own calculations.

ORGANISATIONAL CAPITAL DISCLOSURES

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	year[b]	.	Enter
a. Dependent Variable: organisational capital disclosures			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.934[a]	.872	.829	14.755
a. Predictors: (Constant), year				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sign.
1	Regression	4,452.100	1	4,452.100	20.451	.020[b]
	Residual	653.100	3	217.700		
	Total	5,105.200	4			
a. Dependent Variable: organisational capital disclosures						
b. Predictors: (Constant), year						

Coefficients[a]						
Model		Unstandardized Coefficients		Stand. Coeff.	t	Sign.
		B	Std. Error	Beta		
1	(Constant)	-41,590.200	9,368.996		-4.439	.021
	year	21.100	4.666	.934	4.522	.020
a. Dependent Variable: organisational capital disclosures						

Source: Own calculations.

HRM DISCLOSURES

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	year[b]	.	Enter
a. Dependent Variable: HRM disclosures			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.833	.778	18.787
a. Predictors: (Constant), year				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sign.
1	Regression	5,290.000	1	5,290.000	14.989	.030[b]
	Residual	1,058.800	3	352.933		
	Total	6,348.800	4			
a. Dependent Variable: HRM disclosures						
b. Predictors: (Constant), year						

Coefficients[a]						
Model		Unstandardized Coefficients		Stand. Coeff.	t	Sign.
		B	Std. Error	Beta		
1	(Constant)	-45,629.200	11,929.168		-3.825	.031
	year	23.000	5.941	.913	3.872	.030
a. Dependent Variable: HRM disclosures						

Source: Own calculations.

Table A2.12: Friedman test

Descriptive Statistics					
	N	Mean	SD	Min	Max
2006_ DISCLOSURE_SCORE	89	.1692	.18015	.00	.88
2007_DISCLOSURE_SCORE	89	.1793	.19079	.00	.90
2008_DISCLOSURE_SCORE	89	.1898	.19433	.00	.91
2009_DISCLOSURE_SCORE	89	.1961	.19970	.00	.92
2010_DISCLOSURE_SCORE	89	.1966	.19122	.00	.90

Ranks	
	Mean Rank
2006_ DISCLOSURE_SCORE	2.12
2007_DISCLOSURE_SCORE	2.59
2008_DISCLOSURE_SCORE	3.24
2009_DISCLOSURE_SCORE	3.39
2010_DISCLOSURE_SCORE	3.66

Test Statistics[a]	
N	89
Chi-Square	64.008
df	4
Asymp. Sign.	.000
a. Friedman Test	

Source: Own calculations.

Table A2.13: Wilcoxon Signed Ranks Test

Ranks				
		N	**Mean Rank**	**Sum of Ranks**
2007_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE	Negative Ranks	27[a]	37.26	1,006.00
	Positive Ranks	56[b]	44.29	2,480.00
	Ties	6[c]		
	Total	89		
2008_DISCLOSURE_SCORE -	Negative Ranks	22[d]	30.18	664.00

2006_ DISCLOSURE_SCORE	Positive Ranks	63[e]	47.48	2,991.00
	Ties	4[f]		
	Total	89		
2009_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE	Negative Ranks	24[g]	29.23	701.50
	Positive Ranks	62[h]	49.02	3,039.50
	Ties	3[i]		
	Total	89		
2010_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE	Negative Ranks	18[j]	30.50	549.00
	Positive Ranks	68[k]	46.94	3,192.00
	Ties	3[l]		
	Total	89		
a. 2007_DISCLOSURE_SCORE < 2006_ DISCLOSURE_SCORE				
b. 2007_DISCLOSURE_SCORE > 2006_ DISCLOSURE_SCORE				
c. 2007_DISCLOSURE_SCORE = 2006_ DISCLOSURE_SCORE				
d. 2008_DISCLOSURE_SCORE < 2006_ DISCLOSURE_SCORE				
e. 2008_DISCLOSURE_SCORE > 2006_ DISCLOSURE_SCORE				
f. 2008_DISCLOSURE_SCORE = 2006_ DISCLOSURE_SCORE				
g. 2009_DISCLOSURE_SCORE < 2006_ DISCLOSURE_SCORE				
h. 2009_DISCLOSURE_SCORE > 2006_ DISCLOSURE_SCORE				
i. 2009_DISCLOSURE_SCORE = 2006_ DISCLOSURE_SCORE				
j. 2010_DISCLOSURE_SCORE < 2006_ DISCLOSURE_SCORE				
k. 2010_DISCLOSURE_SCORE > 2006_ DISCLOSURE_SCORE				
l. 2010_DISCLOSURE_SCORE = 2006_ DISCLOSURE_SCORE				

Test Statistics[a]				
	2007_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE	**2008_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE**	**2009_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE**	**2010_DISCLOSURE_SCORE - 2006_ DISCLOSURE_SCORE**
Z	-3.354[b]	-5.106[b]	-5.039[b]	-5.699[b]
Asymp. Sign. (2-tailed)	.001	.000	.000	.000
a. Wilcoxon Signed Ranks Test				
b. Based on negative ranks.				

Ranks				
		N	**Mean Rank**	**Sum of Ranks**
2008_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE	Negative Ranks	22[a]	37.52	825.50
	Positive Ranks	60[b]	42.96	2,577.50
	Ties	7[c]		
	Total	89		
2009_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE	Negative Ranks	29[d]	32.62	946.00
	Positive Ranks	56[e]	48.38	2,709.00
	Ties	4[f]		
	Total	89		
2010_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE	Negative Ranks	26[g]	33.25	864.50
	Positive Ranks	59[h]	47.30	2,790.50
	Ties	4[i]		
	Total	89		
a. 2008_DISCLOSURE_SCORE < 2007_DISCLOSURE_SCORE				
b. 2008_DISCLOSURE_SCORE > 2007_DISCLOSURE_SCORE				
c. 2008_DISCLOSURE_SCORE = 2007_DISCLOSURE_SCORE				
d. 2009_DISCLOSURE_SCORE < 2007_DISCLOSURE_SCORE				

e. 2009_DISCLOSURE_SCORE > 2007_DISCLOSURE_SCORE
f. 2009_DISCLOSURE_SCORE = 2007_DISCLOSURE_SCORE
g. 2010_DISCLOSURE_SCORE < 2007_DISCLOSURE_SCORE
h. 2010_DISCLOSURE_SCORE > 2007_DISCLOSURE_SCORE
i. 2010_DISCLOSURE_SCORE = 2007_DISCLOSURE_SCORE

Test Statistics[a]			
	2008_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE	**2009_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE**	**2010_DISCLOSURE_SCORE - 2007_DISCLOSURE_SCORE**
Z	-4.063[b]	-3.873[b]	-4.230[b]
Asymp. Sign. (2-tailed)	.000	.000	.000
a. Wilcoxon Signed Ranks Test			
b. Based on negative ranks.			

Ranks				
		N	**Mean Rank**	**Sum of Ranks**
2009_DISCLOSURE_SCORE - 2008_DISCLOSURE_SCORE	Negative Ranks	39[a]	36.81	1,435.50
	Positive Ranks	47[b]	49.05	2,305.50
	Ties	3[c]		
	Total	89		
2010_DISCLOSURE_SCORE - 2008_DISCLOSURE_SCORE	Negative Ranks	34[d]	36.65	1,246.00
	Positive Ranks	50[e]	46.48	2,324.00
	Ties	5[f]		
	Total	89		
2010_DISCLOSURE_SCORE - 2009_DISCLOSURE_SCORE	Negative Ranks	33[g]	40.02	1,320.50
	Positive Ranks	43[h]	37.34	1,605.50
	Ties	13[i]		
	Total	89		
a. 2009_DISCLOSURE_SCORE < 2008_DISCLOSURE_SCORE				
b. 2009_DISCLOSURE_SCORE > 2008_DISCLOSURE_SCORE				
c. 2009_DISCLOSURE_SCORE = 2008_DISCLOSURE_SCORE				
d. 2010_DISCLOSURE_SCORE < 2008_DISCLOSURE_SCORE				
e. 2010_DISCLOSURE_SCORE > 2008_DISCLOSURE_SCORE				
f. 2010_DISCLOSURE_SCORE = 2008_DISCLOSURE_SCORE				
g. 2010_DISCLOSURE_SCORE < 2009_DISCLOSURE_SCORE				
h. 2010_DISCLOSURE_SCORE > 2009_DISCLOSURE_SCORE				
i. 2010_DISCLOSURE_SCORE = 2009_DISCLOSURE_SCORE				

Test Statistics[a]			
	2009_DISCLOSURE_SCORE - 2008_DISCLOSURE_SCORE	**2010_DISCLOSURE_SCORE - 2008_DISCLOSURE_SCORE**	**2010_DISCLOSURE_SCORE - 2009_DISCLOSURE_SCORE**
Z	-1.883[b]	-2.409[b]	-.741[b]
Asymp. Sign. (2-tailed)	.060	.016	.459
a. Wilcoxon Signed Ranks Test			
b. Based on negative ranks.			

Source: Own calculations.

Table A2.14: Disclosure score of IC items in the period 2006-2010

DESCRIPTIVE STATISTICS FOR ALL DISCLOSURES IN 2006-2010 PERIOD						
IC ITEMS	N	Min	Max	Mean	SD	**Disclosure score (0-1)**
Employees number	465	0.00	0.84	0.76	0.24	0.90
Education of employees	465	0.00	0.84	0.61	0.37	0.72
Management structure	465	0.00	1.19	0.81	0.55	0.68
Accreditations and certifications	465	0.00	1.19	0.76	0.56	0.64
Ownership and shareholder's structure	465	0.00	1.19	0.70	0.58	0.59
Principal products	465	0.00	1.01	0.57	0.32	0.57
Market share/Principal markets	465	0.00	1.01	0.55	0.36	0.55
Process improvement investment	465	0.00	0.79	0.43	0.35	0.54
Strategy	465	0.00	1.19	0.58	0.59	0.49
Compliance with environmental standards	465	0.00	1.01	0.48	0.49	0.47
Health and safety policy	465	0.00	0.84	0.34	0.41	0.40
Brand recognition	465	0.00	1.01	0.38	0.48	0.38
Added value per employee	465	0.00	0.84	0.31	0.39	0.37
Past industry market tendencies	465	0.00	1.01	0.37	0.48	0.37
Workers representatives	465	0.00	1.19	0.36	0.54	0.30
Training costs	465	0.00	0.84	0.25	0.25	0.30
Average age	465	0.00	0.84	0.25	0.38	0.30
Distribution channels	465	0.00	1.01	0.30	0.45	0.30
Internal improvement and technological innovation projects	465	0.00	1.19	0.34	0.54	0.29
Gender (% of women employees)	465	0.00	0.84	0.24	0.38	0.29
Environmental performance	465	0.00	1.01	0.27	0.30	0.27
Product and process development	465	0.00	0.79	0.19	0.22	0.24
Extensions of existing product lines	465	0.00	1.19	0.29	0.51	0.24
Modification of existing products	465	0.00	1.19	0.28	0.50	0.23
Disabled	465	0.00	0.84	0.19	0.35	0.23
Newly employed	465	0.00	0.84	0.18	0.35	0.22
Terminated contracts	465	0.00	0.84	0.18	0.35	0.22
Research collaborations	465	0.00	1.01	0.22	0.41	0.21
Community involvement	465	0.00	0.67	0.14	0.21	0.20
Unions	465	0.00	0.84	0.17	0.34	0.20
Absentee rates	465	0.00	0.84	0.17	0.30	0.20
Time frame of corporate goals	465	0.00	1.19	0.22	0.46	0.18
New services and products	465	0.00	1.19	0.22	0.46	0.18
Customer and supplier support closeness to potential real customers	465	0.00	1.19	0.21	0.45	0.18
Energy and water consumption	465	0.00	1.01	0.17	0.33	0.17
IT system	465	0.00	1.19	0.20	0.28	0.16
New customers	465	0.00	0.67	0.11	0.19	0.16
Full and part-time employees	465	0.00	0.84	0.13	0.30	0.15
Performance feedback	465	0.00	0.84	0.13	0.30	0.15
Types of customers	465	0.00	1.01	0.14	0.27	0.14
Environmental considerations	465	0.00	1.01	0.14	0.34	0.14
Incentive and remuneration system	465	0.00	0.56	0.08	0.16	0.14
Cost of grievances	465	0.00	1.01	0.13	0.26	0.13
Description of basic R&D projects	465	0.00	1.19	0.16	0.40	0.13
Terminated open-end and fixed-term contracts	465	0.00	0.84	0.10	0.28	0.12
Customers' loyalty	465	0.00	1.01	0.11	0.31	0.11

Awards for product and corporate brands	465	0.00	1.01	0.10	0.30	0.10
Awards for innovative products	465	0.00	1.19	0.12	0.35	0.10
R&D investment	465	0.00	1.19	0.11	0.30	0.10
Employees working departments	465	0.00	0.84	0.08	0.24	0.09
Customers' influence and suggestions	465	0.00	1.01	0.09	0.28	0.09
Finance providers	465	0.00	1.19	0.10	0.33	0.09
Communication system	465	0.00	1.01	0.08	0.27	0.08
Relationships with media	465	0.00	1.01	0.08	0.27	0.08
Business partnership	465	0.00	1.01	0.08	0.27	0.08
Promotion	465	0.00	1.01	0.08	0.18	0.08
Awards for corporate image	465	0.00	1.01	0.08	0.26	0.08
Patents	465	0.00	1.19	0.09	0.31	0.07
Employee satisfaction	465	0.00	0.84	0.06	0.16	0.07
Training programs for leaders	465	0.00	0.84	0.06	0.21	0.07
Stuff turnover rate	465	0.00	0.84	0.06	0.17	0.07
Customer satisfaction	465	0.00	0.98	0.06	0.17	0.07
Future industry and market tendencies	465	0.00	1.01	0.06	0.24	0.06
Long-term relationship with suppliers	465	0.00	1.01	0.06	0.23	0.06
Motivation of employees	465	0.00	0.56	0.03	0.12	0.05
Competition	465	0.00	0.67	0.03	0.12	0.05
Corporate brand	465	0.00	1.01	0.05	0.22	0.05
Workers participation in the workplace	465	0.00	0.84	0.04	0.18	0.05
CSR	465	0.00	1.01	0.05	0.21	0.05
Knowledge transfer	465	0.00	0.84	0.04	0.18	0.05
Trademarks	465	0.00	1.19	0.05	0.24	0.04
Suppliers impact on business decisions and product development	465	0.00	1.01	0.04	0.20	0.04
Brand architecture	465	0.00	1.01	0.03	0.18	0.03
Sales revenue of new products	465	0.00	1.19	0.04	0.19	0.03
Newly employed per year	465	0.00	0.84	0.03	0.14	0.03
Employees in R&D department	465	0.00	1.19	0.04	0.20	0.03
New product lines	465	0.00	1.19	0.04	0.20	0.03
No of services and products	465	0.00	1.19	0.03	0.18	0.02
Integrated management system	465	0.00	1.19	0.03	0.18	0.02
Competitors influence	465	0.00	0.34	0.01	0.05	0.02
Work life balance	465	0.00	0.84	0.01	0.11	0.02
Awards for R&D activities	465	0.00	1.19	0.02	0.14	0.01
Profile of directors	465	0.00	1.19	0.02	0.14	0.01
Company perception	465	0.00	1.01	0.01	0.12	0.01
Listed environmental managers	465	0.00	0.98	0.01	0.11	0.01
Customer and supplier support reduced reaction time	465	0.00	1.19	0.02	0.13	0.01
On-line sale	465	0.00	0.98	0.00	0.05	0.00
Novelties in global markets	465	0.00	0.00	0.00	0.00	0.00
Copyrights	465	0.00	0.00	0.00	0.00	0.00
Total						**16.29**
MEAN DISCLOSURE SCORE						**0.18**

Source: Own calculations.

Table A2.15: Annual disclosure score of HRM items

HRM					
Items	**2006**	**2007**	**2008**	**2009**	**2010**
Absentee rates	0.172	0.190	0.229	0.204	0.215
Added value per employee	0.387	0.398	0.384	0.351	0.366
Average age	0.258	0.280	0.323	0.355	0.290
Disabled	0.161	0.247	0.237	0.258	0.237
Education of employees	0.688	0.720	0.720	0.785	0.731
Employee satisfaction	0.072	0.072	0.082	0.054	0.082
Employees number	0.882	0.903	0.914	0.925	0.903
Employees working departments	0.108	0.086	0.086	0.097	0.075
Full and part time employees	0.118	0.118	0.140	0.183	0.194
Gender (% of women employees)	0.215	0.226	0.323	0.366	0.312
Health and safety policy	0.312	0.366	0.409	0.473	0.473
Incentive and remuneration system	0.102	0.129	0.156	0.140	0.161
Knowledge transfer	0.022	0.065	0.043	0.043	0.065
Motivation of employees	0.048	0.054	0.054	0.043	0.065
Newly employed per year	0.032	0.022	0.032	0.032	0.032
Newly employed	0.183	0.204	0.226	0.237	0.258
Performance feedback	0.140	0.161	0.161	0.129	0.161
Stuff turnover rate	0.065	0.065	0.068	0.072	0.072
Terminated contracts	0.183	0.204	0.215	0.290	0.215
Terminated open-end and fixed-term contracts	0.097	0.129	0.118	0.161	0.118
Training costs	0.283	0.297	0.301	0.301	0.326
Training programs for leaders	0.065	0.065	0.065	0.054	0.097
Unions	0.161	0.237	0.215	0.194	0.204
Work life balance	0.000	0.011	0.011	0.022	0.043
Workers participation in the work place	0.043	0.054	0.054	0.043	0.054
Total	**4.796**	**5.301**	**5.565**	**5.810**	**5.749**
MEAN DISCLOSURE SCORE	**0.192**	**0.212**	**0.223**	**0.232**	**0.230**

Source: Own calculations.

Table A2.16: Annual disclosure score of organisational items

ORGANISATIONAL CAPITAL					
Items	**2006**	**2007**	**2008**	**2009**	**2010**
Accreditations and certifications	0.548	0.656	0.677	0.688	0.667
Awards for innovative products	0.086	0.054	0.108	0.118	0.129
Awards for R&D activities	0.000	0.032	0.011	0.022	0.011
Copyrights	0.000	0.000	0.000	0.000	0.000
Customer and supplier support - closeness to potential real customers	0.215	0.194	0.215	0.151	0.129
Customer and supplier support - reduced reaction time	0.000	0.000	0.032	0.022	0.011
Description of basic R&D projects	0.097	0.111	0.143	0.165	0.147
Employees in R&D department	0.043	0.043	0.011	0.022	0.032
Extensions of existing product lines	0.237	0.237	0.226	0.237	0.280
Finance providers	0.054	0.075	0.086	0.108	0.108
Integrated management system	0.022	0.011	0.022	0.022	0.043
Internal improvement and technological innovation projects	0.290	0.280	0.312	0.301	0.269
IT system	0.201	0.176	0.161	0.161	0.129
Management structure	0.645	0.699	0.699	0.710	0.699
Modification of existing products	0.194	0.237	0.280	0.237	0.237

New product lines	0.011	0.011	0.022	0.054	0.054
New services and products	0.151	0.140	0.194	0.204	0.226
Number of services and products	0.022	0.022	0.032	0.022	0.022
Novelties in global markets	0.000	0.000	0.000	0.000	0.000
Ownership and shareholder structure	0.570	0.559	0.581	0.634	0.634
Patents	0.065	0.054	0.097	0.065	0.086
Process improvement investment	0.554	0.565	0.548	0.527	0.538
Product and process development	0.231	0.237	0.247	0.253	0.258
Profile of directors	0.011	0.011	0.011	0.022	0.022
R&D investment	0.104	0.100	0.079	0.097	0.108
Sales revenue of new products	0.029	0.039	0.018	0.039	0.039
Strategy	0.419	0.495	0.505	0.527	0.527
Time frame for corporate goals	0.161	0.161	0.183	0.183	0.226
Trademarks	0.011	0.032	0.065	0.054	0.065
Workers representatives	0.290	0.258	0.323	0.323	0.323
Total	**5.258**	**5.486**	**5.885**	**5.962**	**6.014**
MEAN DISCLOSURE SCORE	**0.175**	**0.183**	**0.196**	**0.199**	**0.200**

Source: Own calculations.

Table A2.17: Annual disclosure score of relational items

RELATIONAL CAPITAL					
Items	**2006**	**2007**	**2008**	**2009**	**2010**
Awards for corporate image	0.054	0.075	0.086	0.086	0.086
Awards for product and corporate brands	0.065	0.065	0.140	0.097	0.151
Brand architecture	0.032	0.032	0.032	0.032	0.043
Brand recognition	0.366	0.398	0.419	0.387	0.398
Business partnership	0.097	0.054	0.075	0.086	0.086
Communication system	0.075	0.097	0.108	0.086	0.065
Community involvement	0.194	0.199	0.199	0.220	0.226
Company perception	0.011	0.011	0.011	0.022	0.022
Competition	0.048	0.054	0.059	0.043	0.059
Competitors influence	0.043	0.032	0.011	0.011	0.011
Compliance with environmental standards	0.430	0.484	0.505	0.516	0.505
Corporate brand	0.065	0.054	0.054	0.043	0.043
Cost of grievances	0.111	0.147	0.143	0.143	0.133
CSR	0.043	0.043	0.043	0.054	0.065
Customer satisfaction	0.097	0.075	0.079	0.072	0.091
Customers influence and suggestions	0.097	0.086	0.086	0.086	0.086
Customers loyalty	0.118	0.118	0.075	0.097	0.151
Distribution channels	0.290	0.323	0.301	0.290	0.333
Energy and water consumption	0.154	0.172	0.194	0.172	0.168
Environmental considerations	0.108	0.118	0.140	0.183	0.161
Environmental performance	0.226	0.244	0.283	0.319	0.297
Future industry market tendencies	0.054	0.032	0.043	0.086	0.108
Listed environmental managers	0.000	0.011	0.022	0.011	0.022
Long-term relationship with suppliers	0.043	0.054	0.054	0.075	0.075
Market share/Principal markets	0.534	0.573	0.584	0.595	0.534
New customers	0.167	0.118	0.134	0.210	0.204
On-line sale	0.000	0.000	0.000	0.011	0.000
Past industry market tendencies	0.333	0.344	0.376	0.419	0.441
Principal products	0.591	0.584	0.609	0.595	0.556

Promotion	0.090	0.102	0.102	0.086	0.129
Relationships with media	0.043	0.054	0.086	0.108	0.118
Research collaborations	0.172	0.226	0.237	0.269	0.204
Suppliers impact on business decisions and product development	0.054	0.032	0.054	0.032	0.043
Types of customers	0.201	0.158	0.097	0.140	0.122
Total	**5.004**	**5.168**	**5.441**	**5.681**	**5.735**
MEAN DISCLOSURE SCORE	**0.147**	**0.152**	**0.160**	**0.167**	**0.169**

Source: Own calculations.