

Repositório ISCTE-IUL

Deposited in *Repositório ISCTE-IUL*:

2022-04-05

Deposited version:

Publisher Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Lopes, I. T. & Martins, M. M. (2015). Intangibles as source of effective returns in the Iberian stock exchange markets. In Maurizio Massaro, Andrea Garlatti (Ed.), Proceedings of the 16th European Conference on Knowledge Management Knowledge Management, ECKM 2015. (pp. 468-476). Udine: ACPI - Academic Conferences and Publishing International.

Further information on publisher's website:

<https://sites.google.com/a/fl.books-now.com/xingmachicsand35/9781910810460-25diaviGEcentsis14>

Publisher's copyright statement:

This is the peer reviewed version of the following article: Lopes, I. T. & Martins, M. M. (2015). Intangibles as source of effective returns in the Iberian stock exchange markets. In Maurizio Massaro, Andrea Garlatti (Ed.), Proceedings of the 16th European Conference on Knowledge Management Knowledge Management, ECKM 2015. (pp. 468-476). Udine: ACPI - Academic Conferences and Publishing International.. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

**UNIVERSITÀ
DEGLI STUDI
DI UDINE**

**UNIVERSITÀ
DEGLI STUDI
DI UDINE**

Proceedings of the
16th European Conference on
Knowledge Management
University of Udine, Italy
3-4 September 2015



Edited by
Prof Andrea Garlatti
and
Dr Maurizio Massaro
Udine University, Italy

A conference managed by ACPI, UK

acpi

Paper Title	Author(s)	Page no	Guide page
The Demise of Knowledge Management Executive Leadership: An Empirical Study of Leading Companies That Have Changed Their Knowledge Management Strategies	Harold Harlow	340	36
Share-Review-Practise Spiral Model (SRP) to Enhance Postgraduate Students' Cognitive Skills	Atichart Harncharnchai and Teeraporn Saeheaw	349	37
From Research to a Web-Based Interactive Tool: Knowledge Transfer Within Social Services Organizations	Nathalie Houlfort, Julie Descheneaux, Pr�scilla Labelle, Caroline Marion, Mathieu-Jo�l Gervais and Benoit Martel	359	38
Sustainability to Improve Knowledge Values and Intangible Capital: A Case Study in Wine Sector	Barbara Iannone	367	39
Designed to Fail? Challenges in Sharing Engineering Knowledge Across a Global Company	Aleksandra Irnazarow and Peter Heisig	375	40
An Agile Approach for Designing Marketing Activities	Monica Izvercianu, Miclea �erban, Potra Sabina and Iva�cu Larisa	383	41
Extending the Organizational Learning Process in Order to Enable Innovative Ideas	Alexander Kaiser, Florian Kragulj, Thomas Grisold and Roman Walser	391	42
Taxonomy Transfer: Adapting a Knowledge Representing Resource to new Domains and Tasks	Laura Kassner and Cornelia Kiefer	399	43
Sharing Scientific Knowledge Through Telling Stories and Digital Storytelling	Marcela Katu��akov�	408	43
Learning orientation, market orientation and organizational performance: The mediating effect of absorptive capacity	Radwan Kharabsheh, Waed Ensour and Pavel Bogolybov	416	44
Knowledge Management Practices, Intellectual Capital and Firm Performance: Empirical Evidence From Chinese Companies	Aino Kianto, Liu Gang and Rongbin Lee	424	45
Knowledge Flows and Banks' Resilience: The Case of Poland	Monika Klimontowicz	432	46
Coaching as a way to Unleash Access to One's own Knowledge: Is it the Same in Every Culture?	Jaroslava Kub�tov�	442	47
Knowledge Management in the Public Broadcast Industry: A Case Study	Lutz Lemmer	450	48
Storytelling as a Knowledge Strategy in Higher Education Institutions	Ramona - Diana Leon and Elena - M�d�lina V�t�m�nescu	458	49
Intangibles as Source of Effective Returns in the Iberian Stock Exchange Markets	Il�dio Tom�s Lopes and Maria Manuela Martins	468	50
Transfer and Knowledge Management in Very Small and Micro Businesses: Developing a Website in Collaboration With and for Flexible Floor Layers	Monique Lortie, Idriss Kefi and Steve Vezeau	477	51
Leadership Behavior, Perceived Organizational Support, Knowledge Sharing Intensity, and Knowledge Satisfaction: Study on the Headquarters of 3 State-Owned Enterprises That Implement Knowledge Management	Paul Lumbantobing, Ernie Tisnawati Sule, Jann Hidajat Tjakraatmadja, Yunizar, Juli Purwanti	474	52
Intellectual Capital and Profitability: A Firm Value Approach in the European Companies	Maria Manuela Martins and Il�dio Tom�s Lopes	496	53

Jouni A. Laitinen is a PhD student at Tokyo Institute of Technology, Tokyo, Japan where he does research on incentives used to encourage knowledge sharing. His other research interests include knowledge management, behavioral economics, open innovation and national culture.

Dr. Gianluca Lanza is a PhD Student in Economic and Management of Innovation and Sustainability at University of Parma and University of Ferrara. His areas of investigation include efficiency and quality of service of public organizations and performance measurement in public institutions, particularly healthcare organizations.

Prof. Dr. Franz Lehner has been assistant professor at the Institute for Organizational Research at the University of Linz, Austria, since 1986. In 2004 he accepted a call to the University of Passau where he holds now the Chair for Information Systems (Wirtschaftsinformatik) since April 2004. His research is focusing on E-Learning as well as Information and Knowledge Management

Lutz Lemmer has been practising as a Knowledge Management Consultant and Knowledge Manager for the past six years, first with Hewlett Packard's European GM account and currently at the BBC Technology Operations. He holds an MBA, is an accredited coach, has experience in travel, education and financial services industries and is passionate about dancing.

Ane Linden is a doctoral student in Management at the University of Vale dos Sinos (UNISINOS) in Brazil, and a sandwich PhD student at Lisboa School of Economics and Management. Before, she completed two postgraduate programmes: Master in Business Administration and Health Care Management Specialist, at PUC- Rio de Janeiro.

Ilídio Tomás Lopes is a professor and researcher at *ISCTE Business School – University Institute of Lisbon*. Graduate in Business Administration, he obtained a Master Degree in Statistics and Information Management and a PhD in Management, Specialization in Accounting (University of Coimbra, Portugal). Researcher in the fields of: Knowledge Management, Management and Financial Accounting, Management Control Systems, and Research Methodologies.

Monique Lortie Ph.D., is a tenure professor at Université du Québec à Montréal. She graduated in Industrial Engineering from École Polytechnique de Montréal and completed her graduated studies in Ergonomics in France. Her main field of research is the occupational health and safety from which various issues on knowledge transfer and management are explored.

Paul Lumbantobing, M.Eng, currently serves as VP Business Performance in PT. Dayamitra Telecommunications, which is a subsidiary of PT. Telekomunikasi Indonesia, Tbk. He completed his doctoral program at the University Padjadjaran and has published two books: Knowledge Management: Konsep, Arsitektur dan Implementasi (2007) dan Manajemen Knowledge Sharing Berbasis Komunitas (2011). Articles and his opinions in the field of knowledge management were published in various media in Indonesia.

Dora Martins did her PhD thesis on expatriates' management on Portuguese companies and continues researching this topic. She has also attended several international conferences. She teaches in the degree and master course of Human Resources Management at Superior School of Industrial and Management Studies, Polytechnic of Porto, Portugal.

Maria Manuela Martins is a professor and researcher at *ISCTE Business School – University Institute of Lisbon*. Graduate in Management, she obtained a Master Degree in Business Administration specialization in Information Systems Management and a PhD in Management, specialization in Accounting (*University Institute of Lisbon - ISCTE-IUL*). Researcher in the fields of: Knowledge Management, Management and Financial Accounting.

Florinda Matos is PhD in Social Sciences, Organizational Behaviour Studies by University of Lisbon. She has a master's degree in Business Sciences by ISCTE - IUL Business School, an Engineer's degree, in Agricultural Engineering and a Licentiate degree in Management of Agricultural Business by Polytechnic Institute of Santarém.

Mahsa Mehrpoor is a PhD student at NTNU. Research work is about "Context-driven information access in the professional workplaces"; how to use recommender systems to improve knowledge access. Has a computer science background. Bachelor degree is in Software engineering and Masters degree is in information Technology (E-Commerce).

Serban Miclea is a PhD Student at the Faculty of Management in Production and Transportation, Politehnica University Timisoara. He is a Marketing Management enthusiast, has a bachelor degree in Marketing and a master in Advertising and Sales Promotion. His PhD research interests include Marketing Management in SMEs, IT&C, Knowledge Management and Legacy Management and Marketing.

Intangibles as Source of Effective Returns in the Iberian Stock Exchange Markets

Ilídio Tomás Lopes and Maria Manuela Martins

ISCTE-IUL – Instituto Universitário de Lisboa, BRU-IUL, Lisbon, Portugal

ilidio.tomas.lopes@iscte.pt

manuela.martins@iscte.pt

Abstract: Literature has assigned to intangible assets the ability to generate future inflows, depending from the rights or privileges that the ownership impacts on the business. In the knowledge based economy, value of business has strengthened the identification of the gap between companies' accounting and market values. Many companies attempt to manage the value of their intangibles, reporting them to stakeholders. Thus, if intangibles are associated to expected returns, a positive impact on turnover, and on other key performance indicators, is expected. This paper aims the identification of that impact and, furthermore, to evidence the typology of intangibles recognized and disclosed on the annual accounts. Data relates to 127 listed companies in the Iberian Stock Exchange Markets. Multiple regression was run towards the identification of the relationship between turnover and independent variables (*e.g.* intangibles capitalized in the statement of financial position; intangibles information compliance and disclosure index; human capital). Based on the theoretical model and predicted assumptions, empirical evidence has provided a statistically significant and reasonable basis towards the identification of variables embedded on intrinsic immateriality which can predict the businesses' turnover.

Keywords: intangibles, information disclosure and compliance index, Euronext Lisbon, Bolsas y Mercados Españoles

1. Introduction

1.1 Scope

Over the last decade, new categories of intellectual capital have been emerged. According Edvinsson *et al.* (1997), intellectual capital can be split into four categories: human capital, structural capital, organizational capital, and relational capital. However, Schiuma *et al.* (2008) refer to social and stakeholder capital, however as subsets of organizational capital and structural capital, respectively. Human capital incorporates the skills, intellect, attitudes, talent, and other tacit knowledge embodied in employees and management bodies. Relational capital relates to the network developed between organizations and their internal and external stakeholders. This network represents the ability to create synergies within the entire value system. Organizational capital captures the flow of information while structure capital embodies the most visible side of individual capabilities employed in the organizational structure. It is usually externalized by patents, licenses, software, products, and processes. Social capital is managed as the network with social and economic agents. Stakeholder capital is a subset of structural capital and privileges the contribution of certain stakeholder group such as customers, suppliers, or companies, acting in the same value system. From a pure accounting perspective, those invisible resources, classified as "*Intangible Assets*", have a potential value but, due to their volatile nature and difficulties in their measurement, are sometimes excluded from the financial statements. However, based on their linkage and contribution for businesses, we argue about their importance and impact on stakeholders' financial statements fair and true overview and subsequent actions. Traditional financial reports, based on traditional accounting rules that exclude the recognition of potential returns, seem to be irrelevant for decision making. Thus, intangibles identification and measurement approaches can contribute for a better decision if clearly and comprehensively accounted and reported.

Intangible expenditures, according the international accounting standard nº38 (IAS 38), must be capitalized and recognized as intangible assets in the companies' statement of financial position if control exists by the owner, if they are identifiable, and if future returns are expected to flow for the owner. Thus, it is expected that the accounting treatment of intangible expenditures affect the companies' future returns, in particular their performance indicators. This paper aims to evidence whether intangible assets recognition and information disclosures affect, or not, the company's turnover in the subsequent year. Furthermore, according to international accounting standards, intangibles have the potential ability to generate future returns within an expected useful life period. Complementarily, this research also intends to identify the categories of intangibles that are effectively capitalized by the Portuguese and Spanish non-financial listed companies.

2. Innovation based assets

2.1 The accounting and financial perspective

Social sciences usually classify intangibles as knowledge resources (Nonaka and von Krogh, 2009; Miller and Choi, 2010; Tsai *et al.*, 2013), as intellectual capital (Edvinsson *et al.* 1997; Schiuma *et al.* 2008; Chang and Hsieh, 2011; Celenza and Rossi, 2014), or as intangible assets (Lev, 2001; Lopes and Rodrigues, 2007; Ittner, 2008; Tanfous, 2013). Dependent from accounting rules and measures, authors like Brockington (1996), Lev (2001), Andriessen (2004), and Cohen (2005), argue about their impact on businesses and on company's value creation. Thus, intangibles have been historically treated as an aggregated amount (goodwill), which represents, in nature, a residual, incorporating all intangibles that cannot be identified nor separately measured. However, this residual can be an important source of potential future returns (Zhang, 2013), however driven by factors not separately identified nor managed.

According to Blair and Wallman (2003:451) *"intangibles are non-physical factors that contribute to, or are used in, the production of goods or the provision of services or that are expected to generate future productive benefits to the individuals or firms that control their use"*. Lev (2001:5) defines those resources as *"a claim to future benefits that does not have a physical or financial (a stock or a bond) embodiment"*. From an accounting perspective, an intangible is a *"nonfinancial asset without physical substance that is held for use in the production or supply of goods or services or for rental to others, or for administrative purposes, which is identifiable and is controlled by the enterprise as a result of past events, and from which future benefits are expected to flow"* (IFRF, 2004). A patent, a brand, and a unique organizational structure (for example an Internet based supply chain) that generate cost savings are intangible assets. Broadly, a typical intangible asset cannot be bought or sold in an organized market, the verification of its existence may be impossible, it may not have a finite life, its value can fluctuate (which means that it should be submitted to the impairment analysis) and, sometimes, it is strongly interlinked with a specific activity, product/service or business. Hence, intangible assets are commonly development expenditures, patents and trademarks, brand names, databases, human know-how, strategic alliances and processes. Despite that, individuals and companies have an expected future return, based on intangibles recognition and management. Expenditures in research and development, advertising and other similar outflows, should be immediately expensed even they traduce expected future returns. However, according Lev and Sougiannis (2003), Wang (2011), Serrano-Bedia *et al.* (2012), and Besharati *et al.* (2012), firms' innovation capital (e.g. R&D expenditures, software, patents, technical design) is associated with subsequent returns.

An intangible asset is anything that has no physical existence or is investment but has structural, organizational, and relational value to the owner. Those assets are typically long-term resources that cannot be measured accurately unless the time that the organization is traded (fully or partially). The majority of them are referenced under the name of goodwill (IFRF, 2008). These assets have no physical substance, possess a high degree of uncertainty in relation to future benefits achievements, only have value for a given entity, sometimes its economic duration is unknown, and they are usually subject to wide fluctuations in value because those benefits are also associated to competitive advantages. Broadly, intangibles are associated to legal and financial attributes such as identifiability, separability, feasibility in their measurement, and existence of predicted economic benefits within their useful lives. Authors as Relly and Schweihs (1999) underline a broader view of intangible assets, criticizing the pure legal, accounting and taxation approaches. Thus, from the perspective of its economic and financial measurement, an intangible asset should have a set of features or descriptors indispensable to its classification as such. These resources should be capitalized and included in the companies' financial statements if they comply with a set of characteristics, such as: 1. must be subject to specific identification and a recognized descriptor to guarantee their unique property; 2. Possess existence and legal protection; 3. Are associated with the legal right to private property, and they must be legally transferable and can therefore be legally claimed; 4. A tangible manifestation or evidence of their existence is required; 5. Their existence should be manifested in a certain identifiable point or result from a particular phenomenon or event; and 6. Those assets must have associated the possibility of being destroyed or terminated in a particular time or as a result of a phenomenon or identifiable event.

2.2 Recognition and information disclosures

According to the IAS 38 (IFRF, 2004), intangibles internally generated should be classified in two phases: the research phase and a further advanced development phase. Expenditures occurred in the first phase should be expensed in the period because the organization cannot demonstrate whether an intangible exists and that will generate probable net cash inflows. The same procedure applies for other items such as internally generated brands, internally generated goodwill (IFRF, 2008), and other similar items. However, in this scope, we consider that those expenditures, although affecting the period net income, can positively affect the organization's turnover. Expenditures occurred during the development phase can be capitalized, having a deferred impact on future performance indicators (Wang, 2011; Besharati *et al.*, 2012; Kommenic *et al.*, 2013; Al-Matari *et al.*, 2014; Celeza and Rossi, 2014; Cfitci *et al.*, 2014). Those expenditures are associated to the production of new or substantially improved material, devices, products, processes, systems, or services, prior the commencement of commercial production or use. In both cases, organization's performance embodies influxes, arising from capitalized or expensed expenditures.

The paradigm of the usefulness of information for decision-making is now one of the key issues in the designing process towards the information dissemination to their stakeholders. The profound changes that have occurred in the economies in general and in business models, in particular, require information to be disclosed in a timely manner and meeting the users' expectations. However, many are the factors that determine the type, timing and intensity with which this information is disseminated. Assuming that the information and knowledge are a key resource driven by individuals, groups, and organizations, the intensity in the disclosure process influences management decisions and stakeholders' actions as a whole (Shackelford *et al.* 2011). Market volatility, as a result of economic globalization, however associated with traditional business models, increases the urgency to produce useful information that can support multiple decisions on a timely and reliable basis. The accounting harmonization effort that we have experienced over the last decades, comply with the need of information quality. This is not merely a mechanism of standardization but fundamentally a mechanism to ensure the comparability of the information produced, in a scattered way, in the context of a globalized market. As a result of the unquestionable advances in the information and communication technologies, many users and agents are more experienced with regard to the usefulness of the information. Broadly, companies use the annual management reports to disseminate to stakeholders quantitative and qualitative information. Thus, according IAS 38, companies are required to disclose historic and prospective information about intangibles recognized in their financial statements. In this scope, information disclosure and compliance indexes are used to measure the quality of the information effectively disseminated.

3. Methodology

3.1 Data source

This research was initially based on 132 non-financial companies, 39 (29.5%) listed in the Portuguese Stock Exchange market and 93 (70.5%) listed in the Spanish Stock Exchange market. However, five companies were excluded from the analysis due to information unavailability or not compliance disclosure (two companies from the Portuguese index and three from the Spanish index). The 127 firms were aggregated in nine activity sectors (SEC): 1. *Oil and Gas* (production and alternative energies); 2. *Basic materials* (forestry and paper, metals and mining); 3. *Industrials* (construction and materials, aerospace and defense, electronic and electrical equipment, transportation); 4. *Consumer goods* (automobile and parts, beverages, food producers, household goods, home construction, leisure goods, tobacco); 5. *Health care*; 6. *Consumer services* (food and drug retailers, media, travel and leisure); 7. *Telecommunications* (fixed line and mobile); 8. *Utilities* (gas, water, electricity and multiutilities); 9. *Technology* (software and computer services, technology hardware and equipment). Data relates to the fiscal years 2012 and 2013 and was extracted from *Datastream* database. Complimentary and qualitative data was collected from the companies' management reports.

3.2 Variables, theoretical framework and regression model

Economic returns can be expressed by multiple key performance indicators such as Return on Assets (ROA), Return on Equity (ROE), Earnings before Interests, Taxes, Depreciation and Amortization (EBITDA), Turnover, among others. These indicators are commonly used as indicators of profitability and returns, all of them included in the annual reports or disseminated through the internal management control systems. Thus, they have been widely used as measures of financial performance in earlier researches (Chen *et al.*, 2005; Gan and Saleh, 2008;

Chang and Hsieh, 2011; Clarke *et al.*, 2011; Wang, 2011; Besharati *et al.*, 2012; Tanfous, 2013; Celeza and Rossi, 2014; Cfitici *et al.*, 2014) as indicators of integrated returns. Intangible assets rates and corresponding predicted economic signals are supported by IFRF (2004, 2008).

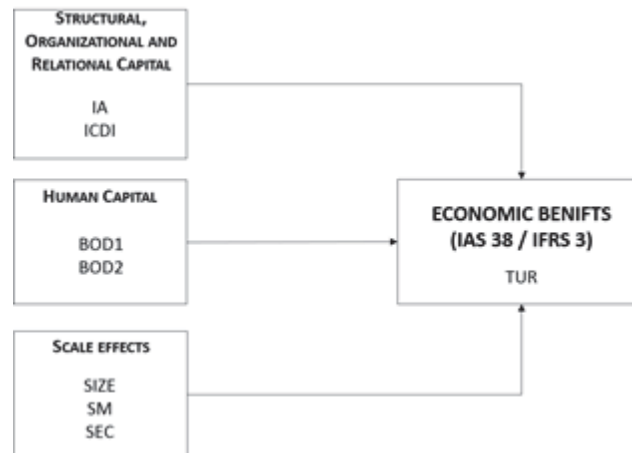


Figure 1: Model theoretical framework

In this scope, we have regressed turnover (TUR) as dependent variable as the natural logarithm of the amount recognized in the company's income statement for the year 2013. IA relates to the natural logarithm of intangible assets recognized in the balance sheet for the economic period 2012. A positive and significant impact on companies' turnover will support the assertions stated in the IAS 38 and IFRS 3 that intangible assets are associated to future economic benefits (IFRS, 2004, 2008).

The variable ICDI translates the type of information disclosed to stakeholders, in 2012, in the company's management report, according to IAS 38 and IFRS 3. Information disclosed was classified according a five level Likert scale (surpassing the traditional limitation associated to the use of a dummy variable, 1 if disclosed, 0 otherwise), as follows:

- Information not disclosed;
- Disclosure of basic quantitative or qualitative information;
- Disclosure of basic quantitative and qualitative information;
- Disclosure of developed quantitative and qualitative information, and related historical assumptions;
- Disclosure of developed quantitative and qualitative information, and related historical and prospective assumptions.

Based on the classification above, we assume that information disclosures can be significantly associated to performance indicators which means that stakeholders can react according the quality of information effectively disclosed (Lopes and Rodrigues, 2007; Mutawaa and Hewaidi, 2010; Iatridis, 2012; Cfitci *et al.*, 2014). According Schiuma *et al.* (2008), stakeholder capital incorporates the information that flows between the organization and the internal and external agents. Thus, information about intangibles can be relevant for decision making and subsequent turnovers.

The board of directors (BOD) is, in the scope of corporate governance literature, understood as an expression of competence, professionalism, skills, knowledge, experience, culture, and management abilities, to conduct the business. It can be partially viewed as a proxy for human capital, complimentary to other expertise and abilities tacitly owned by other employees (Wang *et al.*, 2013; Tsai *et al.*, 2013). For those authors, the size of the board of directors impacts positively only in complicated companies (large size, high diversification level, and high leverage ratios). In SME's, the size of board of directors has a negative impact on performance. In our research, size of board of directors and the number of women participation, were introduced in the model as proxies of management expertise, skills, and abilities, which can affect, from a theoretical perspective, the company's performance over the economic period.

The company size and activity sector are widely supported by literature, namely in Lev and Sougiannis (2003), Nguyen *et al.* (2004), Díaz *et al.* (2005), Ozgulbas *et al.* (2006), Serrano-Bedia (2012), Al-Matari *et al.* (2014), and

Crema and Nosella (2014). Those references also support the indicated predicted economic signals as evidenced in table 1. Ordinary Least Squares (OLS) multiple regressions (using a 5% stepwise approach) were used to test the relationships between the dependent and independent variables.

Table 1: Variables description and framework

Variable Typology	Var.	Description	predicted Economic Signal
Dependent	TUR	Natural logarithm of company's turnover in Y_N	
Independent	IA	Natural logarithm of intangible assets recognized in company's balance sheet (BS) in Y_{N-1}	+
	ICDI	Information disclosure and compliance index in Y_{N-1} , according IAS 38, using a five items Likert scale	+
	BOD1	Size of companies' board of directors	-/+
	BOD2	Number of women in the companies' board of directors	?
	SIZE	Total assets in BS in Y_{N-1}	+
	SM	Stock Market (Portuguese or Spanish)	?
	SEC	Activity sector	?

In order to identify which variables (X_i ; $i=1, \dots, k$) best contribute to explain the variance of dependent variable, the model stated below has been regressed for the performance indicators. A theoretical model will be regressed as follows:

$$\hat{TUR}_{it} = \beta_0 + \beta_1 IA_{i,t} + \beta_2 ICDI_{i,t} + \beta_3 BOD1_{i,t} + \beta_4 BOD2_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 SM_{i,t} + \beta_7 SEC_{i,t} + \varepsilon_{i,t}$$

$$(i = 1, \dots, n ; t = 1, \dots, m)$$

All variables were simultaneously introduced in the model in order to identify which ones can predict the businesses' effective return (rejection of $H_0: \beta_1 = \beta_2 = \dots = \beta_{12} = 0$; $p < \alpha$), as stated in the IAS 38 and IFRS 3 (IFRF, 2004, 2008).

4. Results and discussion

4.1 Descriptive measures and regression model

Firms were aggregated in nine activity sectors (Table 2). The main representative is the sector "Industrials" which includes construction and materials, aerospace and defense, electronic, electrical equipment, and transportation. "Consumer goods" is the second most representative sector (22.1%) and includes automobile and parts, beverages, food producers, household goods, home construction, leisure goods, tobacco. However, this variable is not statistically significant ($t = -0.836$; $p = 0.405$) which means that TUR does not depend from the sector where firm is operating.

Table 2: Activity sectors

Activity sector	f	%
Oil and Gas	9	7.1
Basic materials	14	11.0
Industrials	35	27.6
Consumer goods	28	22.1
Health care	2	1.6
Consumer services	22	17.3

Activity sector	f	%
Telecommunications	4	3.1
Utilities	4	3.1
Technology	9	7.1
Total	127	100.0

According accounting standards, firms can recognize in their financial statements a wide range of intangibles. Those intangibles are associated to economic benefits that flow for its owner over a finite or indefinite useful life time. Approximately 80% of firms (Figure 2) recognize in their financial statements a “Goodwill” (IFRS 3) and “Patents, Licenses, and Rights” (IAS 38). “Software” and “Development Expenses” are recognized by 37% and by 5

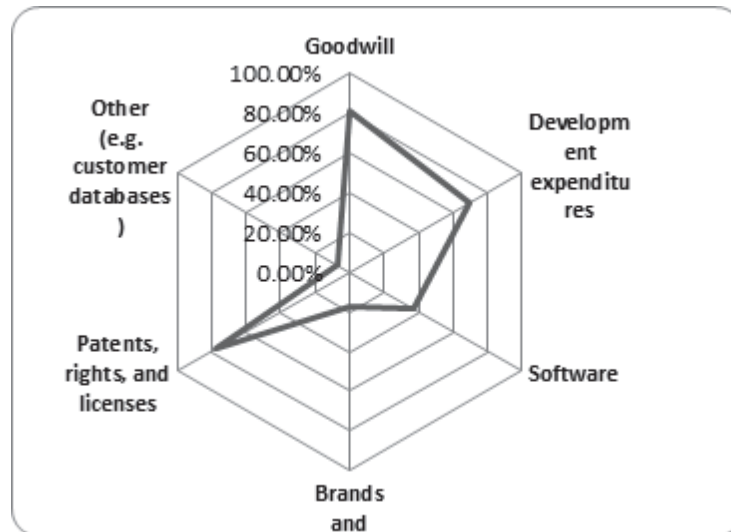


Figure 2: Intangible assets recognized by Iberian companies

The main descriptive measures are evidenced in table 3.

Table 3: Descriptive measures

Variable	N	Minimum	Maximum	Mean	Median	Std. Deviation
TUR	127	16.0545	25.1566	20.3800	20.2963	2.0634
IA	127	10.7579	24.6361	18.3482	18.4007	2.9174
ICDI	127	2	5	3.80	4.00	0.946
BOD1	127	3	21	9.57	9.00	3.5620
BOD2	127	0	4	0.99	1.00	1.342
SIZE	127	16.4685	25.5891	20.9490	20.7863	2.0585

We found that the variance of TURN, as dependent variable, is explained in 82.5% (Adj. $R^2=0.825$; $F=85.987$; $p=0.000$) by the independent variables (with statistical significance, by IA, ICDI, SIZE, and SM). Thus, those variables can act as conjoint predictors (Table 4) of business returns as described in the research aims and objectives. These preliminary results predict a significant impact, at 1% significance level, of intangibles (measurement and disclosures) on future returns (turnover observed in the subsequent economic period). Broadly, we can empirically support the assumptions of IFRS 3 and IAS 38 (IFRF, 2004, 2008) that intangibles generate future economic benefits which flow for the owner.

Table 4: Regression model summary and ANOVA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	0.914	0.835	0.825	0.8626722	1.896

		Sum of Squares	df	Mean Square	F	Sig.
	Regression	447.944	7	63.992	85.987	0.000 ^b
	Residual	88.560	119	0.744		
	Total	536.504	126			

a. <i>Dependent Variable: Turnover</i>
b. <i>Predictors: (Constant), Activity Sector, Information Compliance and Disclosure Index, Size of the Board of Directors, Number of Women in the Board of Directors, Stock Market, Intangible Assets, and Company Size.</i>

Table 5: Regression model equation

	In TURN			
	β (Unst)	β (Std)	t	Sig.
(Constant)	2.132		2.347	0.021**
IA	0.152	0.215	3.439	0.001***
ICDI	0.342	0.157	3.122	0.002***
BOD1	-0.029	-0.051	-1.110	0.269
BOD2	0.057	0.037	0.930	0.354
SIZE	0.666	0.664	11.764	0.000***
SM	0.331	0.073	1.810	0.073*
SEC	-0.031	-0.033	-0.836	0.405
	Adj. R ² =0.825 F=85.987 Sig. 0.000			

*<0,1 **<0,05 ***<0,01

Based on the literature, and as expected, we found a positive and significant correlation between turnover and intangible assets (IA) capitalized in the statement of financial position ($t=3.439$; $p=0,001$). Null hypothesis is rejected, confirming that strong interactions between TUR and IA can be observed for Iberian non-financial listed companies. This evidence supports the assumptions of IAS 38 and IFRS 3 that intangible assets have the ability to generate potential economic benefits over a certain subsequent period of time.

This research introduces the original variable IDCI (using a five level Likert scale) which reflects the type (quantitative/qualitative and historical/prospective) and quality of information (clearness, comprehensiveness, relevance) disclosed to stakeholders. As expected, this variable has a positive impact ($\beta_2=0.342$) on turnover and is significant at 1% significance ($t=3.122$; $p=0,002$). Thus, we can assume that the quality of corporate’s reporting has a significant impact on subsequent benefits, as stated in Mutawaa and Hewaidi (2010), Iatridis, (2012), and Ciftci *et al.* (2014).

The size of Board of Directors (BOD1) and the participation of women in the board (BOD2) are not statistically significant in our model ($t=-1.110$; $p=0.269$ and $t=0.930$; $p=0.354$, respectively), not confirming the results of Wang *et al.* (2013). Null hypothesis cannot be rejected, confirming the absence of interactions between our human capital proxies and TUR. However, we underline the negative impact, despite its non-statistically significant impact in our model. This result is aligned with the evidence achieved by Wang *et al.* (2013) for firms with low size, low diversification, and low leverage (simple firms). As listed companies in the Iberian markets (usually large sized companies), our results refutes that trend, requiring further developments in order to gather corroborative information and evidence.

The statistical results ($t=11.764$; $p=0.000$) for the variable SIZE consolidates the literature, confirming the effects of scale. With a positive impact ($\beta_4=0.666$), firms with higher level of assets tend to generate higher level of turnovers. Stock Market (SM) is statistically significant, however only at 10% significance ($t=1.810$; $p=0.073$), which certainly reflects the effect of scale from the Spanish market (approx. 70% of companies). Activity Sector (SEC) is not statistically significant in our model which means that we cannot reject the null hypothesis ($t=-0.836$; $p=0.405$).

Thus, our full regression model has the following specification:

$$\hat{TUR} = 2.132 + 0.152IA + 0.342IDCI - 0.029BOD1 + 0.057BOD2 + 0.666SIZE + 0.331SM - 0.031SEC$$

4.2 Multicollinearity diagnosis and residuals analysis

Variance Inflation Factor (VIF) assesses the degree of multicollinearity in the model. Thus, we found that none of our independent variables has a VIF value close to 10 (VIF varies between 1.115 and 1.803), concluding that our analysis does not observe a multicollinearity severe problem. Towards the analysis of residuals independence, we used the *Durbin-Watson* (DW). We found by linear interpolation, for 127 observations, $k'=7$, and for a significance level of 1%, a $dL = 1.386$ and a $dU = 1.636$. Based on this range, we notice that null hypothesis cannot be rejected ($1,386 < DW(1.896) < 4-1.636$). Thus, residuals can describe a normal distribution, confirming its independence.

5. Final remarks and expected future outcomes

The results of this research consolidates the assumptions of IAS 38 and IFRS 3 that capitalized resources in the companies' statement of financial position are significantly associated to expected economic benefits. It also confirms the importance of intangibles and the need to increasingly disclose information to stakeholders. Evidence consolidate the assumption that turnover also incorporates the type and quality of information disclosed to stakeholders, in the companies' annual management reports. In this scope, Iberian non-financial listed companies have recognized in their financial statements a wide variety of intangibles such as: goodwill (under IFRS 3 assumptions), brands and trademarks, software, patents, licenses, rights, customer databases, and agreements (under IAS 38 assumptions). These knowledge resources are managed as source of future returns and included in the internal knowledge management systems. In fact, from a strategic and marketing perspective, those resources are used to improve synergies and increase the business value added. These knowledge based drivers can induce firms into unexpected and abnormal subsequent returns. It will depend from the stakeholders' ability to capture and embody their intrinsic value and impacts. Thus, quantitative and qualitative information about the typology of intangibles capitalized or expensed can serve as a reliable basis towards the preparation of complementary intangible reports, as included in the agenda of some accounting standards setting boards. As usual, some limitations are associated to this research: firstly, the range of time under analysis and, secondly, the intrinsic subjective approach observed in the information quality classification. Despite the use of a five items Likert scale, we consider that our results are more reliable than the results achieved using a dummy variable (1 if information is disclosed, 0 otherwise). As further research, we intend to look for impacts between intangibles rates and performance indicators over a large range of time, in order to evaluate the trend in the intensity of future returns. Acting the year as a control variable, some economic effects could be observed and economically interpreted. Additionally, new proxies for intangibles, performance, and human capital, could be computed towards the identification of new or corroborative insights.

References

- Al-Matari, E.M.; Al-Swidi, A. K. and Fadzil, F.H. (2014) "The Measurements of Firm Performance's Dimensions", *Asian Journal of Finance & Accounting*, Vol. 6, No. 1, pp 24-49.
- Andriessen, D. (2004) *Making Sense of Intellectual Capital- Designing a Method for the Valuation of Intangibles*, Oxford: Elsevier.
- Besharati, E.; Kamali, S; Mazhari, H. R. and Soheila, M. (2012) "An investigation of relationship between intellectual capital and innovation capital with financial performance and value of companies accepted in Tehran Stock Exchange", *Journal of Basic and Applied Scientific Research*, Vol. 2, No. 2, pp 1241-1245.
- Blair, M. and Wallman, S. (2003) "The Growing Intangibles Reporting Discrepancy", *Intangibles: Management, Measurement, and Reporting*, Washington: Brooking Institution Press, John Hand and Baruch Lev (Ed.), pp 449-468.
- Brockington, R. (1996) *Accounting for Intangible Assets: A new Perspective on the True and Fair View*, England: Addison-Wesley Publishing Company.
- Celenza, D. and Rossi, F. (2014) "Intellectual capital and performance of listed companies: empirical evidence from Italy", *Measuring Business Excellence*, Vol.18, No 1, pp 22-34.
- Chang, W. S. and Hsieh, J. J. (2011) "Intellectual Capital and Value Creation – Is Innovation Capital a Missing Link?", *International Journal of Business and Management*, Vol. 6, No. 2, pp 3-9.
- Chen, M. C.; Cheng, S. and Hwang, Y. (2005) "An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance", *Journal of Intellectual Capital*, Vol.6, No. 2, pp 159-176.
- Clarke, M.; Seng, D. and Whiting, R.H. (2011) "Intellectual capital and firm performance in Australia", *Journal of Intellectual Capital*, Vol. 12, No. 4, pp 505-530.
- Ciftci, M., Darrough, M. and Mashruwala, R. (2014), "Value relevance of accounting information for intangible-intensive industries and the impact of scale: The US evidence", *European Accounting Review*, Vol.23 No. 2, pp 199-226.
- Crema, M.; Nosella, A. (2014) "Intangible Assets Management and Evaluation: Evidence form SMEs", *Engineering Management Journal*, Vol. 26, No. 1, pp 8-20.
- Cohen, J.A. (2005) *Intangible Assets – Valuation and Economic Benefit*, New Jersey: John Wiley & Sons.

- Díaz, M.S.; Gil, M.J. and Machuca, J.A. (2005) "Performance measurement systems, competitive priorities, and advanced manufacturing technology", *International Journal of Operations & Production Management*, Vol. 25, No. 8, pp 781-799.
- Edvinsson, L.; Roos, J.; Roos, G. and Dragonetti, N.C. (1997) *Intellectual Capital – Navigating the New Business Landscape*, London: MacMillan Press.
- Gan, K. and Saleh, Z. (2008) "Intellectual capital and corporate performance of technology-intensive companies: Malaysia evidence", *Asian Journal of Business and Accounting*, Vol. 1, No. 1, pp 113-130.
- IFRF – International Financial Reporting Foundation (2004) *International Accounting Standard N.º38 – Intangible Assets*, available from <http://www.ifrs.org/IFRSs/Pages/IFRS.aspx> (accessed on January 2015).
- IFRF – International Financial Reporting Foundation (2008) *International Reporting and Financial Standard N.º3 – Business Combinations*, available from <http://www.ifrs.org/IFRSs/Pages/IFRS.aspx> (accessed on January 2015).
- Iatridis, G.E. (2012) "Voluntary IFRS disclosures: evidence from the transition from UK GAAP to IFRSs", *Managerial Auditing Journal*, Vol. 27 No. 6, pp. 573-597.
- Ittner, C.D. (2008) "Does measuring intangibles for management purposes improve performance? A review of the evidence", *Accounting and Business Research*, Vol. 38, No. 3, pp 261-272.
- Kommenic, B.; Tomic, D. and Tomic, R. (2013). "Intangible Assets and Business Performance", *The Journal of American Business Review*, Vol. 1, No. 2, pp 165-172.
- Lev, B. and Sougiannis, T. (1996) "The capitalization, amortization, and value-relevance of research and development", *Journal of Accounting and Economics*, No. 21, pp 107-138.
- Lev, Baruch and Sougiannis, T. (2003) "The Capitalization, Amortization and Value-relevance of R&D", *Intangibles: Management, Measurement, and Reporting*, Washington: Brooking Institution Press, John Hand and Baruch Lev (Ed.), pp 123-152.
- Lev, B. (2001) *Intangibles: Management, Measurement, and Reporting*, Washington: Brooking.
- Lopes, I.T. and Rodrigues, A.M. (2007) "Intangible assets identification and valuation – a theoretical framework approach to the Portuguese Airlines companies", *Electronic Journal of Knowledge Management*, Vol. 5, No. 2, pp. 193-202
- Miller, C.C. and Choi, C.J. (2010) "Development and knowledge resources: a conceptual analysis", *Journal of Knowledge Management*, Vol. 14, No. 5, pp 759-776.
- Mutawaa, A. and A. Hewaidy (2010) "Disclosure Level and Compliance with IFRSs: An empirical investigation of Kuwaiti companies", *The International Business & Economics Research Journal*, Vol.9 No. 5: pp 33-49.
- Nguyen Van, P.; Lainsley, F. and Kaiser, U. (2004) "The Performance of German Firms in the Business-Related Service Sector: a Dynamic Analysis", *Journal of Business & Economic Statistics*, Vol. 22, No. 3, pp 276-295.
- Nonaka, I.; Von Krogh, G. (2009) "Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory", *Organization Science*, Vol. 20, No. 3, May-June, pp.: 635-652.
- Ozgulbas, N.; koyuncugil, A.S. and Yilmaz, F. (2006) "Identifying the Effect of Firm Size on Financial performance of SMEs", *The Business Review*, Vol. 6, No. 1, pp 162-167.
- Reilly, R. F.; Schweihs, R.P. (1998) *Valuing Intangible Assets*, New York: McGraw-Hill.
- Serrano-Bedia, A.M.; López-Fernandez, M.C. and Garcia-Piqueres, G. (2012) "Complementarity between innovation activities and innovation performance", *Journal of Manufacturing Technology Management*, Vol.23, No. 5, pp 557-577.
- Schiama, G, Lerro, A and Sanitate, D (2008) "The intellectual capital dimensions of Ducati's turnaround: exploring knowledge assets grounding a change management program", *International Journal of Innovation Management*, Vol.12, No 22, pp 161-193.
- Tanfous, M.B. (2013) "The Contribution of Intangibles to the Value Creation", *Journal of Business Studies Quarterly*, Vol. 5, No. 1, pp 43-75.
- Shackelford, D.A., Slemrod, J. and J. M. Salle (2011) Financial Reporting, tax, and real decisions: toward a unifying framework. *International Tax Public Finance*, Vol. 18, pp 461-494.
- Tsai, M.; Tsai, M. and Chang, C. (2013) "The Direct and Indirect Factors on Affecting Organizational Sustainability", *Journal of Management and Sustainability*, Vol.3, No. 4, pp 67-77.
- Wang, M.S. (2011) "Innovation Capital and Firm Performance: To Explore the Deferral Effect and the Revisited Measurement", *Journal of Strategic innovation and Sustainability*, Vol. 7, No. 2, pp 64-78.
- Wang, Y, Tsai, J. and Lin, H. (2013) "The influence of board structure on firm performance", *The Journal of Global Management*, Vol.9 No. 2, pp.7-14.
- Zhang, M. (2013) "The Impact of Internally Generated Goodwill on Financial Performance of Firms", *The Journal of Applied Business Research*, Vol. 29, No. 6, pp 1809-1814.