Empirical Evidence for the Increasing Importance of Intellectual Capital Reporting in Higher Education Institutions

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Abstract

The purpose of this paper is to know the opinion of the university stakeholders regarding the importance they give to completing the information from university financial statements with information relating to these institutions' intellectual capital. To this end, a questionnaire was designed and sent to every member of the Social Councils of Spanish public universities. It was thought that these participants would provide a good example of the attitude of university stakeholders since they represent the different social groups connected with universities.The results of our empirical study allow us to criticize the current accounting information model of Spanish higher education institutions and to recommend extending the limits of universities' annual accounts so as to include the information on intellectual capital demanded by the different stakeholders. Finally, this empirical study identifies which of components of intellectual capital (human, structural and relation) is the most relevant for publication.

Keywords: intellectual capital, reporting, stakeholders, universities, Spain.

1. Introduction

Although the intellectual capital concept was first developed as a framework to analyse the contribution of intellectual resources in for-profit enterprises, it was soon taken over by public and non-profit organisations due to its importance (Mouritsen et al., 2004; Kong and Prior, 2008; Ramírez, 2010). Also, there is a growing interest in applying an intellectual capital approach in universities, since among the main goals of universities there is the production and diffusion of knowledge and their most important investments are in research and human resources (Leitner and Warden, 2004; Sánchez et al., 2009; Brătianu, 2009; Veltri et al., 2012; Wu et al., 2012). The higher education institutions are, therefore, an ideal framework for the application of the ideas related to intellectual capital theory.

The definition of intellectual capital to which we refer in this paper sees intellectual capital as a dynamic system of intangible elements whose effective management is essential to value creation in universities. Necessities like the increasing stakeholder demand for greater transparency, the increasing competition between universities and firms, and greater autonomy, push universities towards the adoption of new reporting systems which should necessarily incorporate intangibles (Sánchez et al., 2009).

This paper focuses on the importance of reporting on intellectual capital for Spanish universities and the information needs of university stakeholders. Numerous papers and books have come to the conclusion that our traditional accounting systems do not suffice for today's organisations, whose value creation often depends more on intellectual capital type resources rather than monetary or physical resources (Burgman et al., 2007).

It is useful to remember that accounting research is currently focused on the utility paradigm, which stresses the need for accounting information to be truly relevant to good decision making by its users.

However, accounting in the public sector has traditionally focused on financial and budget information (Martín and Moneva, 2009), ignoring other types of information such as data on the social responsibility of their activities (Melle, 2007) or the key intangible elements in their value creation (Ramírez, 2010; Hussi, 2004). Public universities are a prime example of this, since the information provided focuses on guaranteeing financial control of the organisation without paying attention to the needs of other groups of interest (Martín, 2006). Gray(2006) consider that the information supplied in traditional financial reports is not enough, highlighting the need to establish more extensive communication and accounting mechanisms which take into account the needs of the different groups of interest. Consequently, the current socio-economic climate creates the need for universities' financial statements provide all the relevant information on their activities and the key factors of their success – their intangible resources.

In this study we will show the opinion which exists among the university stakeholders regarding the need to complete the content of the current university financial statements by providing non-financial information on intellectual capital.

The paper is structured as follows: the section 2 shows the main reasons for the importance of intellectual capital reporting in higher education institutions. In section 3, we review the existing literature on the presentation of information on intellectual capital in these institutions. In section 4, we define the scope of the empirical study conducted and the methodology used. Then, we present the results obtained. Final conclusions are drawn in Section 5.

2. Importance of Intellectual Capital Reporting in Institutions of Higher Education

The presentation of information about intellectual capital has now become of prime importance in institutions of higher education, principally because knowledge is the main output and input of these institutions. Universities produce knowledge, either through technical and scientific research (the results of investigation, publications, etc) or through teaching (students trained and productive relationships with their stakeholders). Their most valuable resources also include their teachers, researchers, administration and service staff, university governors and students, with all their organisational relationships and routines (Warden, 2003; Leitner, 2004; Ramírez et al., 2007). It is true to say then that universities' input and output are intangible (Cañibano and Sánchez, 2008, p. 9).
Intellectual capital, when referred to a university, is a term used to cover all the institution's non tangible or non-physical assets, including processes, capacity for innovation, patents, the tacit knowledge of its members and their capacities, talents and skills, the recognition of society, its network of collaborators and contacts, etc.The intellectual capital is the collection of intangibles which "*allows an organisation to transfer a collection of material, financial and human resources into a system capable of creating value for the stakeholders"*(European Commission, 2006, p. 4).

Another reason for the importance and necessity of establishing a model for the dissemination of universities' intellectual capital is the existence of continual demands for greater information and transparency about the use of public money (Warden, 2003), mainly due to the continuous process of both academic and financial decentralisation which institutions of higher education are currently engaged in. As leading producers of knowledge, universities are now key players in the current economy and their activities are therefore subject to much greater scrutiny by the wider community (European University Association, 2006, p. 19). Therefore the appropriate presentation of institutional communication has become one of the principal mechanisms by which institutions of higher education render accounts.

The implementation of the European Space for Higher Education promotes the mobility of both students and teachers within the territory of Europe, while at the same time encouraging both collaboration and competition between universities. This environment of greater competition and necessary collaboration means that these institutions are now committed to accessing citizens and transmitting relevant information on their activities. All this could well play an important role in the decision-making processes of the users of the accounting information, for example in the case of potential students choosing where to study.

Another reason why universities have begun to publish information on their intellectual capital is that they now have to compete for funding. Universities are now facing growing competition due to lower funding, which puts them under greater pressure to communicate their results.

It is clear, then, that there is an increased necessity for universities to render accounts. University organisations must be ready to supply objective and relevant information which fully satisfies users' information needs. Universities will have to pay greater attention to their different stakeholders and their respective information interests when designing their communication strategy. It will be necessary to include relevant information on their intangible assets, such as the quality of the institutions, their social and environmental responsibility, the capacities, competences and skills of their staff, etc.

Despite the increased pressure on universities to render a broader account of their activities, most countries do not require universities to present information on intellectual capital. The only exceptions are Austria, where universities have been obliged to present an intellectual capital report since January 2007 (Leitner, 2004), and Sweden, where it has been compulsory since 1996 for universities to publish environmental reports (Arvidsson, 2004).

3. Intellectual Capital Reporting: A Literature Review

At the European level, in 2002 the European Association of Research, Managers and Administrators (EARMA) in collaboration with the European Centre for Strategic Management of Universities (ESMU) launched the initiative about intellectual capital in higher education institutions and research and technology organisations (HEROs) with the objective to raise awareness and disseminating good practice research in the field of intellectual capital reporting among universities and research organisations (Leitner, 2005).

One of the most interesting experiences in the presentation of information on intellectual capital is that of Austria's public universities, which are obliged to present Intellectual Capital Reports (known as *Wissensbilanz*). The Austrian University Law of 2002 (Federal Ministry of Education, Science and Culture of Austria, 2002), in article 13, established the obligation and the general framework for developing this intellectual capital report. According to UG2002 (section 13, subsection 6), the IC report will include, at least, the following elements: a) the university's activities, its social and voluntary objectives and its strategies; b) the intellectual capital, divided into human, structural and relational capital; c) the processes presented in the performance contract, including outputs and impacts. The first intellectual capital report should have been published in 2005. However, the ministerial order (Federal Ministry of Education, Science and Culture of Austria, 2006) relating to the detailed structure of the university intellectual capital report. The way to present the information and the indicators to be compulsorily included was not published until 15 February 2006. So, Austrian universities have only really been obliged to publish an intellectual capital report every 30 April since 2007.

Another interesting study is the case of the Poznan University of Economics, in Poland, where Fazlagic (2005) presents an intellectual capital report based on the methodology proposed by the Danish Ministry of Science, Technology and Innovation (2000), in which intellectual capital is presented in the form of resources, activities and results; and the proposal of the Korean non-profit research organization ETRI (Electronics and Telecommunications Research Institute), which in early 2001 developed an effective management tool and established a knowledge management system. And, since 2004 ETRI publishes intellectual capital reports annually (ETRI, 2005).

On the other hand, the Observatory of European Universities (OEU) proposed the presentation of an intellectual capital report called the *ICU Report* (Sánchez *et al.*, 2006), specifically designed for universities and research centres, with the aim of improving transparency and aiding the homogenous dissemination of the indicators of intellectual capital. The proposed ICU report consists of three fundamental sections which describe the logical movement from internal strategy (design of the vision and objectives of an institution) and management towards a system of indicators(OEU, 2006, p. 211): (a) vision of the institution; (b) intangible resources and activities; (c) system of metrics.

Lastly, on the basis of the advanced guidelines for reporting intellectual capital, some universities and research centres have started to developed a report for describing their intellectual capital and knowledge flows (Bonaccorsi and Daraio, 2007; Jones et al., 2009; Nowack et al., 2009; Veltri et al., 2012).

Despite these experiences, at a Spanish level neither accounting bodies nor government agencies have established regulations, standards or norms related to preparing intellectual capital reports which involve the existence of a strict, agreed, and theoretical framework standardising the data to be presented.

The empirical study conducted for this work is a first step towards highlightingthe importancegiven by different Spanish public universities to the need to carry out a proactive publication of information on intellectual capital.

4. Empirical Study

The generalised concern regarding the need to guarantee the information transparency of universities led us to consider the need to include information on intellectual capital in universities' annual reports. To this end the decision was taken to seek out the opinion of the university stakeholders regarding the importance they give to completing the information from university financial statements with information relating to these institutions' intellectual capital. A questionnaire was designed and sent to every member of the Social Councils of Spanish public universities.

4.1. Research Objectives

The two fundamental objectives of the empirical study are:

- Objective I:To determine the extent to which different university stakeholders are demanding information relating to the intellectual capital of Spanish public universities in order to make the right decisions, identifying which intangible resources are the most relevant for publication.
- Objective II: To determine which of the three components of intellectual capital (human, structural and relational capital) it is most important to publish information about.

4.2. Methodology and Data Collection

In order to achieve the previously mentioned objectives, in mid-May 2010 an online questionnaire requesting the opinion of the members of the Social Councils was sent to all Spanish public universities. The methodology of the study is outlined in the data sheet attached in table 1.

Table 1. Technical details

Analysis group	Stakeholders from Spanish public universities
Universe	Members of the social councils of Spanish public universities (1.094)
Size of sample	247
Information collection technique	On line survey
Period of field work	May-July 2010
Average time per survey	7 minutes 45 seconds
Software	SPSS® v. 17

Source: Compiled by the authors

4.2.1. Defining the population and selecting the sample

Two important factors were used to justify the population to be studied: (1) members of the Social Councils of Spanish public universities were considered to provide a good sample of the feelings of university stakeholders, as they represent the various social groups with links to the universities (2) these members are familiar with the accounting information published by the universities since they are responsible for approving the universities' annual accounts.

Following the analysis of the composition of the Social Councils, the members were divided into these seven groups: 1) university governors (vice-chancellor, general secretary, council secretary and manager), 2) teaching and research staff, 3) students, 4) administration and service staff, 5) representatives of business organisations, 6) representatives of union organisations, 7) representatives of the public administrations.

The population to be studied was therefore composed of the 1.904 members of the Social Councils of Spanish public universities. Replies were received from 247 members, 22.57% of the total. The size of the sample was considered sufficient, since in a binomial population the estimation error would be 5.37% for a reliability level of 95%.

4.2.2. Information collection and treatment

The information was collected via an online survey. An email was sent to the members of the Spanish university Social Councils requesting the members to take part in our research. The questionnaire consists of closed dichotomous questions combined with *Likert*scales, designed to learn the opinion of university stakeholders on the importance of Spanish public universities publishing information on their intellectual capital.

A descriptive analysis of the replies was conducted according to the characteristics of each of the questions. Also, a Nonparametric test (*the Kruskal-Wallis test*) was used to see if there were differences in responses by type of stakeholder.

4.3. Analysis of the Results of the Empirical Study

There now follows a consideration of the principal results obtained through the empirical study for each of the objectives previously established.

4.2.3. Objective 1: The importance given by university stakeholders to the presentation of information on intellectual capital

This block of the questionnaire includes a set of questions related to the importance stakeholders give to the inclusion of information on intellectual capital in universities' accounting statements. A list of intangible assets relating to human capital, structural capital, and relational capital is included so as to ascertain to what degree it is relevant to publish this information.

A high percentage, 89.1%, of those surveyed in our study showed great interest in Spanish public universities presenting information on intellectual capital. They felt that publishing this information would make the content of the current university financial statements more relevant.Only 4.9% of those surveyed consider that publishing information on intellectual capital increases the ambiguity and the lack of relevance of the information included in the current accounting statements.

Lastly, the aim of this paper is to learn the opinion of the university stakeholders about which intangible assets it is most important to publish information. This would help to justify the need to include this information in the university accounting model.

In order to fulfil this objective those surveyed were given a list of intangible elements corresponding to the three blocks of intellectual capital and were then asked to value on a 5-point Likert scale the importance they gave to universities publishing information on these items. On the scale 1 corresponds to "not at all important" and 5 "very important".

In order to identify the intangible assets about which university stakeholders consider it relevant or very relevant to publish information, we set as a requirement that the assets had to reach a mean value or a median equal or higher than 4 points in combination with a minimum 25 of 4 points and a minimum 75 percentile of 5 points. In short, the intention is that most of the distribution of values is concentrated in high scores close to 5 points.

- **Human capital block**

Human capital is the sum of the explicit and tacit knowledge of the university staff (teachers, researchers, managers, administration and service staff) acquired through formal and non-formal education and refresher processes included in their activities.

Table 2 shows the frequencies obtained by each of the 12 intangible elements related to the human capital block about which those surveyed were questioned.

Table 2. Frequency analysis in the human capital block (*)

INTANGIBLE ASSET	Mean	Median	Mode	Typical deviation.	Range	Percentile 25	Percentile 75
Typology of university staff (historical data of growth or decrease in staff, age structure of staff, contractual conditions, etc.)	3.66	4	4	0.76	3	3	4
Academic and professional qualifications of teaching and research staff (% of doctors, % civil servants, etc.)	4.52	5	5	0.60	3	4	5
Mobility of teachers and researchers (% of teachers on fellowships, etc.)	4.08	4	4	0.87	3	4	5
Scientific productivity (books. articles published. etc.)	4.54	5	5	0.68	3	4	5
Professional qualifications of administration and service staff	3.68	4	4	0.99	4	3	4
Mobility of graduates	4.30	4	5	0.73	3	4	5
Efficiency of human capital	4.49	5	5	0.74	3	4	5
Teaching capacities and competences (pedagogical capacity, teaching innovation, teaching quality, language proficiency, etc.)	4.57	5	5	0.66	3	4	5
Research capacities and competences (research quality, participation in national and international projects, % of doctor, six-year research periods, etc.)	4.63	5	5	0.62	2	4	5
Teamwork capacity	4.04	4	4	0.79	3	4	5
Leadership capacity	3.97	4	4	0.79	3	3	5
Training activities	4.44	5	5	0.71	3	4	5

(*) 5-point scale: (1: not at all important, 5: very important)

One of the first conclusions that can be drawn from the data is the extremely high level of importance given to publishing the items of human capital. Most of the intangible assets give a mean value higher than 4. There are three exceptions – typology of university staff (3.66), professional qualifications of administration and service staff (3.68) and leadership capacity (3.97).

The analysis of the statistics of mean, median, mode, range, typical deviation, percentile 25 and 75 allows us to state that those surveyed consider the publication of the following intangible assets to be relevant or very relevant: research capacities and competences, teaching capacities and competences, scientific productivity, academic and professional qualifications of teaching and research staff, efficiency of human capital, training activities, mobility of teachers and researchers and teamwork capacity.

- **Structural capital block**

The second of the blocks of intellectual capital included in our survey, structural capital, consists of 14 intangible assets.

Structural capital is the explicit knowledge relating to the internal process of dissemination, communication and management of the scientific and technical knowledge at the university. Structural capital may be divided into:

- Organisational capital: this refers to the operational environment derived from the interaction between research, management and organisation processes, organisational routines, corporate culture and values, internal procedures, quality and the scope of the information system, etc.
- Technological capital: this refers to the technological resources available at the university, such as bibliographical and documentary resources, archives, technical developments, patents, licences, software, databases, etc.

Table 3 shows their frequencies.

Table 3. Frequency analysis in the structural capital block (*)

INTANGIBLE ASSET	Mean	Median	Mode	Typical deviation.	Range	Percentile 25	Percentile 75
Installations and material resources supporting pedagogical qualification and innovation	4.09	4	4	0.71	3	4	5
Installations and material resources for research and development	4.40	4	5	0.66	3	4	5
Evaluation and qualification processes and activities within the institution	4.28	4	5	0.73	3	4	5
Structural organisation	3.98	4	5	0.97	3	3	5
Teaching management and organisation (academic networks, teaching exchanges, teaching incentives, etc.)	4.26	4	4	0.69	3	4	5
Research management and organisation (internal communication of results, efficient management of research projects, research incentives, theses read, etc.)	4.47	5	5	0.60	3	4	5
Organisation of scientific. cultural and social events	4.40	4	5	0.68	3	4	5
Productivity of administrative, academic and support services	3.98	4	4	0.77	3	3	5
Organisational culture and values	4.04	4	4	0.80	3	3	5
Effort in innovation and improvement (expenditure on innovation, staff working on innovation)	4.55	5	5	0.58	3	4	5
Management quality	4.51	5	5	0.60	4	4	5
Information system (documented processes, databases, use of ITC)	4.38	4	5	0.63	2	4	5
Technological capacity (total expenditure on technology, availability and use of computer programs, use of intranet/Internet, etc.)	4.45	5	5	0.61	3	4	5
Intellectual property (patents, licenses, etc.)	4.52	5	5	0.64	3	4	5

(*) 5-point scale: (1: not at all important, 5: very important)

It is important to note once again the high mean value given to the publication of information relating to the different intangible assets included in the structural capital block. From the analysis of the statistics we can classify as relevant or very relevant the inclusion of information on the following intangible assets: effort in innovation and improvement, intellectual property, management quality, research management and organisation, technological capacity, installations and material resources for research and development, organisation of scientific, cultural and social events, information systems, evaluation and qualification processes and activities within the institution, teaching management and organisation and finally installations and material resources supporting pedagogical qualification and innovation.

- **Relational capital block**

Relational capital refers to the extensive collection of economic, political and institutional relations developed and upheld between the university and its non-academic partners: enterprises, non-profit organisations, local government and society in general. It also includes the perception others have of the university: its image, appeal, reliability, etc.

This block analyses the importance university stakeholders give to the publication of information concerning intangible assets within the relational block. The questionnaire includes 16 intangible assets reflected in the following descriptive statistics (see table 4).

Table 4. Frequency analysis in the relational capital block (*)

INTANGIBLE ASSET	Mean	Median	Mode	Typical deviation.	Range	Percentile 25	Percentile 75
Efficiency of graduate teaching (average duration of studies, dropout rate, graduation rate, etc.)	4.53	5	5	0.64	3	4	5
Student satisfaction	4.61	5	5	0.68	3	4	5
Graduate employability	4.75	5	5	0.50	3	5	5
Student relations (capacity for responding to student needs, permanent relations with ex-students, etc.)	4.21	4	4	0.60	3	4	5
Relations with the business world (spin-offs, contracts and R&D projects, etc.)	4.74	5	5	0.57	4	5	5
Relations with society in general (institutional representation in external organisations, collaboration on national and international projects, etc.)	4.48	5	5	0.60	3	4	5
Application and dissemination of results (dissemination of results, appropriateness of research)	4.62	5	5	0.55	2	4	5
Relations with the media	3.94	4	4	0.85	3	3	5
University's image	4.56	5	5	0.65	2	4	5
Collaborations and contacts with public and private organisations	4.40	5	5	0.68	2	4	5
Collaboration with other universities	4.51	5	5	0.54	2	4	5
Strategic links	4.35	4	4	0.63	3	4	5
Relations with quality institutions	4.38	4	5	0.70	3	4	5
University's regional, national and international reputation	4.41	5	5	0.69	3	4	5
Social and cultural commitment	4.47	5	5	0.65	3	4	5
Environmental responsibility	4.44	5	5	0.70	3	4	5

(*) 5-point scale: (1: not at all important, 5: very important)

The first interesting result is the high mean scores awarded to all the intangible assets included in the relational block. The lowest score was 3.94 for the intangible asset, "relations with the media". The other intangible assets in this block achieved values above 4 and in 43.7% of the cases the value was higher than 4.5. These high values show that, a priori, the intangible assets related to relational capital are those for which publication is most relevant.

According to the results obtained from the analysis of the different statistics it may be concluded that the stakeholders of Spanish public universities feel that it is relevant to publish all the assets included in the relational block of our questionnaire, except for information concerning relations with the media.

Lastly, in order to classify any of the intangible items as essential to publish, apart from meeting the previous requirements (a median value of 4 or more points, in conjunction with a minimum percentile of 25 scoring 4 points and a minimum percentile of 75 of 5 points), they must achieve a mean value of over above 4.5.

Specifically, it is considered essential the disclosure of the following intangible elements: academic and professional qualifications of the teaching and research staff, scientific productivity, teaching capacities and competences, and research capacities and competences (Human Capital); effort in innovation and improvement, intellectual property and quality management (Capital Structure); as well as the graduate employability, relations with the business world, application and dissemination of research, students' satisfaction, the university's image and collaboration with other universities (Relational Capital).

4.2.4. Objective II: To determine which of the three components of intellectual capital (human, structural and relational capital) it is most important to reporting.

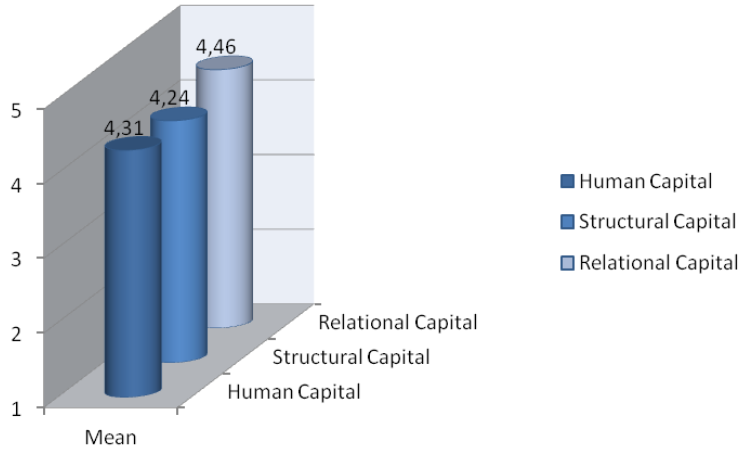
The analysis of the relative importance of the different components of intellectual capital is a challenging task. We will determine here which of the three components of intellectual capital (IC) it is most important to publish information about.

If we focus on the relative importance of each component of intellectual capital, various authors such as Kaplan and Norton (1992), Saint-Onge (1996) and Bueno (1998) highlight that in the case of business organisations relational capital is the most valued of the three components of intellectual capital, as there is clearly a direct relationship between the organisation's stock of knowledge on customers, suppliers, competitors, public administrations and other external agents and the organisation's financial results and long-term survival.

In the case of universities, studies such as the one by Martínez (2003) and Benkö (2006) showed that structural capital takes priority over human and relational capital in knowledge-intensive organisations such as higher education institutions. Greater relative importance may be given to structural capital since this is the component where people's knowledge, skills and capacities "come to fruition," which is key to external relations. These results also coincide with the work of authors such as Stewart (1997) and Edvinsson (2000), who are of the opinion that structural capital is the most important part of intellectual capital, since intellectual capital belongs directly to the organisation and is a vehicle for making employees' personal knowledge an added value.

The results obtained in our empirical study demonstrate that the information most highly valued by the different stakeholder groups is that related to elements of relational capital, followed in order by human and then structural capital (see figure 2). This may seem surprising if we consider that structural capital is regarded as the support of the other components of intellectual capital. Nevertheless, the greater importance given to relational capital may be justified by the fact that relational capital is a result of the more important components of human and structural capital.

Figure2. Relative importance of each component of intellectual capital in universities



Source: compiled by the author
(*) 5-point scale: (1: not at all important, 5: very important)

On the other hand, it was analyzed whether or not these opinions depend on the stakeholder group. For this purpose, the Kruskal-Wallis test allowed us to check whether there were varying views amongst the different groups of stakeholders and whether they were statistically significant. This test is most appropriate for small groups' contrasts and when the variables do not meet the normality hypothesis (as it is our case).

To carry out the Kruskal-Wallis test, the p-value (Sig.) is obtained with a critical level of 0.05 to determine if the variables included in the analysis show significant differences between the three groups formed.

According to the Kruskal-Wallis H test there are no statistically significant differences between the stakeholder groups regarding the importance given to the publication of information on each component of intellectual capital (human, structural and relational). However, in the case of structural capital, this equality is not so clear, since the significance of the contrast is 0.055. Specifically it seems that the students (4.5) and the teaching and research staff (5.51) are those who give most importance to structural capital, possibly because they have a greater need of information on the university's mechanisms of knowledge transfer.

Table 5.Kruskal-Wallis H Test (Blocks of intellectual capital)

Ranges

	Groups	N	Averagerange
Human Capital	Publicadministrations	113	120.65
	Students	12	156.00
	Unionorganisations	17	132.09
	Business organisations	29	120.64
	Administration and services staff	15	158.30
	Teaching and research staff	22	110.95
	Universitygovernors	39	117.01
	Total	247	
Structural Capital	Publicadministrations	113	118.23
	Students	12	159.25
	Unionorganisations	17	150.12
	Business organisations	29	135.91
	Administration and services staff	15	154.33
	Teaching and research staff	22	99.73
	Universitygovernors	39	111.65
	Total	247	
Relational Capital	Publicadministrations	113	121.08
	Students	12	160.08
	Unionorganisations	17	123.94
	Business organisations	29	147.97
	Administration and services staff	15	138.00
	Teaching and research staff	22	94.48
	Universitygovernors	39	114.83
	Total	247	

Contrast statistics[a,b]

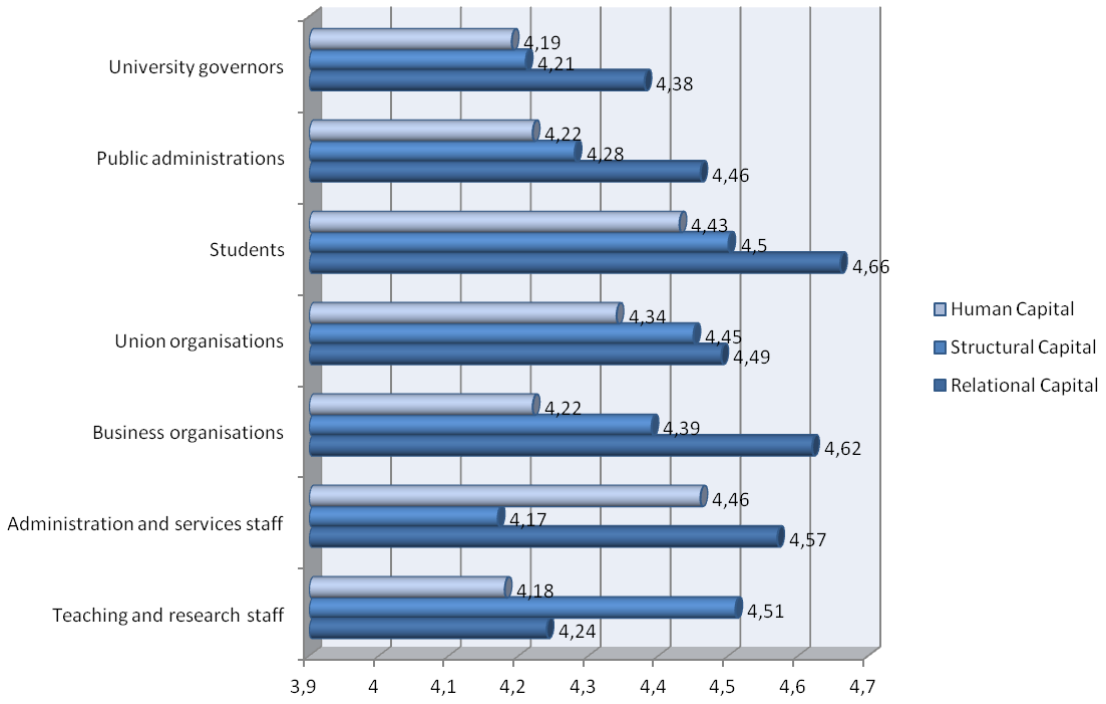
	Human Capital	Structural Capital	Relational Capital
Chi-square	**7.553**	**12.203**	**11.574**
Df	**6**	**6**	**6**
Asymp. Sig.	**.273**	**.055**	**0.72**

a. Kruskal-Wallis test

b. Grouping variable: 7 stakeholder groups

The figure 2 shows the importance given to the publication of information on the different components of intellectual capital (human, structural and relational) by the different stakeholder groups of university accounting information.

Figure 2. Relative importance of each component of intellectual capital according to stakeholder type



Source: own information
(*) 5-point scale: (1: not at all important, 5: very important)

The conclusion regarding publication is, therefore, that greatest value is given to the intangible elements of relational capital and lowest value is given to those of structural capital where no significant differences exist between the different stakeholder groups of university accounting information.

5. Conclusions

The results obtained in this empirical study show that university stakeholders believe it is fundamental that Spanish public universities publish information on intellectual capital. Indeed a high percentage of the interviewees -89.1%- consider that this publication on intellectual capital would increase the relevance of the information contained in the current university financial statements.

In our opinion, publishing information related to intellectual capital will be an exercise in transparency for the public universities and will facilitate stakeholders' access to information which is relevant to their decision making processes.

These results allow us to criticize the current accounting information model of Spanish higher education institutions and to recommend extending the limits of universities' annual accounts so as to include the information on intellectual capital demanded by the different stakeholders. Specifically, the university stakeholders considered essential the disclosure of the following intangible elements: academic and professional qualifications of the teaching and research staff, scientific productivity, teaching capacities and competences, and research capacities and competences (Human Capital); effort in innovation and improvement, intellectual property and quality management (Capital Structure); as well as the graduate employability, relations with the business world, application and dissemination of research, students' satisfaction, the university's image and collaboration with other universities (Relational Capital).

Lastly, the results of the empirical study show that the information most valued by the different stakeholder groups is that related to relational capital, followed by human and then lastly structural capital. The Kurskal-Wallis test also shows that all interviewees give highly similar values, independently of the stakeholder group they represent.

The empirical study conducted for this work is a first step towards highlighting the importance given by different Spanish public universities to the need to carry out a proactive publication of information on intellectual capital.It is therefore considered of prime importance to make the accounting regulators aware of the need to improve the current model of accounting information.

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