UNIVERSIDAD COMPLUTENSE DE MADRID
FACULTAD DE CIENCIAS ECONÓMICAS Y EMPRESARIALES
Departamento de Organización de Empresa y Marketing

TESIS DOCTORAL

Consejos de administración: evolución de la literatura e impacto de los códigos de gobierno corporativo en las empresas cotizadas en España

Boards of directors: research literature evolution and corporate governance codes impact on Spanish listed firms

MEMORIA PARA OPTAR AL GRADO DE DOCTOR

PRESENTADA POR

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BOARDS OF DIRECTORS: RESEARCH LITERATURE EVOLUTION AND CORPORATE GOVERNANCE CODES IMPACT ON SPANISH LISTED FIRMS

PRESENTADA POR

CARLOS ISIDORO ESTÉVEZ MENDOZA

DIRIGIDA POR

MARÍA ÁNGELES MONTORO SÁNCHEZ

Madrid, 2019

A los que me quieren:

A mi familia,

A mis amigos.

Al Profesor Félix Huerta, *In memoriam*

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SUMMARY

The government of organizations has been a relevant matter from the very first moment of their existence. Nevertheless, it is commonly assumed that issues coming after the diffusion of corporations as we now may identify and the atomization of property sowed the grounds of early theories that address corporate governance. Hereafter, the study on boards of directors, a key element of the governance of organizations, has been at the center of numerous scientific publications over the years.

The importance and impact in business practice, and in society in general, also fostered the interest in recent decades, considering a board-centered model of corporate governance and searching for the best possible government for the organizations. Many research contributions have been made, keeping the focus on the Board of Directors as one of the main topics in the debate on Corporate Governance. Concurrently, problems that involved the boards and senior executives in deceptive behavior led to a variety of proposals that were often channeled through a new regulation or Corporate Governance Codes. These Codes reflected goals, spread practices, based on principles that were influenced by contributions, and were expressed in recommendations.

Consequently, we formulated the General Objective for this Thesis:

The General objective is to analyze the main contributions on the boards of directors in research literature in order to observe how the have been reflected in Good Governance Codes through the degree of compliance and their impact on performance in Spanish Listed Firms.

In order to specify this General Objective, we established four specific objectives:

1. To analyze the studies on Boards of Directors that shape the existing intellectual framework.
2. To analyze the studies on Board of Directors, carrying out this same analysis for the journal that has a greater presence in the field.
3. To verify the evolution and how the codes in Spain have channeled key issues of the corporate governance towards listed firms, via the degree of compliance, with special attention to those that may refer to human capital.

4. To analyze the impact of the degree of compliance in the recommendations of good governance on the performance of companies, and determine whether those related to human capital have an effect on it.

We used different methodologies. For the first two objectives, we followed bibliometric techniques. They include citation and co-citation analyses, principal component analyses, and mapping. In the case of the third objective, we employed descriptive analysis, and the analysis of principal components analogously to when they have been used for the validation of constructs in indices on this same field of study. In the case of the fourth objective, we employed multiple-regression technique in different models.

Thus, we described, analyzed and mapped the research on the topic realized up to 2017, identifying three periods of time. Contributions on the first period would show the initial grounding of the topic. The second one would deploy in parallel to the codes progressive implementation. In the third period, contributions are built upon the previous seeding and grounding stages, spreading the analyses to a broader range of topics as a sign of maturity. We confirmed the multidisciplinary interest from the point of view of the editors, in several scientific arenas: management, finance, accounting, ethics, psychology, law or sociology. Although there are a great number of contributors, only a few of them recurrently produced studies over time. Similarly, a small group of them concentrates the citation count and it is consistently referred across the literature. Across the quoted references we may note the main theories help providing the building blocks for their approaches (Institutional Theory, Resource Dependent Theory, Agency Theory), and are focused on the board of directors. We also mapped a geographical distribution of research studies. Journals have been co-cited mostly based on close research arenas where Corporate Governance and Ethics journals serve as a bridge among different areas. The analysis of the keywords shows the most relevant topics that were addressed (e.g. gender diversity, board structure, CEO compensation and duality, and firm performance). As regards to the cited references, we found five main factors grounding the research: the Agency Theory (and related topics), diversity, RDT, strategy and other angles on composition, and other theoretical perspectives. The majority of the references were originated in the second stage of publications, configuring it period of consolidation of groundings and topics. The analysis in the different periods of time supports the idea of a maturation process in the literature.

Then, we utilized the bibliometrics techniques for the leading journal, Corporate Governance An International Review, mapping and analyzing the research on the topic from 2000 to 2017, in three different periods and highlighting the growth, maturation, and consolidation of the produced literature. Geographical origins and collaboration among research organizations show a prevalence of European affiliations with a high degree of institutional diversity that leads to matters that are focused on governance beyond local angles. As in other journals, a small group of authors account for a significant number of articles. The mapping and analysis of co-authorship shows several nodes of collaboration and a diverse community of authors. The analysis of the keywords confirms a rising role of codes and indices, and shows the recent evolution of research towards disclosure, family firms, or shareholder activism. In spite of this, we found a lack of presence of board capital and ethics related studies. The analysis of the components showed five pillars: the relationship between the board and the strategy, and the impact of diversity; foundations for board composition; ownership structure matters; a theoretical bridge; and family firms, ownership structure and indices. Given the analysis of the factors, we think that the theoretical foundation of the works has a deep root in Agency Theory framework but it is open to new theories. Topics are diverse and wider in scope than those of the overall set of journals. The analysis we performed draws an evolution of the mentioned pillars of knowledge across the different stages of time.

Upon intellectual frameworks, codes of good governance build their principles and set recommendations for listed firms. We provided a matching of the principles of the Spanish Code of Governance and the main theories, and a very useful table to compare recommendations topics across different codes, depicting some of the characteristics too. We confirmed that Agency Theory related recommendations are highly met by Spanish listed companies. Based on the degree of compliance of the recommendations, we confirmed that remuneration provisions as well as internal controls are capturing the underlying constructs. In this regard, internal controls are gaining presence but, under our view, are likely to be incorporated to legislation, especially in Spain, if the situation of deteriorated compliance persists. This would be aligned with the explanation on the legal systems and their relation to codes, widely discussed in research literature. CSR has evolved towards a higher degree of disclosure on policies and implementation. As for human capital-related recommendations, we foresee that companies will try to comply, at least formally, but the market will have to look at further disclosures to interpret advantages and profits coming out of a certain company's human capital variable. Recommendations on traditional topics based on the Agency Theory (e.g. independence, internal controls) provide different outcomes. Human capital is present in codes and appears as a key element, especially in the last period of the study. We think that the codes are certainly playing a key role while reflecting intellectual foundations, challenging companies, and, as we tested in the validation of constructs, they help measuring the corporate governance. This is a convenient step in order to study a potential association to performance.

Finally, we found a positive and significant relationship between the degree of compliance and the firm performance of the Spanish firms in the period of our study. As regards to past levels of compliance, our research confirms that we can't take their values into account along with the present ones, due to the lack of significance. The positive link between past levels of compliance and firm performance considered alone might point to be closely interchangeable with present values, which may suggest that it could be a sort of inertia that leans on recent degree of compliance but rather prefers the current ones. We tested that there were differences in the association depending on the size of the firms considered. We also found the lack of statistical significance in subsets of recommendations regarding human capital. In this context, going beyond what is required by regulation or by provisions in codes could build relevant groundings for long-term government of the firm and gain envision and advantages for competing. Also, this is quite interesting in terms of the markets, the need of detailed demands of information at disclosures, the future performance, and the future role of the code as a useful tool to spread best practices and to achieve its core principles.

RESUMEN

El gobierno de las organizaciones ha sido una cuestión relevante desde el primer momento de la existencia de las mismas. Sin embargo, se asume normalmente que las cuestiones derivadas de la difusión de las corporaciones como las conocemos ahora y la atomización de la propiedad sirvieron de base para las primeras teorías que analizaban el gobierno corporativo. A partir de aquí, el estudio de los consejos de administración ha estado en el centro de numerosas publicaciones científicas a lo largo de los años.

La importancia y el impacto en la práctica empresarial, y en la sociedad en general, alentaron un interés creciente en las últimas décadas, considerando un modelo de gobierno corporativo centrado en el consejo de administración y buscando el mejor gobierno posible para las organizaciones. Muchas contribuciones en el terreno de la investigación han sido realizadas manteniendo el foco en el consejo de administración como uno de los principales puntos de discusión sobre el gobierno corporativo. Al mismo tiempo, los problemas que implicaron a los consejos y a los directivos en conductas éticamente responsables llevaron a una variedad de propuestas que fueron a menudo canalizadas a través de nueva regulación y de códigos de buen gobierno. Estos códigos reflejan metas, difunden prácticas y están basados en principios que recibieron la influencia de las contribuciones antes referidas, y que fueron expresados en recomendaciones.

Consecuentemente, hemos formulado el objetivo general para esta tesis.

El objetivo general es analizar las principales contribuciones sobre los consejos de administración en la literatura con el fin de observar cómo han sido reflejadas en los códigos de buen gobierno a través del grado de cumplimiento y su impacto sobre el Performance de las compañías cotizadas en España.

Con el fin de especificar este objetivo general, hemos establecido cuatro objetivos específicos.

- Analizar los estudios sobre Consejos de Administración que configuran el marco intelectual existente.
- Analizar los estudios sobre consejos de administración, llevando a cabo este análisis para la publicación con mayor presencia en este campo.

- Verificar la evolución y cómo los códigos han canalizado los elementos principales del gobierno corporativo hacia las empresas cotizadas a través del grado de cumplimiento, con especial atención a las que se refieren al capital humano.
- Analizar el grado de cumplimiento de las recomendaciones de buen gobierno sobre el performance de las compañías y determinar si aquellas relacionadas con el capital humano tienen efecto sobre ellas.

Utilizamos distintas metodologías. Para los dos primeros objetivos, seguimos técnicas bibliométricas. Éstas incluyen el análisis de citas y co-citas, el análisis de componentes principales y técnicas de mapeo. En el caso del tercer objetivo, empleamos análisis descriptivo y el análisis de componentes principales de forma análoga a lo que se hace cuando se utiliza para la validación de constructos en los índices en el mismo campo de estudio. El caso del cuarto objetivo hemos empleado la técnica de la regresión múltiple.

De esta manera hemos descrito, analizado y mapeado la investigación sobre el tema realizada hasta el año 2017, identificando tres periodos de tiempo. Las contribuciones en el primer periodo de tiempo mostrarían las fundamentaciones iniciales sobre el tema. El segundo se desarrollaría en paralelo a la difusión progresiva de los códigos de buen gobierno. En el tercer periodo las contribuciones son construidas sobre los elementos previos que se ha establecido en las etapas anteriores, difundiendo los análisis a un ámbito más específico de tópicos como signo de madurez. Confirmamos el interés multidisciplinar desde distintos puntos de vista de los editores y distintas disciplinas científicas: Management, finanzas, contabilidad, ética, psicología, derecho o sociología. Aunque hay un gran número de autores sólo unos pocos de ellos producen recurrentemente estudios a largo del tiempo. De manera análoga, un pequeño grupo de ellos concentra el número de citas y es referido a lo largo de la literatura. Dentro de las referencias citadas podemos destacar las principales teorías formando los pilares fundamentales para cada enfoque (Teoría de la Agencia, RDT, etc.), centradas en el consejo de administración. Además, hemos mapeado la distribución geográfica de los estudios. Las fuentes has sido citadas conjuntamente en terrenos próximos, sirviendo el específico de Gobierno Corporativo y la Ética como puentes. El análisis de las palabras clave muestra los puntos más relevantes que han sido tratados (p.ej. diversidad, estructura del consejo, dualidad, performance). Por lo que se refiere a las referencias citadas , hemos encontrado cinco factores principales: la teoría de la Agencia (y temas relacionados), diversidad, RDT, estrategia y otras perspectivas sobre la composición, y otros puntos de vista teóricos. La mayoría de las referencias tuvieron su origen en el segundo periodo de publicaciones, configurando un periodo de consolidación de los fundamentos y los temas. El análisis de los deferentes periodos apoya la idea de este proceso de maduración.

A continuación, utilizamos las técnicas bibliométricas para analizar la investigación sobre el tema en la principal revista, *Corporate Governance – An International Review*, en publicaciones realizadas desde 2000 hasta 2017. Los orígenes geográficos y la colaboración entre distintas organizaciones muestra una prevalencia de las instituciones europeas, con un alto grado de diversidad institucional que lleva a pensar que están centradas en el gobierno más allá de enfoques locales. Como en otras publicaciones, un pequeño grupo de autores concentra un número significativo de artículos. El mapa y el análisis de las coautoría muestran diversos nodos de colaboración y una comunidad diversa de autores. El análisis de las palabras clave confirma el creciente papel de los códigos y los índices, y muestra evolución reciente de la investigación hacia temas como la transparencia, el activismo accionarial o las empresas familiares. A pesar de esto, encontramos poca presencia de temas relacionados con el capital del consejo y de aquellos relacionados con cuestiones éticas. El análisis de componentes mostró cinco pilares: la relación entre el consejo y la estrategia y el impacto sobre la diversidad, los fundamentos para la composición del consejo, cuestiones sobre la estructura de la propiedad un puente teórico y cuestiones relativas a las empresas familiares estructura de la propiedad y los índices. Dado el análisis de estos factores, pensamos que la fundamentación teórica de las obras tiene una raíz profunda de la Teoría de la Agencia pero está abierta a nuevas teorías. Los tópicos son diversos y amplios en alcance más allá de lo que sucede en otras publicaciones. El análisis que realizamos muestra una evolución de los pilares de conocimiento mencionados a través de los diferentes periodos de tiempo.

Sobre la base de estos marcos intelectuales, los códigos de buen gobierno construyen sus principios y establecen las recomendaciones para las empresas cotizadas. Hemos proporcionado un cruce entre principios de gobierno y las principales teorías, y una tabla útil para comparar las recomendaciones a través de los diferentes códigos, poniendo de manifiesto algunas de sus características. Confirmamos que las recomendaciones relacionadas más directamente con la Teoría de la Agencia son cumplidas aunque no en su totalidad por las empresas cotizadas. Sobre la base del grado de cumplimiento de las recomendaciones, confirmamos que los códigos recogen la importancia de tópicos relacionados con la remuneración y los controles internos. A este respectos, estos últimos ganan presencia pero, bajo nuestro punto de vista, pueden ser pronto incorporados a la regulación en el caso de un deterioro persistente en cumplimiento. Esto estaría alineado con la explicación sobre los sistemas legales y su relación con los códigos, ampliamente comentada en la literatura. La RSC ha evolucionado hacia un nivel más alto de transparencia sobre políticas e implantación. Por lo que se refiere a las recomendaciones relacionadas con el capital humano, prevemos que las compañías cumplirán al menso formalmente, pero el mercado tendrá que buscar detalles ulteriores para interpretar las ventajas y beneficios derivados de las variables que lo componen. Las recomendaciones que tratan temas 'tradicionales' basados en el Teoría de la Agencia proporcionan resultados diferentes. El capital humano está presente en los códigos y aparece como un elemento clave, especialmente en el último periodo de estudio. Pesamos que, ciertamente están desempeñando un papel importante reflejando su fundamentación en los marcos teóricos, sirviendo de reto para las compañías y, como comprobamos en la validación de los constructos anteriores, ayudan a medir el buen gobierno de las mismas. Este es un paso conveniente con el fin de poder estudiar una potencial asociación con el performance.

Finalmente, encontramos una relación positiva y significativa entre el grado de cumplimento y el performance de las compañías cotizadas en España en nuestro periodo de estudio. Por lo que se refiere a niveles de cumplimiento pasados, nuestra investigación confirma que no podemos tener en cuenta los mismos al tiempo que los presentes, por falta de significatividad. El carácter positivo y significativo si son considerados aisladamente apunta a que son en cierto sentido intercambiables, sugiriendo una suerte de inercia que se apoya en los cumplimientos realizados pero prefiere los más recientes. Comprobamos también diferencias en la asociación en función del tamaño de las empresas consideradas. Encontramos falta de significatividad en el cumplimiento de las recomendaciones relacionadas con el capital humano. En este contexto, ir más allá de lo requerido por la regulación o las recomendaciones de los códigos puede construir fundamentaciones relevantes para el gobierno a largo plazo de las compañías y ganar en visión y en ventajas para competir. Además, esto es bastante interesante en términos de los mercados, de la necesidad de demandas detalladas de información en las divulgaciones, del desempeño futuro y del rol futuro del código como una herramienta útil para difundir las mejores prácticas y alcanzar sus principios fundamentales.

CHAPTER 1
INTRODUCTION

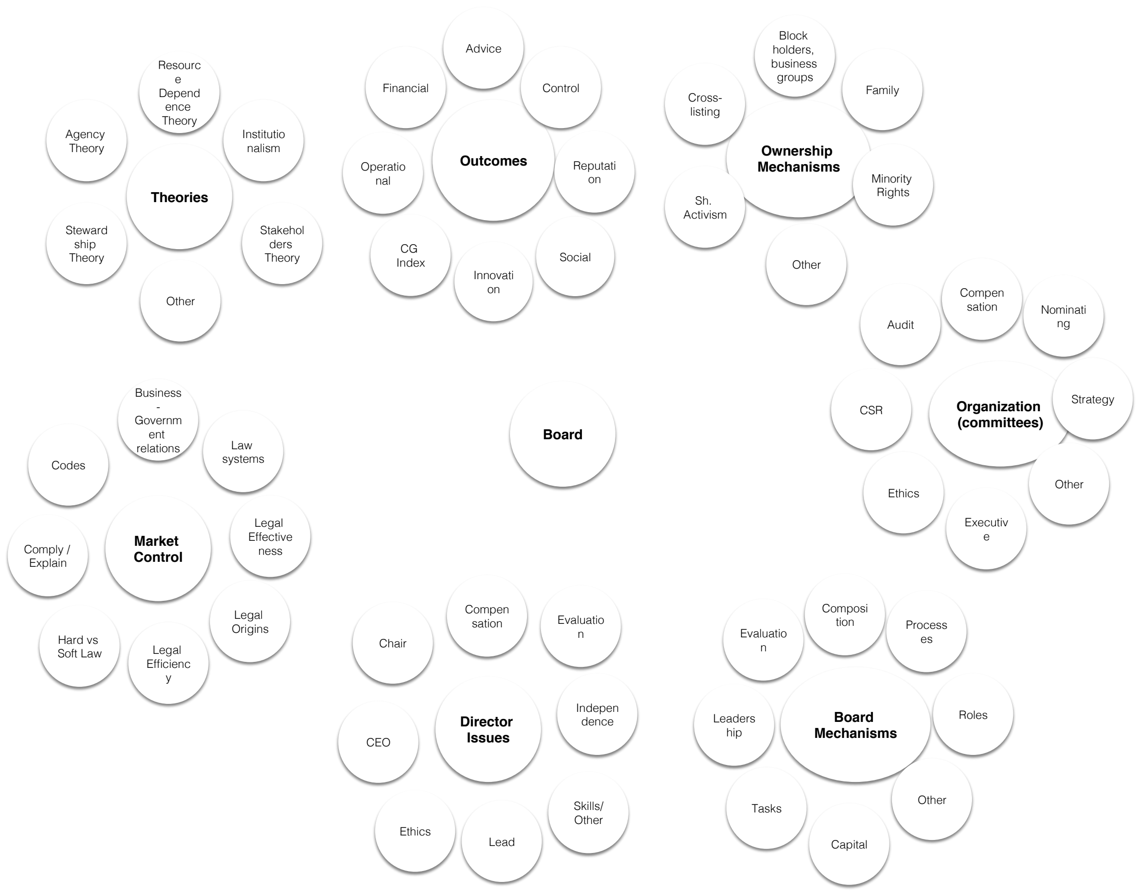
The government of organizations has been a relevant matter from the very first moment of their existence. Ancient Rome made room for early forms of companies, but issues on their government stayed limited to a few topics, mostly related to trade and the *res publica*. Besides, *societas,* the legal form provided by the law, were usually small, quite localized and few people worked in them. Nevertheless, the legal form of *societas publicanorum* (Malmendier, 2005), where there were shares and limited liabilities entering in government leases, somehow anticipated the idea of corporations (Malmendier, 2009). Although records were scarce for centuries, it allowed us to reckon the rise of big companies, such as the merchant banks of Florence (Bardi, Peruzzi, Acciaiouli) in the thirteenth century (Gevurtz, 2004; Hunt, 1994). Companies were usually controlled by the families that named the company and the conflicts usually intermixed with business ones (Hunt, 1994). But in other geographies companies were raised from guilds or in the purpose of a bigger trade enterprise, based on the ancient form *comenda* and the development of *compagnia* concept (e.g. East India Company, La compagnie française des Indes Orientales, Vereenigde Oostindische Compagnie)(Morck & Steier, 2005; Puga Vial, 2011). Although some of these big companies were established with strong political control, links and empowerments, there was an opening move towards private initiatives as early as in 1215 in UK (Magna Carta, 1215), and 1495 in America (Real Provisión 10 de abril, 1495). The idea of 'director' was introduced prior to the corporate governance itself. It was used by the Bank of England and the Bank of Scotland in the seventeenth century, and the main work of Adam Smith also utilizes the notion, bringing an early conceptualization of the issues rising there was a separation of the ownership and the control:

> "The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company". Smith, Adam. *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776).

It is in that period of time when charters of incorporation evolve to companies through new regulation (Joint Stock Companies Act in the UK, the Code in France), that established basic foundations for companies, corporations, *aktiengesellschaft*, *societá per azioni* or *sociedades anónimas* in different countries (Evans, 1908; Puga Vial, 2011). Boards of Directors had aristocratic traits and were considered a menace in the early ages of democracy. In fact, there were forbidden in France during the period of The Convention. Nevertheless, it is commonly assumed that issues coming after the diffusion of corporations as we now may identify and the atomization of property sowed the grounds of early theories that address corporate governance (Berle & Means, 1932).

Hereafter, the study on boards of directors, a key part of the governance of organizations (Hermalin & Weisbach, 2003), has been at the center of numerous scientific publications over the years. These investigations, published in various international journals, have focused on the subject from very different points of view, beyond being a central element within the government of organizations.

Figure 1: Centrality of the Board in Corporate Governance



The importance and impact of their field of study in business practice, and in society in general, also fostered the interest in recent decades. The election scheme, the peer decision-making model and control-supervision roles built solid pillars for considering a board-centered model of corporate governance. Besides, both, the goal of seeking the best possible government for the organizations and some corporate failures and scandals at the beginning of this century, posed problems that involved the boards and senior executives in deceptive behavior (Boivie, Graffin, & Pollock, 2012; Combs, Ketchen, Perryman, & Donahue, 2007; Lawal, 2011), and led to a variety of proposals that were often channeled through a new regulation. There were also proposals in terms of recommendations that were progressively included in the Corporate Governance Codes in many countries. Its adoption followed the needs of efficiency and also the pressures of legitimation, showing different patterns of adoption according to variables such as the level of rights of protection of shareholders (Aguilera & Cuervo-Cazurra, 2004).

On the other hand, in addition to the indicated factors, in the field of scientific research, performed intellectual contributions have complemented the initial works, which have revealed different problems and issues detected in business practice, and that have provided consistency to this field of study. This leads to the conclusion that corporate governance research is already configured as a discipline in itself (Durisin & Puzone, 2009).

Following the basic principles of corporate governance that aim to promote transparency and efficiency in markets, protect the rights and roles of shareholders and ensure timely and accurate disclosure (Chen, Kao, Tsao, & Wu, 2007), research has been approached from different angles. A significant number of these works have focused on the Board of Directors as one of the main topics in the debate on Corporate Governance (Ingley & Van der Walt, 2001; Kiel & Nicholson, 2003; Pugliese et al., 2009).

Whereas research on Corporate Governance was providing approaches and analyses on various topics, the issuing of Codes somehow reflected goals, spread practices, based on principles that were influenced by them. These Codes gave, as well, as central role to the Board of Directors, and gravitated most of the recommendations around it. They also were very helpful for the aims of any researcher, since they open a window to interesting data through the ordinary reporting, at least on a yearly basis.

Consequently, these arguments help triggering the research question we wanted to address in this Thesis:

> *Have Good Governance Codes channeled to the Spanish Listed Firms the main contributions on the Board of Directors, a key element in Corporate Governance?*

To answer to this question, we formulated the General Objective for this Thesis:

> *The General objective is to analyze the main contributions on the boards of directors in research literature in order to observe how the have been reflected in Good Governance Codes through the degree of compliance and their impact on performance in Spanish Listed Firms.*

In order to specify this General Objective we established four specific objectives:

1. To analyze the studies on Boards of Directors that shape the existing intellectual framework.

By formulating this objective we aimed to review to literature, where the centrality of the Board was configured according to the roles that were designed and given as the apex of any organization. For this purpose, research works have aimed to understand different issues such as the structure and implications of the Board (Rechner & Dalton, 1991; Zahra & Pearce II, 1989), its composition and characteristics (Datta, Musteen, & Herrmann, 2009; Hillman, Nicholson, & Shropshire, 2008; Sherman, Kashlak, & Joshi, 1998), processes (Dulewicz, MacMillan, & Herbert, 1995), or roles (Björkman, 1994; Boulton, 1978; Kim, Burns, & Prescott, 2009; Nicholson & Newton, 2010). Also, a diverse group of theories may have been involved in proving a proper intellectual grounding such as the Agency Theory (Jensen & Meckling, 1976), the Stakeholders Theory (Donaldson & Preston, 1995), the Resource Dependence Theory (Pfeffer & Salancik, 1978) or the Stewardship Theory (Donaldson & Davis, 1991) Given the increasing number of approaches and topics with which it has been related, there has been a growing number of articles in recent decades, and it is convenient to analyze how they are structured, their evolution and their contributions.

By setting this objective, we will try to give a proper answer to the question '*How are the contributions on the board of directors structured, how have they evolved, what is their relevance and intellectual framework?'* The answer to this question will also determine how future research can fill gaps or use new points of view for the main elements of discussion. In our case, we also want to determine to what extent topics are covered by literature on the subject.

In order to respond to the first of the specific objectives proposed, following the available literature, we have agreed that the best way to undertake this type of analysis requires the introduction of elements that allow an objective evaluation. The bibliometric analysis techniques provide the necessary tools for this purpose and so they have been used, with some methodological variations, to respond to the objective in question. It was proposed to consider for its analysis all those publications classified as articles that were in the databases of Clarivate Web Of Science, in this case more than 3,000.

2. To analyze the studies on Board of Directors, carrying out this same analysis for the journal that has a greater presence in the field.

Focusing the analysis on the key sources gives us the opportunity to understand how the relevance is configured and strengthens the most relevant developments of the research. While there are many journals that show different aspects related to the boards of directors, we saw that the Corporate Governance Review - An International Review (CGIR) has the greatest number of contributions. This journal has helped significantly in the maturation process, addressing many issues and topics from different perspectives. The journal refers to a "multidisciplinary conversation" that is, in short, one of its objectives, as well as to seek the publication of "research on the phenomena of comparative corporate governance in companies of any international geographical scope", on the basis of contributions that come from a large variety of areas.

The second objective will, therefore, lead us to consider answers to the question that may be stated as follows: *How are the contributions of the most relevant journal structured and how have they evolved?*

It is important to focus the focus on that journal that has greater relevance on the subject in question, applying the same type of analysis. In our case, we analyzed the 190 articles on Boards of Directors that have been published in the *Corporate Governance - An International Review*, from 2000 to 2017.

3. To verify the evolution and how the codes in Spain have channeled key issues of the corporate governance towards listed firms, via the degree of compliance, with special attention to those that may refer to human capital.

Once we identified intellectual frameworks and topics that were centered on the Board of Directors, we are more capable to address the analysis we propose on the Codes. For almost three decades, Good Government Codes have been a key tool for improving governance in organizations. In order to provide a greater degree of transparency and avoid negative governance problems, codes are disseminated in most countries. The Cadbury Code (Cadbury, 1992), issued in the United Kingdom in 1992, took the initiative of subsequent codes in France (Association Française des Entreprises Privées & Conseil National du Patronat Français, 1995), the Netherlands (Peters Committee, 1997) and Spain (Comisión Especial para el Estudio de un Código Ético de los Consejos de Administración de las Sociedades, 1998). The second moment of great momentum in the dissemination of codes was reached after the financial crisis, which led to numerous revisions and the issuance of some new ones in other countries (Cuomo, Mallin, & Zattoni, 2016). Although there are authors who think of codes as a mere way to protect themselves from governance (Carver, 2007), we think of their relevant role in disseminating concepts related to good governance, regardless of the subsequent degree of implementation of them. Good governance codes have also played a key role in the evolution of research. While tracking the code has been voluntary in many countries, a large number of companies began to provide information on corporate governance that has been very useful. Market regulators adopted specific formats to show such information so that all possible interested parties could have access with a certain degree of structure and homogeneity. For this, it was key that the issuers of codes establish principles of corporate governance and elaborate, based on them, recommendations. Within these recommendations, the Board of Directors was in the center, having a relevant role. And that can help us to solve the question: *In the case of Spain, do the recommendations and their degree of compliance respond to the main issues and constructs of corporate governance? Could they serve as a good measure of corporate governance ?*

Over the past 20 years there has been an impulse to good Corporate Governance in Spain. And it has been channeled through the issuance of different codes of good governance that have successively established different principles that had among their main protagonists, as a main element in the governance of organizations, the boards of directors (CNMV, 2013, 2015; Comisión Especial para el Estudio de un Código Ético de los Consejos de

Administración de las Sociedades, 1998; Comisión Nacional del Mercado de Valores, 2006). The principles have been, in turn, specified in recommendations. Focusing the analysis on companies listed in Spain, we have considered the aforementioned recommendations, their changes, evolution and degree of compliance across three different periods of time to see to what extent they responded to the topics of discussion, emphasis and concern of the different theories that have studied the corporate governance of the organizations. As a result of this process of validation of various constructs underlying the recommendations, after considering a wide period of time, they might serve as an index of corporate governance for listed firms. On that point, we have tried to discern the existence of substantive elements in the recommendations that point to a relevance of human capital. This way, we have undertaken the third of the objectives.

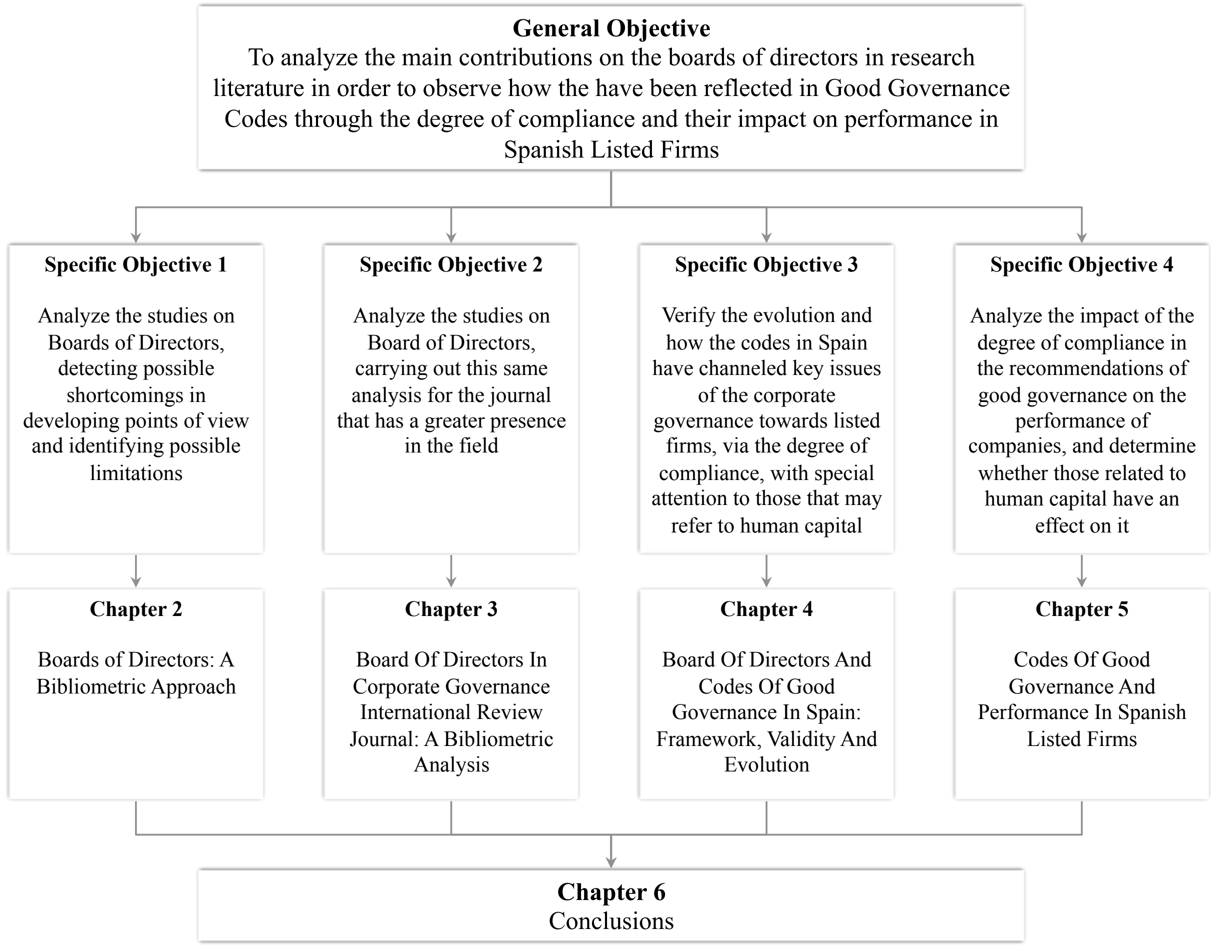
4. To analyze the impact of the degree of compliance in the recommendations of good governance on the performance of companies, and determine whether those related to human capital have an effect on it.

Once the previous analyzes have been carried out, we can approach the fourth of the objectives. Based on the recommendations of each one of the codes that were issued in Spain, and providing their ability to act as an index for corporate governance, we want to analyze the relationship between the degree of compliance and the performance in Spanish listed firms in period 2007-2016. We aim to enlighten whether the outcomes follow the effort made by firms in this respect, in a time span with three different sets of recommendations that were originated by successive code of good governance modifications, deepening in the relationship through the analysis of past compliance. We'd also like considering the size of the firms, and the degree of compliance of recommendations related to human capital provisions, that may serve for future code developments as well as for companies' governance policies. These analyses may help us to answer and deepen into the question: *Does the degree of compliance with good governance recommendations relate to the performance of companies?*

Thus, we have analyzed the degree of compliance with the good governance recommendations that were in force from 2007 to 2016 for all the companies listed on the Spanish markets. For such analysis, we rely on the results of the previous specific objective, where the structure, definition and equivalences of the different recommendations that each code provided for each period of time were determined.

In the following figure, we depict the structure of this Thesis, linking each specific objective to the chapter where it has been addressed.

Figure 2: General Structure of the Chapters of The Thesis



Regarding the methodology we used, the first thing we have to mention is that it is plural, responding to each one of the objectives. To answer to the first two objectives, we performed, with slight differences and adaptations, bibliometric techniques based on those applied in a great number of articles that have analyzed the bibliographical references in different fields, theories, topics and publications of various disciplinary fields. These techniques include citation and co-citation analyses, principal component analyses, and mapping for visualization and interpretation of results.

In the case of the third objective, after gathering the information of companies in different periods of time and in addition to the performance of a purely descriptive analysis, we have used the analysis of principal components and Cronbach Alpha analyses analogously to when they have been used for the validation of constructs in indices on this same field of study.

In the case of the fourth objective, according to some past research literature on related topics, we employed multiple-regression technique in different models so as to validate the different proposed hypotheses.

As a result of the methods we used, we may classify the research of chapters 2 and 3 as ‘Literature review’, the one of chapter 4 as ‘conceptual and empiric’, and the one of chapter 5 as ‘empiric’.

In order to appropriately structure the answers for each of the objectives that we have set out in this research, and aiming to achieve a prompted translation in the future to the literature as a whole, we decided to build the present work with the configuration of reference publications. Thus, English was adopted as the language for the entire work. In addition, each one of the chapters that follows this introduction responds to each one of the specific objectives, and is structured as if it were an article. This means that the chapters have their own Abstract, Keywords, Introduction, Literature review, Methodology, Results, Discussion and Conclusions, References and Appendix.

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CHAPTER 2
BOARD OF DIRECTORS: A BIBLIOMETRIC ANALYSIS

ABSTRACT

Research on the board of directors produced a significant number of articles. This study aims to investigate which are the main topics in board of directors' scientific literature and how it has been approached from different perspectives. We also seek to depict and analyze the intellectual structure that has been built upon them. We analyzed 3,021 articles and their bibliographic references in academic journals up to 2017 using bibliometrics methods. The work identifies which are the main studies in terms of influence, the relevant authors, the approaches that have been elaborated, the dominant topics that have been targeted, and the way they related. This way we may show the map and the structure of the intellectual frameworks that studied the board of directors. We identified three period of time in the maturation of the research on the topic, and we provide the analysis on the evolution across them. Through our contribution, there is a clearer map for approaching the topic of the board of directors from new points of view, those that were missing or less considered in the research studies. In his sense, there is room for more deepening in the relation digitalization, training or ethics, among other matters. This study points out new areas for future development in the research on the board of directors, and serves as a solid starting point to perform meta-analyses or literature reviews.

KEYWORDS

Corporate Governance, Board of Directors, Bibliometrics, Citation and Co-citation Analysis, Knowledge Mapping.

1. INTRODUCTION

Although the research works on management have a long track in scientific literature, the study of Corporate Governance is relatively recent. Nevertheless, the importance and impact of its field of study in business practice, and in society in general, have led to a significant and rising interest over the last years. With the aim of pursuing the best possible government for organizations, several initiatives took place worldwide. Some corporate failures and scandals in the beginning of this century – such as the Enron, Tyco, Parmalat or WorldCom cases – came out as problems that involved boards and top executives in misleading behaviors (Boivie, Graffin, & Pollock, 2012; Combs, Ketchen, Perryman, & Donahue, 2007; Lawal, 2011), and triggered a great variety of proposals that were very often channeled through new regulation. There were also proposals in terms of recommendations that were progressively included in Codes of Corporate Governance in many countries. Efficiency needs and legitimation pressures appeared as key supporting rationales for code adoption, and showed different patterns according to variables such as the level of shareholder protection rights (Aguilera & Cuervo-Cazurra, 2004).

Therefore, multiple factors converged in the making of intellectual contributions, which increased and evolved over these years, complementing initial works and providing consistency to this field of study. Providing this degree of maturation, corporate governance research is already configured as a discipline itself (Durisin & Puzone, 2009), addressing many matters and topics from diverse perspectives.

Following basic principles of corporate governance that aim to promote transparency and efficiency in markets, to protect the rights and roles of shareholders, and to secure timely an accurate disclosure (Chen, Kao, Tsao, & Wu, 2007), the research on corporate governance has been approached from different angles. A significant number of these research works were focused on the board of directors as one of the main topics in the debate on Corporate Governance (Ingley & Van der Walt, 2001; Kiel & Nicholson, 2003; Pugliese et al., 2009). The board centrality was configured upon the roles that were designed and given as the apex of any organization. For that purpose, researches aimed to understand different issues such as the structure and implications of the board (Rechner & Dalton, 1991; Zahra & Pearce II, 1989), its composition and characteristics (Datta, Musteen, & Herrmann, 2009; A. J. Hillman, Nicholson, & Shropshire, 2008; Sherman, Kashlak, & Joshi, 1998), the processes (Dulewicz, MacMillan, & Herbert, 1995), or the roles (Björkman, 1994; Boulton, 1978; Kim, Burns, & Prescott, 2009; Nicholson &

Newton, 2010). Given the still increasing number of approaches and the issues they faced, a growing number of works were produced over last decades, and it is convenient to question how they are structured, whether there are signs of possible evolution, and, providing what has been already studied, which way future researches may take to cover gaps or new points of view.

The main objective of this article is to obtain a general view and assess the published researches on the board of directors. The study does so through the analysis of the literature that has been published in leading journals, using bibliometrics methods. We aim to identify and weight the relationships and influence of the main articles and contributors on this topic, which shapes the existing intellectual framework. Thus, we will show the result of previous research on the topic that has been performed until now. As result, we will be able to detect potential themes, lacking angles, or matters with a low degree of development. Future research literature that wants to investigate the topic can benefit from this analysis and address the gaps we identified or new unexplored ones, such as deepen in aspects that relate human capital, strategy, or digitization to the board of directors. Also, it might set a fair basis for further meta-analysis studies. In order to achieve these goals, we will analyze the research articles, the keywords they employed, and the citations that the authors use in their works, with the help of bibliometric analyses such as impact indicators, citation, co-citation, and mapping. Whereas some researches aimed to analyze corporate governance as a discipline (Durisin & Puzone, 2009; Huang & Ho, 2011), we focused on the board of directors, a key topic to understand many analyses of issues related to corporate governance. We analyzed articles written until 2017 on this respect, whose data is stored in the Web of Science (WoS) main collection database.

This work is composed of three sections after this introduction. In the first one, we review some literature on bibliometrics methods and describe the methodology we adopted to analyze the intellectual structure of the research on the board of directors. In the second section, we show and discuss the results obtained from the performing of bibliometric techniques. Finally, we state some conclusions and suggestions for future research.

2. METHODOLOGY

In this section, we review the groundings of bibliometrics techniques and explain the empirical research methods we used for this work. Bibliometrics is a group tools the researchers may use for analyzing publications data. It is also a field of research itself that uses mathematical and statistical techniques to study publishing patterns in the distribution of information (McCain, 1996), that was conceptualized in the late 1960s (Groos & Pritchard, 1969). Of all these techniques, we will use impact indicators, citation and co-citation analysis, and bibliometric mapping.

The citation analysis poses that authors cite the reference documents they think they are meaningful for the purpose of their research. Consequently, the frequency of citation of these articles may emerge linked to the influence on the topic (Culnan, 1987). By gathering data from databases and applying analytical and graphic display techniques, co-citation analysis studies the articles that cite a certain pair of references (McCain, 1990). This way of citation may reflect some similarities and connections in the contents, and, therefore, help identifying groups of topics, frameworks and authors, and how they can be related (Pilkington & Liston-Heyes, 1999; Ramos-Rodriguez & Ruiz-Navarro, 2004). We will use data and results obtained throughout the analysis to perform a bibliometric mapping using VOSviewer approach and software (van Eck, Waltman, Dekker, & van den Berg, 2010). This is specially appropriate when we are handling sources coming from multidisciplinary fields (Börner, Chen, & Boyack, 2005) as it is in this case. Compared to other techniques, bibliometrics methods have the advantages of presenting quantified data that lead to a more objective discussion on the results (Durisin & Puzone, 2009). They have been used for years to map and study the knowledge on disciplines of science that vary significantly, such as biotechnology (Dalpé, 2002), sociology (Keshava, Hittalamani, & Gowda, 2008), psychology (Guilera, Barrios, & Gómez-Benito, 2013) or chemistry (Zibareva, Vedyagin, & Bukhtiyarov, 2014).

Several areas of research have already been analyzed in the management field using these methods: management (Tahai & Meyer, 1999), strategic management (Nerur, Rasheed, & Natarajan, 2008; Ramos-Rodriguez & Ruiz-Navarro, 2004), finance (Alexander & Mabry, 1994; Merigó, Yang, & Xu, 2015), operations management (Pilkington & Liston-Heyes, 1999; Pilkington & Meredith, 2009), organizational behavior (Culnan, O'Reilly III, & Chatman, 1990), human resources management (Fernandez-Alles & Ramos-Rodríguez, 2009), supply chain management (Charvet, Cooper, & Gardner, 2008) or innovation (Fagerberg, Fosaas, & Sapprasert, 2012).

The use of these techniques for the study of specific topics or subfields within the management arena has also been employed. Thus, amongst those works, we may find studies on corporate social responsibility (De Bakker, Groenewegen, & Den Hond, 2005), family business (Casillas & Acedo, 2007), entrepreneurship (Etemad & Lee, 2003;

Landström, Harirchi, & Åström, 2012; Schildt, Zahra, & Sillanpää, 2006), environmental management accounting (Schaltegger, Gibassier, & Zvezdov, 2013), or science parks and incubators (Diez-Vial & Montoro-Sanchez, 2017). Besides, theories and intellectual frameworks have been the objective of these methods too. That is the case of the resource-based theory (Acedo, Barroso, & Galan, 2006), the Dynamic Capability View (Vogel & Güttel, 2012), the Transaction Cost Theory (Martins, Serra, Leite, Ferreira, & Li, 2010), or the Institutional Theory (Weerakkody, Dwivedi, & Irani, 2009).

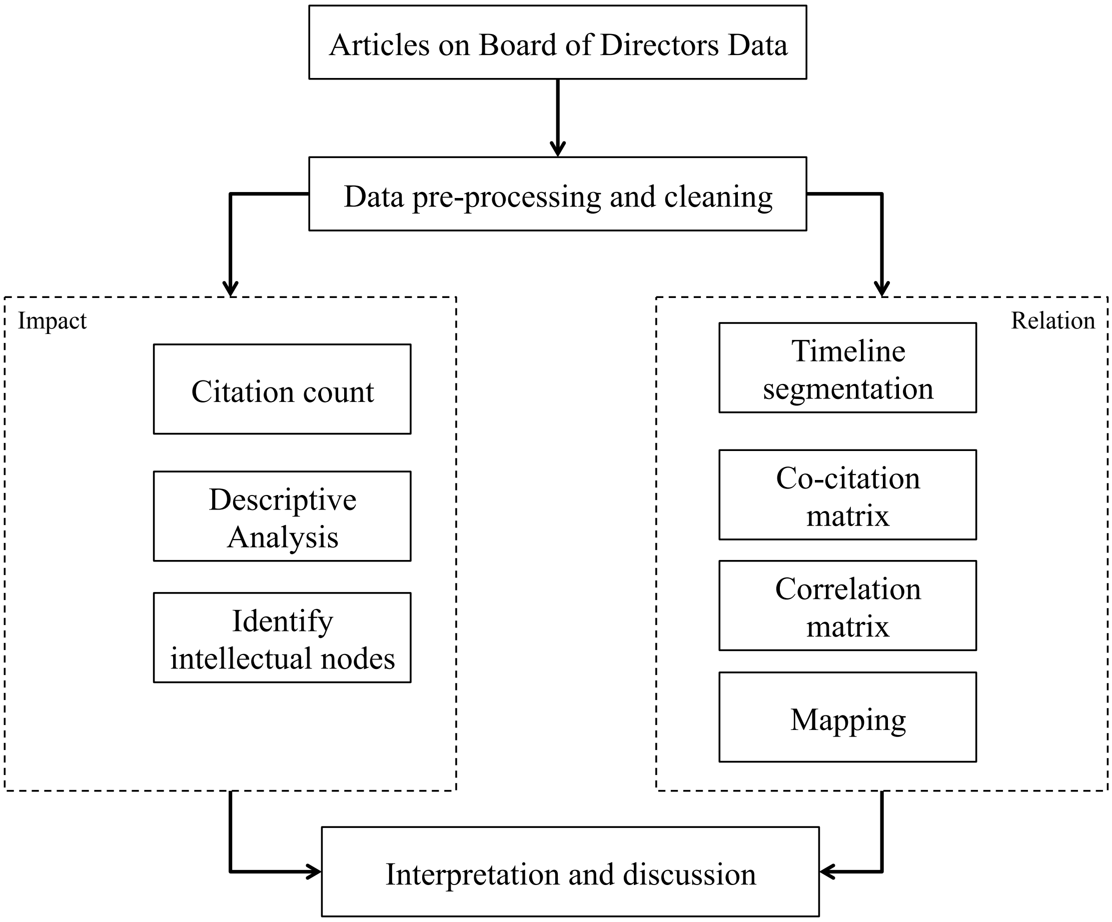
2.1. Unit of Analysis

For the purpose of our research, we decided to use articles published in journals as legitimate sources. They are considered 'certified knowledge', because they come from a qualification process and provide reliability to the results (Callon, Courtial, & Penan, 1993; Ramos-Rodriguez & Ruiz-Navarro, 2004). Therefore, the unit of analysis is granular and we took each publication as a possible contribution to the research in this arena. This approach is, therefore, consistent with the goal of mapping which works configure the contributions to the research on board of directors from different perspectives.

We utilized citation analysis and co-occurrence citation analysis. Citation analysis is based on the importance that researchers give to a publication when they refer to it as a source. Consequently, we may think that the more cited, the more influential it will be for the research community in the development of that specific arena (Ramos & Ruiz, 2008). Besides, we consider helpful to visualize some quantitative analyses through maps. Based on the last references, we elaborated some steps to perform or methodology.

2.2. Methodology stages

Our research has been designed in stages so as to apply bibliometric techniques properly. Between the research design and the conclusions elaboration, it is agreed that it is necessary to perform a group of tasks that include steps like data retrieval, cleaning, analysis and visualization (Zupic & Cater, 2015). The Figure 1 shows the different stages we followed to perform the data analysis.



Own elaboration adapted from Ramos-Rodríguez and Ruiz-Navarro (2004)

Figure 1: Methodology Stages

2.3. Data retrieval from source

For the purpose of this paper, accordingly with the majority of bibliometric studies in this realm (Zupic & Cater, 2015), we collected articles' data from journals stored at the Web of Science main collection website database. The articles we obtained were published up to 2017. Since we wanted to examine the different approaches and the structure of contributions, we limited the initial search to those articles that included the words 'board' and 'director', in the title, the keywords or the abstract. We realize that there were some combinations of words that studied our field (board, boards, boardroom, board of directors, directorate). Thus, we included all of them in our initial step of the search and retrieval process. The starting group accounted for over 5,200 registers. Then, we excluded those that not were properly articles, documents that were not into the unit of analysis, and, following a continuous checking processes, we also filtered articles taking out those whose contents and classification under unrelated categories were out of the scope. Once said this, we should mention that we look at the articles within each category to secure they properly worked filtering the aimed information (a detailed list of categories/articles excluded as well as the steps followed in selecting the final set may be checked in the Appendix Table 1). Besides, we checked every remaining article so as to filter those related to the topic. Once we performed data preparation tasks, as previously stated, we obtained 3,021 articles. Those articles were published between 1958 and 2017.

2.4. Data preprocessing and cleaning

Above-mentioned research works, as well as many others, have pointed out the need for a data pre-processing and cleaning due to raw data condition. Data cleaning included capital letters homogenization, authors' initials checking, removal of duplicities in cited references, data completion, management of anonymous authorship, etc. Articles up to mid 80s included multiple references to same sources, incomplete data, and frequent referral to books. Despite some bibliometric studies recommend to keep just the first authors initial, we decided to keep the initials that were provided as raw data (at least to preserve the nature of the analysis), because we identified authors that differ just in the middle name (we found up to four different authors for the same surname and a sample of them can be checked in the Appendix Table 2). That led us to check each author and reference in the original raw data to prevent duplicates, clean data and standardize references as to minimize the possibilities of failure in their homogenization. We were helped by specific software we developed in python coding language for data pre-processing of misspellings in authors, initials, etc.

Once the dataset was produced, we used several software packages to explore it. For the specific bibliometrics data management, we employed BibExcel software to analyze the data and attain indicators, classify items, etc. (Åström, Danell, Larsen, & Schneider, 2009). We utilized classical software for basic treatment of data, such as MS Word and MS Excel, to support tasks of data cleaning and sorting, and figures designing. In order to obtain the correlation matrices and to perform factor analysis, which is convenient to point out intellectual nodes (factors) based on joint appearance of articles at cited references, we utilized SPSS v.25. We also applied VOSviewer software as a tool to build and visualize relationships graphically, and to perform analyses based on the networks underneath the research on the topic (van Eck & Waltman, 2010).

2.5. Descriptive and relational bibliometric analysis

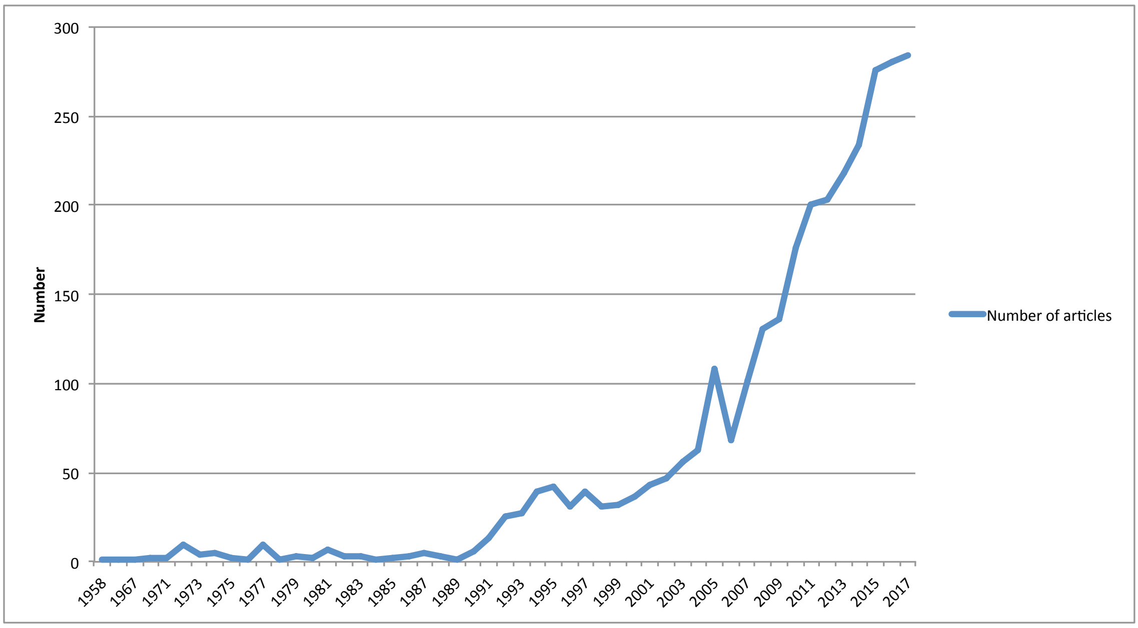
For the purpose of our study, we decided to use descriptive and relational bibliometric indicators and tools. The publishing year frequency will help to visualize and set up stages in the history of researching this topic. The country of origin will highlight the main geographical centers of contribution, sometimes linked to the institutional affiliation. The language used to write the articles also shows the origins and the goals of spreading the knowledge of the authors. Through the main contributors and journals we will show who has researched the most and which publication served to collect the majority of those studies. The mapping and analysis of the organizations the author belong to will help to provide a different picture of the institutional collaboration and contribution to this topic. The keywords help to understand the self-assessment of how the concepts and the researches are classified and related in this context, and which among them have not been studied enough. Co-occurrence in cited journals provides a clearer picture of the concentration of the research main streams. Co-occurrence in authors gives a structure of research communities and co-occurrence in citations lead to understand the intellectual framework. Finally, maps provided a clearer picture of what has been done, the communities, and what could be developed in future research. This way, we could obtain the main figures and the global configuration of the research on board of directors before deepening in certain core intellectual nodes, subtopics or publications. As a result, the final step of the methodology provides our conclusions based on the findings of this analysis, the limitations we faced on this study and some possible lines for future research.

3. RESULTS AND DISCUSSION

3.1. Descriptive analysis

We start showing some descriptive figures that help the initial understanding on the matter. As the Figure 2 shows, we may observe different periods we could establish for a better analysis and discussion.

Figure 2: Published articles per year



The first segment of time finishes in 1991, and it is characterized by the small number of publications (avg. 3.8) at a small rhythm of growth (CAGR 8.55%). This is presenting a seeding stage in the study of the topic. The following year, fostered by the Cadbury Report, Codes of Governance start appearing in different countries, pursuing to improve the corporate governance of the firms. The second period shows a fairly significant increase of publications compared to the previous one (CAGR 15.14%), and it might be driven by new journals, a greater incorporation of the topic to management journals, or the spreading of governance principles. This period finishes in 2005 when there have been some years after corporate scandals, new codes (by then, more than 60 countries have at least one version, including all big economies) and regulation flourished (i.e. SOA), and yet there were not results of the impulse of the recommendation issued by OECD in 2004. The third period we identify starts, just after the first implementations of those principles, the new released codes and their modifications, and when is plausible to perceive more outcomes from the implementation. During the third period, the number of publications is still growing but at a lower rate (CAGR 8.39%), suggesting the start of a maturation period. It is noticeable that it has not a significant relationship with economic cycle and ends in 2017.

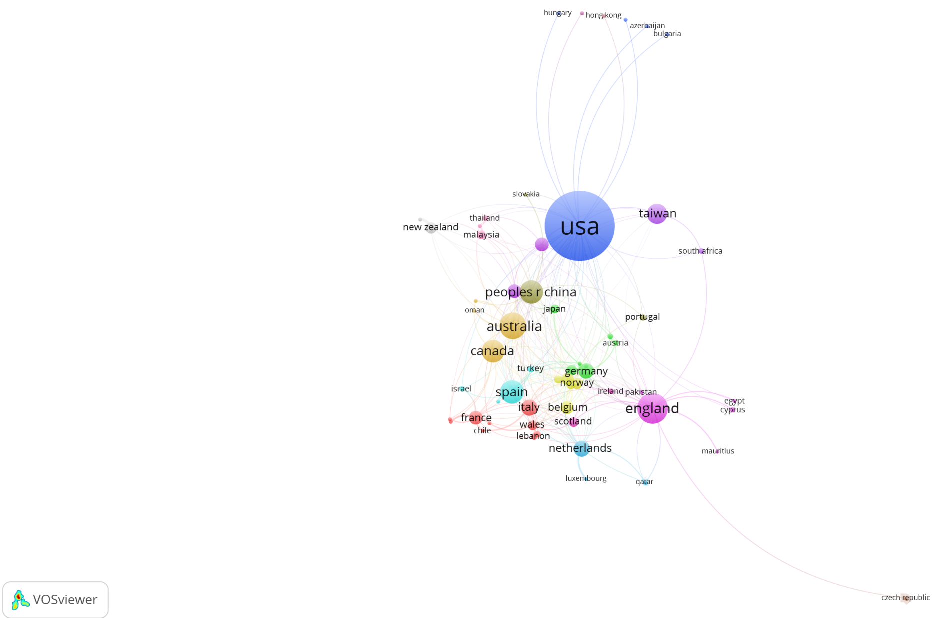
As the figure shows, the majority of articles on the topic have been published since 2006 (74.1%). Besides, from that year on the number of published articles per year doubles the previous decade. 2007 was the year with more published articles (3.37% of the total amount). Thus, it is clear that the interest on this topic increased right after great corporate failures, mainly in the US but soon reaching other countries, and under the spreading of new codes of corporate governance in developing countries.

Some reasons may be behind abnormal changes in the trends we have detected. First, there were an increase of 23 sources between 2004 and 2005. Second, we notice that the impact of journals like *Corporate Governance: An International Review* might be accountable for the curve behavior since 2000, and especially between 2004 and 2007, where near half of the increases/decreases of the overall publications are due to it. In the case of this Journal, there is an increase in the number of issues in 2005, from 4 to 6, and a change in the editorial board in July 2007. Besides, the *Journal of Corporate Finance* included on additional issue in 2005 and reduced one in 2006. Similarly, the *Journal of Business Ethics* reduced 12 articles between those two years and prior to set a sharp increase from 2007. We think that a further analysis of every stage, setting the focus in the above-mentioned journal, would be interesting to deepen in the analysis.

As regards the language, the vast majority of the articles, almost 98%, were written in English. Articles in German, Spanish and French languages follow with a small number of contributions, aiming local impact. There are also articles in other seven languages. A significant amount of articles is originated in the US. There are author coming from more than 60 nationalities, but only 15 of them reached 1% of the total. The analysis of the information by periods, shows that English is consistently the first language and there is an increasing though scant number in other languages starting in the second stage.

A visualization of the co-authorship in terms of countries is congruent to the previous statement. As Figure 3 shows, co-authorship is mainly distributed in clear geographical areas. Authors' collaboration is centered in the US, but there are other big areas. England appears detached, and it has his own role probably due to the early impulse of Cadbury Code. Other countries with related regulation and governance traditions (Canada, Australia) are close to the previous referred countries. In fact, this is consistent with the common stakeholders orientation in those countries, and the push for academic collaboration especially in the US (Gabrielsson & Huse, 2004; Huse, 2005). There is also a smaller group of European countries where Spain plays a significant role. We might say that there is cooperation between different countries, that this cooperation has relevant poles, and that the data sources for research might be helping to foster this situation. Early codes, transparency, regulation requirements of detailed detached data, publicity of data, number and size of companies in these areas is significantly bigger.

Figure 3: Countries co-authorship map



The articles were published in 567 journals, but just 41 of them, the 7.2%, accounted for 52% of all published researches. The Table 1 shows these journals ranked by the number of articles they published on the subject. They ranged from 15 to 189 published articles. The remaining 526 sources published up to 14 articles each one, adding up the remaining half of the sample.

Table 1: Number of Published Articles per Journal

Rank	Journal	Number of articles	%	Ac %
1	Corporate Governance-An International Review	190	6.25%	6.25%
2	Journal Of Business Ethics	139	4.60%	10.85%
3	Journal Of Corporate Finance	122	4.04%	14.89%
4	Strategic Management Journal	84	2.78%	17.66%
5	Journal Of Financial Economics	82	2.71%	20.38%
6	Academy Of Management Journal	55	1.82%	22.20%

Rank	Journal	Number of articles	%	Ac %
7	Journal Of Banking & Finance	55	1.82%	24.02%
8	Journal Of Business Research	48	1.59%	25.60%
9	Business Lawyer	45	1.49%	27.09%
10	Harvard Business Review	42	1.39%	28.48%
11	Journal Of Business Finance & Accounting	40	1.32%	29.80%
12	Financial Management	34	1.12%	30.93%
13	British Journal Of Management	31	1.03%	31.96%
14	Journal Of Management Studies	30	0.99%	32.95%
15	Journal Of Management	29	0.96%	33.91%
16	Contemporary Accounting Research	29	0.96%	34.87%
17	Journal Of Finance	29	0.96%	35.83%
18	Management Decision	28	0.93%	36.75%
19	Accounting Review	28	0.93%	37.68%
20	Accounting And Finance	28	0.93%	38.60%
21	Review Of Financial Studies	28	0.93%	39.53%
22	Journal Of Accounting & Economics	26	0.86%	40.39%
23	Journal Of Financial And Quantitative Analysis	25	0.83%	41.22%
24	International Review Of Financial Analysis	24	0.79%	42.01%
25	Journal Of Accounting And Public Policy	23	0.76%	42.77%
26	Journal Of Management & Organization	22	0.73%	43.50%
27	Australian Accounting Review	21	0.69%	44.19%
28	Nonprofit And Voluntary Sector Quarterly	20	0.66%	44.86%
29	Administrative Science Quarterly	20	0.66%	45.52%
30	Emerging Markets Finance And Trade	20	0.66%	46.18%
31	Management Science	19	0.63%	46.81%
32	Auditing-A Journal Of Practice & Theory	18	0.60%	47.40%
33	Pacific-Basin Finance Journal	18	0.60%	48.00%
34	Organization Science	17	0.56%	48.56%
35	Nonprofit Management & Leadership	17	0.56%	49.12%
36	Journal Of Family Business Strategy	16	0.53%	49.65%
37	Long Range Planning	16	0.53%	50.18%
38	European Accounting Review	16	0.53%	50.71%
39	African Journal Of Business Management	16	0.53%	51.24%
40	European Financial Management	15	0.50%	51.74%
41	Business Horizons	15	0.50%	52.23%

As a first, quick analysis to the figures above, they show that there have been different approaches to the board of directors, since the articles have been published in a wide variety of management, accounting, finance or law journals. The largest number of publications corresponds to a specialized journal in corporate governance, *Corporate Governance: An International Review*, which gives the board a key role in the research works and centers all its publications. The *Journal of Business Ethics* has a relevant position, congruently with the interests that triggered many corporate governance studies. Law and finance focused journals account for a significant share of publications. That is the case of the *Journal of Corporate Finance*, the *Journal of Financial Economics*, *Business Lawyer* or the *Journal of Business Finance and Accounting*. Management Journals such as the *Strategic Management Journal*, the *Academy of Management Journal* or the *Journal of Management Studies* have also a relevant position.

The evolution across the periods of time is shown in Table 2. The second and the third period of time present a change in the orientation of the top ranked sources: there is an increase in the publications in specific journals (CGIR), or ethics (JBE), management (SMJ, AMJ). There are still finance related journals at the top (JCF, JFE), whereas law focused journals loose prevalent positions. The number of sources, as we mentioned, increases in every step, and the number of publications follows the same path. There are also changes on publishing policies affecting these figures (e.g. CGIR increased the number of issues per year, and in other occasion changes the policy to fewer and longer articles).

Table 2: Number of Published Articles per Journal per Period

1958 - 1991		1992 - 2005		2006 - 2017	
Journal	**Articles**	**Journal**	**Articles**	**Journal**	**Articles**
California management review	7	Corporate Governance-An International Review	52	Corporate governance-an international review	138
Conference board record	4	Journal Of Business Ethics	29	Journal of business ethics	110
Management international review	4	Business Lawyer	29	Journal of corporate finance	108
Harvard business review	4	Journal Of Financial Economics	27	Strategic management journal	56
Administrative science quarterly	4	Strategic Management Journal	27	Journal of financial economics	53
Academy of management journal	4	Harvard Business Review	23	Journal of banking & finance	44
Business lawyer	3	Academy Of Management Journal	16	Journal of business research	40
Betrieb	3	Journal Of Corporate Finance	14	Journal of business finance & accounting	35
Academy of management review	3	Financial Management	12	Academy of management journal	35
Journal of voluntary action research	3	Administrative Science Quarterly	12	Management decision	28
Journal of international business studies	2	Journal Of Management	11	Accounting and finance	28
Journal of financial economics	2	Journal Of Finance	11	Review of financial studies	27
Journal of general management	2	Journal Of Banking & Finance	11	Contemporary accounting research	25
Compensation review	2	Journal Of Management Studies	10	International review of financial analysis	24
Business horizons	2	British Journal Of Management	9	Journal of accounting and public policy	22
Boston university law review	2	Long Range Planning	8	British journal of management	22
Institutional investor	2	Journal Of Business Research	7	Journal of management & organization	22
American journal of sociology	2	Auditing-A Journal Of Practice & Theory	7	Australian accounting review	21
Organization science	2	Journal Of Accounting & Economics	7	Financial management	21
New york university law review	1	Journal Of Business	7	Accounting review	21
Long range planning	1	Accounting Review	7	Emerging markets finance and trade	20
Law quarterly review	1	Securities Regulation Law Journal	7	Journal of management studies	19
New statesman & society	1	Journal Of Financial And Quantitative Analysis	7	Journal of accounting & economics	19
Michigan law review	1	Nonprofit And Voluntary Sector Quarterly	6	Journal of finance	18
Social policy	1	Administration In Social Work	6	Journal of financial and quantitative analysis	18

Social casework-journal of contemporary social work	1	Academy Of Management Executive	5	Pacific-basin finance journal	18
Strategic management journal	1	Journal Of Accounting Research	5	Management science	17
University of chicago law review	1	Public Administration	5	Nonprofit management & leadership	17
Temple law review	1	Journal Of Business Finance & Accounting	5	Journal of management	17
Real estate review	1	Academy Of Management Review	5	African journal of business management	16
Pacific sociological review	1	Journal Of Law & Economics	4	Journal of family business strategy	16
Notre dame lawyer	1	Contemporary Accounting Research	4	European accounting review	16
Political studies	1	Mit Sloan Management Review	4	Harvard business review	15

Considering the main taxonomy used by the WoS, articles were classified mainly under Business (21.95%), and other categories like Finance (21.68%), Management (20.97%), Economics (11.2%), Law (4.48%), Ethics (3%), Public Administration (1.88), Sociology (1.32%), or Applied Psychology (1.2%) (We mentioned the categories with at least 1% of the publications on them. They add up to the 87.49% of the total. There are journals classified under other 57 WoS categories). The variety of classification categories for the articles indicates that the issues affect a broad set of disciplines in social sciences, consistently with the typology of publishing journals we studied.

From the overall 6,965 authors of the publications, there were 4,804 unique authors across all the articles of the sample. Following the same pattern of other scientific arenas, just a small group of them concentrates most publications. The most prolific authors are presented in Table 3 (and Table 4 per period). We calculated the Hirsch-index for each one of them (Hirsch, 2005), taking into account the articles under scope, and ranked them according to that parameter. This way, we used a commonly established measure to understand the relevance of their contributions. These authors account for more than 52% of the references and are mentioned at least in the 11% of the articles. Besides, some of them are also quoted for other works, what makes them even more relevant.

Table 3: Most prolific authors with h-index

Author	h-index	Citation sum within h-core	No. citations	No. articles
Dalton DR	14	1413	1457	18
Huse M	13	787	801	15
Westphal JD	12	1562	1566	13
Filatotchev I	11	520	528	14
Zajac EJ	11	2181	2181	11
Cannella AA	10	1244	1247	11
Aguilera RV	10	620	620	10
Daily CM	10	1297	1297	10
Hillman AJ	9	1943	1966	13
Minichilli A	9	273	273	10
Zattoni A	8	256	257	9
Shivdasani A	8	1673	1678	9
Boivie S	8	401	402	9
Adams RB	8	1664	1673	10
Garciasanchez IM	8	281	312	19
Bebchuk LA	8	1237	1237	9
Zahra SA	7	1144	1144	7

Author	h-index	Citation sum within h-core	No. citations	No. articles
Conyon MJ	7	271	279	9
Certo ST	7	904	904	7
Dalton CM	7	322	322	7
Garciameca E	7	186	200	14
Hoskisson RE	6	1273	1276	7
Hambrick DC	6	1039	1039	6
Weisbach MS	6	1299	1299	6
Wright M	6	261	273	10
Yeh YH	6	315	315	6
Heemskerk EM	6	95	99	7
Voordeckers W	6	202	203	8
Davidson WN	6	799	801	7
Sharma VD	6	111	111	7
Jiraporn P	6	200	209	13
Semadeni M	6	132	137	8
Dahya J	6	508	508	6
Kesner IF	6	218	218	6
Larcker DF	6	1807	1807	6
Johnson RA	6	1343	1343	6

Note: Table showing author with h-index above 6. They account for 10% of the total of articles considered.

Table 4: Most Prolific Authors per period ranked by H-Index

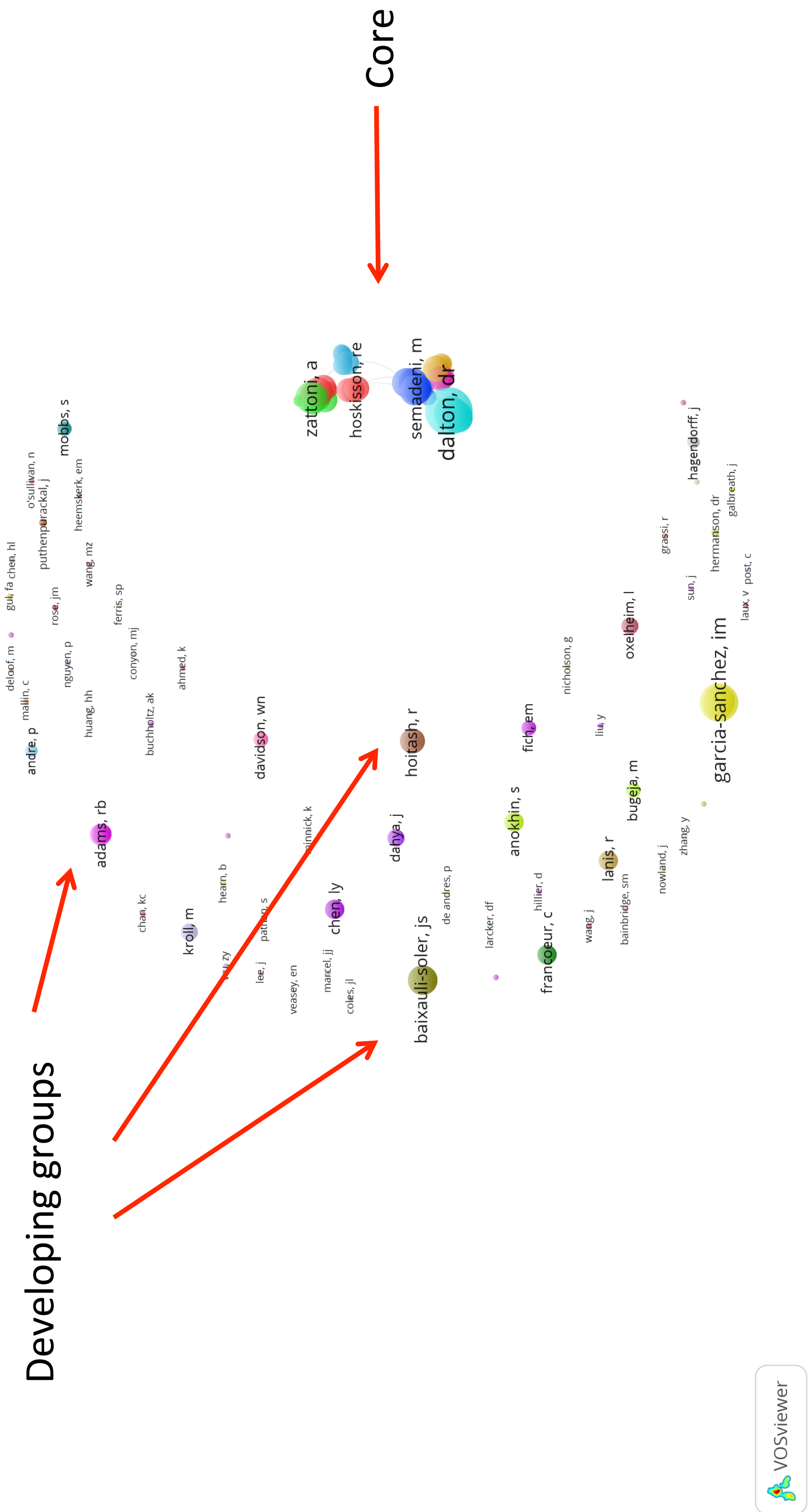
1958 - 1991		1992 - 2005		2006 - 2017	
h-index	Author	h-index	Author	h-index	Author
3	Chitayat G	10	Daily CM	10	Huse M
3	Pfeffer J	10	Dalton DR	8	Garcia-Sanchez IM
2	Zald MN	8	Zajac EJ	8	Adams RB
2	Boeker W	6	Shivdasani A	8	Filatotchev I
2	Stern RN	5	Westphal JD	8	Minichilli A
2	Dalton DR	5	Vafeas N	8	Aguilera RV
2	Goodstein J	5	Hillman AJ	8	Zattoni A
2	Kesner IF	5	Bebchuk LA	7	Garcia-Meca E
1	Lynk WJ	5	Davidson WN	7	Westphal JD
1	Mace ML	4	Johnson RA	7	Boivie S
1	Macleod BV	4	Johnson JL	6	Hillman AJ
1	Makhija AK	4	Certo ST	6	Heemskerk EM
1	Mizruchi MS	4	Veasey EN	6	Jiraporn P
1	Molz R	4	Farrell KA	6	Voordeckers W
1	Mandelker GN	4	Shen W	6	Semadeni M
1	Miller LE	4	Whidbee DA	6	Dalton DR
1	Kriger MP	4	Dahya J	6	Cannella AA
1	Labatt S	4	Conyon MJ	6	Wright M
1	Kosnik RD	4	Cannella AA	5	Nordqvist M

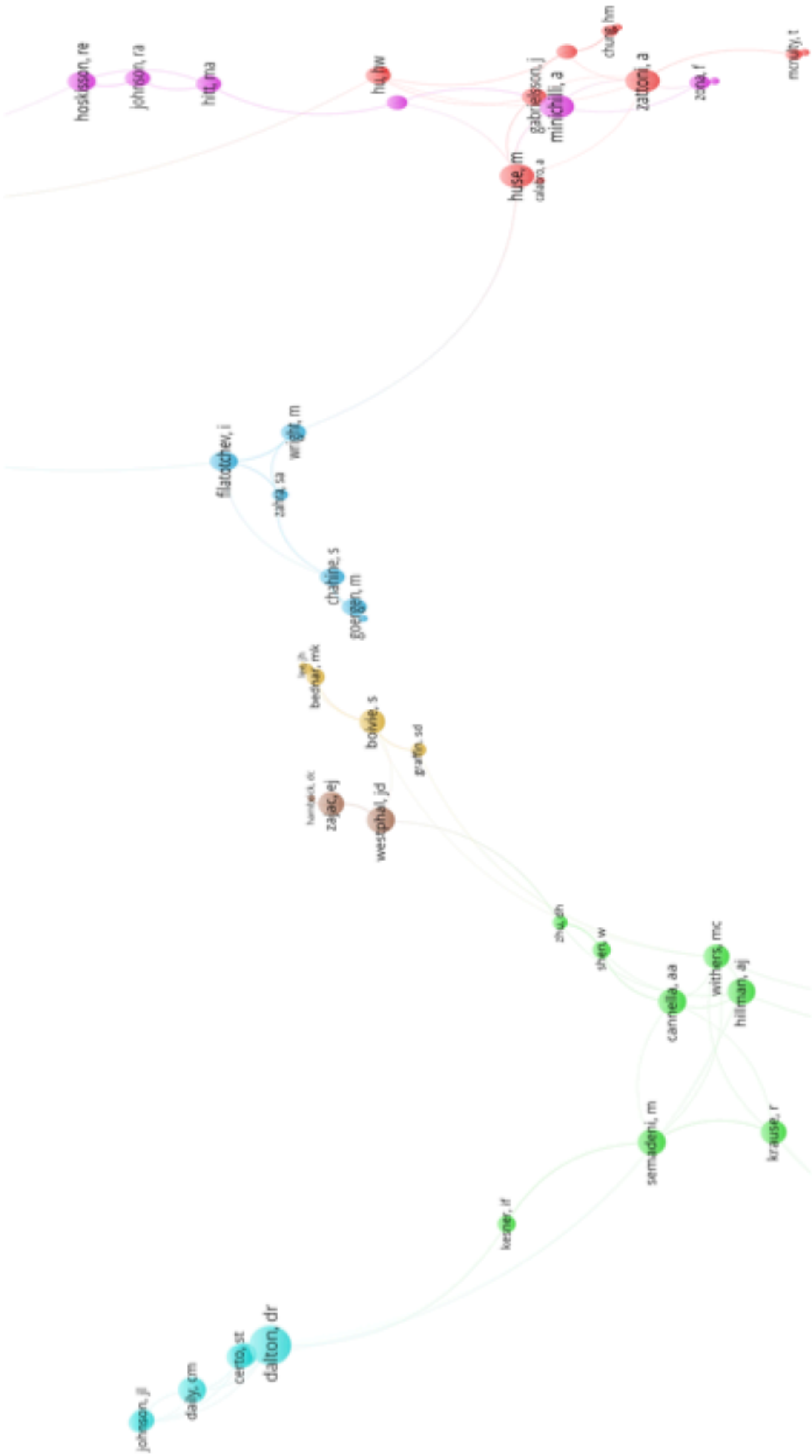
1958 - 1991		1992 - 2005		2006 - 2017	
h-index	Author	h-index	Author	h-index	Author
1	Hoskisson RE	3	Rosenstein S	5	Wincent J
1	Kerr J	3	Bilimoria D	5	Post C
1	Levinthal DA	3	Beasley MS	5	Ferreira D
1	Lindgren U	3	Ellstrand AE	5	Hoitash U
1	Leksell L	3	Battiston S	5	Krause R
1	Lagges JG	3	Hoskisson RE	5	Dalton CM
1	Leduc RF	3	Filatotchev I	5	Masulis RW
1	Murray VV	3	Mehran H	5	Sharma VD
1	Wade J	3	Huse M	5	Bednar MK
1	Weiss EJ	3	Mizruchi MS	5	Chen HL
1	Tashakori A	3	Roberts J	5	Walters BA
1	Solomon LD	3	Hambrick DC	5	Mobbs S
1	Stewart R	3	Fich EM	5	Rose JM
1	Wood DD	3	Wang J	5	Zhu DH
1	Wyatt JG	3	Weir C	5	Sanchez-Ballesta JP
1	Widmer C	3	Hermalin BE	5	Zona F
1	Weiss RM	3	Cornett MM	4	Jiang W
1	White TH	3	Zenner M	4	Wang MZ
1	Soderquist LD	3	Hitt MA	4	Locke S
1	Rich PJJ	3	Weisbach MS	4	Lee JH
1	Zahra SA	3	Alexander M	4	Fields LP
1	Phillips RM	3	Yeh YH	4	Zahra SA
1	Oreilly CA	3	Daveni RA	4	Zaman M
1	Pearce JA	3	Parrino R	4	Rose AM
1	Sheehan DP	3	Coates JC	4	Mcnulty T

Note: Table showing author with h-index threshold varies depending on the period so as to show the top ranked.

If we analyze co-authorship in terms of authors, using fractional counting, we only reckon 47 authors closely linked in their collaborations. If we map this relationship (Figure 4), we may distinguish several groups around authors (e.g. Weisbach, Hermalin, Adams, and Bebchuk; Hoskisson, Johnson and Hitt; Huse, and Minichilli). Daily, Dalton, Johnson and Ellstrand, for instance, have published together in many occasions some reviews and meta-analyses (Daily, Johnson, Ellstrand, & Dalton, 1998; Dalton, Daily, Johnson, & Ellstrand, 1999). Many of them appeared in the above-mentioned classification, what leads us to think that they built a strong, highly renowned contribution to the topic while collaborating in their research works.

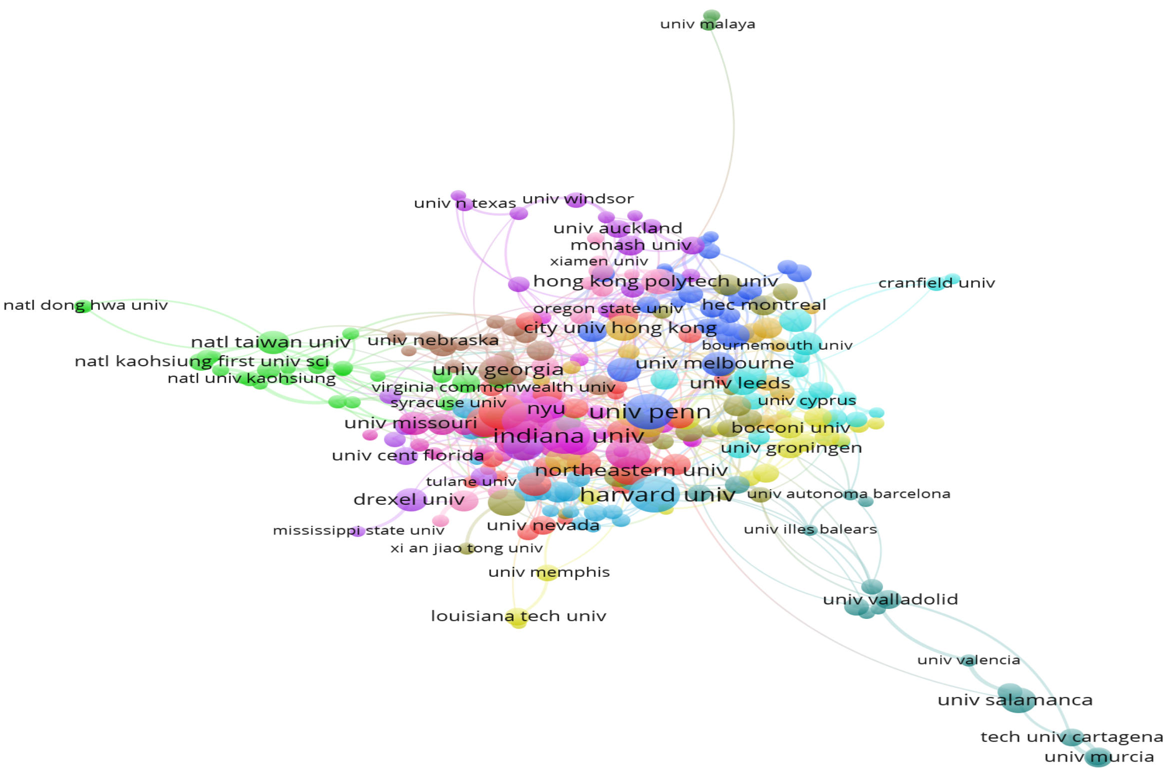
Figure 4: Co-authorship map




hoskisson, re
johnson, ra
hitt, ma
hu, hw
gabrielsson, j
minichilli, a
zattoni, a
huse, m
chung, hm
zona, f
mcnulty, t
filatotchev, i
wright, m
zahra, sa
chahine, s
goergen, m
bednar, mk
boivie, s
graffin, sd
zajac, ej
westphal, jd
zhu, dh
shen, w
withers, mc
cannella, aa
hillman, aj
semadeni, m
krause, r
dalton, dr
certo, st
daily, cm
johnson, jl

The organization behind the author is other relevant variable that is useful to analyze how the articles have shaping the knowledge. We identified 1,653 research institutions. Among them, 310 contributed in at least 5 articles. A visualization of their collaboration shows four major geographical areas: the US, UK-Commonwealth, Continental Europe and Asia. US universities are highly represented and related, and they are placed at the center of the overall research organizational landscape (Figure 5). The map below shows the core of the co-authoring institutions with at least 5 articles (310) and how close they are in their collaborations. The size of the circles has been linked to the number of articles. Institutional collaboration shows a certain parallelism to co-authorship. That is the case Daily and Dalton at Indiana University; García-Sánchez at Salamanca University; Sanchez-Marin Baixauli-Soler and Lucas-Perez at Murcia University. In some cases, contributors from different universities are in the same state (Cannella at Arizona State University, Jones at Sam Houston State University and Withers at Texas A&M University). Therefore, there is more room for cross-institutional and cross-country collaboration in research on this topic.

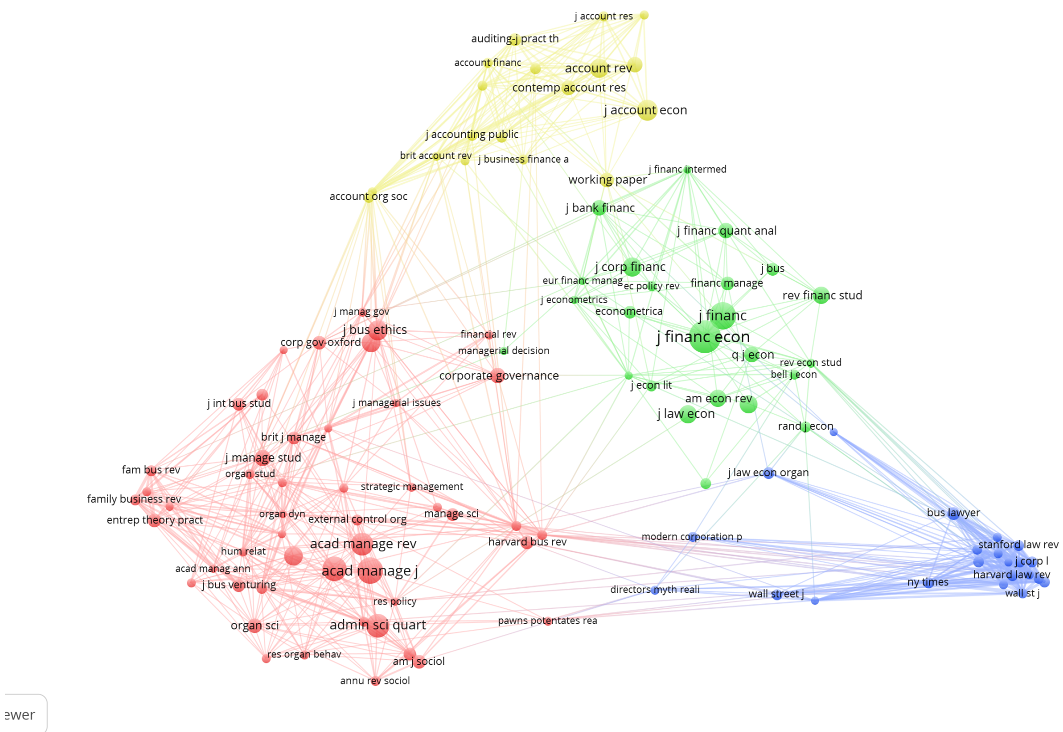
Figure 5: Research Institutions Co-authorship Map



Map generated with VOSviewer

If we analyze the co-citation of the sources in the cited references, we may show whether the intellectual foundation is being built upon similar scientific arenas based on the focus of the journals. In our case, we may observe several groups: the first one could be defined as the finance group, and the second one claims to gather management related journals. Smaller groups are focused on Accounting or Law studies. There are multiple connections between them and with others. The Figure 6 only shows 113 journals that are co-cited in at least 1% of the references, but the number of co-citations and the proximities strengthen the idea of a maturation staging that is focused on those great areas of knowledge. That would lead to cite more articles from journals that deepen in approaches, topics, subtopics and points of view where they are more proficient. The fact that the journals *Corporate Governance An International Review* or the *Journal of Business Ethics* are less prominent though playing a ‘bridging’ role is plausible, since they are more recent in the spreading of their studies and are related to different matters that not necessarily have to be included in those specific research arenas but categorized according to their embedded contributions. It could also be determined by the evolution of the research on the topic and has to be studied in further analyses.

Figure 6: Co-citation references' sources map



Through the analysis of authors' keywords we may describe directions of research, main areas of interest and help to know trends and future lines of investigation. The analysis of the keywords of the sample of our work shows that there were 21,414 keywords. They accounted for 2,845 unique words of group of words, which were built upon 3,310 different concepts. It is worth saying that these keywords are composed by different words and, also, we may establish some equivalence for the purpose of our research (e.g. we merged frequencies for the keywords Gender/Gender diversity/Diversity/Board gender diversity/Women/Women directors/Women on boards). Amongst them, 3,210 appeared less than eight times. The Table 5 shows the 50 most cited keywords and their frequencies. They account for half of the total of keywords mentioned.

Table 5: Most cited keywords

Term	Times Cited
Performance	1623
Corporate Governance	1225
Ownership	1097
Directors	1010
Compensation	603
Boards	512
Firm	490
Agency	418
Management	328
Empirical-Analysis	296
Determinants	263
Composition	250
Gender Diversity	227
Size	201
Incentives	192
Market	179
Earnings Management	176
Impact	157
Ceo	114
Market Valuation	114
Consequences	111
Power	111
Audit Committees	109
Information	106
Perspective	104
Diversity	103

Term	Times Cited
Shareholder Wealth	99
Independence	94
Turnover	88
Strategy	87
Ceo Turnover	86
Valuation	77
Behavior	73

Since we established a clear criteria for searching articles' data, keywords like Corporate Governance or Board of Directors are obviously at the top of the list. From that point, the terms show some relevant aspects. First, they show the interest in the gender diversity matters. Second, the prevalence of the Agency theory amongst the intellectual frameworks utilized by the authors is well defined, also in non-explicit terms. It may be observed in the number subtopics that are based on this theory, which relate to control, costs, supervision, etc. Regarding specific geographies, countries like China, Spain or UK introduce certain diversity in the targeted firms. Finally, human capital approaches are a minority in the research topic. The capital of the board, when appeared, is more often approached from the social perspective. We may visualize the relationship in Figure 7 (and Figures 8, 9 and 10 per period).

Figure 7: Map of keywords

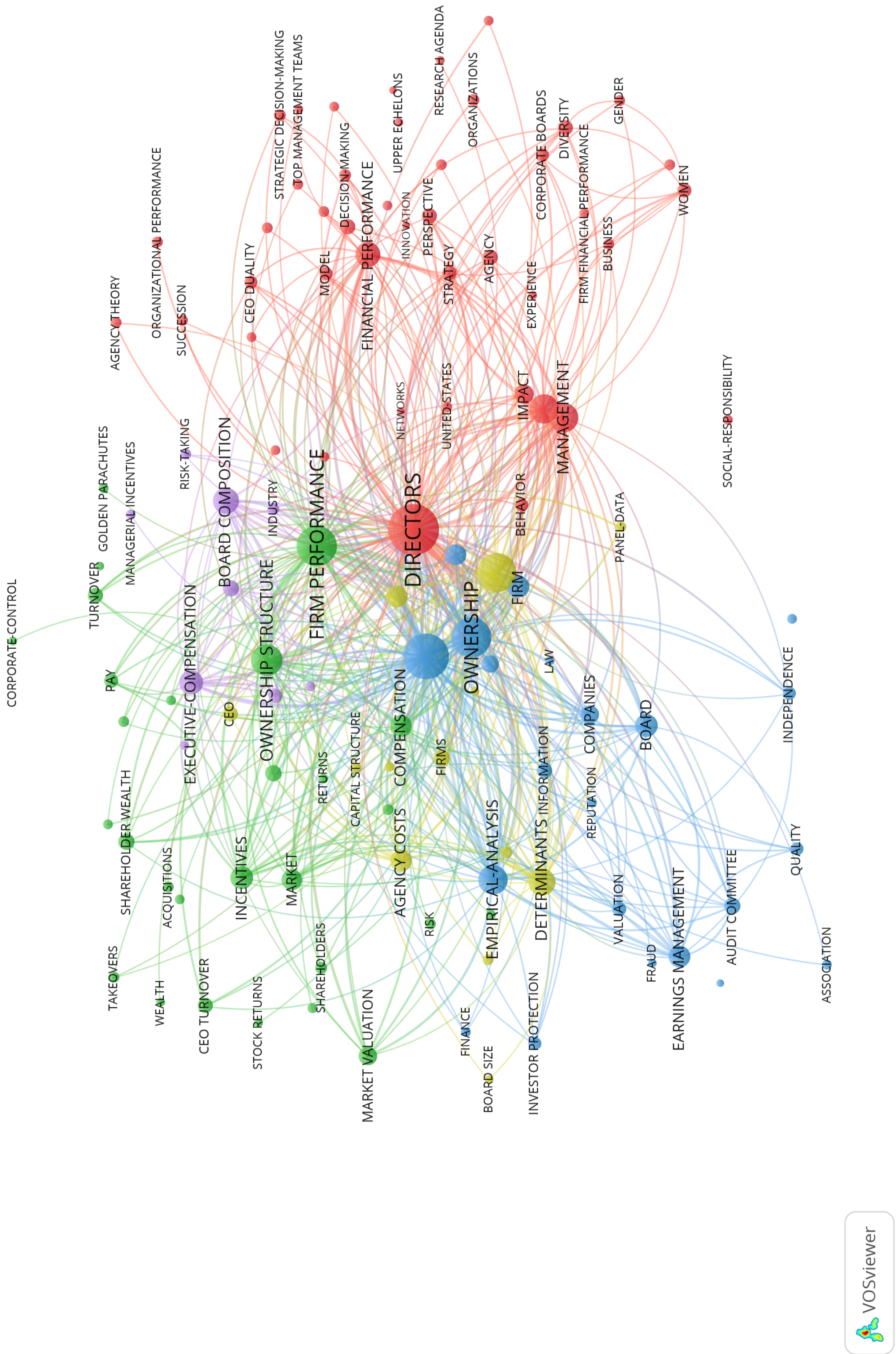


Figure 8: Keywords co-citation map. 1958 - 1991

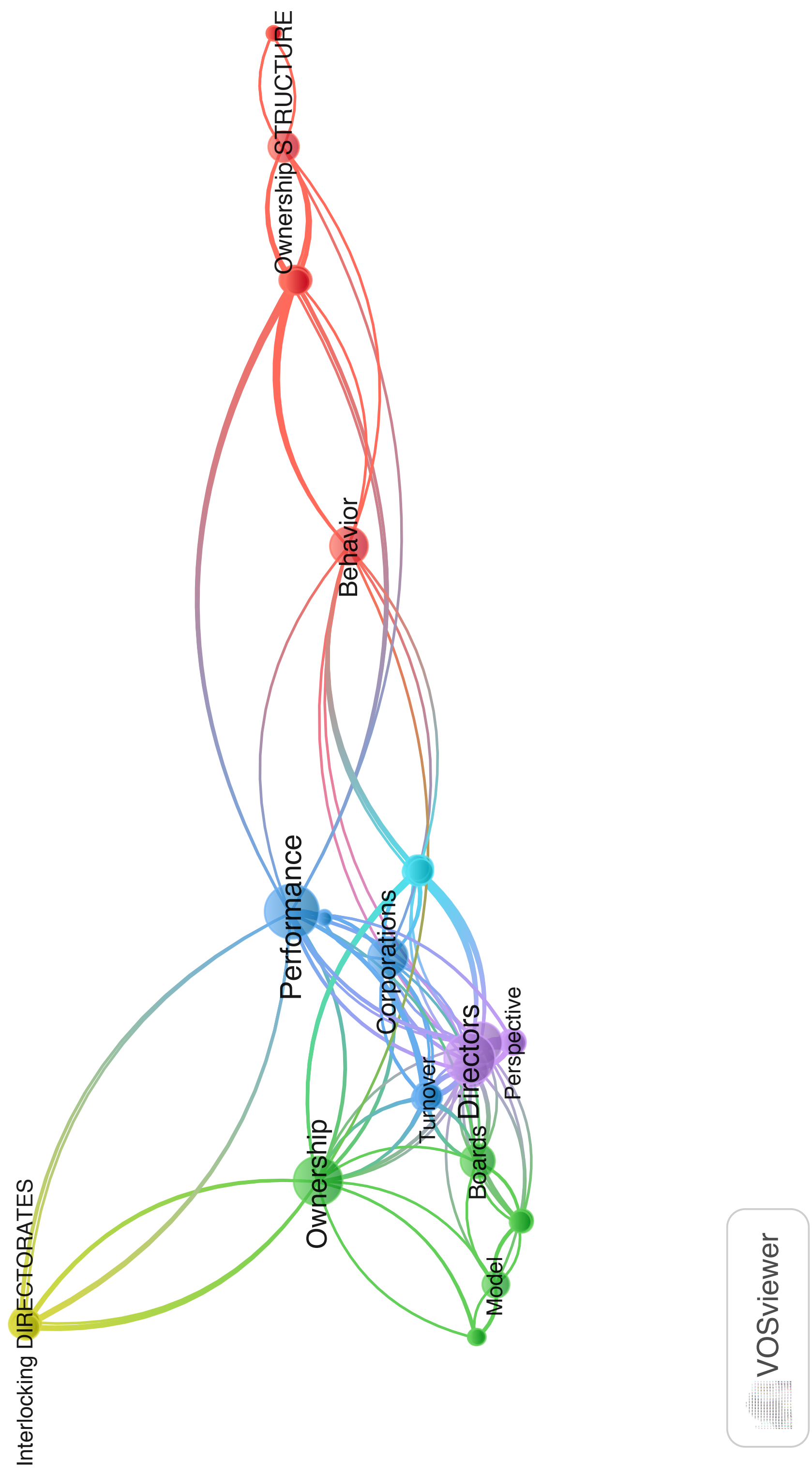


Figure 9: Keywords co-citation map. 1992 - 2005.

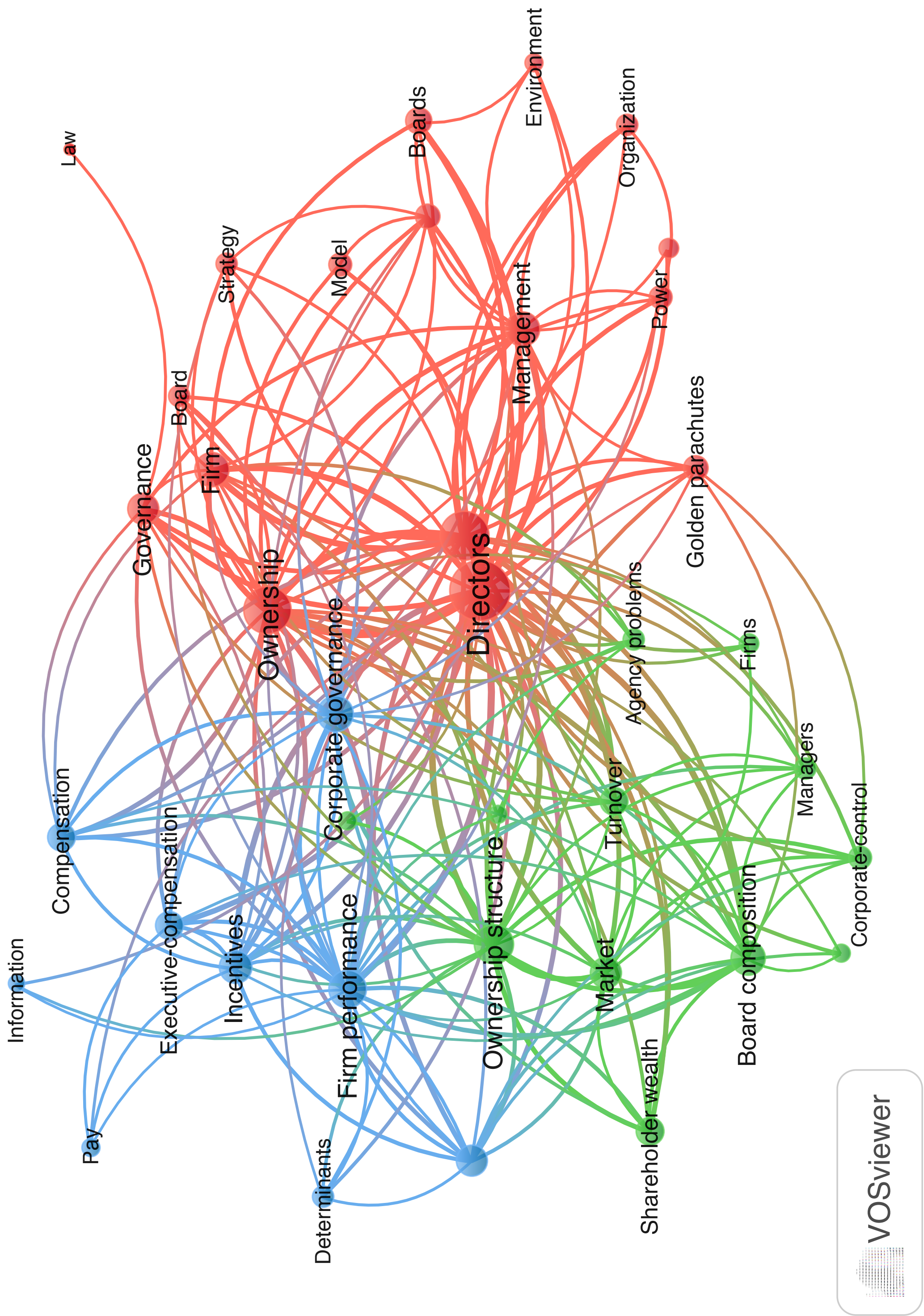
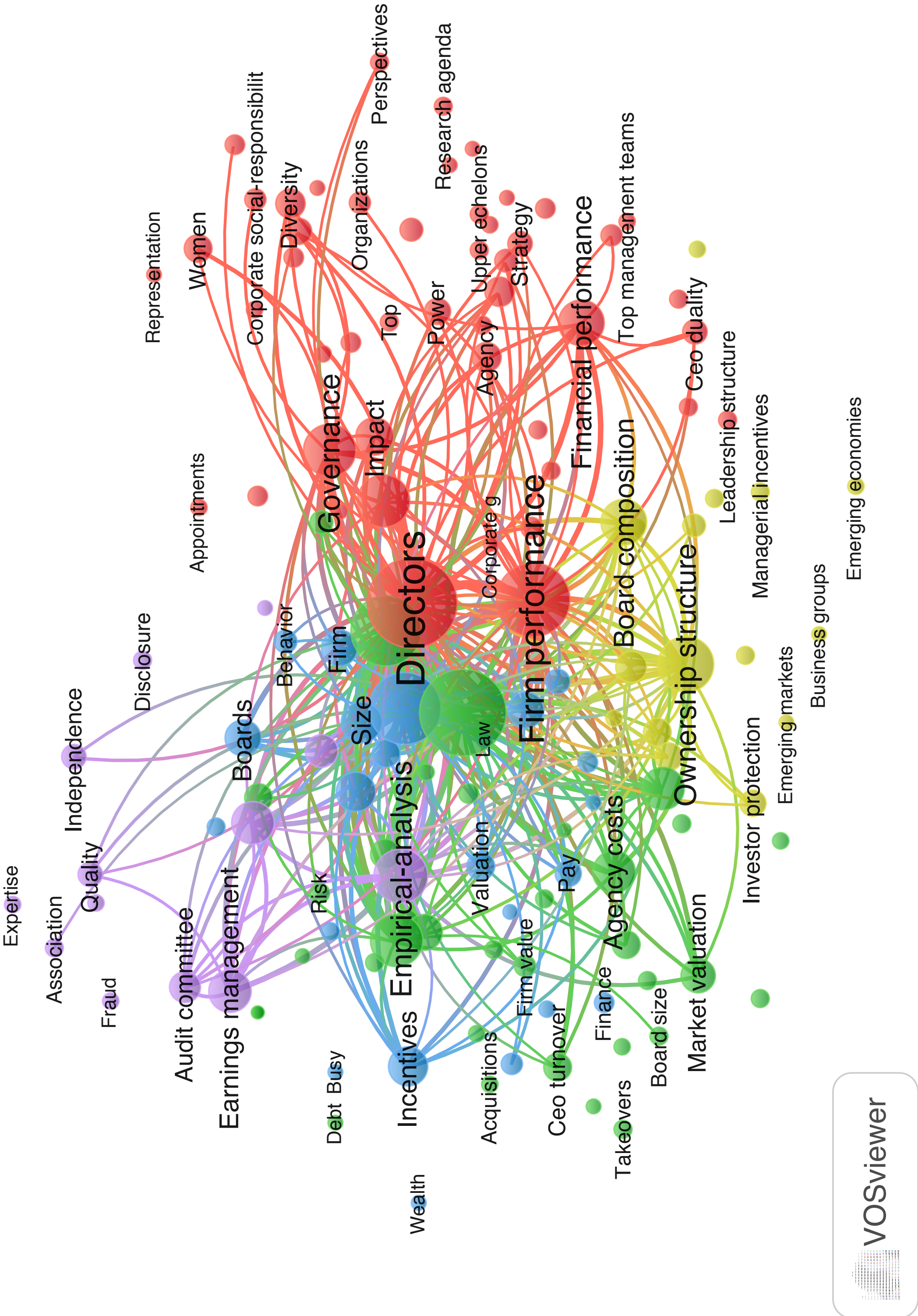
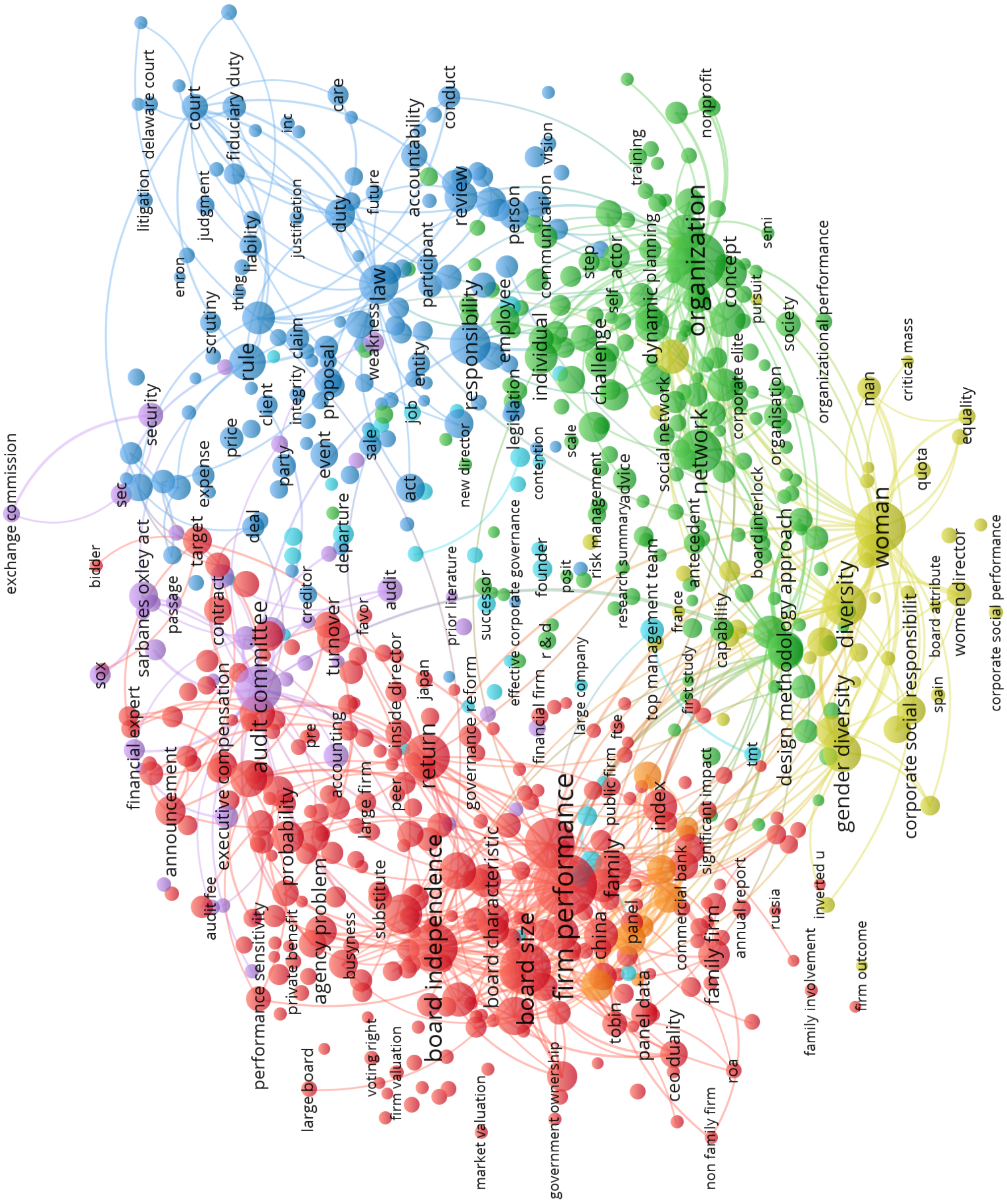


Figure 10: Keywords co-citation map. 2006 - 2017



Besides, we may analyze and visualize the words utilized in the abstracts so as to reinforce the arguments we found analyzing the keywords. As the Figure 11 shows, there has been a great focus on performance (over 15% of the articles include that term). Different approaches or theories are also mentioned: agency, resource dependence, institutional or stewardship. Human capital is referred in only 1% of the abstracts of publications. The figure shows a map of the most relevant terms that appear in the abstracts (best 60% of those appearing more than ten times). The circles size shows the number of occurrences. Terms are organized in clusters showing proximities. We used colored bubbles to show these terms lined to years. That way we may notice that there is also an evolution in the research, from law-related and grounding terms towards subtopics like diversity. The source titles and the keywords that are provided by the authors could be used as a guideline and indicate the subject of an article in particular. Then bibliometrics methodology can use them to analyze the trend shown in the research (Huang & Ho, 2011).

Figure 11: Map of relevant words found in the abstracts



In order to study the references, firstly we will provide the overall picture, analyzing the whole sample. This way, we will obtain a view on the current status of the research. In a second step, we will show the same type of analysis for each one of the identified periods of time, showing the evolution in the items of analysis.

3.2. References Analysis. Final Picture.

The articles included almost 170,000 bibliographic references. Over 80,000 of them were unique. The Table 6 (and Table 7 per period) shows the 101 works that account for the highest number of citations, all of them with more than 90 citations, that add up to more than 18,969 references of the total amount. In any research arena it is clear that those works published in the first decades of study pursuit, or resulted, to be seminal and set in many cases the main theories for approaching the topic, and there are some that are permanently quoted as a signal of consolidated knowledge or intellectual framework. That is the case of (Fama, 1980; Jensen & Ruback, 1983). As a matter of fact, those articles recently published tend to receive fewer citations. This is also a motive that leads us to think of the need of a research agenda that includes the evolution of the framework across different periods of time.

Table 6: Most Cited Articles

Reference	Times cited	Reference	Times cited	Reference	Times cited
Fama E, 1983, V26	869	Demsetz H, 1985, V93	197	Mizruchi M, 1996, V22	122
Jensen M, 1976, V3	835	Hermalin B, 1991, V20	193	Erhardt N, 2003, V11	121
Yermack D, 1996, V40	558	Boone A, 2007, V85	186	Davis J, 1997, V22	119
Jensen M, 1993, V48	519	Baysinger B, 1985, V1	184	Claessens S, 2000, V58	116
Weisbach M, 1988, V20	407	Hermalin B, 1988, V19	183	Pearce J, 1992, V29	115
Fama E, 1980, V88	369	Carpenter M, 2001, V44	179	Rechner P, 1991, V12	112
Shleifer A, 1997, V52	331	Eisenberg T, 1998, V48	174	Gilson S, 1990, V27	111
Hermalin B, 1998, V88	304	Jensen M, 1990, V98	173	Yermack D, 2004, V59	111
Hillman A, 2003, V28	300	Baysinger B, 1990, V15	170	Finkelstein S, 1992, V35	107
Core J, 1999, V51	273	Ferris S, 2003, V58	170	Walsh J, 1990, V15	106
Dalton D, 1998, V19	262	Hillman A, 2000, V37	168	Terjesen S, 2009, V17	106
Morck R, 1988, V20	259	Adams R, 2010, V48	166	La P, 2000, V58	105
Zahra S, 1989, V15	258	Daily C, 2003, V28	165	Judge W, 1992, V35	104
Gompers P, 2003, V118	252	Raheja C, 2005, V40	163	Bebchuk L, 2009, V22	102
Jensen M, 1986, V76	248	Dalton D, 1999, V42	161	Anderson R, 2003, V58	101
Coles J, 2008, V87	246	Agrawal A, 1996, V31	161	Petersen M, 2009, V22	101
Beasley M, 1996, V71	234	Bhagat S, 2002, V27	161	Goodstein J, 1994, V15	101
Klein A, 2002, V33	232	La P, 1998, V106	159	Xie B, 2003, V9	101

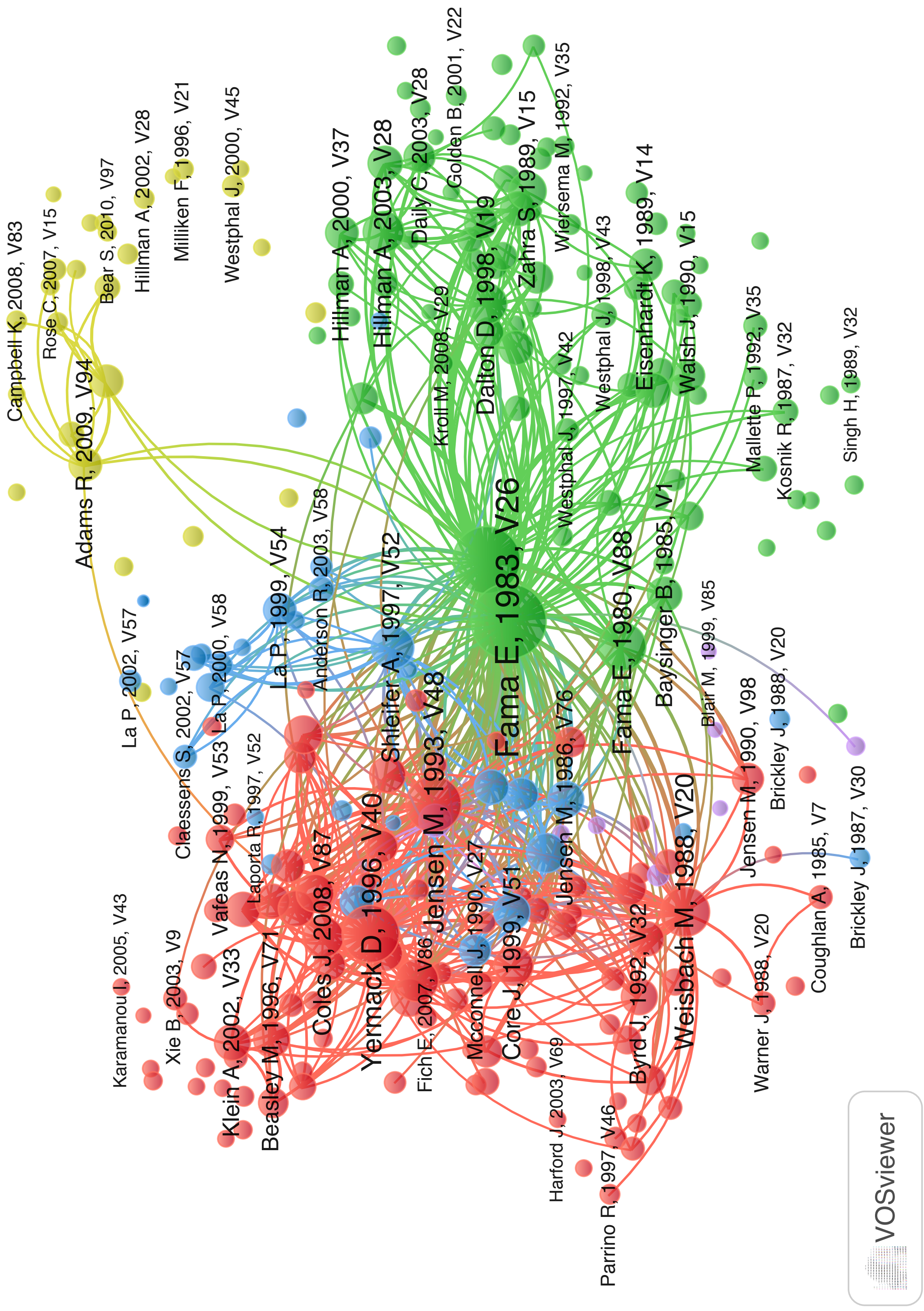
Reference	Times cited	Reference	Times cited	Reference	Times cited
Weisbach M, 2003, V9	232	Klein A, 1998, V41	159	Warner J, 1988, V20	101
Adams R, 2007, V62	215	Hambrick D, 1984, V9	158	Kosnik R, 1987, V32	101
Byrd J, 1992, V32	214	Mcconnell J, 1990, V27	155	Davis G, 1991, V36	99
Linck J, 2008, V87	212	Westphal J, 1999, V42	154	Cotter J, 1997, V43	98
Forbes D, 1999, V24	211	Dechow P, 1996, V13	152	Harris M, 2008, V21	98
Pfeffer J, 1972, V17	209	Shivdasani A, 1999, V54	151	Claessens S, 2002, V57	98
Lipton M, 1992, V48	206	Brickley J, 1994, V35	148	Farrell K, 2005, V11	98
Adams R, 2009, V94	205	Westphal J, 1995, V40	145	La P, 2002, V57	96
La P, 1999, V54	205	Finkelstein S, 1994, V37	141	Rediker K, 1995, V16	96
Carter D, 2003, V38	202	Vafeas N, 1999, V53	141	Pettigrew A, 1992, V13	96
Eisenhardt K, 1989, V14	201	White H, 1980, V48	134	Kaplan S, 1990, V27	95
Rosenstein S, 1990, V26	201	Bhagat S, 1999, V54	127	Boyd B, 1995, V16	95
Shleifer A, 1986, V94	200	Dimaggio P, 1983, V48	127	Westphal J, 1998, V43	92
Johnson J, 1996, V22	200	Shivdasani A, 1993, V16	127	Donaldson L, 1991, V16	91
Fich E, 2006, V61	200	Brickley J, 1997, V3	127		

Table 7: Most Cited References per period

1958 - 1991		1992 - 2005		2006 - 2017	
Reference	N	Reference	N	Reference	N
Mace ML, 1971, Directors Myth Reali	25	Fama EF, 1983, V26, P301, J Law Econ	166	Fama EF, 1983, V26, P301, J Law Econ	696
Pfeffer J, 1972, V17, P218, Admin Sci Quart	15	Jensen MC, 1976, V3, P305, J Financ Econ	137	Jensen MC, 1976, V3, P305, J Financ Econ	693
Koontz H, 1967, Board Directors Effe	10	Weisbach MS, 1988, V20, P431, J Financ Econ	131	Yermack D, 1996, V40, P185, J Financ Econ	487
Zald MN, 1969, V75, P97, Am J Sociol	8	Fama EF, 1980, V88, P288, J Polit Econ	96	Jensen MC, 1993, V48, P831, J Financ	422
Berle AA, 1932, Modern Corporation P	8	Lorsch J, 1989, Pawns Potentates Rea	80	Pfeffer J, 1978, External Control Org	303
Herman ES, 1981, Corporate Control Co	8	Jensen MC, 1993, V48, P831, J Financ	77	Hillman AJ, 2003, V28, P383, Acad Manage Rev	298
Vance SC, 1983, Corporate Leadership	8	Yermack D, 1996, V40, P185, J Financ Econ	71	Shleifer A, 1997, V52, P737, J Financ	290
Brown CC, 1976, Putting Corporate Bo	7	Baysinger BD, 1985, V1, P101, J Law Econ Organ	69	Weisbach MS, 1988, V20, P431, J Financ Econ	276
Fama EF, 1983, V26, P301, J Law Econ	7	Pfeffer J, 1978, External Control Org	67	Hermalin BE, 1998, V88, P96, Am Econ Rev	271
Fama EF, 1980, V88, P288, J Polit Econ	7	Hermalin BE, 1988, V19, P589, Rand J Econ	64	Fama EF, 1980, V88, P288, J Polit Econ	266
Mizruchi MS, 1983, V8, P426, Acad Manage Rev	7	Jensen MC, 1990, V98, P225, J Polit Econ	63	Coles JL, 2008, V87, P329, J Financ Econ	243
Vance SC, 1964, Boards Directors Str	7	Rosenstein S, 1990, V26, P175, J Financ Econ	62	Core JE, 1999, V51, P371, J Financ Econ	239
Vance SC, 1968, Corporate Director C	5	Zahra SA, 1989, V15, P291, J Manage	60	Gompers P, 2003, V118, P107, Q J Econ	234
Jensen MC, 1976, V3, P305, J Financ Econ	5	Byrd JW, 1992, V32, P195, J Financ Econ	60	Dalton DRR, 1998, V19, P269, Strategic Manage J	224
Stone CD, 1975, Where The Law Ends	5	Mace ML, 1971, Directors Myth Reali	60	Weisbach MS, 2003, V9, P7, Ec Policy Rev	215
Mace ML, 1976, V54, P48, Harv Bus Rev	5	Morck R, 1988, V20, P293, J Financ Econ	59	Adams RB, 2007, V62, P217, J Financ	213
Selznick P, 1949, Tva Grass Roots	5	Berle AA, 1932, Modern Corporation P	56	Klein A, 2002, V33, P375, J Account Econ	212
Pfeffer J, 1973, V18, P349, Admin Sci Quart	5	Kosnik RD, 1987, V32, P163, Admin Sci Quart	55	Linck JS, 2008, V87, P308, J Financ Econ	209
Juran JM, 1966, Corporate Director	5	Shivdasani A, 1993, V16, P167, J Account Econ	53	Adams RB, 2009, V94, P291, J Financ Econ	203
Walkling RA, 1984, V15, P54, Rand J Econ	4	Brickley JA, 1994, V35, P371, J Financ Econ	52	Beasley MS, 1996, V71, P443, Account Rev	203
Galbraith JK, 1967, New Ind State	4	Hermalin BE, 1991, V20, P101, Financ Manage	49	Jensen MC, 1986, V76, P323, Am Econ Rev	202
Zald MN, 1967, V73, P261, Am J Sociol	4	Pfeffer J, 1972, V17, P218, Admin Sci Quart	47	Fich EM, 2006, V61, P689, J Financ	196
Kesner IF, 1986, V29, P789, Acad Manage J	4	Demsetz H, 1985, V93, P1155, J Polit Econ	47	Carter DA, 2003, V38, P33, Financial Rev	193
Zeitlin M, 1974, V79, P1073, Am J Sociol	4	Baysinger BD, 1990, V15, P72, Acad Manage Rev	47	Zahra SA, 1989, V15, P291, J Manage	193
Pfeffer J, 1978, External Control Org	4	Shleifer A, 1986, V94, P461, J Polit Econ	45	Morck R, 1988, V20, P293, J Financ Econ	192
Waldo CN, 1985, Boards Directors	3	Kosnik RD, 1990, V33, P129, Acad Manage J	41	Forbes DP, 1999, V24, P489, Acad Manage Rev	189
Salancik GR, 1980, V23, P653, Acad Manage J	3	Gilson SC, 1990, V27, P355, J Financ Econ	40	Boone AL, 2007, V85, P66, J Financ Econ	182
Thompson JD, 1967, Org Action	3	Vance SC, 1983, Corporate Leadership	40	LaPorta R, 1999, V54, P471, J Financ	181
Wagner WG, 1984, V29, P74, Admin Sci Quart	3	Eisenhardt KM, 1989, V14, P57, Acad Manage Rev	39	Berle AA, 1932, Modern Corporation P	166

The first approximation to the analysis of the intellectual framework can be performed visualizing a map of co-cited references (Figure 12). At first sight, this map shows the centrality of a few works in the global landscape of references. This articles set an intellectual framework around the Agency Theory for many analyses (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976) and, consistently, are a reference as we found previously amongst most cited references. The map also describes significant groups of contributions pivoting around other seminal works.

Figure 12: Co-citation references map



Once we have an overall picture, it is necessary to identify the big areas that have been configured via the above-mentioned co-citations. We show a list of the first 50 co-cited references in Table 8. Thus, we performed an exploratory factor analysis for the top 250 works in the rank of co-cited references with principal components analysis as extraction method. We specify factors with an eigenvalue over 1, and varimax rotation to fit the references to the factors. The analysis provided five factors that explain over 96% of the variance. For the analysis if the factors and references, we considered those loadings above 0.7 as core contributors to the factor, whereas those below 0.32 were taken into account (Diez-Vial & Montoro-Sanchez, 2017; Vogel & Güttel, 2012). We weighted the contribution of the references according to their loadings in each factor. For the characterization of the factor, we took those references clearly linked to one of the factors extracted, and examined the group of references for every factor to find similarities in theories, topics or approaches. Since this process may lead to some subjectivity bias, we double-checked this process with a parallel examination (See Total Variance Explained and Rotated Component Matrix in Appendix Tables 3 and 4).

Table 8: Top co-cited references

Reference A	Reference B	Times co-cited
Fama E, 1983, V26	Jensen M, 1976, V3	593
Fama E, 1983, V26	Jensen M, 1993, V48	319
Fama E, 1983, V26	Yermack D, 1996, V40	314
Fama E, 1980, V88	Fama E, 1983, V26	308
Jensen M, 1993, V48	Yermack D, 1996, V40	294
Fama E, 1980, V88	Jensen M, 1976, V3	239
Fama E, 1983, V26	Weisbach M, 1988, V20	237
Jensen M, 1976, V3	Yermack D, 1996, V40	222
Jensen M, 1993, V48	Jensen M, 1976, V3	218
Fama E, 1983, V26	Shleifer A, 1997, V52	194
Jensen M, 1976, V3	Shleifer A, 1997, V52	183
Weisbach M, 1988, V20	Yermack D, 1996, V40	179
Dalton D, 1998, V19	Fama E, 1983, V26	168
Jensen M, 1976, V3	Weisbach M, 1988, V20	162
Fama E, 1983, V26	Morck R, 1988, V20	159
Fama E, 1983, V26	Hermalin B, 1998, V88	159
Eisenberg T, 1998, V48	Yermack D, 1996, V40	158
Fama E, 1983, V26	Zahra S, 1989, V15	158
Jensen M, 1993, V48	Weisbach M, 1988, V20	154
Fama E, 1983, V26	Hillman A, 2003, V28	151
Jensen M, 1993, V48	Lipton M, 1992, V48	151

Reference A	Reference B	Times co-cited
Jensen M, 1976, V3	Morck R, 1988, V20	150
Dalton D, 1998, V19	Jensen M, 1976, V3	143
Lipton M, 1992, V48	Yermack D, 1996, V40	142
Beasley M, 1996, V71	Fama E, 1983, V26	142
Fama E, 1983, V26	Weisbach M, 2003, V9	140
Hillman A, 2003, V28	Jensen M, 1976, V3	139
Core J, 1999, V51	Fama E, 1983, V26	137
Jensen M, 1986, V76	Jensen M, 1976, V3	135
Jensen M, 1976, V3	Zahra S, 1989, V15	135
Morck R, 1988, V20	Yermack D, 1996, V40	135
Baysinger B, 1985, V1	Fama E, 1983, V26	134
Eisenhardt K, 1989, V14	Fama E, 1983, V26	134
Coles J, 2008, V87	Fama E, 1983, V26	134
Fama E, 1983, V26	Jensen M, 1986, V76	132
Coles J, 2008, V87	Yermack D, 1996, V40	131
Core J, 1999, V51	Yermack D, 1996, V40	130
Coles J, 2008, V87	Linck J, 2008, V87	130
Eisenhardt K, 1989, V14	Jensen M, 1976, V3	129
Baysinger B, 1990, V15	Fama E, 1983, V26	127
Hermalin B, 1998, V88	Yermack D, 1996, V40	126
Fama E, 1983, V26	Lipton M, 1992, V48	124
Byrd J, 1992, V32	Weisbach M, 1988, V20	124
Boone A, 2007, V85	Linck J, 2008, V87	122
Fama E, 1983, V26	Shleifer A, 1986, V94	122
Fama E, 1983, V26	Pfeffer J, 1972, V17	121
Fama E, 1980, V88	Jensen M, 1993, V48	121
Fama E, 1983, V26	Johnson J, 1996, V22	120
Fama E, 1983, V26	Linck J, 2008, V87	120
Demsetz H, 1985, V93	Fama E, 1983, V26	120

The first factor explains 20.129% of the variance. The top loadings point to references that refer to two main elements: agency theory issues, and theoretical or integrative models. The independence, outside directors (Hermalin & Weisbach, 1998; Klein, 2002; Weisbach, 1988; Westphal, 1998), ownership (La Porta, Lopez-De-Silanes, & Shleifer, 1999; Morck, Shleifer, & Vishny, 1988), composition (Hermalin & Weisbach, 2003; Yermack, 1996) and compensation (Murphy, 1999) are subjects of study with high weight in this factor, and have been largely discussed in literature, with a clear impact on codes and regulation. Besides these issues, an agency-stewardship integrative model is also provided (Zahra & Pearce II, 1989). It is interesting that the willingness to provide and integrate different theories approaching the board of directors is at the core and for decades in the research literature, despite most of the works commonly opted for a unique way.

The second factor is mostly composed of groundings for the intellectual approach given by the Agency Theory. Thus, managerial behavior and ownership structure are depicted (Fama & Jensen, 1983; Jensen & Meckling, 1976), on the basis of the assessment of the theory and their problems (Eisenhardt, 1989; Fama, 1980). CEO duality (Boyd, 1995; Finkelstein & D'aveni, 1994) and compensation (Finkelstein & Hambrick, 1989; Tosi & Gomez-mejia, 1989; Zajac & Westphal, 1994) have been addressed as classical subtopics and paradigmatic questions on the grounds of this theoretical context. We think that this factor weights high because it provides the theoretical basis for the great amount of works that deal with agency theory issues, whose particularization is better explained in factor 1. Besides, the existence of two factors whose content, in terms of weight elements, is that close, may indicate that these nuclei have been formed in different periods of time. This would manifest itself in small differences, in approach or in treated topics that would require slightly different intellectual support.

The third factor explains 19.47% of the total variance and the top contributors centered their works in topics related to diversity, in terms of gender or ethnic. Women on board are approached considering critical mass (what it can be considered as a quota) and innovation (Torchia, Calabrò, & Huse, 2011), in connection to Corporate Social Responsibility and firm reputation (Bear, Rahman, & Post, 2010), or related to size and strategic change (Goodstein, Gautam, & Boeker, 1994). Predictors of their presence in boardrooms are also studied (Hillman, Shropshire, & Cannella, 2007). But we found groundings for diversity in a wider perspective as well. Board diversity, including ethnic diversity, is analyzed in relation to firm value, including a human capital view (Carter, Simkins, & Simpson, 2003), or from a signaling and behavioral theories (Miller & Del Carmen Triana, 2009). This is consistent with the analysis we made out of the keywords, where gender in particular and diversity in general ranked high. The great number of articles referring to diversity related topics is corresponded with a proper and strong grounding factor in terms of supporting references. In this factor is included relevant work for multi-directorship issues (Fich & Shivdasani, 2006), experience, CEO selection and change in corporate strategy (Westphal & Fredrickson, 2001).

The fourth factor has is centered in the board composition (Baysinger & Hoskisson, 1990; Bebchuk & Cohen, 2005; Certo, 2003; Daily & Dalton, 1994; Mallette & Fowler, 1992), but in includes the references supporting the resource dependence model (Boyd, 1990;

Hillman, Cannella, & Paetzold, 2000), what suggest a new orientations for 'classical' problems in literature on board of directors. That might be behind the analysis of the size of the boards (Coles, Daniel, & Naveen, 2008), where there is also room for a join analysis with some human capital variables (tenure, experience).

The fifth factor open the theoretical scope to other perspectives such as the stewardship theory (Bebchuk, Fried, & Walker, 2002; Davis, Schoorman, & Donaldson, 1997), property rights view (Demsetz & Lehn, 1985), an integrative theory (Lynall, Golden, & Hillman, 2003) or institutional perspectives (Judge & Zeithaml, 1992). Board characteristics where human capital and diversity play a relevant role (Kesner, 1988), experience considered along with board independence (Kosnik, 1987), and transparency, information and interlocks (Gul, Srinidhi, & Ng, 2011; Haunschild & Beckman, 1998) are also relevant in this factor. Issues regarding transparency have been recently addressed through additional disclosures in companies' reporting on recommendations compliance, and they involve other areas of governance like general meetings. As a result, we might say that this factor gathers other theoretical landscapes whereas studying classical issues. Providing the year of publication, they stood in the research backlog for as much as many years as other researches framed under the agency theory, but further developments did not pay the same attention.

As it may be checked, the majority of references that weight the most in these factors have been written in the second stage we identified at the beginning of our analysis. This reinforces the idea of a 'foundations stage' in the evolution of the literature on boards that should be addressed in the future. Regarding the theories, it is clear the prevalence of Agency Theory, but this field is already open to deepen in new approaches.

3.3. References Analysis per period

As we previously mentioned, in order to provide a detailed view of the evolution of the research across the different periods of time, we performed the same technique for each one of the periods we identified. In each period, we choose those works that were cited in at list the 5% of the sample (since the number of journals varies significantly among periods, we utilized that threshold to secure the possibility of making this kind of performance and, at the same time, to address the core of the co-cited references).

Period until 1991

There are three factors that explained the 94.88% of the variance (Total Variance Explained and Rotated Component Matrix in Appendix Figure 2, Appendix Tables 5 and

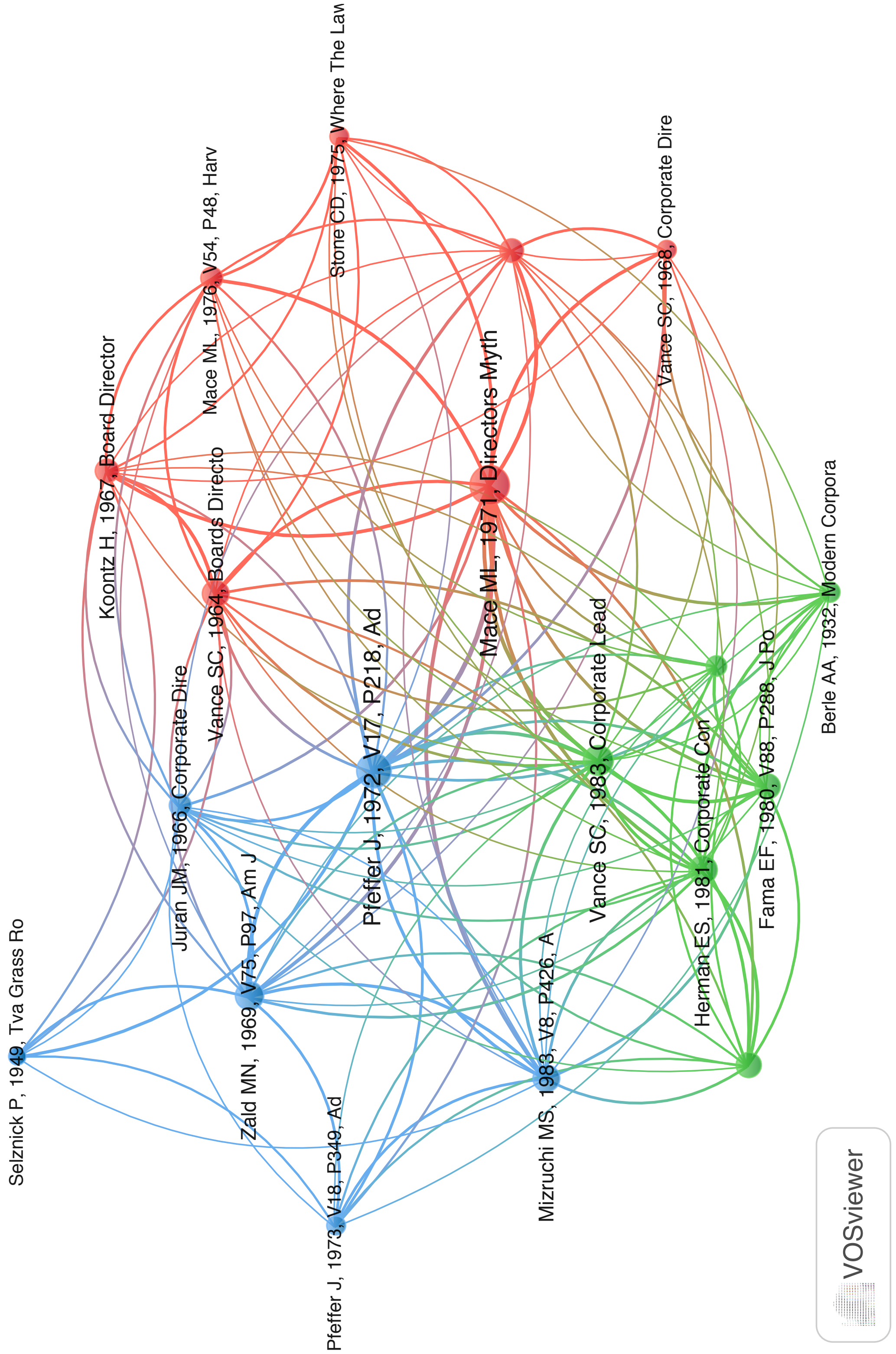
6). The first of them sets the frame in the 'modern' corporation (Berle & Means, 1932) where responsibility has to go beyond what the law is proposing to channel these organizations (Stone, 1975). In this context the board is configured as the main instrument and characterized for this purpose (Brown, 1976; Mace, 1976). This factor contains theoretical foundations for approaching corporation in a context where the institutional configuration, personalized in the board, has to provide answers to new typologies of issues.

The second factor accounts for the 37.65% of the variance. The second factor deepens in the Board, by giving a theoretical foundation to support its power and functions (Zald, 1969), studying its size and composition in the context of organizations that consider their environment (Pfeffer, 1972), as a way to exercise the corporate leadership (Vance, 1983), and establishing a role for corporate directors where is possible to identify a different kind of issues that might affect the organizations such as board meetings functioning and regularity or directors absenteeism (Vance, 1968).

The third factor explained the 10.53% of the variance of the references considered. Based on the Agency Theory, the separation of owner and control (Fama & Jensen, 1983) leads to agency problems in the firms (Fama, 1980), and is theorized around the potential conflict and costs that may come out of managerial behavior given a certain ownership structure (Jensen & Meckling, 1976). In this context, size, composition and functions of the board (Pfeffer, 1973) serve to exert control and power at corporations (Herman, 1981; Mizruchi, 1983).

These factors characterize the references of these periods, and the articles, around three pillars: the characteristics of the corporation, where there is an increasing separation of ownership and management, the institutionalization of the board as the key element in this situation, and the theoretical foundation of the Agency Theory. From a formal point of view, in this period there are a high proportion of books among cited references, and, although there are a number of examples, the contents has a high loading of theoretical contribution. Visualizing the co-cited references (Figure 13), we observe that they relate in a quite close relationship, accordingly with the bonds that tight the factors of this period.

Figure 13: Cited References co-citation map 1958 - 1991



Period 1992 – 2005

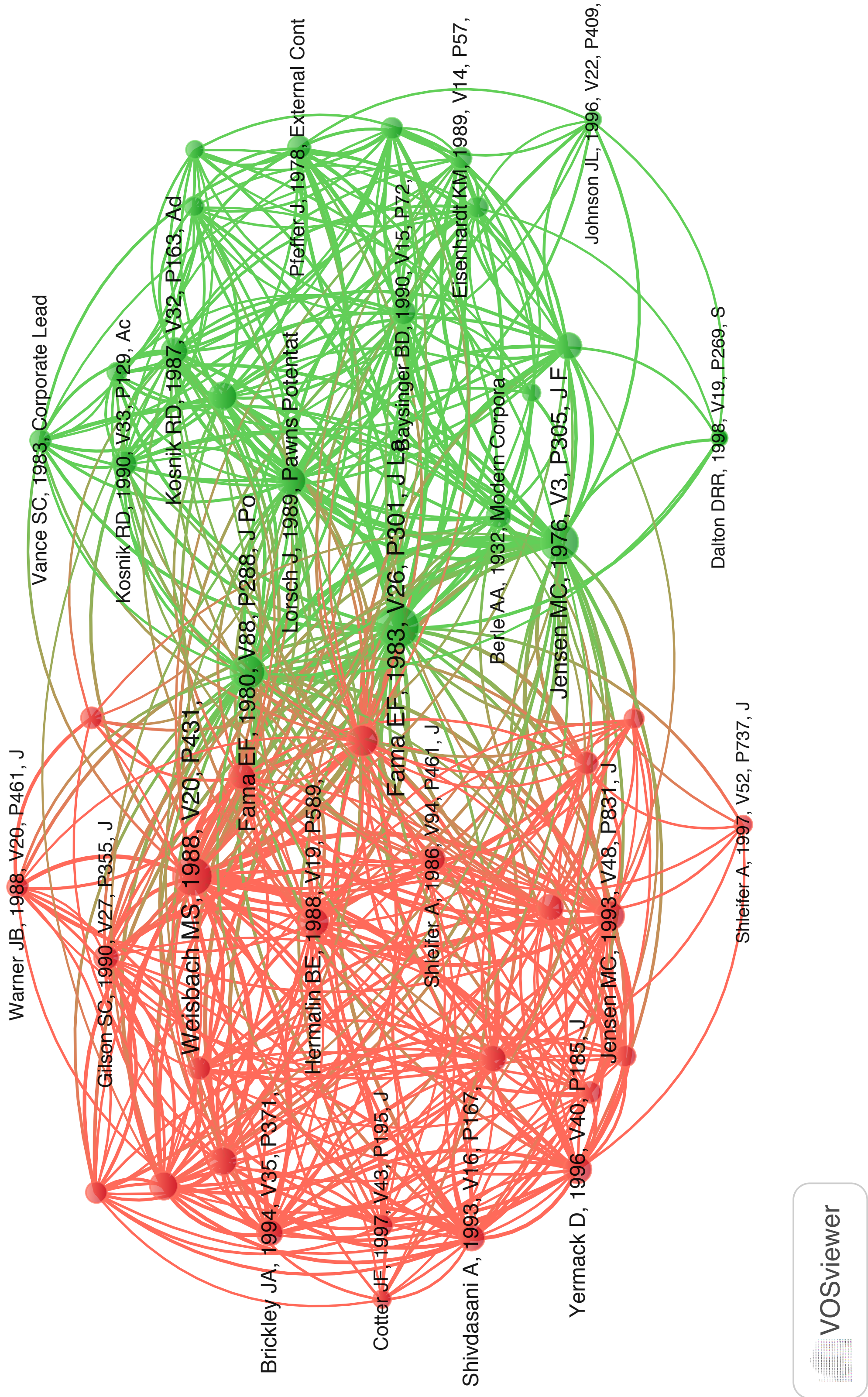
As in the previous period of time, we found three factors with an eigenvalue over 1 that explained 95.87% of the variance (See Total Variance Explained and Rotated Component Matrix in Appendix Tables 7 and 8). The first factor is mainly based on theoretical and review works to bring some key issues like the board composition. Again, the reckoning of a modern corporation (Berle & Means, 1932), seeds the fields for the need of a proper corporate governance (Shleifer & Vishny, 1997), where the board of directors plays a key role, is the core theme of the literature and aims to an ambitious research agenda (Dalton, Daily, Ellstrand, & Johnson, 1998; Johnson, Daily, & Ellstrand, 1996), in the context framed by the Agency Theory (Eisenhardt, 1989). Under this view, some of the main problems such as the board composition (B. Baysinger & Hoskisson, 1990; Kosnik, 1990), the CEO duality (Finkelstein & D'aveni, 1994), and, generally speaking, the relationship between the board and the management (Mizruchi, 1983) are addressed.

The second factor explains 41.54% of the variance. Founded in the theory that gives relevance to the agency costs occurring in the firm (Jensen, 1986), the board composition (Baysinger & Butler, 1985; Hermalin & Weisbach, 1991) and formation (Hermalin & Weisbach, 1998), it centers the question of board independence through outside directors in the monitoring role (Byrd & Hickman, 1992) and before special circumstances such as tender offers (Cotter, Shivdasani, & Zenner, 1997) or the adoption of poison pills (Brickley, Coles, & Terry, 1994).

The third factor explains 10.63% of the variance. The references included in this group give the core intellectual structure to support Agency issues. From the basic understanding of the separation between ownership and control (Fama & Jensen, 1983) and the Agency problems that the firm faces in that situation (Fama, 1980; Jensen & Meckling, 1976), the boards (Vance, 1983), the directors (Mace, 1971), their power (Lorsch, 1989), and their size and composition (Pfeffer, 1972; Yermack, 1996) are studied and related to firm performance (Zahra & Pearce II, 1989). Besides, there is a small room for human capital through the experience of directors (Kosnik, 1987).

We may summarize that the factors give the Agency Theory as the founding to address the main identified problems in this realm. Thus, in this period there is a great presence of the board composition and a concern for the independence of the boards, given a determined ownership structure. Human capital barely appears, and, if so, their usual variables, such as directors' experience, are approached from the mentioned intellectual background. We may visualize how the previous core founding for this topic deepens in the main concepts, which is depicted in close relationships, and, at the same time, in keeping the theoretical vision on the basis of traditional Agency-influenced works, now placed at the center of the network of the main co-cited references. The fact of nodes connecting to many other nodes, shows the closeness of the group of articles in a determined framework (Figure 14).

Figure 14: Cited References co-citation map 1992 – 2005



Period 2006-2017

In the last period of time of our research, 2006-2017, we found five factors with an eigenvalue over 1, explaining 93.55% of the total variance (See Total Variance Explained and Rotated Component Matrix in Appendix Tables 9 and 10).

The first factor explains 23.01% of the variance. This factor is offers the framework of the Agency Theory in the context of the corporate world, and where the board plays a key role. In the firms, given the ownership structure (La Porta, Lopez-De-Silanes, & Shleifer, 1999), the separation of the ownership and control (Fama & Jensen, 1983) originates agency costs (Jensen & Meckling, 1976), failures in control (Jensen, 1993), that the Board of Directors should approach efficiently (Yermack, 1996) and independently (Weisbach, 1988), to deliver performance within an integrative perspective of its roles (Zahra & Pearce II, 1989). This integrative view includes perspectives of Resource Dependence Theory (A. Hillman, Cannella, & Paetzold, 2000; Hillman & Dalziel, 2003).

The second factor explains 19.75% of the variance of the references of this period. It is centered in the board structure. Thus, the determinants of the board structure are analyzed (Linck, Netter, & Yang, 2008), considering the potential problem of endogeneity (Hermalin & Weisbach, 1998) and the role of the CEO (Shivdasani & Yermack, 1999) in the process of election of the directors, where the characterization and structuration of the board and the audit committee through independence give better results (Klein, 2002).

The third factor explains 17.65% of the variance in this period. It is based on the discussion on the size of the boards, compensation and the ownership structure. Again, the grounding if the agency problems already described (Jensen, 1986), the topic of the size a board should have and what are its determinants is studied (Coles et al., 2008; Eisenberg, Sundgren, & Wells, 1998). Also, the importance of the remuneration issue, on a given board composition, is brought up here (Hermalin & Weisbach, 1991). Finally, diversity in a broader perspective helps to build the board composition needed to deliver firm value (Carter, Simkins, & Simpson, 2003; Erhardt, Werbel, & Shrader, 2003).

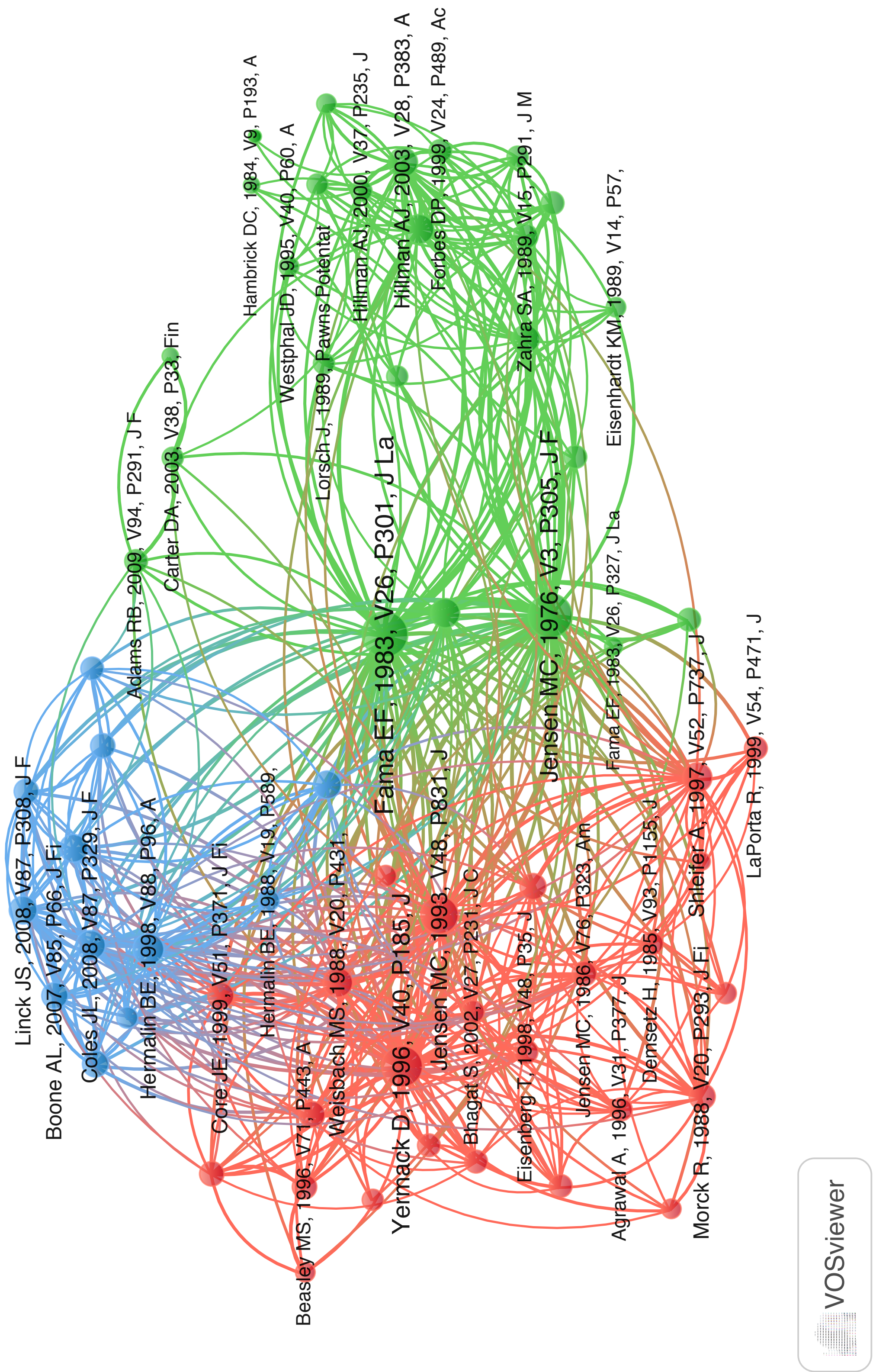
The fourth factor explains 16.82% of the variance and is centered in the processes and effectiveness within the board. Thus, based on the Agency problems faced by the firms (Fama, 1980), the authors discuss dedication (Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006) in the context of the board as a strategic decision-making group (Forbes & Milliken, 1999), where cognitive bases and values determine choices (Hambrick & Mason, 1984) and interlocks might have a direct effect (Mizruchi, 1996).

The last factor of this period explains 16.31% of the variance and deals with the board independence (Rosenstein & Wyatt, 1990) in the context of corporate control (La Porta, Lopez ‑ de ‑ Silanes, Shleifer, & Vishny, 1998; Shleifer & Vishny, 1986).

Within this period we found three main elements. The first, Agency Theory framework still prevails in foundation and in the topics subject to analysis. The second, new perspectives gain track, i.e. Resource Dependence. Third, subtopics like diversity, effectiveness and, slightly, human capital related ones such as experience, are addressed. We already perceived this in the analysis of the keywords, and here we find the reference foundation for those studies. Therefore, as we foresee in the global picture of the topic of study, the last stage of time we identified can be considered as maturation phase, when the intellectual backgrounds diversify and a new variety of themes happen to be investigated.

Consistently with this analysis and the one performed for the keywords, the visualization of the co-cited references of this period shows that there are new topics and approaches making distanced groups of articles (Figure 15).

Figure 15: References co-citation map. 2006 - 2017



4. CONCLUSIONS

The board of directors has been a key topic in the research field of corporate governance for years. Many articles addressed the main themes surrounding this topic: performance, board composition, board size, etc. In this article, we described and mapped the research on the topic realized up to 2017 in 3,021 research articles.

Based on the year of publication, we can identify several periods of time, probably triggered or influenced by major events like the Cadbury Report, the spreading of Codes of Governance, or the impulse of Regulators and International Organizations and the incorporation of new journals to the study of the topic. These periods would be: up to 1991, from 1992 to 2005, and 2006 onwards. The first would show the initial grounding of the topic. The second one would deploy in parallel to the codes implementation in many countries and the raising interest on corporate governance. The third one would be built upon the previous seeding and grounding stages, spreading the analyses to a broader range of topics as a sign of maturity.

The topic of the board of directors has been addressed in journals of several scientific disciplines, and that includes management or finance, but also accounting ethics, psychology, law or sociology. That shows a multidisciplinary interest from the point of view of the editors. Despite the number of published works, 41 of these journals concentrate 52% of the total. Distribution of articles is consistent with the variety of approaches and the presumed evolution of the studies.

As in other research arenas, although there are a great number of contributors, only a few of them recurrently produced studies during all these years. Similarly, a small group of them concentrates citation count. That is the case of Dalton, Westphal, Daily, Zajac, or Zahra amongst others. Nevertheless, is remarkable the way this group is consistently referred across the literature. These conform a true nuclear set of knowledge or reference point for the topic.

Across the references quoted we may note the main theories behind their approaches. Despite several theories, such as the institutional theory or the Resource Dependent theory, framed the investigation of the articles, the Agency Theory constitutes the core intellectual framework for many works on the board of directors. We mapped a geographical distribution of researches where US, UK-Commonwealth, Continental Europe and Asia group investigations, and US research institutions are highly represented.

Journals have been co-cited mostly based on close research arenas. We may identify four big groups. The first one groups business and management journals, the second pivots around finance, the third is centered in accounting, and the fourth on law studies. Corporate Governance and Ethics journals serve as a bridge among different areas.

The analysis of the abstracts and the keywords provides some facts. Regarding the topics related to the board of directors, gender diversity in all its forms is at the top of the ranks. Although it relatively recent in the literature it is clearly a trending issue for research. Board structure, CEO compensation and duality, and firm performance are commonly approached to check different hypotheses as well.

As regards to the cited references, we provided two analyses: First, the overall picture, and second, the study of each period. The principal component analysis of 250 top ranked co-cited references provides a clear picture of the intellectual framework and is consistent with the topics and angles detected in the process of our methodology. This way, we found five main factors that build most of the research on board of directors: the agency theory, main topics based on that (CEO duality, ownership structure, boards' independence, compensation), diversity (setting the focus on gender), resource dependence views, strategy and other angles on composition, and other theoretical perspectives. The majority of the references were originated in the second stage of publications, configuring it period of consolidation of groundings and topics. Despite the prevalence of Agency related matters, there is also room for new or integrative approaches. Thus, stewardship, institutional, or resource dependence models provide are drawn in this context, supporting a number of articles. The detail provided by performing the analysis in the different periods of time supports the idea of a maturation process in the literature, and confirms the previous findings. The first period is characterized by early foundations of the discipline of corporate governance, where it is reckoned the separation of ownership and control, in the context of so-called 'modern organizations'. The Agency Theory gives the Board a central role solving the conflicts described at that time. Some of the issues raised are developed during the second stage. Thus, board composition, independence, ownership structure, etc., configure a solid basis of references for the second period. Finally, the third period shows that maturation in the topic comes through a broadening in the intellectual perspective, including integrative ways for different theories, and the addressing of recent subtopics such as diversity. Human capital related topics, although at a slight approximation, have a new vision, but they are still under a huge influence of Agency Theory.

The Codes of Governance have an underlying presence in the research. First, they triggered interest, investigation. Second, the measures and recommendations gathered in most of them are very often studied in the articles, and, reversely, may impact on their evolution. That is the case of CEO duality, independence, or compensation, among others. Although the study of the influence of human capital in boards has been pursued under different aspects, it is still very limited in terms of the number of articles, themes or subtopics (e.g. experience categorization, government skills missing).

The mapping of the intellectual structure and quantitative study of the topic we made has some implications for future research. Besides being a good starting point to cover gaps and new angles of investigation, it provides the necessary weight to perform further meta-analyses. For the practice of corporate governance, this study gives ideas to incorporate in the work of board of directors, considering the main and relevant empirical works that influence the research, codes and regulation.

Our contribution provides a solid basis to perform a meta-analysis on the board of directors since it delivers a deeper understanding of the qualified contributions identified that shaped the investigation over the years. As the main angles and approaches to the analysis of the board have been identified throughout this article, the gaps and the lack of deep understanding from other points of view, and some topics related for further research appear clearer for scholars. Amongst them we may identify some related to human capital and codes relationship, or human capital and the board, diversity human capital. Experience, knowledge, tenure, skills have already been approached but there are perspectives still low developed. We also would like to mention training, combined with digital strategies or ethics as themes to be included in future studies. All of them could lean also in qualitative information or configurational comparative techniques to a greater extent, helping to increase the variety in approaches and topics that would be shown in the core references of upcoming publications. We acknowledge the difficulties to obtain information suitable for research in issues regarding actual inside board dynamics, their relation to market and nonmarket strategy definition or selection-evaluation processes relationship, but we think that it would be worthwhile as to analyze and improve government of organizations beyond their corporate governance. It can be interesting for future researches to employ bibliographic coupling technique to assess potential trends in recent research.

Likewise in most researches of this kind, our techniques did not link the references to places where they were mentioned within the articles (e.g. introduction, methodology, results). Although their position within the articles could drive a deeper understanding, a natural language processing software should be utilized so as to analyze the actual meaning in a sample of articles as big as ours, while reducing the level of subjectivity. Despite that, this sort of study could be approached when performing a meta-analysis of a reduced, meaningful number of articles. Although we followed existing literature in the methodological steps to obtain and process the source of data, we concede that limiting to one database could let some articles out of the analysis. To avoid a significant number of issues that might appear in such a case, we chose the one that was utilized alone in the vast majority of the studies. Finally, it may be interesting to analyze the role and characteristics of the published works in leading journals, considering their impact on the evolution of the research topic.

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APPENDIX

Appendix Table 1: List of Web of Sciences categories that were filtered due to unrelated contents of their articles

Dermatology	Reproductive Biology	Infectious Diseases
Health Care Sciences Services	Toxicology	Computer Science Theory Methods
Endocrinology Metabolism	Surgery	Information Science Library Science
Genetics Heredity	Optics	Developmental Biology
Medicine General Internal	Chemistry Multidisciplinary	Ergonomics
Ophthalmology	Critical Care Medicine	Geochemistry Geophysics
Anesthesiology	Nuclear Science Technology	Instruments Instrumentation
Nutrition Dietetics	Biology	Materials Science Ceramics
Respiratory System	Biotechnology Applied Microbiology	Mathematical Computational Biology
Clinical Neurology	Criminology Penology	Medical Laboratory Technology
Health Policy Services	Entomology	Mineralogy
Nursing	Substance Abuse	Mining Mineral Processing
Pediatrics	Engineering Biomedical	Oceanography
Education Educational Research	Food Science Technology	Physics Fluids
Radiology Nuclear Medicine Medical Imaging	Forestry	Engineering Aerospace
Gerontology	Gastroenterology Hepatology	Astronomy Astrophysics
Oncology	Geosciences Multidisciplinary	Biodiversity Conservation
Emergency Medicine	Hematology	Polymer Science
Orthopedics	Horticulture	Soil Science
Urology Nephrology	Materials Science Multidisciplinary	Psychology Mathematical
Dentistry	Medical Ethics	Psychology Psychoanalysis
Oral Surgery Medicine	Microbiology	Mathematics
Geriatrics Gerontology	Pharmacology Pharmacy	Psychiatry
Metallurgy Metallurgical Engineering	Plant Sciences	Cardiac Cardiovascular Systems
Medicine Legal	Rheumatology	Psychology
Veterinary Sciences	Thermodynamics	Materials Science Paper Wood
Pathology	Acoustics	Telecommunications
Zoology	Agriculture Dairy Animal Science	Psychology Educational
Medicine Research Experimental	Archaeology	Neurosciences
Chemistry Physical	Immunology	Education Scientific Disciplines
Otorhinolaryngology	Materials Science Characterization Testing	Family Studies
Rehabilitation	Public Environmental Occupational Health	
Obstetrics Gynecology	Computer Science Hardware Architecture	

Appendix Table 2: Examples of corrections of authors' misspelling in registers

BERLE A,Berle AA	Wang J,Wang J	Zhang J,Zhang J
BERLE AA,Berle AA	Wang J.,Wang J	Zhang J.,Zhang J
BERLE ADOLF A.,Berle AA	Wang JC,Wang JC	Zhang JH,Zhang JH
BERLE ADOLPH A.,Berle AA	Wang JE,Wang JE	Zhang JJ,Zhang JJ
BERLE JR ADOLF A.,Berle AA	Wang JL,Wang JL	Zhang JQ,Zhang JQ
BERLE JR. ADOLF A.,Berle AA	Wang JS,Wang JS	Zhang JY,Zhang JY
BERLE,Berle AA	Wang JW,Wang JW	
Berle A,Berle AA	Wang JY,Wang JY	ALEXANDER C,Alexander C
Berle A. A,Berle AA		ALEXANDER CA,Alexander CA
Berle A. A.,Berle AA	Williamson O,Williamson OE	ALEXANDER CR,Alexander CR
Berle A.,Berle AA	Williamson O. E,Williamson OE	
Berle A.A.,Berle AA	Williamson O. E.,Williamson OE	AGUILERA R,Aguilera RV
Berle AA,Berle AA	Williamson O.,Williamson OE	AGUILERA RV,Aguilera RV
Berle Adolf A,Berle AA	Williamson O.E.,Williamson OE	AGUILERA VR,Aguilera RV
Berle Adolf Augustus,Berle AA	Williamson O.H.,Williamson OH	
Berle Jr A. A,Berle AA	Williamson OE,Williamson OE	ADAMS RB,Adams RB
Berle Jr A. A.,Berle AA	Williamson Oliver E.,Williamson OE	ADAMS RENEE B.,Adams RB
Berle Jr A.A.,Berle AA	Williamson Oliver,Williamson OE	ADAMS RJ,Adams RJ
Berle Jr Adolf A,Berle AA	Williamson QE,Williamson OE	ADAMS RL,Adams RL
Berle Jr Adolf A.,Berle A		
Berle,Berle AA		

Some authors were misspelled at references. Others give different alternatives. There were some that lead to keep the second initial. In this list we show some of the cases we found.

Appendix Table 3: Cited References - Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	50,322	20,129	20,129	50,322	20,129	20,129	50,035	20,014	20,014
2	48,904	19,562	39,690	48,904	19,562	39,690	48,709	19,483	39,497
3	48,675	19,470	59,160	48,675	19,470	59,160	48,477	19,391	58,888
4	47,820	19,128	78,288	47,820	19,128	78,288	47,968	19,187	78,075
5	45,538	18,215	96,504	45,538	18,215	96,504	46,071	18,428	96,504
6	0,647	0,259	96,762						
7	0,608	0,243	97,006						
8	0,591	0,236	97,242						
9	0,557	0,223	97,465						
10	0,544	0,218	97,682						
11	0,507	0,203	97,885						
12	0,490	0,196	98,081						
13	0,476	0,191	98,272						
14	0,409	0,163	98,435						
15	0,402	0,161	98,596						
16	0,376	0,150	98,746						
17	0,352	0,141	98,887						
18	0,335	0,134	99,021						
19	0,314	0,125	99,147						
20	0,226	0,091	99,237						
21	0,061	0,024	99,262						
22	0,059	0,024	99,285						
23	0,057	0,023	99,308						
24	0,055	0,022	99,330						
25	0,051	0,020	99,351						
26	0,050	0,020	99,371						
27	0,048	0,019	99,390						
28	0,048	0,019	99,409						
29	0,047	0,019	99,428						
30	0,045	0,018	99,445						
31	0,041	0,016	99,462						
32	0,040	0,016	99,478						
33	0,039	0,016	99,493						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
34	0,039	0,015	99,509						
35	0,036	0,014	99,523						
36	0,034	0,014	99,537						
37	0,033	0,013	99,550						
38	0,032	0,013	99,563						
39	0,031	0,012	99,575						
40	0,030	0,012	99,587						
41	0,029	0,012	99,599						
42	0,029	0,012	99,611						
43	0,027	0,011	99,622						
44	0,027	0,011	99,632						
45	0,026	0,010	99,643						
46	0,024	0,010	99,652						
47	0,024	0,010	99,662						
48	0,021	0,008	99,670						
49	0,020	0,008	99,679						
50	0,018	0,007	99,686						
51	0,015	0,006	99,692						
52	0,014	0,006	99,697						
53	0,013	0,005	99,703						
54	0,013	0,005	99,708						
55	0,012	0,005	99,713						
56	0,012	0,005	99,717						
57	0,012	0,005	99,722						
58	0,011	0,005	99,726						
59	0,011	0,004	99,731						
60	0,011	0,004	99,735						
61	0,011	0,004	99,739						
62	0,010	0,004	99,743						
63	0,010	0,004	99,747						
64	0,010	0,004	99,751						
65	0,010	0,004	99,755						
66	0,009	0,004	99,759						
67	0,009	0,004	99,763						
68	0,009	0,004	99,766						
69	0,009	0,004	99,770						
70	0,009	0,003	99,773						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
71	0,009	0,003	99,777						
72	0,008	0,003	99,780						
73	0,008	0,003	99,783						
74	0,008	0,003	99,787						
75	0,008	0,003	99,790						
76	0,008	0,003	99,793						
77	0,008	0,003	99,796						
78	0,008	0,003	99,799						
79	0,007	0,003	99,802						
80	0,007	0,003	99,805						
81	0,007	0,003	99,808						
82	0,007	0,003	99,810						
83	0,007	0,003	99,813						
84	0,007	0,003	99,816						
85	0,007	0,003	99,818						
86	0,006	0,003	99,821						
87	0,006	0,002	99,823						
88	0,006	0,002	99,826						
89	0,006	0,002	99,828						
90	0,006	0,002	99,831						
91	0,006	0,002	99,833						
92	0,006	0,002	99,835						
93	0,006	0,002	99,838						
94	0,006	0,002	99,840						
95	0,005	0,002	99,842						
96	0,005	0,002	99,844						
97	0,005	0,002	99,846						
98	0,005	0,002	99,848						
99	0,005	0,002	99,850						
100	0,005	0,002	99,852						
101	0,005	0,002	99,854						
102	0,005	0,002	99,856						
103	0,005	0,002	99,858						
104	0,005	0,002	99,860						
105	0,005	0,002	99,862						
106	0,005	0,002	99,864						
107	0,004	0,002	99,866						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
108	0,004	0,002	99,867						
109	0,004	0,002	99,869						
110	0,004	0,002	99,871						
111	0,004	0,002	99,872						
112	0,004	0,002	99,874						
113	0,004	0,002	99,876						
114	0,004	0,002	99,877						
115	0,004	0,002	99,879						
116	0,004	0,002	99,881						
117	0,004	0,002	99,882						
118	0,004	0,002	99,884						
119	0,004	0,002	99,885						
120	0,004	0,002	99,887						
121	0,004	0,002	99,888						
122	0,004	0,002	99,890						
123	0,004	0,002	99,891						
124	0,004	0,001	99,893						
125	0,004	0,001	99,894						
126	0,004	0,001	99,896						
127	0,004	0,001	99,897						
128	0,004	0,001	99,899						
129	0,003	0,001	99,900						
130	0,003	0,001	99,901						
131	0,003	0,001	99,903						
132	0,003	0,001	99,904						
133	0,003	0,001	99,905						
134	0,003	0,001	99,907						
135	0,003	0,001	99,908						
136	0,003	0,001	99,909						
137	0,003	0,001	99,911						
138	0,003	0,001	99,912						
139	0,003	0,001	99,913						
140	0,003	0,001	99,914						
141	0,003	0,001	99,916						
142	0,003	0,001	99,917						
143	0,003	0,001	99,918						
144	0,003	0,001	99,919						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
145	0,003	0,001	99,921						
146	0,003	0,001	99,922						
147	0,003	0,001	99,923						
148	0,003	0,001	99,924						
149	0,003	0,001	99,925						
150	0,003	0,001	99,926						
151	0,003	0,001	99,928						
152	0,003	0,001	99,929						
153	0,003	0,001	99,930						
154	0,003	0,001	99,931						
155	0,003	0,001	99,932						
156	0,003	0,001	99,933						
157	0,003	0,001	99,934						
158	0,003	0,001	99,935						
159	0,003	0,001	99,936						
160	0,003	0,001	99,937						
161	0,003	0,001	99,938						
162	0,003	0,001	99,939						
163	0,003	0,001	99,940						
164	0,003	0,001	99,941						
165	0,003	0,001	99,942						
166	0,002	0,001	99,943						
167	0,002	0,001	99,944						
168	0,002	0,001	99,945						
169	0,002	0,001	99,946						
170	0,002	0,001	99,947						
171	0,002	0,001	99,948						
172	0,002	0,001	99,949						
173	0,002	0,001	99,950						
174	0,002	0,001	99,951						
175	0,002	0,001	99,952						
176	0,002	0,001	99,953						
177	0,002	0,001	99,954						
178	0,002	0,001	99,955						
179	0,002	0,001	99,956						
180	0,002	0,001	99,956						
181	0,002	0,001	99,957						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
182	0,002	0,001	99,958						
183	0,002	0,001	99,959						
184	0,002	0,001	99,960						
185	0,002	0,001	99,961						
186	0,002	0,001	99,962						
187	0,002	0,001	99,962						
188	0,002	0,001	99,963						
189	0,002	0,001	99,964						
190	0,002	0,001	99,965						
191	0,002	0,001	99,966						
192	0,002	0,001	99,966						
193	0,002	0,001	99,967						
194	0,002	0,001	99,968						
195	0,002	0,001	99,969						
196	0,002	0,001	99,970						
197	0,002	0,001	99,970						
198	0,002	0,001	99,971						
199	0,002	0,001	99,972						
200	0,002	0,001	99,973						
201	0,002	0,001	99,973						
202	0,002	0,001	99,974						
203	0,002	0,001	99,975						
204	0,002	0,001	99,976						
205	0,002	0,001	99,976						
206	0,002	0,001	99,977						
207	0,002	0,001	99,978						
208	0,002	0,001	99,978						
209	0,002	0,001	99,979						
210	0,002	0,001	99,980						
211	0,002	0,001	99,980						
212	0,002	0,001	99,981						
213	0,002	0,001	99,982						
214	0,002	0,001	99,982						
215	0,002	0,001	99,983						
216	0,002	0,001	99,984						
217	0,002	0,001	99,984						
218	0,002	0,001	99,985						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
219	0,002	0,001	99,986						
220	0,002	0,001	99,986						
221	0,001	0,001	99,987						
222	0,001	0,001	99,987						
223	0,001	0,001	99,988						
224	0,001	0,001	99,989						
225	0,001	0,001	99,989						
226	0,001	0,001	99,990						
227	0,001	0,001	99,990						
228	0,001	0,001	99,991						
229	0,001	0,001	99,991						
230	0,001	0,001	99,992						
231	0,001	0,001	99,992						
232	0,001	0,001	99,993						
233	0,001	0,001	99,993						
234	0,001	0,000	99,994						
235	0,001	0,000	99,994						
236	0,001	0,000	99,995						
237	0,001	0,000	99,995						
238	0,001	0,000	99,996						
239	0,001	0,000	99,996						
240	0,001	0,000	99,997						
241	0,001	0,000	99,997						
242	0,001	0,000	99,998						
243	0,001	0,000	99,998						
244	0,001	0,000	99,998						
245	0,001	0,000	99,999						
246	0,001	0,000	99,999						
247	0,001	0,000	99,999						
248	0,001	0,000	100,000						
249	0,000	0,000	100,000						
250	-6,060E-16	-2,424E-16	100,000						

Appendix Table 4: Cited References - Rotated Component Matrix

Reference	1	2	3	4	5
FamaE1983V26	0,14	**0,872**	0,28	0,312	0,071
JensenM1976V3	0,272	**0,886**	0,216	0,056	-0,23
YermackD1996V40	**0,846**	-0,38	-0,152	-0,126	0,254
JensenM1993V48	0,663	0,684	0,099	0,035	-0,205
WeisbachM1988V20	**0,935**	-0,105	-0,149	0,07	0,223
FamaE1980V88	0,401	**0,724**	0,081	-0,042	0,525
ShleiferA1997V52	**0,852**	0,222	-0,4	0,168	0,026
HermalinB1998V88	**0,861**	0,038	0,283	0,314	-0,207
HillmanA2003V28	0,423	0,422	0,387	0,357	-0,579
CoreJ1999V51	0,359	0,561	0,044	**0,719**	0,007
DaltonD1998V19	0,418	0,613	0,516	0,377	-0,065
MorckR1988V20	**0,857**	0,347	-0,188	-0,087	0,26
ZahraS1989V15	**0,832**	-0,141	-0,343	-0,013	0,364
GompersP2003V118	**0,756**	0,345	-0,145	0,488	-0,123
JensenM1986V76	**0,784**	0,552	-0,15	0,122	0,093
ColesJ2008V87	0,338	0,046	0,152	**0,902**	-0,089
BeasleyM1996V71	-0,296	-0,051	-0,691	0,633	-0,005
WeisbachM2003V9	**0,829**	-0,432	-0,292	-0,019	0,066
KleinA2002V33	**0,842**	-0,315	-0,003	0,261	-0,301
AdamsR2007V62	-0,884	0,213	0,322	-0,052	-0,172
ByrdJ1992V32	-0,056	0,511	-0,147	**0,823**	0
LinckJ2008V87	-0,694	0,076	0,494	0,381	-0,294
ForbesD1999V24	0,457	0,162	**0,71**	0,357	-0,315
PfefferJ1972V17	**0,827**	0,347	0,291	0,013	0,274
LiptonM1992V48	0,64	0,018	0,576	0,31	0,355
LaP1999V54	**0,902**	-0,071	0,327	0,026	0,194
AdamsR2009V94	-0,542	0,185	0,644	-0,338	0,329
CarterD2003V38	-0,391	-0,004	**0,835**	-0,193	0,286
EisenhardtK1989V14	0,405	**0,722**	0,386	-0,27	0,241
RosensteinS1990V26	0,595	-0,074	0,584	-0,168	0,488
ShleiferA1986V94	0,595	0,02	0,3	-0,304	0,655
FichE2006V61	-0,477	0,054	**0,826**	0,119	-0,192
JohnsonJ1996V22	0,543	0,495	0,573	0,064	-0,299
DemsetzH1985V93	0,151	0,355	0,262	-0,193	**0,841**
HermalinB1991V20	0,417	0,234	**0,732**	-0,242	0,382
BooneA2007V85	-0,79	-0,052	0,511	0,258	0,087
BaysingerB1985V1	-0,607	-0,098	-0,227	0,661	0,309
HermalinB1988V19	-0,438	0,334	-0,029	0,525	0,622
CarpenterM2001V44	0,031	0,328	0,674	0,581	-0,256
EisenbergT1998V48	-0,372	-0,223	0,43	0,383	0,668
JensenM1990V98	0,425	0,576	-0,097	0,245	0,623
BaysingerB1990V15	-0,383	-0,066	-0,214	**0,801**	0,352
FerrisS2003V58	-0,445	-0,127	0,681	0,531	-0,073
HillmanA2000V37	-0,13	-0,134	0,662	**0,7**	0,042
AdamsR2010V48	-0,702	0,507	0,094	-0,374	0,26
DailyC2003V28	-0,196	0,251	0,471	**0,796**	0,081
RahejaC2005V40	-0,847	-0,005	0,424	0,02	0,254
DaltonD1999V42	-0,441	0,148	0,393	0,468	0,613
AgrawalA1996V31	-0,328	0,439	0,013	-0,707	-0,407
BhagatS2002V27	-0,827	0,214	-0,027	-0,47	-0,11
LaP1998V106	0,132	0,191	0,01	-0,952	0,055

Reference	1	2	3	4	5
KleinA1998V41	-0,668	-0,099	-0,119	-0,69	-0,14
HambrickD1984V9	-0,183	0,619	0,596	0,27	0,351
McconnellJ1990V27	-0,177	0,082	-0,398	-0,876	-0,042
WestphalJ1999V42	-0,279	-0,447	0,035	0,189	**0,804**
DechowP1996V13	-0,72	-0,071	-0,651	-0,05	0,124
ShivdasaniA1999V54	-0,457	0,16	0,206	-0,828	-0,048
BrickleyJ1994V35	-0,657	0,404	-0,452	-0,311	0,264
WestphalJ1995V40	0,121	-0,361	0,389	0,482	0,66
FinkelsteinS1994V37	-0,476	**0,727**	-0,028	0,257	0,382
VafeasN1999V53	-0,409	-0,407	0,054	-0,786	-0,114
WhiteH1980V48	0,104	-0,349	-0,186	-0,861	0,228
DimaggioP1983V48	0,502	0,122	0,345	0,485	0,589
BrickleyJ1997V3	-0,528	0,59	-0,258	-0,507	-0,127
ShivdasaniA1993V16	-0,305	-0,23	-0,483	-0,752	0,138
BhagatS1999V54	-0,706	0,307	-0,497	-0,297	-0,195
MizruchiM1996V22	0,664	-0,495	0,49	0,205	0,025
ErhardtN2003V11	-0,435	-0,246	0,465	-0,435	0,562
DavisJ1997V22	0,311	0,06	0,157	0,019	**0,916**
ClaessensS2000V58	0,404	-0,022	-0,35	-0,809	-0,161
PearceJ1992V29	-0,168	-0,028	-0,446	-0,525	0,676
RechnerP1991V12	-0,253	0,435	-0,578	-0,465	0,401
YermackD2004V59	0,096	-0,602	0,11	-0,744	0,163
GilsonS1990V27	-0,138	0,284	-0,561	-0,304	0,674
FinkelsteinS1992V35	0,502	0,598	0,49	0,042	0,337
WalshJ1990V15	0,334	-0,304	-0,553	0,299	0,606
TerjesenS2009V17	-0,028	-0,218	0,651	-0,541	0,453
LaP2000V58	0,305	-0,396	-0,285	-0,742	0,283
JudgeW1992V35	-0,208	0,233	-0,102	0,168	**0,909**
BebchukL2009V22	-0,333	0,453	0,267	-0,744	0,154
PetersenM2009V22	-0,065	-0,097	0,376	-0,9	-0,021
WarnerJ1988V20	0,046	-0,78	-0,237	-0,407	0,358
AndersonR2003V58	-0,37	0,119	0,139	0,227	-0,862
XieB2003V9	0,434	-0,35	0,301	-0,749	-0,047
GoodsteinJ1994V15	0,21	0,194	**0,892**	-0,08	-0,28
KosnikR1987V32	0,244	0,218	-0,253	0,346	**0,821**
DavisG1991V36	0,013	0,448	0,301	0,609	0,552
HarrisM2008V21	-0,655	0,114	0,454	-0,482	-0,294
CotterJ1997V43	0,114	0,163	-0,639	-0,646	-0,323
ClaessensS2002V57	0,306	0,136	-0,317	-0,324	-0,805
FarrellK2005V11	-0,401	-0,101	0,667	-0,547	0,232
PettigrewA1992V13	0,632	-0,398	-0,165	0,342	0,516
LaP2002V57	0,402	-0,078	0,223	-0,626	-0,595
RedikerK1995V16	0,219	0,605	-0,556	-0,473	-0,153
BoydB1995V16	0,48	**0,798**	-0,005	-0,305	-0,065
KaplanS1990V27	0,107	-0,397	-0,751	-0,474	0,059
WestphalJ1998V43	**0,766**	0,105	-0,23	-0,542	-0,141
DonaldsonL1991V16	0,339	0,649	-0,273	-0,468	-0,369
AndersonR2004V37	-0,796	0,023	-0,074	-0,016	0,572
SmithC1992V32	0,295	-0,499	-0,682	-0,346	0,201
HeckmanJ1979V47	0,106	-0,103	**0,709**	-0,227	-0,626
BebchukL2002V69	-0,455	-0,119	-0,171	0,374	**0,759**
VillalongaB2006V80	-0,103	-0,349	0,018	0,116	-0,907
SrinivasanS2005V43	-0,093	-0,925	0,217	-0,22	-0,031
AgrawalA2005V48	-0,812	0,076	-0,476	0,257	0,057
CoughlanA1985V7	0,141	0,474	-0,742	-0,193	0,367

Reference	1	2	3	4	5
BeattyR1994V39	-0,241	0,645	-0,659	0,153	0,188
MehranH1995V38	-0,233	0,044	-0,828	-0,449	-0,152
DefondM2005V43	-0,823	-0,42	-0,25	0,126	0,178
LynallM2003V28	0,596	-0,276	0,144	-0,179	0,695
McnultyT1999V20	0,575	-0,564	-0,298	0,476	0,024
DuchinR2010V96	-0,875	-0,166	0,122	-0,332	0,207
MizruchiM1983V8	0,131	0,099	-0,453	0,224	**0,824**
BebchukL2003V17	0,327	0,488	0,115	-0,765	0,153
KesnerI1988V31	-0,112	-0,383	0,133	0,283	**0,839**
DailyC1994V37	-0,075	0,318	-0,127	**0,814**	0,423
FichE2005V78	-0,725	-0,334	0,323	0,058	-0,466
HusonM2001V56	0,051	-0,8	-0,018	-0,498	-0,269
RobertsJ2005V16	0,522	-0,672	0,213	0,037	0,443
LarckerD2007V82	-0,466	-0,685	-0,181	-0,339	0,359
CampbellK2008V83	-0,316	-0,431	0,681	-0,124	0,453
HartzellJ2003V58	0,518	0,064	-0,25	-0,657	0,448
AndersonR2004V49	-0,088	0,262	0,266	0,066	-0,904
RyanH2004V73	0,202	-0,805	-0,29	-0,222	0,376
HillmanA2002V28	-0,234	-0,633	0,611	0,089	0,359
FaccioM2002V65	0,066	-0,246	0,258	-0,19	-0,894
WestphalJ2000V45	0,132	-0,608	0,447	0,044	0,614
BearS2010V97	0,165	-0,328	**0,84**	0,1	0,346
AgrawalA2001V44	-0,05	0,274	-0,321	-0,859	-0,218
BoydB1990V11	0,277	0,14	-0,14	**0,842**	-0,37
ParrinoR1997V46	-0,117	-0,927	0,163	0,121	-0,215
HwangB2009V93	-0,735	-0,465	0,339	-0,229	-0,197
HillmanA2007V50	-0,017	-0,513	**0,835**	0,068	-0,021
HimmelbergC1999V53	0,083	-0,241	-0,08	-0,777	-0,54
KosnikR1990V33	0,137	0,002	-0,294	**0,727**	0,578
HaunschildP1993V38	0,527	-0,093	0,616	0,54	0,087
AguileraR2003V28	-0,478	0,176	0,174	0,027	-0,821
DenisD1999V52	0,026	0,213	-0,247	-0,471	-0,798
WadeJ1990V35	0,215	-0,528	-0,373	0,66	-0,251
MillikenF1996V21	0,075	-0,744	0,573	-0,001	0,276
MeyerJ1977V83	0,591	-0,18	0,243	0,494	-0,531
JohnsonR1993V14	-0,026	-0,021	-0,027	**0,98**	0,02
GoldenB2001V22	0,23	-0,198	0,445	0,663	-0,487
CarterD2010V18	-0,303	-0,315	**0,814**	-0,308	-0,137
MalletteP1992V35	0,113	0,294	-0,54	**0,758**	0,032
FichE2007V86	-0,577	-0,615	0,197	0,263	-0,375
ArellanoM1991V58	-0,135	0,341	0,025	-0,379	-0,828
PearceJ1991V12	0,44	-0,008	-0,651	0,531	0,265
AbbottL2004V23	-0,78	0,067	-0,385	0,441	0,088
WestphalJ1997V42	-0,067	-0,636	-0,572	0,468	0,106
FamaE1997V43	-0,42	-0,612	-0,285	0,094	0,57
WiersemaM1992V35	0,257	-0,844	0,051	0,144	0,403
BebchukL2005V78	-0,399	0,13	-0,864	0,053	-0,195
BrickleyJ1988V20	0,299	0,434	-0,821	-0,021	-0,105
BoydB1994V15	-0,029	0,606	-0,396	0,31	-0,589
DechowP1995V70	-0,381	-0,571	-0,528	0,407	-0,224
HallockK1997V32	-0,064	-0,198	-0,9	0,316	-0,095
AhernK2012V127	-0,074	0,219	0,44	-0,728	0,434
LinckJ2009V22	-0,875	-0,431	-0,071	-0,029	0,065
PfefferJ1973V18	0,541	-0,639	-0,466	-0,224	-0,007
KaramanouI2005V43	-0,23	-0,625	-0,642	0,134	0,305

Reference	1	2	3	4	5
BainbridgeS2002V55	-0,038	0,045	0,138	0,553	-0,8
HolmstromB1979V10	**0,703**	0,099	-0,474	-0,424	0,239
ZajacE1996V41	0,15	-0,707	-0,081	0,595	0,288
BedardJ2004V23	-0,512	-0,364	-0,604	0,399	0,222
ChengS2008V87	-0,459	-0,707	-0,065	0,069	-0,49
YoungM2008V45	0,361	-0,275	0,209	-0,05	-0,845
HausmanJ1978V46	-0,412	-0,627	0,071	0,493	-0,393
RoseC2007V15	0,163	-0,328	0,497	-0,685	0,345
MurphyK1999V3B	**0,78**	-0,173	0,091	-0,4	-0,397
HuseM2005V16	0,395	-0,604	0,276	0,277	-0,541
FredricksonJ1988V13	0,522	0,316	-0,122	**0,728**	0,218
KrollM2008V29	0,077	-0,345	0,536	0,378	-0,644
BrickleyJ1987V30	0,089	0,324	-0,901	-0,043	-0,187
JohnK1998V22	-0,217	-0,509	-0,542	-0,494	-0,348
GoyalV2002V8	-0,203	-0,872	-0,169	0,256	0,267
BakerM2003V46	-0,424	0,274	-0,241	-0,418	-0,692
MurphyK1985V7	0,571	0,087	-0,677	-0,067	0,413
AdamsR2005V18	-0,101	**0,731**	-0,032	-0,598	0,256
NielsenS2010V18	0,309	-0,519	0,696	-0,307	0,15
ConyonM1998V41	0,462	0,636	0,029	-0,217	-0,546
LaportaR1997V52	0,274	-0,624	-0,211	-0,375	-0,56
ManneH1965V73	0,078	-0,085	-0,713	0,231	0,625
ShraderC1997V9	-0,172	-0,631	0,502	-0,525	0,109
ZaldM1969V75	0,406	-0,732	-0,349	0,369	0,073
FinkelsteinS2003V17	0,296	-0,399	0,483	0,482	-0,503
HarfordJ2003V69	0,246	-0,442	-0,838	0,086	-0,011
BaysingerB1991V34	-0,327	-0,342	-0,236	**0,781**	0,273
MillerT2009V46	0,239	-0,303	**0,77**	-0,474	0,002
WangJ1992V11	0,422	-0,77	0,377	-0,225	-0,053
StulzR1988V20	0,531	-0,181	-0,441	-0,379	-0,561
BlackF1973V81	0,506	0,097	-0,821	-0,081	-0,135
JohnsonR1999V42	0,266	-0,775	0,219	0,48	-0,124
BorokhovichK1996V31	0,252	-0,447	-0,385	-0,578	-0,468
GunerA2008V88	-0,729	-0,359	-0,114	-0,26	0,47
HermalinB2003V9	-0,656	-0,51	-0,345	-0,322	-0,226
BebchukL2005V118	0,461	-0,407	-0,195	**0,74**	-0,009
KleinA2002V77	-0,474	-0,43	-0,734	0,129	0,023
JonesJ1991V29	-0,148	-0,801	-0,451	0,012	-0,311
PengM2004V25	0,461	-0,288	-0,11	-0,101	-0,804
BaligaB1996V17	-0,119	0,318	-0,001	-0,101	-0,916
BlundellR1998V87	0,111	0,087	0,557	-0,692	-0,395
SandersW1998V41	0,512	-0,002	-0,317	0,504	-0,59
DenisD1995V50	0,692	0,43	-0,386	-0,336	-0,198
BrickI2006V12	-0,1	-0,061	-0,951	-0,116	-0,174
GranovetterM1985V91	**0,917**	0,121	0,112	-0,033	-0,307
SchulzeW2001V12	0,233	0,02	-0,101	0,201	-0,929
ChagantiR1985V22	0,041	0,237	-0,848	0,242	0,364
BhagatS2008V14	-0,351	-0,22	-0,341	-0,451	-0,69
SundaramurthyC2003V28	0,582	-0,098	-0,25	0,231	-0,708
AmihudY1981V12	-0,276	**0,887**	-0,214	0,222	0,062
JensenM1983V11	-0,058	**0,878**	-0,29	0,316	0,054
WintokiM2012V105	0,084	**0,821**	-0,344	-0,104	0,397
CertoS2003V28	-0,015	-0,161	-0,073	**0,706**	-0,661
ShenW2002V45	0,342	**0,709**	-0,458	0,301	0,213
DenisD1997V45	0,113	**0,826**	-0,386	0,26	0,226

Reference	1	2	3	4	5
BrickleyJ1999V52	0,07	-0,48	-0,575	0,196	-0,601
FaccioM2006V96	0,671	-0,545	0,257	-0,379	-0,097
BantelK1989V10	-0,164	0,194	0,669	-0,223	0,637
HaunschildP1998V43	-0,016	0,405	0,495	-0,24	**0,706**
MyersS1984V13	0,227	**0,805**	-0,492	0,038	0,148
ZajacE1994V15	-0,041	**0,831**	0,022	-0,001	0,523
BlairM1999V85	0,15	-0,371	-0,342	0,555	-0,615
BeasleyM2000V14	-0,738	0,111	-0,104	0,622	0,09
FarberD2005V80	-0,656	-0,077	-0,09	**0,714**	0,088
BarneyJ1991V17	-0,176	0,183	0,157	0,553	-0,757
GordonJ2007V59	-0,524	-0,391	-0,173	0,681	0,208
LehnK2009V38	-0,406	-0,396	0,058	-0,394	-0,697
GulF2011V51	0,017	0,021	0,599	-0,273	**0,731**
BathalaC1995V16	-0,282	0,379	-0,266	-0,783	-0,242
DemsetzH2001V7	-0,098	0,249	0,307	-0,857	0,248
SinghH1989V32	-0,264	0,648	0,12	-0,157	0,661
BusheeB1998V73	-0,419	0,541	-0,426	-0,206	-0,523
FinkelsteinS1989V10	-0,145	**0,777**	0,451	-0,274	0,251
TosiH1989V34	-0,151	**0,948**	-0,091	-0,065	-0,171
OcasioW1994V39	-0,112	0,617	**0,756**	0,019	0,018
CarcelloJ2000V75	-0,793	0,136	-0,544	0,127	0,033
DaltonD2007V1	-0,103	0,663	0,562	0,204	-0,396
KesnerI1986V29	-0,171	**0,874**	-0,086	-0,332	-0,235
MasulisR2007V62	-0,514	0,384	0,254	0,686	-0,136
KorY2009V35	-0,142	0,156	0,623	0,355	-0,641
VafeasN2003V30	-0,424	0,521	0,095	0,266	-0,659
TorchiaM2011V102	0,001	0,073	**0,978**	-0,02	0,054
KielG2003V11	-0,814	0,233	0,416	-0,172	0,205
DenisD2003V38	-0,566	0,113	-0,375	0,069	-0,699
DaltonD2003V46	-0,339	**0,737**	0,209	0,488	-0,159
DailyC1999V20	-0,104	0,076	**0,956**	0,024	-0,175
SuchmanM1995V20	-0,577	0,423	-0,425	0,31	-0,421
WestphalJ2001V46	-0,09	0,39	**0,744**	0,2	-0,458
RomanoR2005V114	-0,759	0,106	0,245	0,217	-0,52
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
Rotation converged in 15 iterations.					

Note: Values over 0.7 are in green cell background. Values between 0.3 and 0.699 are in yellow cell background

Appendix Table 5: Cited References - Total Variance Explained 1958 - 1991

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8,872	46,694	46,694	8,872	46,694	46,694	7,200	37,893	37,893
2	7,154	37,654	84,348	7,154	37,654	84,348	6,949	36,576	74,469
3	2,001	10,533	94,881	2,001	10,533	94,881	3,878	20,412	94,881
4	0,338	1,778	96,659						
5	0,264	1,387	98,047						
6	0,072	0,378	98,425						
7	0,067	0,350	98,775						
8	0,051	0,269	99,045						
9	0,046	0,243	99,288						
10	0,025	0,132	99,420						
11	0,025	0,130	99,549						
12	0,020	0,105	99,654						
13	0,016	0,086	99,740						
14	0,014	0,074	99,814						
15	0,011	0,060	99,874						
16	0,010	0,051	99,925						
17	0,009	0,046	99,971						
18	0,006	0,029	100,000						
19	-2,170E-17	-1,142E-16	100,000						
Extraction Method: Principal Component Analysis.									

Appendix Table 6: Cited References - Rotated Component Matrix 1958 - 1991

	Component		
Reference	1	2	3
MaceML1971DirectorsMythReali	0,114	**0,968**	-0,103
PfefferJ1972V17P218AdminSciQuart	-0,153	0,951	-0,189
KoontzH1967BoardDirectorsEffe	-0,800	0,545	-0,101
ZaldMN1969V75P97AmJSociol	-0,191	**0,900**	-0,320
BerleAA1932ModernCorporationP	**0,758**	-0,397	0,456
HermanES1981CorporateControlCo	-0,500	-0,299	**0,785**
VanceSC1983CorporateLeadership	-0,437	**0,878**	-0,063
BrownCC1976PuttingCorporateBo	**0,953**	-0,001	0,184
FamaEF1983V26P301JLawEcon	0,426	-0,639	0,592
FamaEF1980V88P288JPolitEcon	-0,296	-0,693	0,614
MizruchiMS1983V8P426AcadManageRev	0,086	-0,245	**0,952**
VanceSC1964BoardsDirectorsStr	-0,909	0,207	0,264
VanceSC1968CorporateDirectorC	0,473	**0,826**	-0,211
JensenMC1976V3P305JFinancEcon	0,015	-0,750	0,615
StoneCD1975WhereTheLawEnds	**0,739**	0,596	-0,203
MaceML1976V54P48HarvBusRev	**0,917**	0,324	0,024
SelznickP1949TvaGrassRoots	-0,940	0,225	-0,009
PfefferJ1973V18P349AdminSciQuart	0,673	-0,015	**0,709**
JuranJM1966CorporateDirector	-0,717	-0,486	0,429
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
Rotation converged in 4 iterations.			

Note: Values over 0.7 are in green cell background.

Appendix Table 7: Cited References - Total Variance Explained 1992 - 2005

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20,100	43,695	43,695	20,100	43,695	43,695	17,445	37,924	37,924
2	19,111	41,545	85,241	19,111	41,545	85,241	14,172	30,808	68,732
3	4,890	10,630	95,870	4,890	10,630	95,870	12,484	27,138	95,870
4	0,678	1,474	97,345						
5	0,597	1,298	98,642						
6	0,111	0,242	98,884						
7	0,094	0,204	99,088						
8	0,083	0,179	99,268						
9	0,074	0,161	99,428						
10	0,037	0,081	99,509						
11	0,030	0,066	99,575						
12	0,028	0,061	99,636						
13	0,025	0,054	99,691						
14	0,016	0,035	99,725						
15	0,014	0,031	99,756						
16	0,012	0,025	99,781						
17	0,011	0,023	99,804						
18	0,009	0,019	99,824						
19	0,008	0,018	99,842						
20	0,007	0,016	99,857						
21	0,007	0,014	99,872						
22	0,006	0,013	99,885						
23	0,005	0,010	99,895						
24	0,004	0,010	99,904						
25	0,004	0,009	99,913						
26	0,004	0,008	99,922						
27	0,004	0,008	99,929						
28	0,003	0,007	99,936						
29	0,003	0,007	99,943						
30	0,003	0,006	99,949						
31	0,002	0,005	99,954						
32	0,002	0,005	99,959						
33	0,002	0,005	99,964						
34	0,002	0,005	99,969						
35	0,002	0,004	99,973						
36	0,002	0,004	99,977						
37	0,002	0,004	99,980						
38	0,002	0,003	99,984						
39	0,001	0,003	99,987						
40	0,001	0,003	99,989						
41	0,001	0,003	99,992						
42	0,001	0,002	99,994						
43	0,001	0,002	99,996						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
44	0,001	0,002	99,998						
45	0,001	0,002	100,000						
46	-5,523E-16	-1,201E-15	100,000						
Extraction Method: Principal Component Analysis.									

Appendix Table 8: Cited References - Rotated Component Matrix 1992 – 2005

	Component		
	1	2	3
FamaEF1983V26P301JLawEcon	-0,043	-0,344	**0,921**
JensenMC1976V3P305JFinancEcon	0,044	-0,450	**0,873**
WeisbachMS1988V20P431JFinancEcon	0,098	-0,667	**0,707**
FamaEF1980V88P288JPolitEcon	-0,581	0,130	**0,785**
LorschJ1989PawnsPotentatesRea	-0,244	-0,455	**0,834**
JensenMC1993V48P831JFinanc	-0,645	-0,203	**0,710**
YermackD1996V40P185JFinancEcon	-0,116	-0,629	**0,738**
BaysingerBD1985V1P101JLawEconOrgan	0,206	**0,953**	-0,134
PfefferJ1978ExternalControlOrg	-0,242	-0,544	0,776
HermalinBE1988V19P589RandJEcon	-0,719	0,542	0,393
JensenMC1990V98P225JPolitEcon	-0,765	0,066	0,604
RosensteinS1990V26P175JFinancEcon	-0,790	-0,001	0,573
ZahraSA1989V15P291JManage	-0,437	-0,444	0,756
ByrdJW1992V32P195JFinancEcon	-0,470	**0,832**	-0,212
MaceML1971DirectorsMythReali	-0,441	-0,252	**0,843**
MorckR1988V20P293JFinancEcon	-0,823	0,196	0,484
BerleAA1932ModernCorporationP	**0,777**	0,428	-0,407
KosnikRD1987V32P163AdminSciQuart	0,644	-0,311	0,677
ShivdasaniA1993V16P167JAccountEcon	-0,841	0,312	0,380
BrickleyJA1994V35P371JFinancEcon	-0,063	**0,878**	-0,427
HermalinBE1991V20P101FinancManage	-0,253	**0,943**	-0,120
PfefferJ1972V17P218AdminSciQuart	0,337	-0,651	0,646
DemsetzH1985V93P1155JPolitEcon	0,608	0,645	-0,413
BaysingerBD1990V15P72AcadManageRev	**0,970**	0,000	-0,130
ShleiferA1986V94P461JPolitEcon	-0,300	**0,747**	0,567
KosnikRD1990V33P129AcadManageJ	**0,919**	-0,069	0,343
GilsonSC1990V27P355JFinancEcon	-0,258	**0,894**	-0,305
VanceSC1983CorporateLeadership	0,208	0,099	**0,959**
EisenhardtKM1989V14P57AcadManageRev	**0,867**	-0,411	0,172
WarnerJB1988V20P461JFinancEcon	-0,835	0,440	0,245
WalshJP1990V15P421AcadManageRev	0,509	-0,601	0,579
BrickleyJA1987V30P161JLawEcon	0,334	**0,745**	-0,533
JensenMC1986V76P323AmEconRev	0,659	**0,710**	-0,165
McconnellJJ1990V27P595JFinancEcon	-0,566	**0,801**	0,059
MizruchiMS1983V8P426AcadManageRev	0,751	-0,468	0,418

	Component		
	1	2	3
LiptonM1992V48P59BusLawyer	-0,739	0,638	0,051
CoughlanAT1985V7P43JAccountEcon	0,545	0,615	-0,522
KaplanSN1990V27P389JFinancEcon	-0,596	**0,765**	-0,124
HambrickDC1984V9P193AcadManageRev	**0,719**	-0,559	0,347
FinkelsteinS1994V37P1079AcadManageJ	**0,937**	-0,268	0,047
DaltonDRR1998V19P269StrategicManageJ	**0,903**	0,179	-0,327
JohnsonJL1996V22P409JManage	**0,963**	-0,137	-0,086
HermalinBE1998V88P96AmEconRev	0,174	**0,824**	-0,494
ShleiferA1997V52P737JFinanc	**0,864**	0,354	-0,293
CotterJF1997V43P195JFinancEcon	-0,225	**0,857**	-0,412
SinghH1989V32P7AcadManageJ	**0,965**	0,125	0,144
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization			
Rotation converged in 9 iterations.			

Note: Values over 0.7 are in green cell background.

Appendix Table 9: Cited References - Total Variance Explained 2006 - 2017

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14,272	23,019	23,019	14,272	23,019	23,019	13,627	21,980	21,980
2	12,249	19,756	42,775	12,249	19,756	42,775	11,831	19,082	41,062
3	10,943	17,650	60,424	10,943	17,650	60,424	11,120	17,936	58,998
4	10,429	16,822	77,246	10,429	16,822	77,246	10,873	17,537	76,535
5	10,112	16,310	93,556	10,112	16,310	93,556	10,553	17,021	93,556
6	0,557	0,898	94,454						
7	0,281	0,453	94,907						
8	0,259	0,418	95,325						
9	0,225	0,363	95,688						
10	0,215	0,347	96,035						
11	0,194	0,313	96,348						
12	0,189	0,304	96,652						
13	0,174	0,281	96,934						
14	0,158	0,255	97,189						
15	0,148	0,239	97,427						
16	0,132	0,212	97,640						
17	0,131	0,212	97,851						
18	0,107	0,172	98,024						
19	0,097	0,157	98,181						
20	0,088	0,143	98,323						
21	0,049	0,079	98,402						
22	0,046	0,074	98,476						
23	0,044	0,071	98,547						
24	0,043	0,069	98,616						
25	0,040	0,065	98,681						
26	0,039	0,063	98,744						
27	0,038	0,061	98,805						
28	0,037	0,059	98,864						
29	0,036	0,058	98,922						
30	0,033	0,053	98,975						
31	0,032	0,052	99,027						
32	0,031	0,050	99,078						
33	0,031	0,049	99,127						
34	0,030	0,048	99,175						

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
35	0,028	0,046	99,221						
36	0,027	0,044	99,265						
37	0,026	0,043	99,307						
38	0,026	0,042	99,349						
39	0,025	0,040	99,389						
40	0,023	0,037	99,427						
41	0,023	0,037	99,464						
42	0,023	0,037	99,501						
43	0,022	0,035	99,536						
44	0,021	0,033	99,569						
45	0,020	0,032	99,601						
46	0,019	0,031	99,632						
47	0,019	0,030	99,662						
48	0,018	0,030	99,692						
49	0,018	0,029	99,721						
50	0,018	0,029	99,750						
51	0,017	0,028	99,778						
52	0,017	0,027	99,805						
53	0,016	0,026	99,831						
54	0,016	0,025	99,856						
55	0,015	0,025	99,881						
56	0,015	0,024	99,905						
57	0,015	0,024	99,928						
58	0,014	0,023	99,951						
59	0,014	0,022	99,973						
60	0,013	0,022	99,995						
61	0,003	0,005	100,000						
62	5,156E-17	8,316E-17	100,000						
Extraction Method: Principal Component Analysis.									

Appendix Table 10: Cited References - Rotated Component Matrix 2006 - 2017

	Component				
	1	2	3	4	5
FamaEF1983V26P301JLawEcon	**0,887**	0,263	-0,011	0,213	0,145
JensenMC1976V3P305JFinancEcon	**0,926**	0,210	0,043	0,105	0,132
YermackD1996V40P185JFinancEcon	**0,816**	-0,060	0,148	0,485	0,115
JensenMC1993V48P831JFinanc	**0,828**	0,375	0,305	-0,113	-0,103
PfefferJ1978ExternalControlOrg	0,658	0,118	-0,557	-0,383	0,204
HillmanAJ2003V28P383AcadManageRev	0,468	-0,081	-0,766	0,119	0,337
ShleiferA1997V52P737JFinanc	**0,883**	0,274	-0,161	-0,212	-0,139
WeisbachMS1988V20P431JFinancEcon	**0,749**	0,238	-0,014	-0,382	0,436
HermalinBE1998V88P96AmEconRev	0,225	0,759	-0,002	-0,550	0,048
FamaEF1980V88P288JPolitEcon	0,257	0,129	0,011	**0,903**	-0,203
ColesJL2008V87P329JFinancEcon	-0,071	-0,039	**0,897**	0,326	0,108
CoreJE1999V51P371JFinancEcon	-0,248	0,408	0,415	0,459	0,579
GompersP2003V118P107QJEcon	0,213	0,508	0,457	0,659	-0,028
DaltonDRR1998V19P269StrategicManageJ	-0,205	-0,476	-0,538	0,262	-0,549
WeisbachMS2003V9P7EcPolicyRev	0,558	0,423	-0,091	0,395	0,533
AdamsRB2007V62P217JFinanc	-0,695	0,183	-0,082	-0,227	-0,590
KleinA2002V33P375JAccountEcon	0,302	**0,867**	0,225	0,163	0,140
LinckJS2008V87P308JFinancEcon	0,265	**0,814**	-0,258	-0,028	-0,359
AdamsRB2009V94P291JFinancEcon	-0,243	-0,729	0,260	-0,267	-0,455
BeasleyMS1996V71P443AccountRev	-0,779	0,158	0,220	0,095	0,500
JensenMC1986V76P323AmEconRev	0,199	0,492	**0,767**	-0,195	0,163
FichEM2006V61P689JFinanc	-0,248	0,278	0,125	**0,852**	0,247
CarterDA2003V38P33FinancialRev	-0,031	-0,884	0,310	-0,253	-0,036
ZahraSA1989V15P291JManage	**0,802**	-0,366	-0,272	-0,259	0,158
MorckR1988V20P293JFinancEcon	0,318	0,008	0,630	0,079	0,654
ForbesDP1999V24P489AcadManageRev	0,177	-0,570	0,035	0,759	-0,083
BooneAL2007V85P66JFinancEcon	-0,601	0,244	-0,359	-0,610	0,089
LaPortaR1999V54P471JFinanc	0,630	-0,348	0,542	-0,304	0,182
BerleAA1932ModernCorporationP	-0,614	-0,153	-0,700	-0,048	0,183
LiptonM1992V48P59BusLawyer	-0,010	0,696	0,104	-0,130	0,650
FerrisSP2003V58P1087JFinanc	-0,513	-0,210	0,263	0,736	0,131
JohnsonJL1996V22P409JManage	0,462	-0,318	-0,608	0,489	-0,137
AdamsRB2010V48P58JEconLit	-0,364	-0,352	-0,304	-0,392	-0,654
HillmanAJ2000V37P235JManageStud	0,170	-0,850	-0,419	-0,083	-0,039
RahejaCG2005V40P283JFinancQuantAnal	0,153	0,324	-0,083	-0,879	-0,126
EisenbergT1998V48P35JFinancEcon	-0,308	-0,413	0,754	-0,217	-0,233
DailyCM2003V28P371AcadManageRev	-0,210	-0,798	-0,039	0,384	-0,324

	Component				
	1	2	3	4	5
ShleiferA1986V94P461JPolitEcon	0,089	0,283	-0,227	-0,234	**0,859**
ByrdJW1992V32P195JFinancEcon	-0,844	0,147	-0,303	0,237	0,218
DemsetzH1985V93P1155JPolitEcon	-0,224	-0,129	0,199	-0,907	0,044
BhagatS2002V27P231JCorpLaw	-0,809	0,002	0,160	-0,489	0,086
LorschJ1989PawnsPotentatesRea	-0,085	-0,299	-0,664	0,394	0,487
DaltonDRR1999V42P674AcadManageJ	-0,638	-0,671	0,102	0,154	0,178
HermalinBE1991V20P101FinancManage	-0,478	-0,054	**0,726**	-0,318	0,275
LaPortaR1998V106P1113JPolitEcon	0,038	-0,360	0,248	-0,563	0,655
RosensteinS1990V26P175JFinancEcon	-0,357	-0,008	0,046	-0,193	**0,875**
PfefferJ1972V17P218AdminSciQuart	0,106	-0,742	0,022	0,128	0,592
WestphalJD1999V42P7AcadManageJ	0,531	-0,681	-0,132	0,329	0,260
AgrawalA1996V31P377JFinancQuantAnal	0,152	0,059	0,174	0,204	-0,915
CarpenterMA2001V44P639AcadManageJ	-0,237	0,356	-0,788	-0,272	-0,254
EisenhardtKM1989V14P57AcadManageRev	-0,072	0,013	-0,679	-0,056	-0,682
VafeasN1999V53P113JFinancEcon	0,525	0,055	0,339	-0,180	-0,710
DechowP1996V13P1ContempAccountRes	-0,741	0,548	0,203	0,155	0,155
ShivdasaniA1999V54P1829JFinanc	-0,328	**0,875**	-0,046	0,044	-0,218
WestphalJD1995V40P60AdminSciQuart	0,020	0,147	-0,876	-0,317	0,215
HambrickDC1984V9P193AcadManageRev	-0,258	-0,161	-0,192	**0,828**	-0,355
ErhardtNL2003V11P102CorpGov	0,057	-0,663	0,099	-0,683	-0,147
McconnellJJ1990V27P595JFinancEcon	0,173	0,354	**0,728**	0,058	-0,500
FamaEF1983V26P327JLawEcon	0,063	-0,052	0,105	-0,625	-0,729
MizruchiMS1996V22P271AnnuRevSociol	-0,086	0,206	-0,787	0,505	-0,111
HermalinBE1988V19P589RandJEcon	-0,387	0,360	0,203	-0,023	-0,783
KleinA1998V41P275JLawEcon	-0,409	0,227	0,647	0,287	-0,463
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization					
Rotation converged in 8 iterations.					

Note: Values over 0.7 are in green cell background.

CHAPTER 3

BOARD OF DIRECTORS IN CORPORATE GOVERNANCE INTERNATIONAL REVIEW JOURNAL: A BIBLIOMETRIC ANALYSIS

ABSTRACT

The research on the board of directors produced a significant number of articles in business literature. The Corporate Governance International Review (CGIR) is the Journal that contributes the most to this research field. This study aims to investigate which are the main issues on board of directors scientific that have been published by the journal and how it has been approached from different points of view. In our objectives want to identify and analyze the intellectual structure that has been built upon them. We analyzed 190 articles and their bibliographic references that were published in the CGIR Journal from 2000 to 2017 using bibliometrics methods. The work identifies which are the most relevant studies in terms of influence, the impact authors, the approaches they utilized, the topics that have been targeted, and the way they established relationship. We support those findings through descriptive statistics as well as factor analysis over the three periods we identified in that time span. Thus, we may map the structure of the intellectual framework that studied the board of directors in this Journal. There is a clearer map for approaching the topic of the board of directors in a key journal in terms of significance of contributions, highlighting different points of view and pointing out some missing or less considered ones in the research studies. Future development of them might be addressed to strengthen the relevance of the journal in the topic.

KEYWORDS

Corporate Governance, Board of Directors, Bibliometrics, Citation and Co-citation Analysis, Knowledge Mapping.

1. INTRODUCTION

There is no doubt in referring Corporate Governance as one of the most relevant fields in business practice, in research and in society in general. This relevance comes after a significant rising interest over the last years. Aiming to achieve the best possible government for organizations, and to fix many problems in corporate performance, several initiatives took place in companies and in markets institutional configuration. Some corporate failures in the beginning of this century triggered more proposals that were very often channeled through new regulation (Bennington, 2010; Schmidt & Brauer, 2006) such as the Sarbanes Oxley Act. New propositions, raised under the pressure from market players, were routed through recommendations that were progressively included in Codes of Corporate Governance in many countries, in spite of some criticism that highlighted the 'checklist approach' that might affect boards functioning through overstandarization (Ingley & Van der Walt, 2001; Schmidt & Brauer, 2006). Efficiency needs and legitimation pressures appeared as key supporting rationales for code adoption, and showed different patterns according to variables such as the level of shareholder protection rights (Aguilera & Cuervo-Cazurra, 2004).

In the aim of providing a proper foundation, multiple factors triggered intellectual contributions from academia, which increase and evolve over these years, complementing initial works and providing consistency to this field of study. Although there were many journals showing different aspects regarding the board of directors, the Journal Corporate Governance – An International Review (CGIR) is the greatest contributor to the studies on Corporate Governance. This journal has significantly helped in the process of maturation that builds a discipline itself (Durisin & Puzone, 2009), addressing many matters and topics from diverse perspectives. The 'multidisciplinary conversation' is, eventually, one of the goals of the Journal, looking for publishing 'cutting-edge international business research on the phenomena of comparative corporate governance' based on the contributions of a great variety of academic arenas.

Researchers on this discipline produced a substantial number of works that were focused on the board of directors as one of the main topics, since it has been at the core of the governance mechanisms(Aguilera & Cuervo-Cazurra, 2004; Carver, 2010; Kim & Cannella, 2008). These works aimed to understand different issues such as the structure and implications of the board (Rechner & Dalton, 1991; Zahra & Pearce II, 1989), its composition and characteristics (Datta, Musteen, & Herrmann, 2009; Hillman, Nicholson,

& Shropshire, 2008; Sherman, Kashlak, & Joshi, 1998), the processes (Dulewicz, MacMillan, & Herbert, 1995), or the roles (Björkman, 1994; Boulton, 1978; Kim, Burns, & Prescott, 2009; Nicholson & Newton, 2010). Then, in this context, CGIR addressed the Board of Directors among the main editorial objectives since its very early stages, and, as for 2017, accounts for 6,25% of all the papers that has been produced on the topic. Given the increasing variety of approaches the issues they faced, and the number of works, it is convenient to understand the structure, the evolution and future arenas of study. This work does not intend to make a contribution on any of the topics related to corporate governance, but to the research on boards of directors from a broad notion and point of view.

Thus, the objective of this work is to assess the referred publications on the Board of Directors in CGIR, the foundations for their relevance, and the evolution in the maturation process of the discipline. We aim to identify and weight the relationships and influence of the main articles and contributors on this topic, which shapes the existing intellectual framework. The study does so through an analysis of the literature using bibliometrics methods. Thus, the assessment can be conducted through the articles and the citations that the researches use in their works, with the help of bibliometric analyses. Compared to other techniques, bibliometrics methods have the advantages of presenting quantified data that lead to a more objective discussion on the results (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011; Durisin & Puzone, 2009; Garfield, 1979). We addressed the period from 2000 to 2017. At the beginning of the century, the Journal began to be a reference in the indices of publications, and led the biggest growth in the research on the topic until now. For a better understanding of the evolution over this time, we split the research in different periods. .

This work is composed of three sections. Following this introduction, we review the literature on bibliometrics, and describe the methodology we adopted to analyze the intellectual structure of the research on the board of directors in the journals from CGIR. In the second section, we show and discuss the results obtained from the application of bibliometric techniques. Finally, we state some conclusions and suggestions for future research.

2. LITERATURE ON BIBLIOMETRICS AND METHODOLOGY

2.1. Literature on Bibliometrics

Bibliometrics is a group tools the researchers may use for analyzing publication data. It is also a field of research that uses mathematical and statistical techniques to study publishing patterns in the distribution of information (McCain, 1996), that were conceptualized in the late 1960s (Groos & Pritchard, 1969). Amongst these techniques, we will use impact indicators, citation and co-citation analysis, and bibliometric mapping. Citation analysis states that authors cite the documents they think significant for the purpose of their research. Consequently, the frequency of citation of these articles may appear linked to the influence on the topic (Culnan, 1987). Gathering data from databases and applying analytical and graphic display techniques, co-citation analysis studies the articles that cite a certain pair of references (McCain, 1990). This way of citation may show some similarity of content, and, therefore, help identifying groups of topics and authors, and how they can be related (Pilkington & Liston-Heyes, 1999; Ramos-Rodriguez & Ruiz-Navarro, 2004). We will use data and results obtained to perform a bibliometric mapping using VOS approach (van Eck, Waltman, Dekker, & van den Berg, 2010). This is especially relevant when we are handling sources coming from multidisciplinary fields (Börner, Chen, & Boyack, 2005).

Bibliometrics techniques have been used for years to map and study the knowledge on disciplines of science that vary significantly: from Biotechnology (Dalpé, 2002) to Sociology (Keshava, Hittalamani, & Gowda, 2008), Psychology (Haslam et al., 2008) or Management (Ramos-Rodriguez & Ruiz-Navarro, 2004). Within management, there were more specific studies in areas like finance, operations management, organizational behavior, human resources management, supply chain management or innovation that were studied through these techniques.

The bibliometric analysis of specific topics or subfields within the management arena has also been widely employed. Thus, amongst those works, we may find studies on corporate social responsibility (De Bakker, Groenewegen, & Den Hond, 2005), family business (Casillas & Acedo, 2007), entrepreneurship (Etemad & Lee, 2003; Landström, Harirchi, & Åström, 2012; Schildt, Zahra, & Sillanpää, 2006), environmental management accounting (Schaltegger, Gibassier, & Zvezdov, 2013), or business incubators (Diez-Vial & Montoro-Sanchez, 2017), etc.

Besides, theories and intellectual frameworks, such as the resource-based theory (Acedo, Barroso, & Galan, 2006), Dynamic Capability View (Vogel & Güttel, 2012), Transaction Cost Theory (Martins, Serra, Leite, Ferreira, & Li, 2010), and Institutional Theory (Weerakkody, Dwivedi, & Irani, 2009) have been the objective of these methods too.

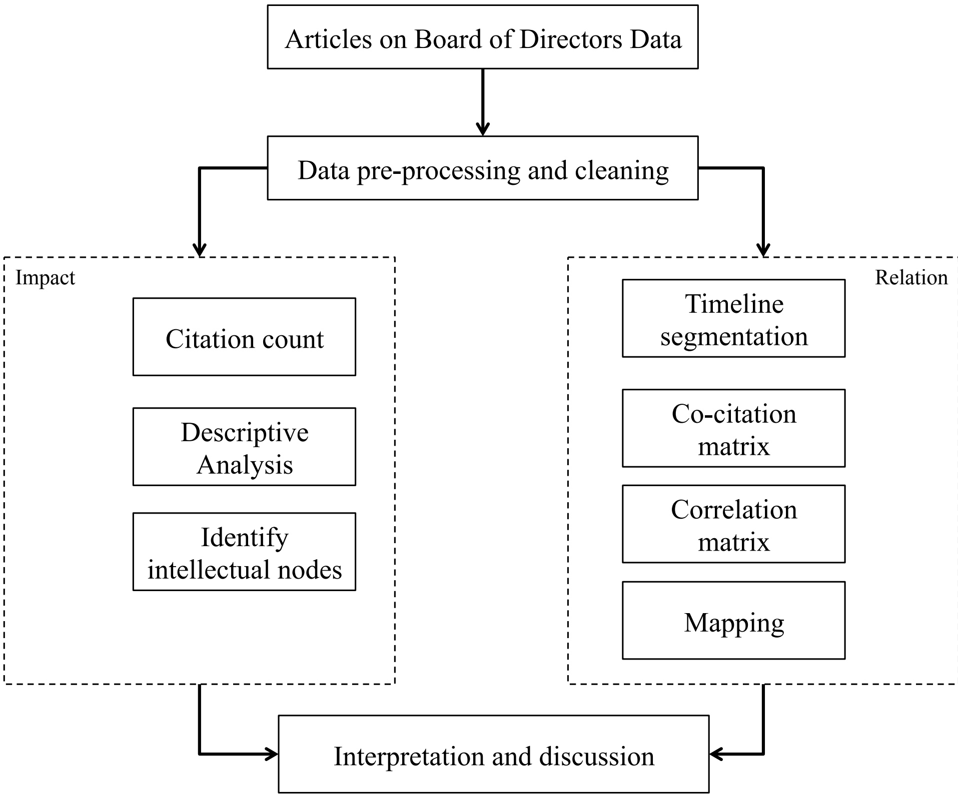
2.2. Methodology

We used articles published in journals as legitimate sources since they are considered 'certified knowledge'. The qualification process provides reliability to the results (Callon, Courtial, & Penan, 1993; Ramos-Rodriguez & Ruiz-Navarro, 2004) and sets this kind of documents as relevant for these research methods. We considered each publication as a possible contribution to the research in this arena. This approach is, therefore, consistent with the goal of mapping which works configure the contributions to the research on board of directors from different perspectives

We utilized citation analysis and co-occurrence citation analysis. Citation analysis is based on the importance that researchers give to a publication when they refer to it as a source. Consequently, we may think that the more cited, the more influential it will be for the research community in the development of that specific arena (Ramos-Rodriguez & Ruiz-Navarro, 2008). The use of co-occurrence leads to establish potential communities in terms of contributions.

Our research has been designed in different stages so as to apply bibliometric techniques properly. Between the research design and the conclusions elaboration, it is agreed that it is necessary to perform a group of tasks that include steps like data retrieval, cleaning, analysis and visualization (Zupic & Cater, 2015). The Figure 1 below shows the different stages we followed to perform the data analysis.

Figure 1: Methodology Stages



Own elaboration adapted from Ramos-Rodríguez and Ruiz-Navarro (2004)

For the purpose of this paper, accordingly with the majority of bibliometric studies in this realm (Zupic & Cater, 2015), we collected articles' data from registers stored at the Web of Science main collection website database. We search for board* director* in the journal Corporate Governance: An International Review. The articles we obtained, 258, were published from 2000 to 2017. Since we wanted to examine the different approaches and the structure of contributions, we limited the initial search to those articles that included the words 'board' and 'director', in the title, the keywords or the abstract. We realize that there were some combinations of words that studied our field: board, boards, boardroom, board of directors. Thus, we included all of them in our search and retrieval process. Then, we checked all the resulting articles so as to keep only those related to the topic. We excluded those that were classified as proceedings papers (68) and performed the analysis on the remaining 190 articles.

Above-mentioned research works, as well as many others, have pointed out the need for a data pre-processing and cleaning due to raw data condition. Data cleaning included capital letters homogenization, authors' initials checking, removal of duplicities in cited references, data completion, removal of anonymous authorship (except in cited references), etc. Despite some bibliometric studies recommend to keep just the first authors initial, we decided to keep the initials that were provided as raw data, because we identified authors that differ just in the middle name (we found up to four different authors for the same surname). That led us to check each author and reference in the original raw data to prevent duplicates, clean data and standardize references as to minimize the possibilities of failure in their homogenization. We were helped by specific software we developed for data pre-processing in Python programming language.

Once the dataset was produced, we used several software packages to explore it. For the specific bibliometrics data management, we employed BibExcel software to analyze the data and attain indicators, classify items, etc. (Åström, Danell, Larsen, & Schneider, 2009). We utilized standardized software for basic treatment of data, such as MS Word and MS Excel, to support tasks of data cleaning and sorting, and figures designing. In order to obtain the correlation matrices and to perform factor analysis, we utilized SPSS v.25. We also applied VOSviewer software as a tool to build and visualize relationships graphically, and to perform analyses based on the networks underneath the research on the topic (van Eck & Waltman, 2010).

For the purpose of our study, we decided to use descriptive and relational bibliometric indicators and tools. The publishing year frequency will help to visualize and set up stages in the history of researching this topic. The country of origin will highlight the main geographical centers of contribution. The mapping and analysis of the organizations the author belong to will help to provide a different picture of the institutional collaboration and contribution to this topic. Through the main contributors and journals we will show who has researched the most and which publication served to collect the majority of those studies. The keywords help to understand the self-assessment of how the concepts and the researches are classified and related in this context, and which among them have not been studied enough. Co-occurrence in cited journals provides a clearer picture of the concentration of the research main streams. Co-occurrence in authors gives a structure of research communities and co-occurrence in citations lead to understand the intellectual framework. Finally, maps provided a clearer picture of what has been done, the communities, and what could be developed in new studies.

This way, we could obtain the main figures and the global configuration of the research on board of directors before deepening in certain core intellectual nodes, subtopics or publications. As a result, the final step of the methodology provides our conclusions based on the findings of this analysis, the limitations we faced on this study and some possible lines for future research.

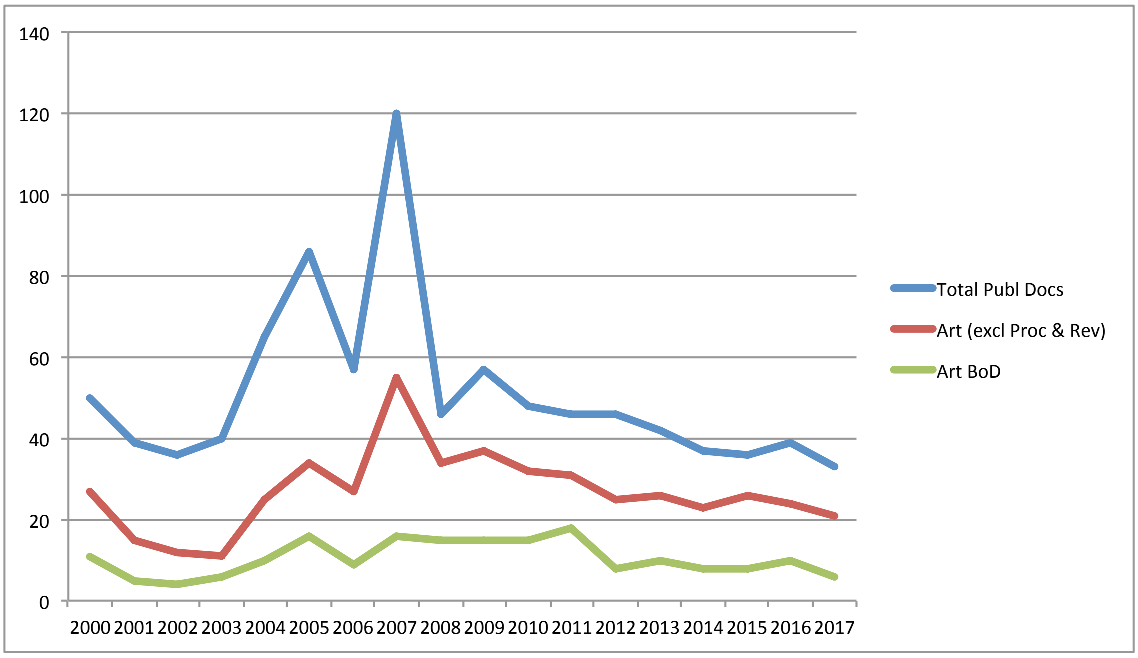
3. RESULTS AND DISCUSSION

Between 2000 and 2017, CGIR published 485 articles in their journals. The total amount of registers was 913. We excluded items categorized under proceedings papers (158), editorial materials (110), book reviews (104), reviews (50), corrections (3) and biographical items (2). By applying the selection criteria, we retrieved 190 articles that account for 39.17% of the publications. Descriptive figures showing frequencies of publications by year may help the initial understanding of the matter. As the Figure 2 shows, there are not clear ex-ante distinctions in terms of periods of time in publications. The average number of articles was 10.55 and the standard deviation 4.287. But there are three sharp peaks in 2005, 2007, and 2011 (in those years, there were 16, 16 and 18 articles respectively) that might lead to split in subperiods. We establish the periods span based on the changes in the Editor in Chief. Therefore, we came up with three periods: 2000–2007, 2008–2013, and 2014–2017. We performed calculations for each one of them. In the first period, the average of articles is 9.625 and the standard deviation 4.627. In the period of time between 2008 and 2013, the average grows until 13.5 per year and the standard deviation diminishes and sets at 3.72. In the last period, the average of published articles is 8 and the standard deviation is 1.63. Therefore, we might say that the second period gives the board of director even more relevance. The comparisons between the total number of articles and those on boards, and the one between boards and the total number of documents published, also support that suggestion. The second time span experienced an increase of the relative presence of the topic in both indicators (See Table 1).

Table 1: Descriptive statistics on published articles by period

	2000 - 2007		2008 - 2013		2014 - 2017	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Total Published Documents (TPD)	61,63	28,799	47,50	5,050	36,25	2,500
Articles excluding Proceedings & Revisions (TA)	25,75	14,390	30,83	4,622	23,50	2,082
Articles on Boards (AoB)	9,63	4,627	13,50	3,728	8,00	1,633
AoB / TPD	15,51%		28,42%		21,92%	
AoB / TA	38,93%		43,34%		33,95%	

Figure 2: Number of Published Articles in CGIR per Year (BoD vs Total Articles vs Total Published Documents)



During the whole period, publications on the board evolve similarly to the total amount of publications. In fact, there is a positive (0.825) and significant (0.000) correlation between the total number of articles and those on boards. Nevertheless, once we considered the three periods the correlation between the total count of articles and those related to the board behaves differently (Table 2). Despite the correlation is still positive, it is not significant in the second period. This behavior points to a progressive inclusion of a variety of topics amongst the themes in the second period, addressing a broad range of governance mechanisms, while keeping the baseline relevance of the board.

Table 2: Correlations: total documents, total articles and articles on Board of Directors

		2000 - 2007			2008 - 2013			2014 - 2017		
		TPD	TA	AoB	TPD	TA	AoB	TPD	TA	AoB
TPD	Pearson Correlation	1,000	0,965**	0,904**	1,000	0,767	0,356	1,000	0,544	0,980*
	Sig. (2-tailed)		0,000	0,002		0,075	0,489		0,456	0,020
TA	Pearson Correlation	0,965**	1	0,902**	0,767	1,000	0,760	0,544	1,000	0,588
	Sig. (2-tailed)	0,000		0,002	0,075		0,079	0,456		0,412
AoB	Pearson Correlation	0,904**	0,902**	1	0,356	0,760	1,000	0,980*	0,588	1,000
	Sig. (2-tailed)	0,002	0,002		0,489	0,079		0,020	0,412	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

TPD: Total Published Documents; TA: Total number of Articles; AoB: Articles on Board of Directors

The analysis of year 2005 might provide some light. The journal published a special issue focused on comparative corporate governance in UK and China, in terms of legal development, ownership structure, stakeholder's vision, and local adoption of international practices. The second issue combines contributions from practitioners and the academia. The contents show a great variety of topics in terms of topics (OCDE Principles evolution, disclosure and transparency, compliance, succession planning, size, board structure, ownership concentration, executive remuneration, strategic diversification) and geographies analyzed (US, UK, Germany, Australia, Hungary, Turkey, Singapore, China, Japan, Taiwan, OECD) and it was meant to be a reflection of the key developments on corporate governance at that time. The third issue was devoted to compare different topics in to countries: Germany and Japan. The fourth issue gathers articles from the Conference held in Birmingham on the previous year and some papers that were characterized as "hot topics". The fifth gathers in a special issue some of the papers from the Conference held at Henley in 2004, daringly labeled under the title "Leading the Boardroom Revolution". Considering all of them, we think that the publications of this year set a milestone in terms of broadness of themes, geographies and angles, which anticipates a period of maturation of the discipline inside the journal.

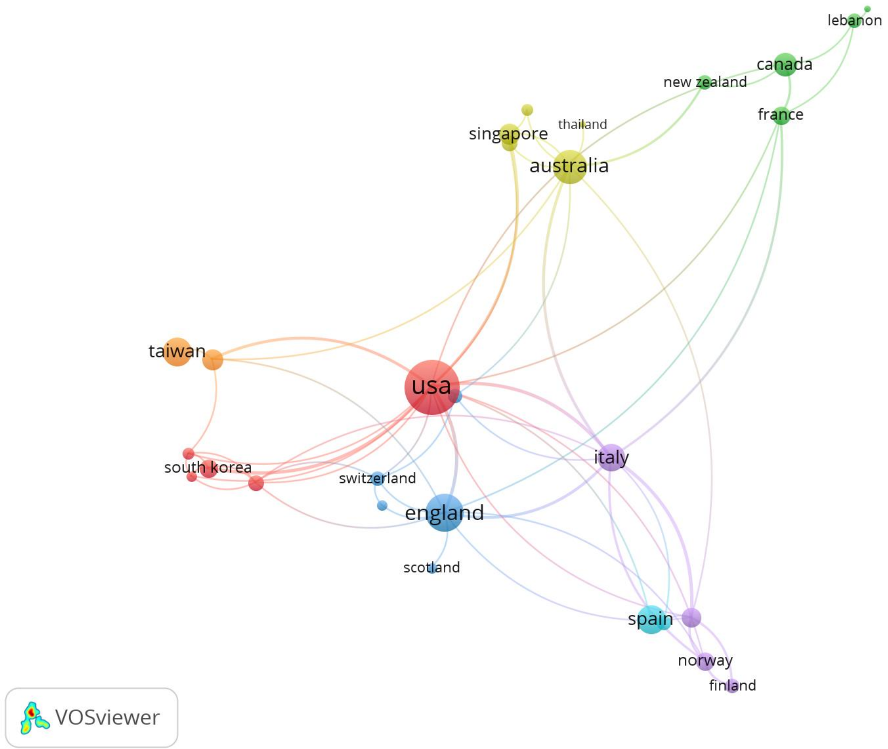
The journal had several editors during the whole time span. From 2000 to July 2007, Chris Martin was the Editor-in-Chief. During that time there was an increase in the number of issues, from four to six, which partially explains the evolution on number of publications during that time. In fact, the first year with six issues was 2005, one of the peaks we analyzed. William Judge succeeded Chris Martin for six years. It is remarkable that the number of articles on board of directors stayed as the number of total articles intentionally decreased during that time, and got open to more author geographical diversity (Judge, 2013). In the last period of time, from 2013, Zattoni and Peevar took the leading position in the Journal. CGIR stats on JCR and SCIMAGO rankings also show an increase in the impact factor while keeping the status at Q1 and Q2 in three categories: business, business and finance, and management. Then, the Journal go over these periods maintaining those contributions on the board of directors at the top level in terms of impact and relevance amongst all contributors.

These publications might be placed in the context of the overall contribution on the topic coming from all journals during that time. We found that CGIR came before, and somehow anticipated, a significant increase in the publication of articles in other journals regarding the topic. If we compare the series with the total amount of articles in other journals during those years (3,021), they are the 6.2% of the total. The correlation is slightly positive but not significant across the 18 years. If we look at the second period, the correlation is positive (0.707) but still not significant enough (0.076). Therefore, although we can't make decisive and conclusive statements just upon these figures, a noticeable fostering in board publishing articles was made at that time, and the relationship with the role of CGIR Journal was positive.

After considering subjects related to periodic publication patterns we address how different geographical areas and institutions combine to deliver the articles. The nationalities and organizations of the published articles lead to a better understanding of demographic characteristics of the authors and their degree of collaboration.

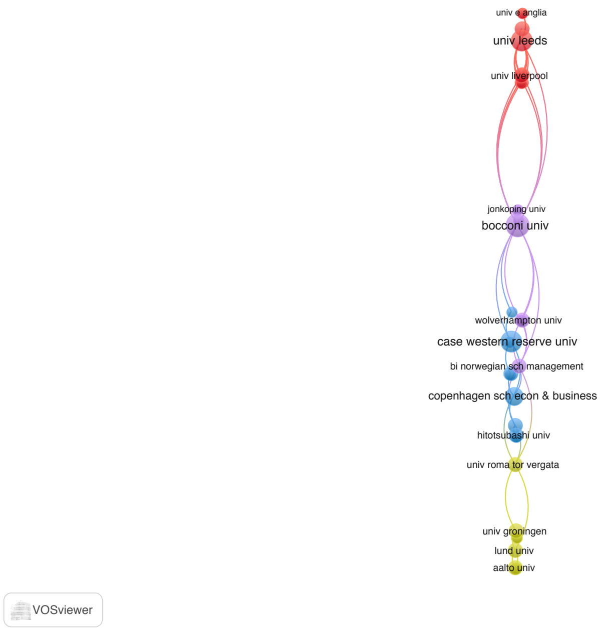
The authors of the journals come from 33 nationalities. US, English, Italian, Taiwanese, Spanish and Australian authors concentrate most of the production. Despite this concentration, it is diverse enough if it is compared to the whole set of publications on this topic. It shown continental diversity and relevance, and a more groups connected in their contributions. Five of them are not connected to others. That is the case of authors from Indonesia, Ireland, Cyprus, Colombia and Turkey. We mapped the co-authorship and showed how authors from 28 countries relate one each other in Figure 3. In the figure, the size of the nodes indicates the relative number of documents. Accordingly, the thickness of lines shows the relative strength of the relationship between authors of two countries.

Figure 3: Countries co-authorship map



The organizations behind the authors may help us to understand the way the author related within and across institutions in their collaborations. We identified 260 sourcing research organizations. We visualize that the vast majority of them are low related, even in the case when they play a key role in terms of nationality, such in many US institutions. We also notice a core built upon Italian organizations (e.g. Bocconi University, University of Padua), English institutions (e.g. Liverpool University or Leeds University), and a group of diverse north European organizations (e.g. Copenhagen University, Norwegian University, Lund University, or Aalto University), provide a higher degree of collaboration. Figure 4 shows the latest referred institutions. The size of the bubble is related to the number of co-occurrences. Thus, the bigger the size, the more contributions they have. And the closer they are, the higher the degree of collaboration between organizations.

Figure 4: Co-authorship Organizations Map



It is perceptible that the diversity of authors, as regards to the institutions and countries they belong, can be improved but, if we compare that to the overall contributions on board of directors, the CGIR is leading the way.

Although articles on board of directors have been published in management, accounting, finance or law journals, the contribution of CGIR is the more meaningful, since it accounts for the 7% of them and it is at the top of the rank according to the number of published researches on the topic.

Once we have studied the evolution in publication, and the collaboration between organizations, the analysis should aim to the authors of the journal. There are 377 unique authors across all the articles we studied. Following the same pattern of other scientific arenas, just a small group of them concentrates most publications. We should remind that we just considered articles type of document as a unit of analysis. There were a number of proceedings papers such as those authored by Kiel and Johnson that were highly cited since it study board effectiveness, composition and financial performance, and analyzed the impact of directors from the point of view of three theories (agency, stewardship and resource dependence). But, in order to keep constant criteria in the analysis, we decided not to include them.

We calculated the Hirsch-index for each one of the authors (Hirsch, 2005) and utilized this criteria to rank them in Table 3. This index is commonly used to rank and analyze the relevance of their contributions. These 26 authors account for the 30% of the articles and wrote at least two articles. The remaining 351 authors published just once in the journal.

Table 3: Top authors ranked by h-index

Author	h-index	Citation sum within h-core	All citations	All articles
Huse M	5	300	300	5
Yeh YH	3	164	164	3
Garcia-Meca E	2	73	73	2
McNulty T	2	55	55	2
Wan D	2	51	51	2
Gabrielsson J	2	106	106	2
Samra-Fredericks D	2	90	90	2
Machold S	2	57	57	2
Brammer S	2	128	128	2
Ward AJ	2	58	58	2
Gonzalez M	2	15	15	2
Chen AL	2	46	46	2
Hagendorff J	2	28	28	2
Nordqvist M	2	68	68	2
Chen HL	2	37	37	2
Ong CH	2	51	51	2
Hung JH	2	15	15	2
Minichilli A	2	57	57	3
Guedri Z	2	21	21	2
Carver J	2	25	25	2
Randoy T	2	29	29	2
Aguilera RV	2	160	160	2
Phan PH	2	30	30	2
Yoshikawa T	2	36	36	2
Keasey K	2	23	23	2
Pye A	2	36	36	2

The analysis of gender diversity on boards (Iannotta, Gatti, & Huse, 2016; Nielsen & Huse, 2010), boards involvement in strategy (Machold, Huse, Minichilli, & Nordqvist, 2011), the behavioral theory of boards (van Ees, Gabrielsson, & Huse, 2009), and the evaluation of the board (Minichilli, Gabrielsson, & Huse, 2007) give Huse, and coauthors like Gabrielsson or Nordqvist, a top ranking position. The themes he studied, along with the other collaborators, provide support to one of the main topics of research on boards, gender diversity, as well as differential approaches to the analysis. The articles authored by Yeh investigate the independence at committees with a cross-country perspective (Yeh, Chung, & Liu, 2011), the effect of control and ownership of controlling shareholders on corporate valuation in Taiwanese listed companies (Yeh, 2005), and the relationship between board characteristics, with special focus in the ownership structure, and financial distress (Lee & Yeh, 2004). The contributions coauthored by Garcia-Meca studied the board committees the reporting quality (Pucheta-Martínez & García-Meca, 2014), and provided a meta-analysis of 35 articles on earnings management in relationship with ownership structure (García-Meca & Sánchez-Ballesta, 2009). Aguilera has an important rank and count of citations mainly due to the study of Codes of Good Governance (Aguilera & Cuervo-Cazurra, 2009). According to this ranking, the Journal's contributors support their researches on authors that provide grounding for issues regarding ownership structure, often in a context of financial crisis, gender diversity, codes of good governance and new theoretical approaches on the board. The use of meta-analysis is also relevant and convenient while dealing with developments on issues related to the main topic.

A different ranking could be produce so as to remark the overall amount of citations and detect collaborations. Table 4 shows top authors ranked by citations. These 26 authors were cited over 100 times and represent 36.5% of all citations (12,370). Huse is still at the top group of authors but we reckon collaborations among Werbel, Shrader and Erhart; Simkins, Simpson, D'Souza, and Carter; Barako, Izan, and Hancock; or de Andrés, Azofra, and López, that have been widely spread. The first group of authors studied board diversity and firm financial performance in 127 US companies and found a positive association (Erhardt, Werbel, & Shrader, 2003). The second identified group of authors brought the analysis of diversity to the gender and ethnics of boards and their committees, also for the case of US companies. These authors did not find any positive nor negative effect of diversity on firm financial performance, and pointing to different criteria for heterogeneity (Carter, D'Souza, Simkins, & Simpson, 2010). The group of Barako investigates on the factors leading to voluntary disclosure (Barako, Hancock, & Izan, 2006). Finally, we highlight the article on the size, composition, functioning and effectiveness of boards in OECD countries (De Andres, Azofra, & Lopez, 2005). This article combines classical subtopics on boards of directors, mostly related to the agency theory, with a cross-country analysis. The board structure is also approached in the work of Jackling and Johl (2009) but in this case using two theoretical angles, the agency theory and resource dependence theory (Jackling & Johl, 2009). The contents of these works should have a corresponding relation to the keywords and topics studied.

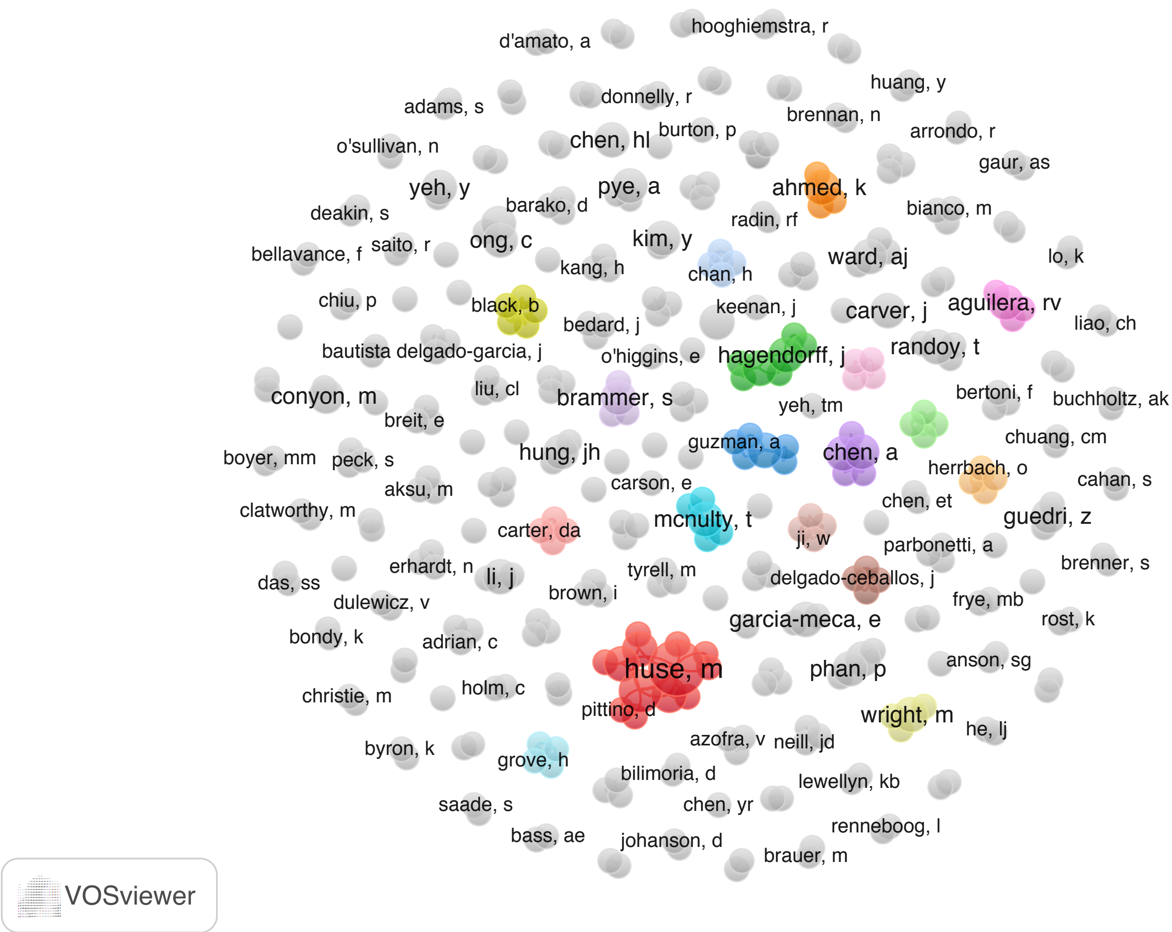
Table 4: Top authors ranked by citations

Author	h-index	Citation sum within h-core	All citations	All articles
Werbel JD	1	332	332	1
Shrader CB	1	332	332	1
Erhardt NL	1	332	332	1
Huse M	5	300	300	5
Simkins BJ	1	205	205	1
Simpson WG	1	205	205	1
D'Souza F	1	205	205	1
Carter DA	1	205	205	1
Rose C	1	181	181	1
Yeh YH	3	164	164	3
Aguilera RV	2	160	160	2
Nielsen S	1	154	154	1
Barako DG	1	152	152	1
Izan HY	1	152	152	1
Hancock P	1	152	152	1
Brammer S	2	128	128	2
Jackling B	1	128	128	1
Johl S	1	128	128	1
Cheng M	1	121	121	1
Kang H	1	121	121	1
Gray SJ	1	121	121	1
Cuervo-Cazurra A	1	115	115	1
Lopez F	1	108	108	1
de Andres P	1	108	108	1
Azofra V	1	108	108	1
Gabrielsson J	2	106	106	2

The map of co-authorship may help us to detect and analyze other groups of collaboration. Some of the groups we visualize were also well referred in terms of impact, suggesting a positive relationship. That is the case of Huse, Garcia-Meca, Aguilera, Brammer or Hagendorf (Figure 5).

In the figure, the size of the nodes shows the relative degree of collaboration and articles' production. Given the number of authors, only some of them appear depending on the group, number of collaborations, and strength of the link they have in common. We realize that there is, at the same time, a certain degree of collaboration, which was previously detected in among institutions (e.g. Italian or Northern Europe Universities), and a great variety of small groups. We think that, despite the need of collaboration, the diversification of authors, geographies, etc. enriches the contents and potential impact of researches.

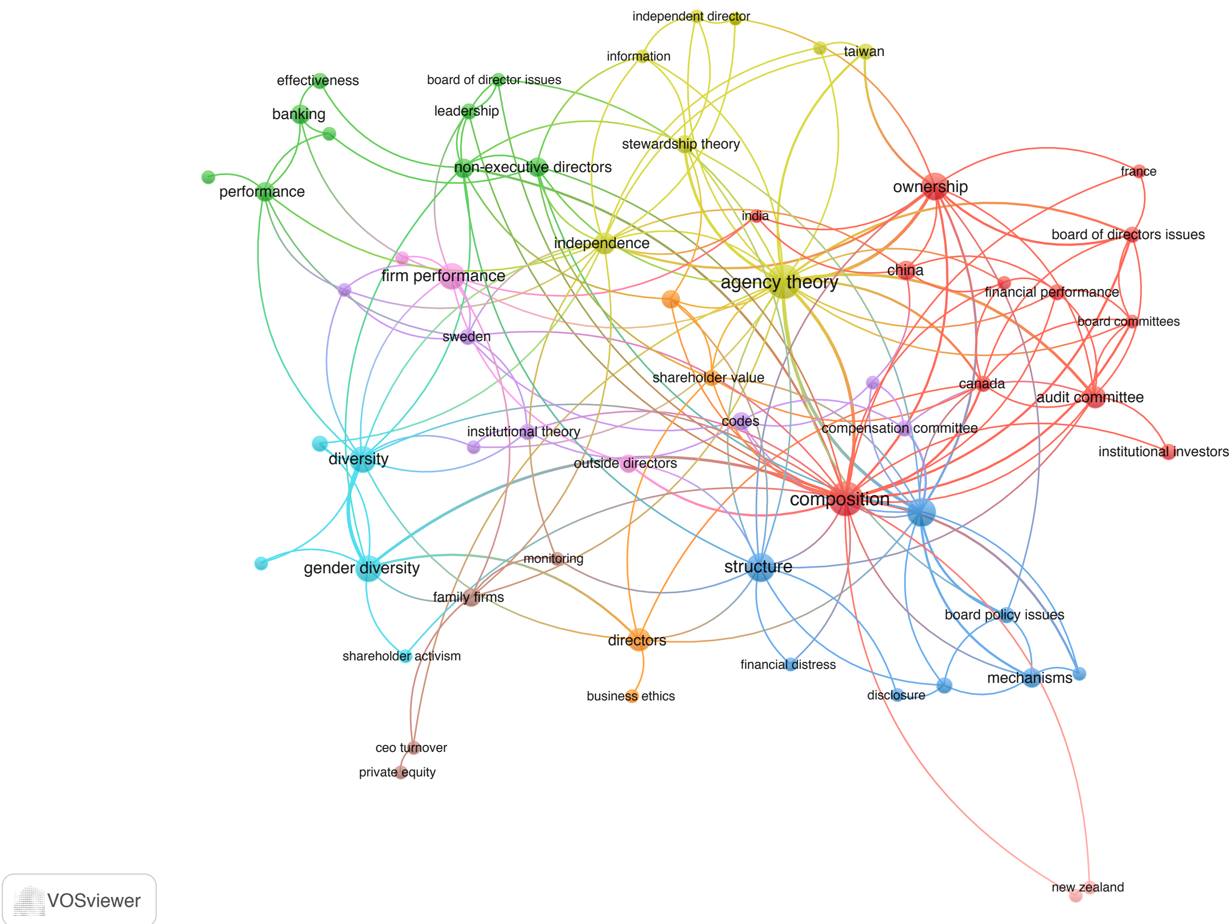
Figure 5: Co-authorship Authors' Map



Through the analysis of authors' keywords we may analyze the key contents of the works and the relationship as primary intention of the authors, providing this is entirely a self-assessment. It might also describe directions of research, main areas of interest and help to know trends and future lines of investigation. The analysis of the keywords of the sample of our work presented 787 keywords made out of 428 different terms. Only 78 of them are shown at least twice as keywords. It is worth saying that keywords are composed by different words and, also, we may establish some equivalence for the purpose of our research (e.g. we merged frequencies for the keywords Gender/Gender diversity/Diversity/Board gender diversity/Women/Women directors/Women on boards).

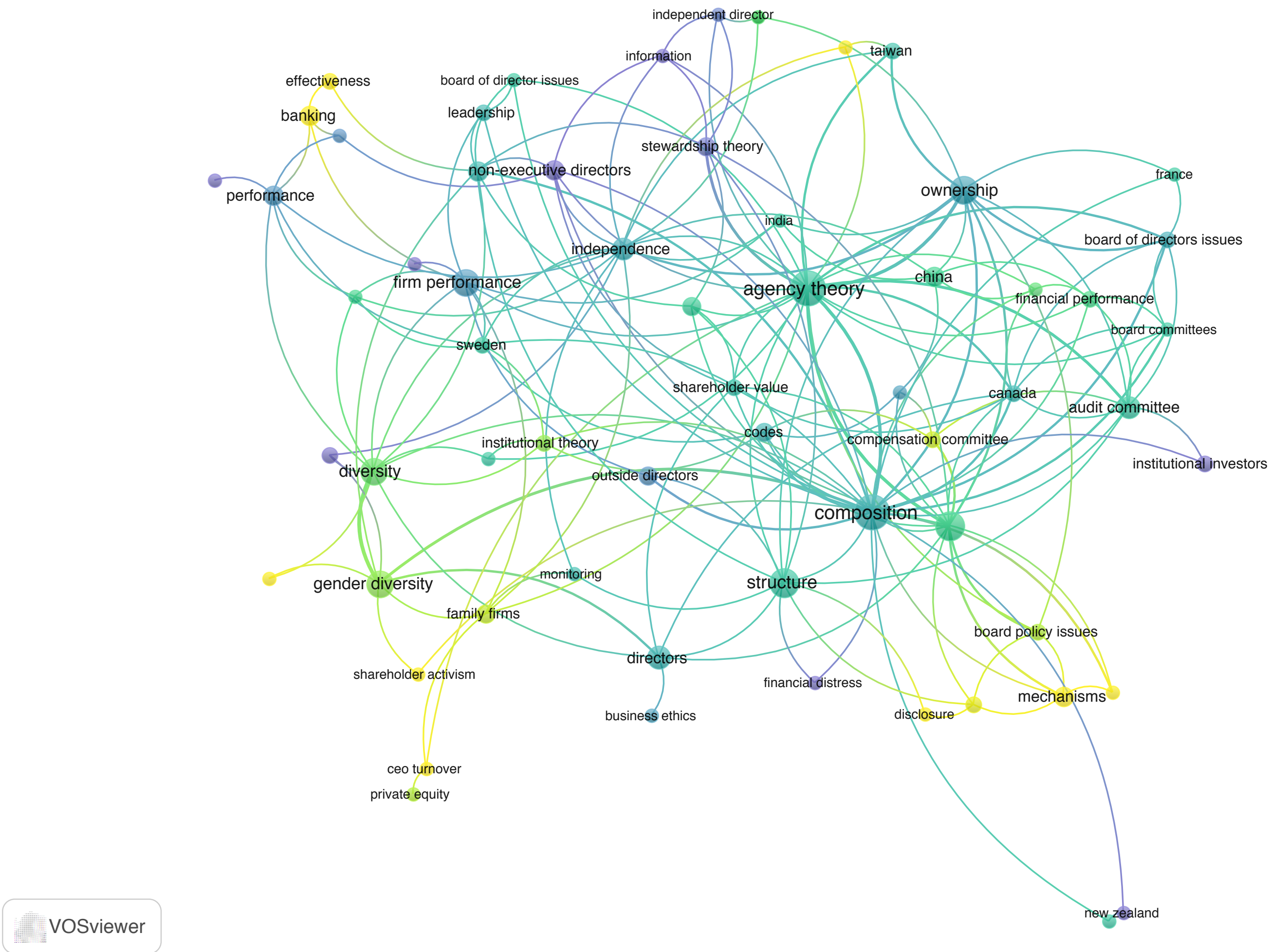
As a result, we reduced the terms to 392. Since we filtered articles considering their relationship with the board in corporate governance, these words appear in, at least, 62% of the articles. They were not considered for further analysis and were not shown at the Figure 6. As regards to the theoretical backgrounds, the Agency theory plays a central role and is strongly related to topics like composition, ownership, compensation or independence. Other theories appear in the landscape, such as the stewardship, resource-dependence or institutional theories, but they have a secondary role. In addition to the mentioned topics, Diversity and Gender diversity are also amongst the most frequent. This is consistent with the analysis of cited authors and references, and traces a road of research that has been followed in other journals. The relationship to performance is commonly used, although it adopts different shapes (value, financial, stock). Codes and indices also are shown. Industries are not clearly specified with the exception of banking. The visualization of the mentioned terms is shown in Figure 6.

Figure 6: Keywords co-occurrence map



If we count the average citation year of each term and visualize it in a color-scaled map (Figure 7), we may notice that the theories remain at the center of the sample. More recent evolutions come from industry specific analysis (banking), disclosure, shareholder activism, corporate social responsibility, board mechanisms and effectiveness at boards or family firms.

Figure 7: Keywords co-occurrence map. Overlay visualization of years.



Darkest color indicates average citation close to the time origin. Yellow colored pointed to the more recent average citation.

In our opinion is still remarkable the low relevance of ethics (2 appearances in keywords), board capital (1), or social capital (1). The Table 5 shows the 38 most cited keywords that account for 50% of the total appearances.

Table 5: Most cited keywords (grouped)

Term	Frequency
Corporate Governance	132
Board	39
Agency Theory	23
Composition	23
Compensation	14
Structure	14
gender diversity	13
Ownership	12
Diversity	11
Firm Performance	11
Directors	8
Audit Committee	7
Independence	7
Banking	5
China	5
Mechanisms	5
non-executive directors	5
performance	5
Processes	5
Codes	4
family firms	4
outside directors	4
Resource Dependence Theory	4
stewardship theory	4
Australia	3
Board of Directors Issues	3
Board Policy Issues	3
Canada	3
Compensation Committee	3
Corporate Governance indices	3
Effectiveness	3
financial performance	3
institutional investors	3
Institutional Theory	3
Leadership	3
shareholder value	3
Sweden	3
Taiwan	3

In order to understand the intellectual framework, we analyzed the cited references. We made it in two steps. In the first, we had the view of the whole set of articles. In the second we spitted the sample in three periods of time: 2000–2007, 2008–2013, and 2014–2017.

Period: 2000-2017

The articles included 11,451 bibliographic references. 8,124 of them were unique. 7,360 met the criteria and, finally, 4,895 include year and volume. The Table 6 shows the 255 works that account for the highest number of citations. They account for more than 52% of the total number of valid references. Although the descriptive results establish a consolidated track in theories and alluded topics, we will perform additional techniques to analyze the results.

Table 6: Most cited references

Article	Citations	Article	Citations	Article	Citations
Fama, 1983	77	Walsh, 1990	13	Daily, 1999	8
Jensen, 1976	71	Brickley, 1997	13	Laporta, 1997	8
Dalton, 1998	39	Hermalin, 1991	13	Anderson, 2004	8
Jensen, 1993	36	Hermalin, 1998	13	Murphy, 1999	8
Shleifer, 1997	36	Eisenberg, 1998	12	Xie, 2003	8
Yermack, 1996	36	Westphal, 1999	12	Minichilli, 2009	8
Forbes, 1999	34	John, 1998	12	Bilimoria, 1994	8
La Porta, 1999	29	Goodstein, 1994	12	van, 2003	8
Zahra, 1989	29	Judge, 1992	12	Jensen, 1990	8
Fama, 1980	27	Westphal, 1995	12	Denis, 2003	8
Daily, 2003	26	Fich, 2006	11	Shivdasani, 1999	8
La Porta, 1998	26	Rosenstein, 1990	11	Winlund, 2000	8
Johnson, 1996	25	Boyd, 1995	11	Hartzell, 2003	8
Hillman, 2003	24	Weisbach, 2003	11	Klapper, 2004	8
Weisbach, 1988	23	Pearce, 1991	11	Adams, 2010	7
Pettigrew, 1992	23	Hermalin, 1988	11	Bathala, 1995	7
Eisenhardt, 1989	22	Claessens, 2000	11	Lynall, 2003	7
Jensen, 1986	21	Kang, 2007	11	Carleton, 1998	7
Klein, 2002	21	Beatty, 1994	11	Zattoni, 2008	7
Beasley, 1996	21	Linck, 2008	11	Pugliese, 2009	7
Shleifer, 1986	20	Davis, 1997	11	Haunschild, 1993	7
Demsetz, 1985	20	Conyon, 1998	10	Pfeffer, 1973	7
Baysinger, 1985	19	Coles, 2008	10	Bhagat, 2008	7
La Porta, 2000	19	Westphal, 1998	10	Gedajlovic, 1998	7
Erhardt, 2003	19	Hillman, 2002	10	Mehran, 1995	7
Morck, 1988	18	Demsetz, 2001	10	Rindova, 1999	7
Carpenter, 2001	18	Pettigrew, 1995	10	Aguilera, 2008	7
Carter, 2003	18	Roberts, 2005	10	Aguilera, 2004	7
Faccio, 2002	18	Klein, 1998	10	Peasnell, 2000	7
Core, 1999	18	Dechow, 1996	10	Beekes, 2004	7
Pearce, 1992	17	Claessens, 2002	10	Samra-fredericks, 2000	7
Dalton, 1999	17	Bhagat, 2002	10	Westphal, 2000	7
Gompers, 2003	17	Sundaramurthy, 2003	10	Leblanc, 2007	7
Mcnulty, 1999	17	Kosnik, 1987	9	Ajinkya, 2005	7
Pfeffer, 1972	17	Dharwadkar, 2000	9	Mizruchi, 1996	7
Hillman, 2000	16	Finkelstein, 2003	9	Zona, 2007	7

Article	Citations	Article	Citations	Article	Citations
Huse, 2005	16	Kesner, 1988	9	Daily, 1994	7
La Porta, 2002	15	Hambrick, 1984	9	Johnson, 2000	7
Mcconnell, 1990	15	Young, 2008	9	Peasnell, 2005	7
Byrd, 1992	15	Judge, 2010	9	van, 2008	7
Lipton, 1992	15	Bhagat, 1999	9	Peng, 2004	7
Donaldson, 1991	14	Baysinger, 1990	9	Singh, 2004	7
Dimaggio, 1983	14	Golden, 2001	9	Westphal, 1997	6
Finkelstein, 1994	14	Villalonga, 2006	9	Kroll, 2008	6
Agrawal, 1996	14	Vafeas, 1999	9	Gillan, 2000	6
Terjesen, 2009	14	Anderson, 2003	9	Meyer, 1977	6
Rechner, 1991	14	Milliken, 1996	9	Boyd, 1990	6
Aguilera, 2003	13	Shivdasani, 1993	9	Karamanou, 2005	6
Rediker, 1995	13	Conger, 1998	9	Oxelheim, 2003	6
Ferris, 2003	13	Donaldson, 1998	8	Weimer, 1999	6
Bushee, 1998	6	Singh, 2001	5	Yeh, 2005	5
Sonnenfeld, 2002	6	Schulze, 2001	5	Hendry, 2004	5
Donaldson, 1990	6	Conyon, 1997	5	Lubatkin, 2005	5
Kaplan, 1994	6	Shrader, 1997	5	Almazan, 2005	5
Pathan, 2009	6	Chung, 1994	5	Mizruchi, 1994	5
Williams, 1998	6	Carter, 2010	5		
Kiel, 2003	6	Boyd, 1994	5		
Zajac, 1994	6	Terjesen, 2015	5		
Johnson, 1993	6	Tosi, 1989	5		
Davis, 1991	6	Thomsen, 2000	5		
Baliga, 1996	6	Terjesen, 2008	5		
Chaganti, 1985	6	Vafeas, 1998	5		
Larcker, 2007	6	Vafeas, 2003	5		
Jackson, 2005	6	Burgess, 2002	5		
Boone, 2007	6	Carcello, 2000	5		
Schellenger, 1989	6	Pettigrew, 1998	5		
Conyon, 2000	6	Dulewicz, 2004	5		
Daily, 1992	6	Djankov, 2008	5		
Daily, 1993	6	Donaldson, 1994	5		
Wiersema, 1992	6	Durnev, 2005	5		
Chen, 2009	6	Barclay, 1989	5		
Smith, 1996	6	Westphal, 1994	5		
Van, 2004	6	Pelled, 1999	5		
Smith, 1992	6	Eisenhardt, 1989	5		
Kim, 2009	6	Pye, 2004	5		
Baysinger, 1991	6	Wan, 2005	5		
Adams, 2009	6	Dalton, 2007	5		
Gilson, 1990	6	Ruigrok, 2006	5		
Pye, 2005	6	Cotter, 1997	5		
Raheja, 2005	6	Rhoades, 2000	5		
Himmelberg, 1999	6	Deangelo, 1981	5		
Bebchuk, 2003	6	Dechow, 1995	5		
Hillman, 2007	6	Davis, 1994	5		
Yermack, 2004	6	Ravasi, 2006	5		
Filatotchev, 2002	5	Gaver, 1993	5		
Farrell, 2005	5	Healy, 2001	5		
Finkelstein, 1992	5	Adams, 2007	5		
Murphy, 1985	5	Kang, 1995	5		
Franks, 2001	5	Heckman, 1979	5		
Fich, 2005	5	Haunschild, 1998	5		
Gabrielsson, 2004	5	Hall, 1998	5		
Westphal, 2005	5	Gulati, 1999	5		
Westphal, 2001	5	Anderson, 2004	5		
Nadler, 2004	5	Hambrick, 2008	5		
Westphal, 2003	5	Judge, 2008	5		

Article	Citations	Article	Citations	Article	Citations
Westphal, 2001	5	Zahra, 2004	5		
Singh, 2008	5	Jackling, 2009	5		
Chan, 2008	5	Jensen, 1983	5		
Solomon, 2003	5	Letendre, 2004	5		
Bethel, 1998	5	Holderness, 1988	5		

In any research arena there are works considered as seminal, and they set, in many cases, the main theories for approaching the topic. Some of them are permanently quoted, especially in combination with other articles, as a signal of consolidated knowledge or intellectual framework. That is the case of Jensen and Meckling (1976) or Fama and Jensen (1983). It's also evident that those articles recently published very often receive a lower number of citations. In order to assess the construction of the intellectual framework upon the cited references properly, we performed a co-citation analysis.

As a first step to visualize the core contributions and how they are related we draw a map included above-mentioned 255 top ranked references. The main co-cited referenced could be visualized in Figure 8. This maps shows the centrality of a few works at the first stage. This articles set an intellectual framework around the Agency Theory for many analyses. That is the case of (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976) and, consistently, they are a reference as we found previously amongst most cited references. The map also describes significant groups of contributions pivoting around other seminal works. For a better understanding of the foundations, we performed a factor analysis of the referred articles.

We performed a factor analysis with varimax extraction for the upper 255 works in the rank. This way we may quantitatively obtain a clearer picture of the framework depicted. The analysis provides five factors that explain over 96.422% of the variance. As is recommended, for the analysis if the factors and references, we considered those loadings above 0.7 as core contributors to the factor, whereas those below 0.32 were taken into account (Diez-Vial & Montoro-Sanchez, 2017; Vogel & Güttel, 2012). Besides, we weighted the contribution of the references based on their loadings in each factor. For the characterization of the factor, we took those references clearly linked to one of the factors extracted, and examined the group of references for every factor to find similarities in theories, topics or approaches. Since this process may lead to some subjectivity bias, we double-checked this process with a parallel examination (See Appendix Table 1).

The first extracted component covers the relationship between the board and the strategy. Thus, it is analyzed through a cognitive perspective (Forbes & Milliken, 1999a; Rindova, 1999), the influence of the appointments of new directors (Carpenter & Westphal, 2001), the presence of strategists on the board (McNulty & Pettigrew, 1999), the influence on strategy (Golden & Zajac, 2001), and also providing a review and research agenda (Pugliese et al., 2009) or a new theoretical perspective integrating organizational and agency theories (Hendry & Kiel, 2004). This factor also contains the integrative propositions of agency and resource dependence theories (Hillman & Dalziel, 2003). It also points to the topic of gender diversity (Conyon & Mallin, 1997; Farrell & Hersch, 2005), female director experience and bias for board committees memberships (Bilimoria & Piderit, 1994) or diversity including demographic, ethnic or professional background types (van der Walt & Ingley, 2003; Westphal & Milton, 2000b).

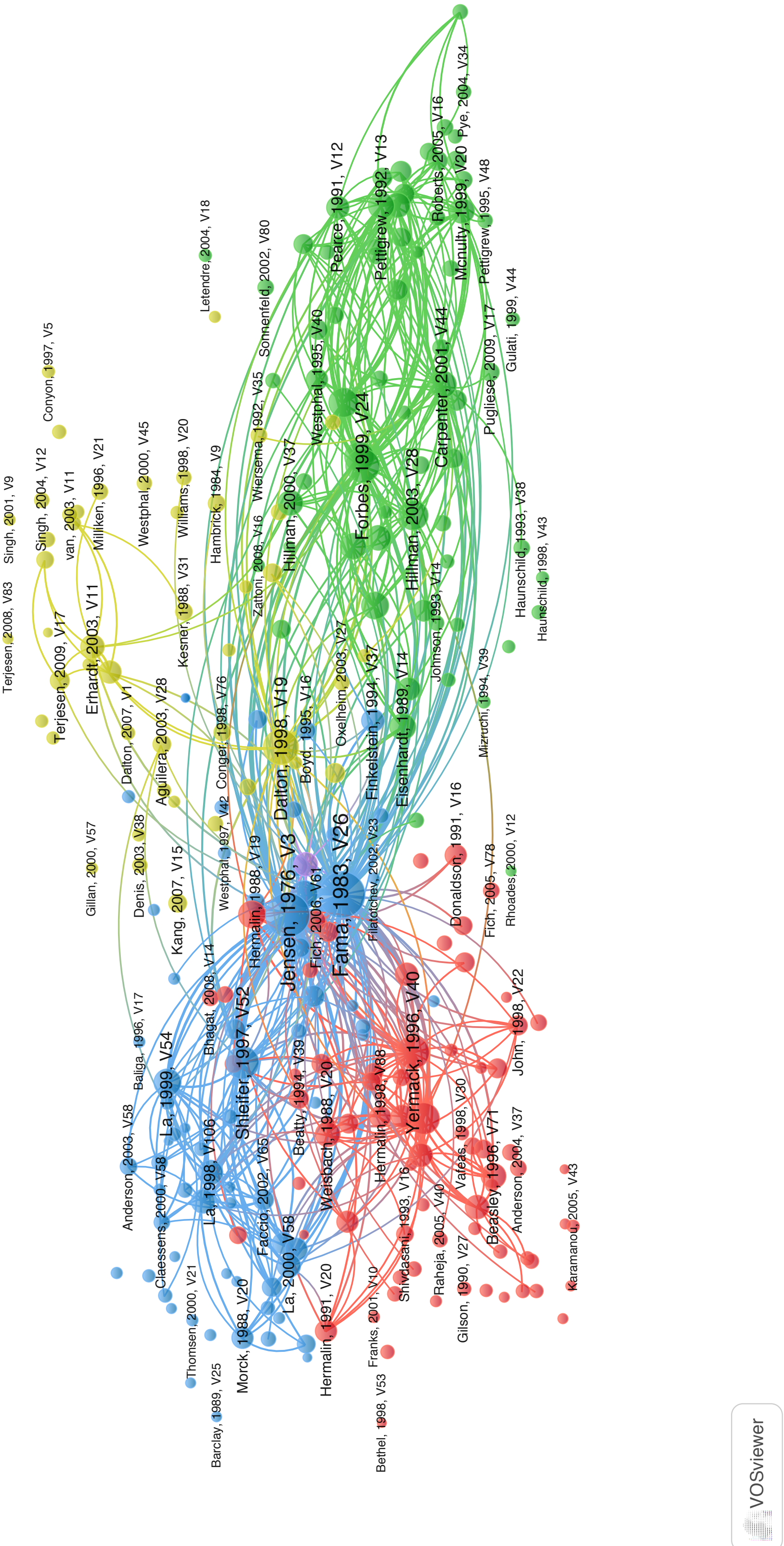
The second component approaches board composition in its relation to corporate strategy (Baysinger & Hoskisson, 1990), its effects on firm performance (Baysinger & Butler, 1985; Bhagat, Black, Bhagat, & Black, 1999; Hermalin & Weisbach, 1991), the determinants (Boone, Casares Field, Karpoff, & Raheja, 2007), or highlighting the topics of board independence (Rosenstein & Wyatt, 1990). These works may be used to provide support for researches involving board composition issues.

The third component includes three meta-analysis on board composition and financial performance (Dalton, Daily, Ellstrand, & Johnson, 1998; Dalton, Daily, Johnson, & Ellstrand, 1999; Rhoades, Rechner, & Sundaramurthy, 2000), the topic of the ownership structure in general (La Porta, Lopez-De-Silanes, & Shleifer, 1999; Thomsen & Pedersen, 2000), in relation to R&D Strategy (Baysinger, Kosnik, & Turk, 1991), or corporate value (McConnell & Servaes, 1990), facing the management ownership effect in market valuation (Morck, Shleifer, & Vishny, 1988). Then we may assume that this factor primarily aims to provide support regarding composition and ownership structure in their relation to corporate valuation.

The fourth component contains works that refer to director characteristics, such as the experience (Kroll, Walters, & Wright, 2008), tenure of directors (Vafeas, 2003), as well as type and gender (Kesner, 1988; Terjesen, Sealy, & Val, 2009). The tenure of directors is also studied in the context of CEO succession (Hermalin & Weisbach, 1988). Besides, there are articles that refer to board control (Conyon & Peck, 1998; Sundaramurthy & Lewis, 2003). In the case of Sundaramurthy, it appears the proposition of integrating Agency Theory and Stewardship Theory, which is in line with other works of the author related to experience-based human capital and social capital at the board. We suggest that this factor is a bridge between theories. It deals with issues like board characteristics, composition, size, etc. but there are elements trying to introduce new angles such as the stewardship theory.

In the fifth component, the study of family firms (Anderson & Reeb, 2004; Claessens, Djankov, & Lang, 2000; Faccio & Lang, 2002; Villalonga & Amit, 2006) is set in a context of works related to ownership structure (Demsetz & Lehn, 1985; Filatotchev & Bishop, 2002; Yeh, 2005). This factor is also accompanied by the classic work regarding the agency problems and the theory of the firm (Fama, 1980). Then, with think of this factor as the one supporting researches that aim to, or include, family ownership of firms, from the agency theory perspective.

Figure 8: Co-citation references map



Aiming to analyze how this intellectual framework evolved over different periods of time, we carried out the same technique for the three stages we identified. (Matrices of rotated components may be found in the Appendix)

Period 2000 – 2007

In this period, there are three components explaining 96.24% of the variance (See Appendix Table 2). Works studying basic issues on agency problems such as ownership structure, remuneration, independence or CEO power supports the first component. Ownership structure is studied for UK (Ezzamel & Watson, 1993), in a comparison among different countries (Gedajlovic & Shapiro, 1998), in the case of majority or large shareholders (Holderness & Sheehan, 1988; Shleifer & Vishny, 1986), or related to board composition and independence before tender offers or hostile takeovers (Cotter, Shivdasani, & Zenner, 1997; Shivdasani, 1993). Remuneration topics are depicted in different angles: executive (Gomez-Mejia & Wiseman, 1997), directors' compensation (Greenbury, 1995), or CEO compensation (Boyd, 1994). The power of the CEO is also studied in terms of the concentration that occurs when holding at the same time the President position (Boyd, 1995; Brickley, Coles, & Jarrell, 1997; Finkelstein & D'aveni, 1994) and his relative power under different circumstances (Pearce II & Zahra, 1991). There is also room for stewardship points of view (Davis, Schoorman, & Donaldson, 1997), to analyze topics on the CEO (Boyd, 1995; Donaldson & Davis, 1991), which suggest a broader perspective to address 'traditional agency issues'.

The second component represents the backbone for Agency theory, with the help of review articles, and the role of the directors, with special focus in the strategy. Thus, the firm in the context of the separation of ownership and control, and the problems it triggers are at the core of the works (Eisenhardt, 1989; Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976). Reviews on the Agency Theory (Eisenhardt, 1989), the Board of Directors (Johnson, Daily, & Ellstrand, 1996) or the board composition and the financial performance (Dalton et al., 1998) help defining the grounds of agency problems. Long-term, strategic envisioning of the directors (Forbes & Milliken, 1999a; McNulty & Pettigrew, 1999) induces, despite their limitations (Lorsch, 1989) and through board involvement (Zahra & Pearce II, 1990), effects on strategy formulation (Tricker, 1994) and the organization as a whole (Finkelstein & Hambrick, 1997). Therefore, the agency theory is complemented with a view from strategy, providing a perspective that is not entirely centered on regulation, law and finance.

In the third component, the board is approached from the Agency Theory perspective and the Resource Dependence view, where diversity raises as a key factor. Here we found studies on the board composition (Barnhart, Rosenstein, & Marr, 1994; Pfeffer, 1972), its determinants (Bathala & Rao, 1995; Hermalin & Weisbach, 1988), and its effects (Baysinger & Butler, 1985; Beasley, 1996; Kosnik, 1987). The control of organizations is approached from the Resource Dependence Theory (Pfeffer & Salancik, 1978), and integrated with the Agency Theory (Hillman & Dalziel, 2003). In this context, human capital variables like experience, background, skills in general (Kesner, 1988), and social capital variables such as network (Pennings, 1980) and credibility are pointed out as main causes for directors contribution (Pettigrew & McNulty, 1995). And, besides, diversity has a key role connected to the network ties (Westphal & Milton, 2000a), linked to firm value (Carter, Simkins, & Simpson, 2003), strategic change (Goodstein, Gautam, & Boeker, 1994), or organizations groups (Milliken & Martins, 1996), and where women directors contribution to the board are relevant (Burgess & Tharenou, 2002; Burke, 1997; Conyon & Mallin, 1997; Singh, Vinnicombe, & Johnson, 2001). The fourth and the fifth components didn’t provide any reference with a loading above 0.32 and, therefore, they were not considered for the analysis.

The components of this period show that the authors addressed classical issues of corporate governance not only under the Agency Theory but also utilizing other perspectives such as RDT and Stewardship Theory. This openness in the intellectual framework

Period 2008 – 2013

For the second stage of time there are three components where the total variance explained is 96.37% (See Appendix Table 3). In the first component the board composition frames matters related to remuneration. The board composition topic is addressed jointly with the size in the context of the environment of the firm (Pfeffer, 1972), showing the importance of independence through outside directors in the context of financial fraud (Beasley, 1996), and considering the performance effects of changes on it (Baysinger & Butler, 1985). The topics of remuneration, compensation, and incentives and are, in turn, related to firm performance, ownership, top management, chief executive and outside directors (Bebchuk & Fried, 2003; Bebchuk & Fried, 2004; Conyon & Peck, 1998; Core, Holthausen, & Larcker, 1999; Hartzell & Starks, 2003; Hermalin & Weisbach, 1991; Mehran, 1995;

Yermack, 2004). The intellectual framework is set in the Agency Theory (Eisenhardt, 1989; Fama, 1980; Fama & Jensen, 1983) and the governance mechanisms to solve potential issues (Agrawal & Knoeber, 1996; Rediker & Seth, 1995).

The second component combines intellectual frameworks of Stewardship Theory (Donaldson & Davis, 1991; Muth & Donaldson, 1998; Van den Berghe & Levrau, 2004), Agency Theory (Jensen, 1993; Jensen & Meckling, 1976; Jensen, 1986). These views frame the board composition determinants (Hermalin & Weisbach, 1988; Raheja, 2005), strategic adaption in response to environmental changes (Hillman, Cannella, & Paetzold, 2000) or certain situation the firm may face in financial markets such as bankruptcy, IPOs, or hostile takeovers (Daily & Dalton, 1994; Filatotchev & Bishop, 2002; Shivdasani, 1993). Besides, in this context, the ownership structure is analyzed when is the case of family firms (Anderson, Mansi, & Reeb, 2003; Anderson & Reeb, 2003, 2004; Claessens et al., 2000; Villalonga & Amit, 2006), large shareholders (Claessens, Djankov, Fan, & Lang, 2002; La Porta et al., 1999; Shleifer & Vishny, 1986) or management (Morck et al., 1988). As a result, we may name this component as multiple views on board composition and ownership structure.

Along with seminal works on separation of ownership and control, and the role of the president and the board of directors (Fama & Jensen, 1983; Lorsch, 1989; Mace, 1972), the third component provides integrative approaches for the board of directors (Hillman & Dalziel, 2003) and a clear direction to open the foundations to the resource dependence approach (Pfeffer & Salancik, 1978), to consider the behavioral perspectives (Gabrielsson & Huse, 2004; Huse, 2005) and to establish a relationship with the strategy (Pugliese et al., 2009). As a result, topics like behavior at the board (Gabrielsson & Winlund, 2000; van Ees, van der Laan, & Postma, 2008; Westphal, 1999) and the strategic orientation of the board (Forbes & Milliken, 1999b; Golden & Zajac, 2001; Judge Jr & Zeithaml, 1992; McNulty & Pettigrew, 1999) have a relevant place. Jointly, provide a solid basis where board demography (Westphal & Zajac, 1995; Williams & O'Reilly III, 1998; Zona & Zattoni, 2007) and topics on board human and social capital configure new areas of research in diversity (Carter et al., 2003; Farrell & Hersch, 2005; Ruigrok, Peck, & Tacheva, 2007) and interlocks (Haunschild & Beckman, 1998; Mizruchi, 1996; Pettigrew & McNulty, 1995; Ravasi & Zattoni, 2006).

Period 2014 – 2017

For the last period we considered, we found three components explaining 96.2% of the total variance (See Appendix Table 4). The first component is clearly focused on gender diversity on the board. Based on solid works on qualitative methods for the field of corporate governance (Mcnulty, Zattoni, & Douglas, 2013; Zattoni, Douglas, & Judge, 2013), this component gives the background for a research agenda (Terjesen et al., 2009). References included in this component offer studies on the presence of women at the board for a single country (Nielsen & Huse, 2010; Singh & Vinnicombe, 2004) and from an international perspective (Terjesen & Singh, 2008), given the need for more cross-national researches (Adams, de Haan, Terjesen, & van Ees, 2015). Some important issues are brought here, such as the discussion on tokenism vs. critical mass approaches (Torchia, Calabrò, & Huse, 2011), the impact on valuation under a mandate of changing the board to meet quotas (Ahern & Dittmar, 2012), or the organizational predictors (Hillman, Shropshire, & Cannella, 2007). The relationship with family firms is also pointed out, since some works studying the topic (Anderson & Reeb, 2003) and its link to performance (Schulze et al., 2001).

The second component focuses on two elements: effectiveness in monitoring (Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006) and the board diversity (Adams & Ferreira, 2009; Carter et al., 2003; Erhardt et al., 2003; Kang, Cheng, & Gray, 2007; Terjesen, Aguilera, & Lorenz, 2015). The presence of works on resource dependence theories (Hillman et al., 2000) clear the way to a broader avenue for researches based on social capital, human capital and demographics at the board (Johnson, Schnatterly, & Hill, 2013).

The last component we identified for this period basically encompasses works providing theoretical backgrounds. From classic articles on the firm, the separation of ownership and control, and the appearance of the agency issues and costs (Fama & Jensen, 1983; Jensen, 1986, 1993; Jensen & Meckling, 1976), to resource dependence (Pfeffer & Salancik, 1978), to integrative approaches of the former theories (Hillman & Dalziel, 2003; Zahra & Pearce II, 1989), or to organizational approaches, key articles provide a grounding for deepening in usual and new topics. Investor protection is linked to the former (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; Shleifer & Vishny, 1997), and it is considered in the context of governance mechanisms (Walsh & Seward, 1990) as well as the circumstances set by the ownership structure of the firms (Faccio &

Lang, 2002). Finally, we should highlight the relevance of earnings management in this component

As it happened in the analysis of the previous periods, fourth and fifth components don't include significant loadings for the references and, therefore, they are not included in the analysis. We summarized the analysis of every period in the following table.

Table 7: Components per period comparison

	Components		
	1	2	3
2000 - 2007	• Board composition and independence before tender offers or hostile takeovers: Cotter, Shivdasani, & Zenner (1997); Shivdasani (1993) • Remuneration and compensation executive Gomez-Mejia & Wiseman (1997), Greenbury (1995), Boyd (1994) • Ownership structure Ezzamel & Watson (1993), Gedajlovic & Shapiro (1998), Holderness & Sheehan (1988); Shleifer & Vishny (1986)	• Agency Theory 'basics': Fama (1980); Fama & Jensen (1983); MC Jensen & Meckling (1976) • Literature Reviews: Eisenhardt, (1989), Johnson, Daily, & Ellstrand (1996), Dalton et al. (1998) • Strategic envisioning: Forbes & Milliken, (1999); McNulty & Pettigrew (1999), Lorsch (1989), Zahra & Pearce II (1990), Tricker (1994)	• Resource Dependence Theory: Pfeffer & Salancik (1978) • Integration RDT-AT: Hillman & Dalziel (2003) • Board Composition, determinants and effects: Barnhart, Rosenstein, & Marr, 1994; Pfeffer, 1972), Bathala & Rao, 1995; Hermalin & Weisbach (1988), Baysinger & Butler (1985), Beasley (1996); Kosnik (1987) • Human Capital, Social capital and Directors contribution: Kesner, 1988), Pennings (1980), Pettigrew & McNulty (1995). • Diversity: Westphal & Milton, (2000), Carter, Simkins, & Simpson (2003), Goodstein, Gautam, & Boeker (1994), Milliken & Martins (1996), Burgess & Tharenou (2002); Burke (1997); Conyon & Mallin (1997); Singh, Vinnicombe, & Johnson (2001)
	Ownership and control issues	Agency Theory and Strategy	Resource Dependence Theory and issues on governance
2008- 2013	• Remuneration, compensation and incentives: Bebchuk & Fried (2003); Bebchuk & Fried, (2004); Conyon & Peck (1998); Core, Holthausen, & Larcker (1999); Hartzell & Starks (2003); Hermalin & Weisbach (1991); Mehran (1995); Yermack (2004). • Board composition, size, independence and effects of changes: Pfeffer, 1972), Beasley, 1996, Baysinger & Butler, (1985) • AT and governance mechanisms: Eisenhardt (1989); Fama (1980); Fama & Jensen (1983), Agrawal & Knoeber (1996); Rediker & Seth (1995)	• Ownership structure, family firms, large stakeholders and management: family firms Anderson, Mansi, & Reeb, (2003); Anderson & Reeb, 2003, 2004; Stijn Claessens et al. (2000); Villalonga & Amit (2006), Claessens, Djankov, Fan, & Lang (2002); La Porta, Lopez-De-Silanes, & Shleifer (1999); Shleifer & Vishny (1986), Morck, Shleifer, & Vishny (1988). • Board composition determinants, strategic adaption: Hermalin & Weisbach (1988); Raheja (2005)	• RDT: Hillman & Dalziel, 2003), Pfeffer & Salancik, 1978) • Behavioral perspectives: Jonas Gabrielsson & Huse, 2004; Huse, 2005), Gabrielsson & Winlund, 2000; Hans van Ees, van der Laan, & Postma, 2008; Westphal, 1999 • Relationship with the strategy: Pugliese et al., 2009), Forbes & Milliken, 1999b; Golden & Zajac, 2001; Judge Jr & Zeithaml, 1992; McNulty & Pettigrew, 1999 • Board demography, human and social capital: Westphal & Zajac, 1995; Williams & O'Reilly III (1998); Zona & Zattoni, 2007, Carter et al. (2003); Farrell & Hersch (2005); Ruigrok, Peck, & Tacheva (2007), Haunschild & Beckman (1998); Mizruchi, (1996); Pettigrew & McNulty (1995); Ravasi & Zattoni (2006)

	Components		
	1	2	3
		Davis, 1991; Muth & Donaldson, 1998; Van den Berghe & Levrau, 2004), Agency Theory: Jensen, 1993; Jensen & Meckling, 1976; Jensen, 1986	
	Board composition and remuneration	Board composition and ownership structure	RDT, behavior and strategy at the board
2014-2017	• Research agenda Terjesen et al., 2009). • Women at the board Nielsen & Huse (2010); Singh & Vinnicombe (2004), Terjesen & Singh (2008), Adams, de Haan, Terjesen, & van Ees (2015). Tokenism vs. critical mass approaches: Torchia, Calabrò, & Huse (2011) • The impact on valuation under a mandate of changing the board to meet quotas: Ahern & Dittmar, 2012) • The organizational predictors: Hillman, Shropshire, & Cannella (2007).	• Effectiveness in monitoring: Ferris, Jagannathan, & Pritchard (2003); Fich & Shivdasani (2006) • Board diversity: Adams & Ferreira (2009); Carter et al. (2003); Erhardt et al. (2003); Kang, Cheng, & Gray (2007); Terjesen, Aguilera, & Lorenz (2015)	• Theories: agency issues and costs: Fama & Jensen, (1983); Jensen, (1993); Jensen & Meckling, (1976); Michael Jensen, (1986); resource dependence: Pfeffer & Salancik, (1978); integrative approaches: Hillman & Dalziel (2003); Zahra & Pearce II (1989) • Classical issues: Investor protection Djankov, La Porta, Lopez-de-Silanes, & Shleifer (2008); La Porta, Lopez-De-Silanes, Shleifer, & Vishny, (2002); La Porta, Lopez de ‐ Silanes, Shleifer, & Vishny, (1998); Shleifer & Vishny (1997) • Context of governance mechanisms: Walsh & Seward (1990) • Ownership structure of the firms: Faccio & Lang (2002).
	Diversity	Effectiveness in monitoring and diversity	Theoretical backbone for investor protection

Comparing the three periods, we found that the ratio unique authors / total number of authors is quite close to one in all periods. This shows a low concentration of authors or, on other words, it shows that the Journal contributors are highly diversified. This fact is consistent with the aim of pursuing a wide range of perspectives and topics while keeping the overall quality of the published research.

The Agency Theory has a relevant place in all periods, but the journal is open to a greater variety of groundings and topics. This is noticeable in the components analyzed in each period, where that theory, although it has a significant role due to the presence of classic references and issues, leaves the leading position to other topics (e.g. diversity) and views, depicting maturation traits in the research literature. We suggest that the openness of theoretical background make a proper frame to trigger researches where Human Capital and Board Capital appear as relevant.

Diversity, a term that clearly appear as a keyword in many journals, in general or specifically focused on gender, has a deep founding already in the first period of our study. It is interesting because it constitutes an explanatory component, showing a solid basis for a whole set of researches, specially in the last period of time. Sometimes a topic may appear in literature but without being considered central or key. In this case, it occurs the opposite, consistently with previous analyses that showed variety in topics, the role of this item, and the ambitious aims of the Journal.

Besides, the concentration of different theories in components, noticeable in the last period of time, suggests that authors are comparing approaches, exploring new ones or introducing new related topics in traditional frameworks. This is also a sign of maturation in the research of the field.

4. CONCLUSIONS

The board of directors has been a key topic in the research field of corporate governance for years. Many articles addressed main themes surrounding this topic: performance, board composition, board size, etc. in vast number of journals, but the leading contributor was the Journal Corporate Governance An International Review. In this article, we described, mapped and analyzed the research on the topic realized from 2000 to 2017 in 190 research articles that were published in that journal.

The frequency of publications shows the topic is relevant and constant element amongst the articles published in that period. We identified three different periods 2000-2004, 2005-2011 and 2012-2017. In those periods we reckon the growth, maturation, and consolidation of the produced literature. Different number of articles, issues, and length evolved accordingly to the expressed goals of the different editors-in-chief in every stage. The combination of these elements positively affected the impact of the journal according to different rankings, and the overall amount of contributions on the topic.

Geographical origins and collaboration among research organizations show a prevalence of European affiliations in a context of a high degree of institutional diversity. The field of Corporate Governance always demands a growing collaboration among diverse countries and institutions. There is a need of spreading knowledge and practice, and also different cultures, societal and legal backgrounds give the opportunity of face issues in a different way. Besides, that kind of collaboration, especially when it is international, leads to matters that are focused on governance beyond local regulation.

The analysis of the 377 unique contributors give as a first rationale for the intellectual framework they built. As in other journals, a small group of authors account for a significant number of articles, although it is wide enough not to be considered as endogamic. The variety of authors is also supported by a ratio unique authors to total authors that it is close to 1. Besides, the mapping and analysis of co-authorship shows, at same time, several nodes of collaboration and a diverse community of authors. Both, the analysis of the impact through Hirch index and the number of citations of their articles in this sample shows the need of supporting traditional agency issue, like board independence or ownership structure, as well as diversity approaches. In that sense, the analysis of the keywords agrees with these statements, confirms a rising role of codes and indices, and shows recent evolution of research towards disclosure, family firms, or shareholder activisms. In spite of this, we found a lack of presence of board capital and ethics related studies.

Although the study of the influence of human capital in boards has been pursued under different aspects, it is still very limited in terms of the number of articles, themes or subtopics. Thus, the factor analysis of the top ranked references shows that it’s been mentioned but at a relatively low relevant level. Nevertheless, the relevant presence in the components suggests strong foundation and open theoretical frameworks that support new researches related to this topic.

The factor analysis provides us with the main grounds the articles used in aims. We identify five great factors that were mapped and analyzed. The first factor focuses on the relationship between the board and the strategy, and the impact of diversity. The second factor contents foundation for board composition researches. The third factor gives support for ownership structure matters. We suggest that the fourth factor is set to be a bridge trying to introduce other theories, such as the stewardship theory, and new angles on board and characteristics, such as experience or tenure. The fifth factor focuses on the family firms as regards to the composition (Anderson & Reeb, 2004) or ownership structure (Faccio & Lang, 2002), or their impact on firm value (Villalonga & Amit, 2006). The construction of a corporate governance index out of the provision so as to check the impact on equity prices (Gompers, Ishii, & Metrick, 2003) as well as other works, is congruent with the analysis on keywords we made. Indices play a key role as for the governance matters, spreading practices, getting information based on recommendations, fostering transparency, accountability and giving signals to investors and markets in general.

Given the analysis of the factors, we think that the theoretical foundation of the works has a deep root in Agency Theory framework and issues but, at the same time, it is open to new theories, such as the Resource Dependence or the Stewardship Theory. Likewise, the presence of studies aiming to strategy topics provides a wider scope to the field. In this sense, we think that it sets new tracks, far from the original law or financial oriented researches. Accordingly with this rationale, the journal ranks high in the indices in those arenas. Regarding the topics, we think that they are diverse and wider in scope, if we compare with the overall published articles, and set a mark in the most relevant ones: composition, structure, diversity, family ownership, board capital, etc. The foundation for diversity studies grows over time and it reaches a prevalent position in the last of the periods we analyzed.

The Board of Directors is a central element in Corporate Governance and it should be faced taking into account different perspectives, studying various topics, and relating to other disciplines that might enlighten that reality. We think that the kind of coverage CGIR makes conveys to a leading position amongst other journals.

Our work shows a quantitative basis to assert the relevance of works, authors and topics in the literature on board of directors, which is a proper starting point to quote researches in any literature review and meta-analysis on the topic. At the same time, this study shows the less studied subjects or points of view, serving as a way to identify future lines of investigation.

Although we studied the topic of board of directors in the journal that contributes the most, it would be appropriate to apply the same type of analysis to other top journals on this field, and compare the results to improve the research. This angle would show how different journals are approaching the topic and the way they are impacting and configuring the intellectual framework as top performers in the arena.

A meta-analysis on the board of directors would have a solid basis in these studies since it would explain and explore the qualified contributions that shaped the investigation over the years and were quantitatively identified using bibliometric techniques. Besides, as the main angles and approaches to the analysis of the board have been identified throughout this article, the gaps and the lack of deep understanding from other points of view or topics related for further research appear clearer for scholars. Amongst them we may identify some related to human capital and codes relationship, or human capital and the board, which, in our opinion, are underrepresented in research studies. As a relevant element of the board capital, it should be studied more in depth. It can be also interesting for future researches to employ bibliographic coupling technique to assess potential trends in recent research.

Finally, we should mention that we did not link the references to places or sections where they were mentioned within the articles (e.g. introduction, methodology, results). Although their position within the articles could drive a deeper understanding, a natural language processing software should be utilized so as to analyze the actual meaning of the citation in a sample of articles as big as ours. Despite that, this sort of study could be approached when performing a meta-analysis of a reduced, meaningful number of articles. Although we followed existing literature in the methodological steps to obtain and process the source of data, we concede that limiting to one database could let some articles out of the analysis. To avoid a significant number of issues that might appear in such a case, we chose the one that was utilized alone in the vast majority of the studies.

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APPENDIX

Appendix Table 1: Components - Total variance explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	52,142	20,448	20,448	52,142	20,448	20,448
2	49,841	19,546	39,993	49,841	19,546	39,993
3	49,317	19,340	59,334	49,317	19,340	59,334
4	48,508	19,023	78,356	48,508	19,023	78,356
5	46,067	18,065	96,422	46,067	18,065	96,422
6	0,696	0,273	96,694			
7	0,638	0,250	96,945			
8	0,624	0,245	97,189			
9	0,612	0,240	97,429			
10	0,555	0,218	97,647			
11	0,539	0,211	97,858			
12	0,495	0,194	98,053			
13	0,473	0,186	98,238			
14	0,457	0,179	98,417			
15	0,428	0,168	98,585			
16	0,404	0,159	98,744			
17	0,372	0,146	98,890			
18	0,355	0,139	99,029			
19	0,279	0,110	99,138			
20	0,263	0,103	99,242			
21	0,065	0,025	99,267			
22	0,064	0,025	99,292			
23	0,062	0,024	99,317			
24	0,057	0,022	99,339			
25	0,053	0,021	99,360			
26	0,051	0,020	99,380			
27	0,050	0,020	99,400			
28	0,049	0,019	99,419			
29	0,047	0,019	99,437			
30	0,047	0,018	99,456			
31	0,045	0,018	99,473			
32	0,044	0,017	99,491			
33	0,043	0,017	99,507			
34	0,041	0,016	99,524			
35	0,040	0,016	99,539			
36	0,039	0,015	99,554			
37	0,036	0,014	99,568			
38	0,034	0,013	99,582			
39	0,034	0,013	99,595			
40	0,031	0,012	99,607			
41	0,030	0,012	99,619			
42	0,028	0,011	99,630			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
43	0,026	0,010	99,640			
44	0,026	0,010	99,650			
45	0,024	0,009	99,660			
46	0,022	0,009	99,668			
47	0,021	0,008	99,676			
48	0,020	0,008	99,684			
49	0,017	0,007	99,691			
50	0,017	0,006	99,697			
51	0,015	0,006	99,703			
52	0,013	0,005	99,708			
53	0,013	0,005	99,713			
54	0,012	0,005	99,718			
55	0,012	0,005	99,723			
56	0,012	0,005	99,728			
57	0,012	0,005	99,732			
58	0,011	0,004	99,737			
59	0,011	0,004	99,741			
60	0,011	0,004	99,745			
61	0,011	0,004	99,750			
62	0,010	0,004	99,754			
63	0,010	0,004	99,758			
64	0,010	0,004	99,762			
65	0,010	0,004	99,765			
66	0,009	0,004	99,769			
67	0,009	0,004	99,773			
68	0,009	0,004	99,776			
69	0,009	0,003	99,780			
70	0,009	0,003	99,783			
71	0,008	0,003	99,786			
72	0,008	0,003	99,790			
73	0,008	0,003	99,793			
74	0,008	0,003	99,796			
75	0,008	0,003	99,799			
76	0,008	0,003	99,802			
77	0,008	0,003	99,805			
78	0,007	0,003	99,808			
79	0,007	0,003	99,811			
80	0,007	0,003	99,814			
81	0,007	0,003	99,816			
82	0,007	0,003	99,819			
83	0,007	0,003	99,822			
84	0,007	0,003	99,824			
85	0,006	0,003	99,827			
86	0,006	0,002	99,829			
87	0,006	0,002	99,832			
88	0,006	0,002	99,834			
89	0,006	0,002	99,836			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
90	0,006	0,002	99,839			
91	0,006	0,002	99,841			
92	0,006	0,002	99,843			
93	0,006	0,002	99,845			
94	0,005	0,002	99,847			
95	0,005	0,002	99,849			
96	0,005	0,002	99,851			
97	0,005	0,002	99,853			
98	0,005	0,002	99,855			
99	0,005	0,002	99,857			
100	0,005	0,002	99,859			
101	0,005	0,002	99,861			
102	0,005	0,002	99,863			
103	0,005	0,002	99,865			
104	0,005	0,002	99,866			
105	0,004	0,002	99,868			
106	0,004	0,002	99,870			
107	0,004	0,002	99,872			
108	0,004	0,002	99,873			
109	0,004	0,002	99,875			
110	0,004	0,002	99,877			
111	0,004	0,002	99,878			
112	0,004	0,002	99,880			
113	0,004	0,002	99,881			
114	0,004	0,002	99,883			
115	0,004	0,002	99,885			
116	0,004	0,002	99,886			
117	0,004	0,002	99,888			
118	0,004	0,002	99,889			
119	0,004	0,001	99,891			
120	0,004	0,001	99,892			
121	0,004	0,001	99,893			
122	0,004	0,001	99,895			
123	0,004	0,001	99,896			
124	0,004	0,001	99,898			
125	0,003	0,001	99,899			
126	0,003	0,001	99,900			
127	0,003	0,001	99,902			
128	0,003	0,001	99,903			
129	0,003	0,001	99,904			
130	0,003	0,001	99,906			
131	0,003	0,001	99,907			
132	0,003	0,001	99,908			
133	0,003	0,001	99,909			
134	0,003	0,001	99,911			
135	0,003	0,001	99,912			
136	0,003	0,001	99,913			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
137	0,003	0,001	99,914			
138	0,003	0,001	99,915			
139	0,003	0,001	99,917			
140	0,003	0,001	99,918			
141	0,003	0,001	99,919			
142	0,003	0,001	99,920			
143	0,003	0,001	99,921			
144	0,003	0,001	99,922			
145	0,003	0,001	99,923			
146	0,003	0,001	99,925			
147	0,003	0,001	99,926			
148	0,003	0,001	99,927			
149	0,003	0,001	99,928			
150	0,003	0,001	99,929			
151	0,003	0,001	99,930			
152	0,003	0,001	99,931			
153	0,003	0,001	99,932			
154	0,003	0,001	99,933			
155	0,003	0,001	99,934			
156	0,003	0,001	99,935			
157	0,003	0,001	99,936			
158	0,003	0,001	99,937			
159	0,002	0,001	99,938			
160	0,002	0,001	99,939			
161	0,002	0,001	99,940			
162	0,002	0,001	99,941			
163	0,002	0,001	99,942			
164	0,002	0,001	99,943			
165	0,002	0,001	99,944			
166	0,002	0,001	99,944			
167	0,002	0,001	99,945			
168	0,002	0,001	99,946			
169	0,002	0,001	99,947			
170	0,002	0,001	99,948			
171	0,002	0,001	99,949			
172	0,002	0,001	99,950			
173	0,002	0,001	99,951			
174	0,002	0,001	99,951			
175	0,002	0,001	99,952			
176	0,002	0,001	99,953			
177	0,002	0,001	99,954			
178	0,002	0,001	99,955			
179	0,002	0,001	99,955			
180	0,002	0,001	99,956			
181	0,002	0,001	99,957			
182	0,002	0,001	99,958			
183	0,002	0,001	99,959			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
184	0,002	0,001	99,959			
185	0,002	0,001	99,960			
186	0,002	0,001	99,961			
187	0,002	0,001	99,962			
188	0,002	0,001	99,962			
189	0,002	0,001	99,963			
190	0,002	0,001	99,964			
191	0,002	0,001	99,965			
192	0,002	0,001	99,965			
193	0,002	0,001	99,966			
194	0,002	0,001	99,967			
195	0,002	0,001	99,967			
196	0,002	0,001	99,968			
197	0,002	0,001	99,969			
198	0,002	0,001	99,969			
199	0,002	0,001	99,970			
200	0,002	0,001	99,971			
201	0,002	0,001	99,972			
202	0,002	0,001	99,972			
203	0,002	0,001	99,973			
204	0,002	0,001	99,973			
205	0,002	0,001	99,974			
206	0,002	0,001	99,975			
207	0,002	0,001	99,975			
208	0,002	0,001	99,976			
209	0,002	0,001	99,977			
210	0,002	0,001	99,977			
211	0,002	0,001	99,978			
212	0,002	0,001	99,979			
213	0,002	0,001	99,979			
214	0,002	0,001	99,980			
215	0,002	0,001	99,980			
216	0,002	0,001	99,981			
217	0,002	0,001	99,982			
218	0,002	0,001	99,982			
219	0,002	0,001	99,983			
220	0,001	0,001	99,983			
221	0,001	0,001	99,984			
222	0,001	0,001	99,985			
223	0,001	0,001	99,985			
224	0,001	0,001	99,986			
225	0,001	0,001	99,986			
226	0,001	0,001	99,987			
227	0,001	0,001	99,987			
228	0,001	0,001	99,988			
229	0,001	0,001	99,988			
230	0,001	0,001	99,989			

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
231	0,001	0,001	99,990			
232	0,001	0,001	99,990			
233	0,001	0,001	99,991			
234	0,001	0,001	99,991			
235	0,001	0,001	99,992			
236	0,001	0,001	99,992			
237	0,001	0,001	99,993			
238	0,001	0,000	99,993			
239	0,001	0,000	99,994			
240	0,001	0,000	99,994			
241	0,001	0,000	99,995			
242	0,001	0,000	99,995			
243	0,001	0,000	99,996			
244	0,001	0,000	99,996			
245	0,001	0,000	99,996			
246	0,001	0,000	99,997			
247	0,001	0,000	99,997			
248	0,001	0,000	99,998			
249	0,001	0,000	99,998			
250	0,001	0,000	99,999			
251	0,001	0,000	99,999			
252	0,001	0,000	99,999			
253	0,001	0,000	100,000			
254	0,001	0,000	100,000			
255	2,273E-16	8,915E-17	100,000			

Extraction Method: Principal Component Analysis.

Appendix Table 2: Rotated Component Matrix

Article	1	2	3	4	5
Fama, 1983	0,231	0,045	0,648	0,207	0,662
Jensen, 1976	-0,020	0,141	0,774	0,333	0,478
Dalton, 1998	0,468	0,214	0,818	-0,145	0,091
Jensen, 1993	-0,455	-0,179	0,679	0,361	-0,370
Shleifer, 1997	-0,217	-0,264	0,526	0,269	0,706
Yermack, 1996	-0,031	-0,721	0,072	0,616	0,239
Forbes, 1999	0,751	-0,026	0,558	-0,049	0,290
La Porta, 1999	-0,244	-0,248	0,726	0,040	0,560
Zahra, 1989	-0,092	-0,888	0,048	0,267	0,304
Fama, 1980	0,167	0,352	0,082	0,297	0,849
Daily, 2003	0,714	0,213	0,472	-0,192	-0,386
La Porta, 1998	-0,562	-0,343	0,432	-0,037	0,584
Johnson, 1996	0,558	-0,470	0,557	0,035	-0,346
Hillman, 2003	0,681	0,125	0,534	0,065	-0,439
Weisbach, 1988	-0,432	-0,732	-0,104	0,335	0,345
Pettigrew, 1992	0,595	-0,603	-0,150	0,425	0,214
Eisenhardt, 1989	0,295	-0,455	0,417	-0,031	-0,704
Jensen, 1986	-0,691	-0,141	0,300	0,345	0,507
Klein, 2002	-0,503	-0,603	0,492	0,147	-0,291
Beasley, 1996	-0,476	-0,175	0,842	-0,026	-0,029
Shleifer, 1986	-0,486	-0,633	0,425	-0,027	0,383
Demsetz, 1985	-0,412	0,416	0,245	0,157	0,736
Baysinger, 1985	0,454	0,735	0,232	0,405	0,044
La Porta, 2000	0,113	-0,172	0,845	0,264	0,370
Erhardt, 2003	0,407	0,103	0,493	0,315	-0,667
Morck, 1988	0,047	-0,365	0,876	0,030	-0,254
Carpenter, 2001	0,851	0,017	0,242	0,093	0,417
Carter, 2003	0,306	0,181	0,577	0,038	-0,709
Faccio, 2002	-0,305	0,192	0,385	0,094	0,827
Core, 1999	0,067	-0,360	0,588	0,519	0,464
Pearce, 1992	0,476	0,035	0,853	-0,029	-0,090
Dalton, 1999	0,265	0,115	0,723	0,067	0,591
Gompers, 2003	-0,151	-0,424	-0,096	0,053	0,868
Mcnulty, 1999	0,832	-0,440	0,208	0,175	-0,073
Pfeffer, 1972	0,641	-0,310	0,674	0,053	0,003
Hillman, 2000	0,613	0,273	0,578	0,377	-0,202
Huse, 2005	0,870	-0,188	0,368	0,125	-0,149
La Porta, 2002	-0,312	-0,367	0,040	0,403	0,757
Mcconnell, 1990	-0,221	-0,552	0,752	-0,123	-0,183
Byrd, 1992	0,219	-0,651	0,401	0,195	0,540
Lipton, 1992	0,248	-0,194	0,902	0,205	-0,112
Donaldson, 1991	0,327	0,205	0,330	0,685	0,486

Article	1	2	3	4	5
Dimaggio, 1983	-0,091	-0,705	0,086	0,222	0,633
Finkelstein, 1994	0,529	-0,439	0,318	0,038	0,621
Agrawal, 1996	-0,351	0,866	-0,117	-0,004	-0,274
Terjesen, 2009	0,221	-0,608	-0,117	0,728	0,013
Rechner, 1991	-0,383	0,217	-0,154	0,427	-0,752
Aguilera, 2003	-0,063	0,370	-0,035	-0,904	0,068
Rediker, 1995	-0,330	0,657	0,221	-0,503	-0,350
Ferris, 2003	-0,307	0,635	0,585	-0,002	0,352
Walsh, 1990	-0,167	-0,037	-0,640	-0,126	-0,709
Brickley, 1997	0,038	0,410	-0,168	0,820	0,300
Hermalin, 1991	-0,075	0,814	0,444	0,316	0,006
Hermalin, 1998	-0,147	0,576	-0,335	0,356	-0,612
Eisenberg, 1998	0,225	0,423	-0,020	0,768	0,375
Westphal, 1999	0,081	0,092	-0,786	0,081	-0,562
John, 1998	0,183	0,766	0,238	0,015	-0,537
Goodstein, 1994	0,471	0,087	0,459	-0,334	0,641
Judge, 1992	0,485	0,646	0,283	-0,044	-0,479
Westphal, 1995	0,430	-0,795	-0,238	-0,176	0,249
Fich, 2006	0,036	-0,524	0,249	-0,507	0,608
Rosenstein, 1990	0,066	0,758	0,052	0,417	-0,463
Boyd, 1995	-0,669	0,514	0,299	-0,364	0,168
Weisbach, 2003	-0,010	0,563	-0,573	-0,351	-0,436
Pearce, 1991	0,821	-0,051	-0,472	-0,043	0,254
Hermalin, 1988	0,066	0,519	0,405	0,676	0,256
Claessens, 2000	-0,130	-0,056	-0,515	0,184	0,804
Kang, 2007	-0,467	0,470	-0,077	-0,684	0,225
Beatty, 1994	0,003	0,923	0,229	-0,246	0,045
Linck, 2008	0,342	-0,345	0,093	-0,422	0,734
Davis, 1997	0,499	-0,154	-0,375	-0,194	0,716
Conyon, 1998	-0,042	-0,070	0,022	0,844	0,495
Coles, 2008	0,043	0,664	0,179	0,289	0,639
Westphal, 1998	-0,074	0,220	-0,899	-0,013	0,314
Hillman, 2002	0,536	-0,120	0,264	-0,752	-0,166
Demsetz, 2001	-0,315	0,750	-0,173	0,521	0,072
Pettigrew, 1995	0,254	-0,520	-0,751	-0,105	-0,224
Roberts, 2005	0,650	-0,619	-0,389	-0,019	-0,097
Klein, 1998	-0,247	0,539	0,511	0,467	-0,369
Dechow, 1996	-0,361	-0,224	0,580	-0,604	0,293
Claessens, 2002	-0,730	-0,041	0,000	-0,297	0,587
Bhagat, 2002	-0,083	0,690	0,117	-0,565	-0,384
Sundaramurthy, 2003	0,430	0,178	0,322	0,738	-0,315
Kosnik, 1987	0,272	-0,586	0,667	0,086	-0,309
Dharwadkar, 2000	-0,223	0,119	0,421	-0,551	0,651
Finkelstein, 2003	0,817	-0,033	0,260	-0,452	-0,158
Kesner, 1988	0,440	-0,279	-0,294	0,771	-0,103

Article	1	2	3	4	5
Hambrick, 1984	0,319	0,491	-0,393	-0,463	-0,502
Young, 2008	0,039	-0,683	-0,312	0,575	0,259
Judge, 2010	-0,304	0,229	0,193	-0,615	-0,635
Bhagat, 1999	-0,447	0,740	0,448	-0,119	0,037
Baysinger, 1990	0,247	0,930	-0,158	-0,040	0,114
Golden, 2001	0,784	-0,273	0,231	0,472	0,030
Villalonga, 2006	-0,281	-0,130	-0,326	0,356	0,799
Vafeas, 1999	-0,108	0,414	0,271	0,667	-0,513
Anderson, 2003	-0,512	0,830	-0,110	0,019	-0,009
Milliken, 1996	0,231	-0,719	0,351	0,421	-0,309
Shivdasani, 1993	-0,322	0,367	-0,253	0,734	0,349
Conger, 1998	0,434	0,381	-0,349	0,556	-0,449
Donaldson, 1998	-0,316	0,498	0,202	0,314	-0,693
Daily, 1999	0,484	-0,498	-0,059	-0,247	-0,644
Laporta, 1997	-0,662	0,309	0,183	-0,576	0,249
Anderson, 2004	-0,788	0,072	0,366	0,245	0,372
Murphy, 1999	-0,191	-0,674	-0,585	0,323	-0,164
Xie, 2003	-0,771	-0,375	-0,274	0,373	-0,117
Minichilli, 2009	0,631	-0,620	0,135	-0,349	-0,206
Bilimoria, 1994	0,700	0,663	0,120	-0,054	0,127
van, 2003	0,858	0,151	-0,448	0,069	0,020
Jensen, 1990	-0,512	-0,604	-0,436	-0,382	-0,003
Denis, 2003	0,245	0,186	0,336	-0,841	-0,225
Shivdasani, 1999	-0,711	0,102	-0,091	0,593	0,290
Winlund, 2000	0,707	-0,190	-0,112	0,620	0,181
Hartzell, 2003	-0,430	-0,393	-0,305	-0,322	0,655
Klapper, 2004	-0,640	0,574	-0,115	-0,142	0,438
Adams, 2010	0,238	-0,553	-0,124	-0,372	-0,667
Bathala, 1995	-0,051	0,068	0,037	0,534	-0,819
Lynall, 2003	0,627	-0,539	0,151	0,497	-0,101
Carleton, 1998	0,540	0,064	0,102	0,691	-0,428
Zattoni, 2008	-0,258	-0,153	-0,203	-0,913	0,018
Pugliese, 2009	0,768	-0,203	-0,571	-0,081	-0,010
Haunschild, 1993	0,411	-0,640	0,316	-0,028	0,530
Pfeffer, 1973	0,912	-0,202	0,060	-0,287	-0,084
Bhagat, 2008	-0,316	0,650	0,235	0,612	0,106
Gedajlovic, 1998	-0,564	0,312	0,646	-0,349	0,100
Mehran, 1995	-0,243	0,079	-0,192	0,746	-0,555
Rindova, 1999	0,949	0,046	0,154	-0,179	0,089
Aguilera, 2008	-0,434	-0,344	-0,004	-0,620	0,523
Aguilera, 2004	0,112	0,304	-0,147	-0,890	0,212
Peasnell, 2000	-0,479	-0,368	0,171	0,669	-0,354
Beekes, 2004	-0,598	-0,415	0,608	0,213	0,141
Samra-fredericks, 2000	0,426	-0,154	-0,629	-0,519	-0,307
Westphal, 2000	0,848	0,249	-0,342	0,255	-0,062

Article	1	2	3	4	5
Leblanc, 2007	0,190	-0,311	-0,535	-0,739	0,035
Ajinkya, 2005	-0,705	-0,319	0,325	-0,012	-0,508
Mizruchi, 1996	0,378	-0,598	0,361	-0,522	-0,241
Zona, 2007	0,707	-0,115	-0,294	-0,594	-0,119
Daily, 1994	-0,208	0,444	0,292	-0,152	-0,785
Johnson, 2000	-0,705	0,383	0,440	0,338	0,101
Peasnell, 2005	-0,807	-0,387	0,073	0,295	-0,263
van, 2008	0,742	0,336	-0,073	-0,521	0,155
Peng, 2004	-0,461	0,473	-0,488	-0,268	0,464
Singh, 2004	0,478	0,710	-0,215	-0,428	-0,059
Westphal, 1997	-0,686	-0,155	-0,398	-0,264	-0,486
Kroll, 2008	0,100	-0,116	0,254	0,823	-0,445
Gillan, 2000	-0,788	-0,267	0,180	0,103	-0,474
Meyer, 1977	-0,395	0,136	-0,169	-0,797	0,353
Boyd, 1990	0,279	-0,223	0,355	-0,822	-0,189
Karamanou, 2005	-0,438	-0,702	-0,440	0,155	0,249
Oxelheim, 2003	-0,134	-0,320	-0,008	0,758	-0,522
Weimer, 1999	0,299	0,199	-0,340	-0,850	0,023
Bushee, 1998	-0,580	-0,321	0,568	-0,228	0,388
Sonnenfeld, 2002	0,669	-0,257	-0,427	0,519	-0,023
Donaldson, 1990	0,491	-0,552	0,290	0,483	-0,318
Kaplan, 1994	-0,508	0,243	0,467	-0,256	-0,605
Pathan, 2009	-0,312	0,018	0,351	-0,731	-0,460
Williams, 1998	0,056	-0,780	-0,445	-0,395	-0,004
Kiel, 2003	0,106	0,030	0,495	0,676	-0,498
Zajac, 1994	-0,296	0,549	-0,520	-0,285	-0,466
Johnson, 1993	-0,161	-0,202	0,557	0,398	-0,657
Davis, 1991	0,417	0,346	0,135	-0,452	0,670
Baliga, 1996	-0,453	0,272	-0,763	0,308	0,060
Chaganti, 1985	-0,413	-0,708	0,358	-0,233	-0,332
Larcker, 2007	-0,583	0,267	0,380	0,452	-0,454
Jackson, 2005	-0,630	0,214	-0,483	-0,369	-0,379
Boone, 2007	0,513	0,748	-0,224	0,222	0,210
Schellenger, 1989	-0,148	-0,677	0,591	-0,033	-0,368
Conyon, 2000	-0,598	-0,220	-0,567	0,299	0,383
Daily, 1992	-0,238	0,068	-0,708	-0,277	0,567
Daily, 1993	-0,115	-0,658	-0,030	-0,573	-0,435
Wiersema, 1992	0,241	0,206	-0,704	-0,038	-0,598
Chen, 2009	-0,584	-0,008	0,331	0,309	-0,646
Smith, 1996	-0,284	-0,328	-0,483	0,636	-0,373
Van, 2004	0,104	0,593	-0,567	0,429	-0,313
Smith, 1992	-0,436	-0,757	-0,265	0,352	-0,086
Kim, 2009	0,347	0,436	0,142	-0,568	-0,557
Baysinger, 1991	0,060	0,417	0,790	-0,348	0,202
Adams, 2009	-0,284	-0,771	-0,065	0,004	-0,537

Article	1	2	3	4	5
Gilson, 1990	0,124	0,344	-0,196	0,474	0,755
Pye, 2005	0,484	-0,461	-0,648	-0,179	0,257
Raheja, 2005	0,002	0,588	-0,467	0,554	0,312
Himmelberg, 1999	-0,954	0,121	-0,016	0,158	0,098
Bebchuk, 2003	-0,436	0,029	-0,726	0,435	0,228
Hillman, 2007	0,467	0,635	0,058	-0,458	-0,360
Yermack, 2004	-0,487	0,012	-0,480	0,519	-0,478
Filatotchev, 2002	-0,150	0,016	-0,169	-0,370	0,883
Farrell, 2005	0,788	-0,191	-0,129	-0,223	-0,494
Finkelstein, 1992	-0,703	0,233	0,120	-0,246	-0,584
Murphy, 1985	-0,275	-0,202	-0,743	0,510	-0,187
Franks, 2001	-0,808	0,356	-0,332	0,265	0,053
Fich, 2005	0,200	0,375	-0,278	0,706	-0,458
Gabrielsson, 2004	0,615	0,321	-0,552	-0,412	0,095
Westphal, 2005	0,717	0,180	-0,296	-0,566	0,089
Westphal, 2001	0,163	-0,145	-0,533	-0,503	0,616
Nadler, 2004	0,631	-0,273	-0,646	-0,050	-0,262
Westphal, 2003	-0,214	-0,621	-0,569	-0,362	-0,277
Westphal, 2001	0,512	-0,061	-0,454	-0,697	0,083
Singh, 2008	-0,036	0,132	0,702	-0,665	-0,117
Chan, 2008	0,122	0,223	-0,444	0,555	-0,628
Solomon, 2003	-0,790	-0,015	-0,111	0,262	-0,508
Bethel, 1998	-0,536	0,456	-0,439	0,523	0,059
Singh, 2001	0,369	0,504	-0,718	0,038	-0,237
Schulze, 2001	-0,791	0,267	0,152	0,448	0,191
Conyon, 1997	0,681	0,410	-0,555	0,153	-0,022
Shrader, 1997	0,653	0,084	-0,285	0,665	0,104
Chung, 1994	0,234	0,112	-0,716	0,599	-0,168
Carter, 2010	0,370	-0,345	-0,673	0,473	-0,179
Boyd, 1994	-0,400	0,135	-0,600	0,325	0,564
Terjesen, 2015	-0,310	-0,297	0,100	-0,867	-0,140
Tosi, 1989	-0,614	-0,156	-0,647	-0,221	-0,302
Thomsen, 2000	-0,069	0,320	0,903	-0,162	0,113
Terjesen, 2008	0,023	0,322	0,191	-0,860	-0,293
Vafeas, 1998	-0,258	0,444	0,774	-0,100	-0,307
Vafeas, 2003	0,280	-0,375	-0,337	0,786	0,103
Burgess, 2002	0,565	0,670	0,283	-0,009	0,340
Carcello, 2000	0,038	-0,835	0,095	0,308	-0,408
Pettigrew, 1998	-0,223	-0,489	-0,312	-0,757	-0,061
Dulewicz, 2004	-0,483	0,331	-0,530	-0,040	-0,578
Djankov, 2008	-0,698	-0,027	-0,328	-0,515	0,320
Donaldson, 1994	0,769	0,487	0,026	0,363	-0,081
Durnev, 2005	-0,220	0,584	-0,645	-0,042	0,393
Barclay, 1989	-0,244	0,945	-0,086	-0,005	0,055
Westphal, 1994	-0,239	-0,451	-0,568	-0,258	0,561

Article	1	2	3	4	5
Pelled, 1999	-0,607	-0,274	-0,561	0,330	-0,309
Eisenhardt, 1989	-0,117	0,088	0,788	-0,471	-0,321
Pye, 2004	0,317	-0,367	-0,448	-0,672	-0,280
Wan, 2005	0,808	0,489	0,114	0,152	-0,197
Dalton, 2007	-0,445	0,051	-0,444	-0,664	-0,352
Ruigrok, 2006	-0,093	-0,055	0,138	-0,314	-0,914
Cotter, 1997	0,325	-0,092	-0,355	0,541	0,661
Rhoades, 2000	0,022	-0,004	0,938	-0,194	-0,220
Deangelo, 1981	-0,345	-0,882	0,099	-0,019	-0,241
Dechow, 1995	-0,215	-0,038	0,918	-0,241	0,128
Davis, 1994	-0,438	-0,355	-0,449	-0,641	-0,174
Ravasi, 2006	0,161	-0,649	-0,591	-0,196	-0,356
Gaver, 1993	-0,461	-0,830	0,207	0,148	0,002
Healy, 2001	-0,292	-0,751	-0,545	0,062	-0,116
Adams, 2007	0,239	-0,083	-0,062	-0,113	0,939
Kang, 1995	-0,382	0,799	-0,242	0,092	-0,337
Heckman, 1979	0,099	-0,036	0,357	-0,244	0,876
Haunschild, 1998	0,079	-0,701	0,273	-0,604	-0,166
Hall, 1998	0,140	-0,563	-0,584	0,524	-0,109
Gulati, 1999	0,023	-0,487	0,461	-0,644	-0,317
Anderson, 2004	0,198	-0,169	-0,223	-0,028	0,919
Hambrick, 2008	0,062	-0,119	-0,356	-0,903	-0,096
Judge, 2008	-0,105	0,437	-0,530	-0,602	0,348
Zahra, 2004	0,690	0,446	-0,115	-0,026	0,526
Jackling, 2009	0,209	0,501	-0,588	-0,115	0,558
Jensen, 1983	-0,524	-0,581	0,091	-0,563	-0,170
Letendre, 2004	0,365	-0,223	-0,792	-0,102	-0,371
Holderness, 1988	-0,205	0,619	-0,150	0,007	0,722
Yeh, 2005	-0,094	0,321	-0,148	-0,031	0,914
Hendry, 2004	0,727	0,394	0,089	0,333	0,405
Lubatkin, 2005	-0,369	0,400	-0,500	-0,581	-0,281
Almazan, 2005	0,095	0,448	0,078	-0,813	0,298
Mizruchi, 1994	-0,153	0,322	0,877	0,132	-0,233

Note: Cells with green background color show values over 0.7. Cells with values between 0.3 and 0.7 have yellow background color.

Appendix Table 3: Total Variance Explained. 2000 - 2007

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	56,583	43,193	43,193	56,583	43,193	43,193	55,361	42,26	42,26
2	54,843	41,865	85,058	54,843	41,865	85,058	36,496	27,86	70,12
3	14,651	11,184	96,241	14,651	11,184	96,241	32,908	25,121	95,24
4	1,797	1,372	97,613	1,797	1,372	97,613	3,063	2,338	97,578
5	1,719	1,312	98,925	1,719	1,312	98,925	1,764	1,347	98,925
6	0,291	0,222	99,147						
7	0,262	0,2	99,347						
8	0,178	0,136	99,483						
9	0,147	0,112	99,595						
10	0,09	0,069	99,664						
11	0,077	0,059	99,723						
12	0,071	0,054	99,777						
13	0,036	0,028	99,805						
14	0,03	0,023	99,827						
15	0,028	0,021	99,849						
16	0,026	0,02	99,869						
17	0,013	0,01	99,879						
18	0,013	0,01	99,888						
19	0,011	0,009	99,897						
20	0,011	0,008	99,905						
21	0,01	0,008	99,913						
22	0,009	0,007	99,92						
23	0,008	0,006	99,926						
24	0,007	0,005	99,931						
25	0,006	0,005	99,936						
26	0,005	0,004	99,94						
27	0,005	0,004	99,944						
28	0,005	0,003	99,947						
29	0,004	0,003	99,95						
30	0,004	0,003	99,953						
31	0,003	0,002	99,955						
32	0,003	0,002	99,958						
33	0,003	0,002	99,96						
34	0,002	0,002	99,962						
35	0,002	0,002	99,963						
36	0,002	0,002	99,965						
37	0,002	0,002	99,967						
38	0,002	0,002	99,968						
39	0,002	0,001	99,97						
40	0,002	0,001	99,971						
41	0,001	0,001	99,972						
42	0,001	0,001	99,973						
43	0,001	0,001	99,974						
44	0,001	0,001	99,975						

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
45	0,001	0,001	99,976						
46	0,001	0,001	99,977						
47	0,001	0,001	99,978						
48	0,001	0,001	99,979						
49	0,001	0,001	99,98						
50	0,001	0,001	99,98						
51	0,001	0,001	99,981						
52	0,001	0,001	99,982						
53	0,001	0,001	99,982						
54	0,001	0,001	99,983						
55	0,001	0,001	99,984						
56	0,001	0,001	99,984						
57	0,001	0,001	99,985						
58	0,001	0,001	99,986						
59	0,001	0,001	99,986						
60	0,001	0,001	99,987						
61	0,001	0	99,987						
62	0,001	0	99,987						
63	0,001	0	99,988						
64	0,001	0	99,988						
65	0,001	0	99,989						
66	0,001	0	99,989						
67	0,001	0	99,99						
68	0,001	0	99,99						
69	0,001	0	99,99						
70	0	0	99,991						
71	0	0	99,991						
72	0	0	99,991						
73	0	0	99,992						
74	0	0	99,992						
75	0	0	99,992						
76	0	0	99,993						
77	0	0	99,993						
78	0	0	99,993						
79	0	0	99,993						
80	0	0	99,994						
81	0	0	99,994						
82	0	0	99,994						
83	0	0	99,994						
84	0	0	99,995						
85	0	0	99,995						
86	0	0	99,995						
87	0	0	99,995						
88	0	0	99,995						
89	0	0	99,996						
90	0	0	99,996						

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
91	0	0	99,996						
92	0	0	99,996						
93	0	0	99,996						
94	0	0	99,997						
95	0	0	99,997						
96	0	0	99,997						
97	0	0	99,997						
98	0	0	99,997						
99	0	0	99,997						
100	0	0	99,997						
101	0	0	99,998						
102	0	0	99,998						
103	0	0	99,998						
104	0	0	99,998						
105	0	0	99,998						
106	0	0	99,998						
107	0	0	99,998						
108	0	0	99,998						
109	0	0	99,999						
110	0	0	99,999						
111	0	9,77E-05	99,999						
112	0	9,03E-05	99,999						
113	0	8,98E-05	99,999						
114	0	8,94E-05	99,999						
115	0	8,22E-05	99,999						
116	0	7,85E-05	99,999						
117	9,62E-05	7,34E-05	99,999						
118	9,53E-05	7,28E-05	99,999						
119	9,41E-05	7,19E-05	99,999						
120	9,29E-05	7,09E-05	99,999						
121	9,25E-05	7,06E-05	100						
122	8,66E-05	6,61E-05	100						
123	7,50E-05	5,72E-05	100						
124	7,43E-05	5,67E-05	100						
125	7,10E-05	5,42E-05	100						
126	6,88E-05	5,25E-05	100						
127	5,80E-05	4,43E-05	100						
128	5,01E-05	3,83E-05	100						
129	4,78E-05	3,65E-05	100						
130	4,20E-05	3,21E-05	100						
131	9,82E-16	7,49E-16	100						

Appendix Table 4: PCA Components 2000 - 2007

Reference	1	2	3	4	5
FamaEF1983V26P301JLAWECON	-0,080	0,976	-0,104	0,111	-0,013
JensenMC1976V3P305JFINANCECON	-0,239	0,948	-0,123	0,114	-0,049
DaltonDR1998V19P269STRATEGICMANAGEJ	0,134	0,938	-0,299	-0,003	0,050
JohnsonJL1996V22P409JMANAGE	-0,345	0,854	-0,364	-0,006	-0,104
LaPortaR1999V54P471JFINANC	-0,339	0,828	-0,422	-0,037	-0,105
ZahraSA1989V15P291JMANAGE	-0,828	0,456	-0,197	0,184	-0,146
ForbesDP1999V24P489ACADMANAGEREV	-0,229	0,897	-0,359	-0,021	-0,067
BerleAA1932MODERNCORPORATIONP	0,675	0,644	-0,293	0,054	0,182
YermackD1996V40P185JFINANCECON	0,666	-0,375	0,608	0,027	-0,192
FinkelsteinS1996STRATEGICLEADERSHIP	0,199	0,937	-0,256	0,024	0,064
PettigrewAM1992V13P163STRATEGICMANAGEJ	0,535	0,692	-0,435	-0,040	0,180
WeisbachMS1988V20P431JFINANCECON	0,520	-0,485	0,670	-0,050	-0,180
ShleiferA1986V94P461JPOLITECON	0,846	0,407	-0,266	0,100	0,168
PearceJA1992V29P411JMANAGESTUD	0,271	0,831	-0,455	-0,090	0,111
FamaEF1980V88P288JPOLITECON	0,018	0,886	-0,443	-0,091	0,019
BaysingerBD1985V1P101JLAWECONORGAN	0,083	-0,369	0,919	-0,012	-0,039
CarterDA2003V38P33FINANCIALREV	0,001	-0,514	0,845	-0,109	-0,018
LaPortaR1998V106P1113JPOLITECON	-0,105	-0,514	0,839	-0,103	0,021
ErhardtNL2003V11P102CORPGOV	-0,627	0,682	-0,309	0,086	-0,167
EisenhardtKM1989V14P57ACADMANAGEREV	0,378	0,788	-0,447	-0,074	0,145
DailyCM2003V28P371ACADMANAGEREV	-0,123	-0,146	0,966	0,123	0,017
HampelR1998COMMITTEECORPORATE	0,759	0,553	-0,265	0,083	0,181
JensenMC1993V48P831JFINANC	-0,491	0,765	-0,377	0,019	-0,145
LorschJ1989PAWNSPOTENTATESREA	-0,174	0,924	-0,324	-0,005	-0,047
ShleiferA1997V52P737JFINANC	0,935	0,253	-0,123	0,161	0,104
JensenMC1986V76P323AMECONREV	-0,202	0,847	-0,470	-0,080	-0,059
McnultyT1999V20P47ORGANSTUD	0,342	0,917	-0,079	0,119	0,075
PfefferJ1978EXTERNALCONTROLORG	0,007	-0,263	0,956	0,054	-0,013
PfefferJ1972V17P218ADMINSCIQUART	0,352	-0,441	0,809	-0,048	-0,130
MorckR1988V20P293JFINANCECON	-0,053	0,862	-0,484	-0,103	-0,006
ByrdJW1992V32P195JFINANCECON	0,426	-0,502	0,725	-0,073	-0,159
HermalinBE1991V20P101FINANCMANAGE	0,516	-0,359	0,756	0,014	-0,158
KesnerIF1988V31P66ACADMANAGEJ	0,204	-0,539	0,797	-0,117	-0,093
BrickleyJ1997V3P189JCORPFINANC	0,909	0,316	-0,164	0,148	0,129
AgrawalA1996V31P377JFINANCQUANTANAL	-0,844	0,062	0,441	0,275	0,067
DavisJH1997V22P20ACADMANAGEREV	0,831	0,424	-0,287	0,088	0,173

Reference	1	2	3	4	5
ChagantiRS1985V22P400JMANAGESTUD	0,599	-0,450	0,624	-0,020	-0,193
JensenMC1990V98P225JPOLITECON	0,503	0,716	-0,436	-0,048	0,175
JohnK1998V22P371JBANKFINANC	0,423	0,687	0,498	0,285	0,014
SchellengerMH1989V15P457JMANAGE	-0,125	0,871	-0,455	-0,086	-0,033
DemsetzH1985V93P1155JPOLITECON	0,492	0,748	-0,399	-0,032	0,170
KosnikRD1987V32P163ADMINSCIQUART	0,278	0,012	0,932	0,180	-0,051
PettigrewA1995V48P845HUMRELAT	-0,360	0,307	0,818	0,295	0,023
LaPortaR2000V58P3JFINANCECON	-0,454	-0,392	0,785	0,019	0,126
VanDWN2003V11P218CORPGOV	-0,602	0,689	-0,349	0,061	-0,163
DaltonDR1999V42P674ACADMANAGEJ	0,815	0,445	0,262	0,230	0,034
DailyCM1999V20P93STRATEGICMANAGEJ	-0,588	-0,400	0,677	0,042	0,158
BeasleyMS1996V71P443ACCOUNTREV	-0,204	-0,536	0,804	-0,102	0,055
GreenburyR1995DIRECTORSREMUNERATI	0,974	0,053	0,066	0,186	-0,006
DonaldsonL1991V16P49AUSTRJMANAGEMENT	0,920	0,274	-0,184	0,137	0,122
HiggsD2003REVROLEEFFECTIVENE	0,727	-0,376	0,529	0,038	-0,198
BilimoriaD1994V37P1453ACADMANAGEJ	0,303	-0,540	0,761	-0,106	-0,123
DailyCM1993V17P65ENTREPTHEORYPRACT	0,898	0,363	-0,112	0,162	0,122
WalshJP1990V15P421ACADMANAGEREV	0,243	0,827	-0,476	-0,101	0,102
DailyCM2003V24P8JBUSSTRAT	-0,787	0,516	-0,227	0,164	-0,158
ShivdasaniA1993V16P167JACCOUNTECON	0,764	0,205	0,550	0,228	-0,050
BurkeRJ1997V5P118CORPORATEGOVERNANCE	-0,290	-0,524	0,785	-0,083	0,084
BhagatS1999V54P921BUSLAWYER	-0,925	0,226	0,077	0,279	-0,042
DailyCM1992V7P375JBUSVENTURING	0,744	0,598	-0,203	0,105	0,164
LiptonM1992V48P59BUSLAWYER	0,460	-0,311	0,813	0,035	-0,134
UseemMT1996INVESTORCAPITALISM	0,903	-0,222	0,298	0,126	-0,143
BathalaCH1995V16P59MANAGERIALDECISION	0,034	-0,470	0,873	-0,080	-0,028
BurgessZ2002V37P39JBUSETHICS	-0,740	-0,296	0,559	0,131	0,160
RedikerKJ1995V16P85STRATEGICMANAGEJ	-0,015	0,966	0,092	0,195	0,001
RosensteinS1990V26P175JFINANCECON	-0,598	0,718	-0,290	0,088	-0,160
RechnerPL1991V12P155STRATEGICMANAGEJ	-0,441	-0,217	0,851	0,115	0,093
CadburyA1992REPORTCOMMITTEEFIN	0,974	-0,036	0,091	0,170	-0,040
BaysingerBD1991V34P205ACADMANAGEJ	-0,857	0,323	0,243	0,301	-0,022
BeattyRP1994V39P313ADMINSCIQUART	-0,671	-0,076	0,692	0,208	0,104
Oecd1999OecdPRINCCORPGOV	0,652	0,619	-0,380	0,009	0,194
BaysingerB1990V15P72ACADMANAGEREV	-0,762	0,546	0,157	0,282	-0,067
MurphyKJ1985V7P11JACCOUNTECON	0,100	0,853	-0,488	-0,110	0,051
GompersP2003V118P107QJECON	-0,890	0,009	0,350	0,269	0,071
DimaggioPJ1983V48P147AMSOCIOLREV	-0,536	0,616	0,462	0,318	-0,017
MillikenFJ1996V21P402ACADMANAGEREV	-0,090	-0,550	0,815	-0,119	0,014
WestphalJD2000V45P366ADMINSCIQUART	-0,212	-0,409	0,881	-0,024	0,054

Reference	1	2	3	4	5
HillmanAJ2000V37P235JMANAGESTUD	-0,827	0,482	-0,069	0,234	-0,122
HartOD1983V14P366BELLJECON	0,706	0,565	-0,366	0,028	0,193
HillmanAJ2003V28P383ACADMANAGEREV	-0,415	-0,485	0,752	-0,042	0,122
KleinA1998V41P275JLAWECON	-0,847	0,430	-0,156	0,206	-0,138
SundaramurthyC2003V28P397ACADMANAGEREV	0,329	0,862	-0,356	-0,028	0,115
DavisGF1991V36P583ADMINSCIQUART	0,805	-0,340	0,431	0,066	-0,186
EisenbergT1998V48P35JFINANCECON	-0,664	-0,305	0,649	0,108	0,156
EzzamelMA1993V4P161BRITJMANAGE	0,942	-0,134	0,223	0,156	-0,103
McnultyT.1996V4P160CORPORATEGOVERNANCE	0,950	0,054	0,214	0,197	-0,040
MizruchiMS1994V39P118ADMINSCIQUART	0,674	-0,423	0,563	0,006	-0,199
HilmerFG1993STRICTLYBOARDROOMI	0,955	-0,131	0,170	0,150	-0,088
DailyCM1994V37P1603ACADMANAGEJ	-0,672	0,142	0,659	0,275	0,060
TrickerRI1994INTCORPORATEGOVERN	0,086	0,884	-0,439	-0,090	0,044
PearceJA1991V12P135STRATEGICMANAGEJ	0,715	-0,062	0,657	0,160	-0,115
BlakeA1999DYNAMICDIRECTORSAL	-0,867	-0,190	0,381	0,200	0,124
LaportaR1997V52P1131JFINANC	-0,852	0,428	-0,119	0,222	-0,130
UseemM2003V7P241JMANAGEMENTGOVERNA	-0,862	0,406	0,056	0,273	-0,080
CongerJA1998V76P136HARVARDBUSREV	-0,797	-0,259	0,489	0,160	0,151
CadburyA1999V32P12LONGRANGEPLANN	0,386	0,759	-0,485	-0,084	0,143
BarnhartS1994V15P329MANAGERIALDECISION	-0,499	-0,468	0,708	-0,014	0,141
HermalinBE1988V19P589RANDJECON	0,102	-0,553	0,809	-0,126	-0,056
CotterJF1997V43P195JFINANCECON	0,871	-0,282	0,340	0,097	-0,161
BoydBK1995V16P301STRATEGICMANAGEJ	0,902	-0,193	0,320	0,138	-0,139
BoydBK1994V15P335STRATEGICMANAGEJ	0,915	0,317	0,085	0,203	0,056
BradburyME1990V9P19JACCOUNTPUBLICPOL	-0,907	-0,044	0,307	0,257	0,079
KleinA2002V33P375JACCOUNTECON	0,544	-0,103	0,805	0,137	-0,107
MaceM1971DIRECTORSMYTHREALI	0,956	0,179	-0,112	0,156	0,079
DonaldsonL1998V6P5CORPORATEGOVERNANCE	-0,937	0,092	0,165	0,278	0,013
FaccioM2002V65P365JFINANCECON	-0,916	-0,096	0,278	0,235	0,085
RobertsJ2005V16pS5BRITJMANAGE	-0,408	0,874	0,068	0,213	-0,061
FamaEF1983V26P327JLAWECON	0,949	0,224	0,010	0,192	0,058
GoodsteinJ1994V15P241STRATEGICMANAGEJ	-0,073	0,545	0,758	0,321	0,000
McconnellJJ1990V27P595JFINANCECON	-0,593	-0,284	0,727	0,104	0,139
PengMW2004V25P453STRATEGICMANAGEJ	0,815	-0,177	0,506	0,131	-0,148
WestphalJD1999V42P7ACADMANAGEJ	-0,705	0,603	-0,294	0,113	-0,167
ZahraSA1990V23P109LONGRANGEPLANN	-0,725	0,605	-0,223	0,151	-0,162
ConyonMJ1997V5P112CORPORATEGOVERNANCE	-0,553	-0,444	0,680	0,011	0,152
PenningsJM1980INTERLOCKINGDIRECTO	0,185	-0,522	0,815	-0,110	-0,085
SinghV2001V9P206CORPGOV	-0,305	-0,478	0,812	-0,058	0,090
HoldernessCG1988V20P317JFINANCECON	0,781	0,497	-0,307	0,070	0,186

Reference	1	2	3	4	5
BurkeRJ2000WOMENCORPORATEBOAR	-0,869	-0,154	0,388	0,217	0,119
ConyonMJ2000V110P640ECONJ	-0,909	0,303	-0,065	0,242	-0,093
JohnsonS2000V58P141JFINANCECON	-0,947	0,138	0,063	0,264	-0,023
BhagatS2002V27P231JCORPLAW	0,889	-0,144	0,375	0,152	-0,130
BethelJE1998V53P605JFINANC	-0,690	-0,367	0,588	0,083	0,162
BurkeRJ2000P97WOMENCORPORATEBOAR	-0,935	-0,030	0,218	0,252	0,056
DulewiczV1995V20P1JGENMANAGE	-0,815	-0,265	0,455	0,159	0,146
FinkelsteinS1994V37P1079ACADMANAGEJ	0,773	-0,363	0,468	0,051	-0,193
LaPortaR2002V57P1147JFINANC	-0,948	0,061	0,130	0,263	0,013
DemsetzH2001V7P209JCORPFINANC	-0,932	0,226	-0,005	0,257	-0,061
GomezmejiaL1997V23P291JMANAGE	0,975	0,090	-0,031	0,170	0,032
KesnerIF1986V29P789ACADMANAGEJ	0,672	0,700	-0,112	0,128	0,133
MehranH1995V38P163JFINANCECON	-0,569	0,767	-0,221	0,114	-0,139
GedajlovicER1998V19P533STRATEGICMANAGEJ	0,978	-0,010	0,054	0,169	-0,022
ClaessensS2000V58P81JFINANCECON	-0,386	0,792	-0,446	-0,034	-0,113

Note: Cells with green background color show values over 0.7. Cells with values between 0.3 and 0.7 have yellow background color.

Appendix Table 5: Total Variance Explained. 2008 - 2013

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	80,288	42,706	42,706	80,288	42,706	42,706	68,982	36,693	36,693
2	76,055	40,455	83,161	76,055	40,455	83,161	62,546	33,269	69,962
3	24,836	13,211	96,372	24,836	13,211	96,372	46,184	24,566	94,528
4	2,452	1,304	97,676	2,452	1,304	97,676	4,855	2,582	97,11
5	2,356	1,253	98,929	2,356	1,253	98,929	3,419	1,819	98,929
6	0,369	0,196	99,125						
7	0,364	0,194	99,319						
8	0,289	0,154	99,472						
9	0,245	0,13	99,603						
10	0,154	0,082	99,685						
11	0,1	0,053	99,738						
12	0,091	0,048	99,786						
13	0,057	0,03	99,817						
14	0,047	0,025	99,842						
15	0,036	0,019	99,861						
16	0,033	0,018	99,878						
17	0,02	0,01	99,889						
18	0,016	0,008	99,897						
19	0,015	0,008	99,905						
20	0,015	0,008	99,913						
21	0,014	0,008	99,921						
22	0,014	0,007	99,928						
23	0,012	0,007	99,935						
24	0,008	0,004	99,939						
25	0,007	0,004	99,943						
26	0,007	0,004	99,947						
27	0,006	0,003	99,95						
28	0,006	0,003	99,953						
29	0,005	0,003	99,956						
30	0,004	0,002	99,958						
31	0,004	0,002	99,96						
32	0,004	0,002	99,962						
33	0,003	0,002	99,964						
34	0,003	0,002	99,966						
35	0,003	0,002	99,967						
36	0,003	0,002	99,969						
37	0,003	0,001	99,97						
38	0,003	0,001	99,972						
39	0,002	0,001	99,973						
40	0,002	0,001	99,974						
41	0,002	0,001	99,975						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
42	0,002	0,001	99,976						
43	0,002	0,001	99,977						
44	0,002	0,001	99,978						
45	0,002	0,001	99,979						
46	0,001	0,001	99,979						
47	0,001	0,001	99,98						
48	0,001	0,001	99,981						
49	0,001	0,001	99,981						
50	0,001	0,001	99,982						
51	0,001	0,001	99,983						
52	0,001	0,001	99,983						
53	0,001	0,001	99,984						
54	0,001	0	99,984						
55	0,001	0	99,985						
56	0,001	0	99,985						
57	0,001	0	99,985						
58	0,001	0	99,986						
59	0,001	0	99,986						
60	0,001	0	99,987						
61	0,001	0	99,987						
62	0,001	0	99,987						
63	0,001	0	99,988						
64	0,001	0	99,988						
65	0,001	0	99,988						
66	0,001	0	99,989						
67	0,001	0	99,989						
68	0,001	0	99,989						
69	0,001	0	99,99						
70	0,001	0	99,99						
71	0	0	99,99						
72	0	0	99,99						
73	0	0	99,991						
74	0	0	99,991						
75	0	0	99,991						
76	0	0	99,991						
77	0	0	99,992						
78	0	0	99,992						
79	0	0	99,992						
80	0	0	99,992						
81	0	0	99,992						
82	0	0	99,993						
83	0	0	99,993						
84	0	0	99,993						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
85	0	0	99,993						
86	0	0	99,993						
87	0	0	99,993						
88	0	0	99,994						
89	0	0	99,994						
90	0	0	99,994						
91	0	0	99,994						
92	0	0	99,994						
93	0	0	99,994						
94	0	0	99,994						
95	0	0	99,995						
96	0	0	99,995						
97	0	0	99,995						
98	0	0	99,995						
99	0	0	99,995						
100	0	0	99,995						
101	0	0	99,995						
102	0	0	99,995						
103	0	0	99,996						
104	0	0	99,996						
105	0	0	99,996						
106	0	0	99,996						
107	0	0	99,996						
108	0	0	99,996						
109	0	0	99,996						
110	0	0	99,996						
111	0	9,78E-05	99,996						
112	0	9,67E-05	99,997						
113	0	9,31E-05	99,997						
114	0	9,14E-05	99,997						
115	0	9,05E-05	99,997						
116	0	8,83E-05	99,997						
117	0	8,68E-05	99,997						
118	0	8,35E-05	99,997						
119	0	8,32E-05	99,997						
120	0	8,21E-05	99,997						
121	0	8,03E-05	99,997						
122	0	7,83E-05	99,997						
123	0	7,66E-05	99,997						
124	0	7,50E-05	99,998						
125	0	7,44E-05	99,998						
126	0	7,37E-05	99,998						
127	0	7,28E-05	99,998						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
128	0	7,06E-05	99,998						
129	0	6,87E-05	99,998						
130	0	6,52E-05	99,998						
131	0	6,28E-05	99,998						
132	0	6,17E-05	99,998						
133	0	6,08E-05	99,998						
134	0	5,99E-05	99,998						
135	0	5,96E-05	99,998						
136	0	5,85E-05	99,998						
137	0	5,82E-05	99,998						
138	9,96E-05	5,30E-05	99,998						
139	9,89E-05	5,26E-05	99,998						
140	9,71E-05	5,17E-05	99,999						
141	9,64E-05	5,13E-05	99,999						
142	9,39E-05	4,99E-05	99,999						
143	9,38E-05	4,99E-05	99,999						
144	9,12E-05	4,85E-05	99,999						
145	8,92E-05	4,75E-05	99,999						
146	8,78E-05	4,67E-05	99,999						
147	8,07E-05	4,29E-05	99,999						
148	8,02E-05	4,27E-05	99,999						
149	7,86E-05	4,18E-05	99,999						
150	7,71E-05	4,10E-05	99,999						
151	7,64E-05	4,07E-05	99,999						
152	7,61E-05	4,05E-05	99,999						
153	7,49E-05	3,98E-05	99,999						
154	7,42E-05	3,95E-05	99,999						
155	7,36E-05	3,91E-05	99,999						
156	7,31E-05	3,89E-05	99,999						
157	7,16E-05	3,81E-05	99,999						
158	6,58E-05	3,50E-05	99,999						
159	6,49E-05	3,45E-05	99,999						
160	6,33E-05	3,37E-05	99,999						
161	6,13E-05	3,26E-05	99,999						
162	6,11E-05	3,25E-05	99,999						
163	6,08E-05	3,23E-05	99,999						
164	6,06E-05	3,22E-05	100						
165	5,93E-05	3,16E-05	100						
166	5,70E-05	3,03E-05	100						
167	5,70E-05	3,03E-05	100						
168	5,56E-05	2,96E-05	100						
169	5,17E-05	2,75E-05	100						
170	5,06E-05	2,69E-05	100						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
171	4,98E-05	2,65E-05	100						
172	4,94E-05	2,63E-05	100						
173	4,87E-05	2,59E-05	100						
174	4,86E-05	2,58E-05	100						
175	4,55E-05	2,42E-05	100						
176	4,48E-05	2,38E-05	100						
177	4,40E-05	2,34E-05	100						
178	4,15E-05	2,21E-05	100						
179	3,79E-05	2,02E-05	100						
180	3,71E-05	1,97E-05	100						
181	3,53E-05	1,88E-05	100						
182	3,41E-05	1,81E-05	100						
183	2,79E-05	1,49E-05	100						
184	2,70E-05	1,44E-05	100						
185	1,96E-05	1,04E-05	100						
186	1,17E-05	6,23E-06	100						
187	2,81E-06	1,50E-06	100						
188	-4,46E-16	-2,38E-16	100						

Appendix Table 6: PCA Components 2008 - 2013

Reference	1	2	3	4	5
JensenMC1976V3P305JFINANCECON	0,127	0,736	0,626	0,179	0,023
FamaEF1983V26P301JLAWECON	0,237	0,359	0,878	0,148	0,058
YermackD1996V40P185JFINANCECON	-0,795	0,322	0,352	0,355	-0,058
DaltonDR1998V19P269STRATEGICMANAGEJ	0,415	0,212	0,863	0,104	0,087
JensenMC1993V48P831JFINANC	0,599	0,770	0,165	0,022	-0,058
ShleiferA1997V52P737JFINANC	-0,530	0,799	0,087	0,246	0,071
ForbesDP1999V24P489ACADMANAGEREV	-0,184	-0,069	0,967	0,104	0,017
DailyCM2003V28P371ACADMANAGEREV	-0,105	-0,284	0,945	0,012	0,052
LaPorta1999V54P471JFINANC	0,171	0,968	0,118	0,055	-0,015
HillmanAJ2003V28P383ACADMANAGEREV	-0,155	-0,134	0,967	0,076	0,027
DemsetzH1985V93P1155JPOLITECON	0,658	0,661	-0,278	-0,108	-0,180
BerleAA1932MODERNCORPORATIONP	0,345	0,908	-0,177	-0,082	-0,088
CoreJE1999V51P371JFINANCECON	0,983	-0,097	0,096	0,043	0,058
LorschJ1989PAWNSPOTENTATESREA	0,181	0,178	0,947	0,126	0,070
PfefferJ1978EXTERNALCONTROLORG	-0,390	0,459	0,739	0,275	-0,007
FamaEF1980V88P288JPOLITECON	0,796	0,492	0,322	0,047	-0,014
ZahraSA1989V15P291JMANAGE	-0,600	-0,150	0,756	0,160	-0,111
KleinA2002V33P375JACCOUNTECON	0,955	-0,244	0,080	0,043	0,109
PettigrewAM1992V13P163STRATEGICMANAGEJ	-0,096	-0,456	0,874	-0,067	0,076
BeasleyMS1996V71P443ACCOUNTREV	0,990	0,062	-0,071	0,029	-0,045
LiptonM1992V48P59BUSLAWYER	0,969	0,200	0,068	0,026	-0,034
WeisbachMS1988V20P431JFINANCECON	-0,286	-0,580	0,748	-0,111	0,024
McconnellJJ1990V27P595JFINANCECON	0,675	-0,597	0,311	-0,053	0,282
MaceM1971DIRECTORSMYTHREALI	0,542	-0,047	0,815	0,048	0,136
JensenMC1986V76P323AMECONREV	0,261	0,910	-0,274	-0,116	-0,085
JudgeWQ1992V35P766ACADMANAGEJ	0,472	-0,390	0,754	-0,038	0,204
FerrisSP2003V58P1087JFINANC	0,707	0,653	-0,179	-0,074	-0,157
MorckR1988V20P293JFINANCECON	0,288	0,947	-0,059	-0,028	-0,056
LaPorta2000V58P3JFINANCECON	0,987	0,013	0,107	0,040	0,026
BaysingerBD1985V1P101JLAWECONORGAN	0,791	0,516	-0,248	-0,074	-0,182
HermalinBE1998V88P96AMECONREV	0,952	0,227	-0,147	-0,001	-0,113
JohnsonJL1996V22P409JMANAGE	-0,204	0,100	0,952	0,161	0,010
WeisbachMS2003V9P7ECPOLICYREV	0,610	-0,311	0,691	-0,011	0,198
LinckJS2008V87P308JFINANCECON	-0,064	0,916	0,333	0,167	0,022
EisenhardtKM1989V14P57ACADMANAGEREV	0,800	-0,487	0,239	-0,006	0,238
GoodsteinJ1994V15P241STRATEGICMANAGEJ	-0,169	0,972	0,048	0,108	0,039
McnultyT1999V20P47ORGANSTUD	-0,286	-0,414	0,859	-0,032	0,001
CarpenterMA2001V44P639ACADMANAGEJ	-0,615	0,582	0,403	0,333	0,006
DaltonDR1999V42P674ACADMANAGEJ	-0,262	0,948	-0,128	0,067	0,061
HillmanAJ2000V37P235JMANAGESTUD	-0,317	0,889	0,228	0,208	0,047
WestphalJD1995V40P60ADMINSCIQUART	-0,608	0,153	0,720	0,270	-0,076
FamaEF1983V26P327JLAWECON	0,943	-0,297	-0,044	0,040	0,096
AgrawalA1996V31P377JFINANCQUANTANAL	0,648	0,608	-0,377	-0,133	-0,205

Reference	1	2	3	4	5
GompersP2003V118P107QJECON	0,975	0,057	-0,178	0,020	-0,080
FichEM2006V61P689JFINANC	0,896	0,391	-0,127	-0,023	-0,133
ErhardtNL2003V11P102CORPGOV	0,154	0,966	-0,172	-0,058	-0,040
ShleiferA1986V94P461JPOLITECON	-0,145	0,979	-0,102	0,041	0,038
HuseM2007BOARDSGOVERNANCEVA	0,304	-0,626	0,655	-0,134	0,244
AguileraRV2003V28P447ACADMANAGEREV	0,931	0,053	0,326	0,043	0,068
FaccioM2002V65P365JFINANCECON	0,729	0,504	-0,384	-0,113	-0,211
PfefferJ1972V17P218ADMINSCIQUART	0,730	-0,119	0,641	0,029	0,153
LaPorta1998V106P1113JPOLITECON	0,804	-0,512	0,163	-0,005	0,235
LaPorta2002V57P1147JFINANC	0,849	0,406	-0,264	-0,057	-0,182
DimaggioPJ1983V48P147AMSOCIOLREV	0,031	-0,697	0,662	-0,179	0,176
PearceJA1991V12P135STRATEGICMANAGEJ	-0,438	-0,303	0,838	0,049	-0,061
PearceJA1992V29P411JMANAGESTUD	0,526	0,832	-0,074	-0,049	-0,102
DemsetzH2001V7P209JCORPFINANC	0,788	0,426	-0,369	-0,091	-0,207
ByrdJW1992V32P195JFINANCECON	0,878	0,449	-0,041	-0,013	-0,110
ColesJL2008V87P329JFINANCECON	0,361	0,832	-0,358	-0,154	-0,132
EisenbergT1998V48P35JFINANCECON	0,450	0,766	-0,385	-0,159	-0,163
RedikerKJ1995V16P85STRATEGICMANAGEJ	0,941	-0,171	0,242	0,037	0,118
FinkelsteinS1994V37P1079ACADMANAGEJ	0,693	-0,546	0,373	-0,044	0,270
RechnerPL1991V12P155STRATEGICMANAGEJ	0,577	-0,575	0,497	-0,076	0,276
SundaramurthyC2003V28P397ACADMANAGEREV	-0,497	0,113	0,821	0,227	-0,055
VanEH2008V26P84EuropeanManagementJournal	0,017	-0,344	0,927	-0,021	0,095
LeblancR2007V15P843CORPGOV	-0,203	-0,597	0,756	-0,132	0,061
BeattyRP1994V39P313ADMINSCIQUART	0,930	0,188	-0,265	-0,015	-0,145
GoldenBR2001V22P1087STRATEGICMANAGEJ	-0,111	-0,626	0,744	-0,152	0,104
KangH2007V15P194CORPGOV	0,938	-0,306	0,033	0,041	0,122
WestphalJD1999V42P7ACADMANAGEJ	0,185	-0,255	0,933	0,006	0,123
RosensteinS1990V26P175JFINANCECON	0,761	0,586	-0,188	-0,068	-0,163
ClaessensS2000V58P81JFINANCECON	-0,681	0,655	0,085	0,295	0,046
FinkelsteinS2003V17P101ACADMANAGEEXEC	0,181	-0,677	0,649	-0,166	0,225
HiggsD2003REVROLEEFFECTIVENE	0,468	-0,697	0,427	-0,123	0,293
WinlundH2000V12P311ENTREPREGIONDEV	-0,307	-0,217	0,918	0,064	-0,015
DechowP1996V13P1CONTEMPACCOUNTRES	-0,093	-0,677	0,693	-0,165	0,123
YermackD2004V59P2281JFINANC	0,862	-0,336	0,313	0,015	0,189
PuglieseA2009V17P292CORPGOV	-0,148	-0,555	0,802	-0,116	0,075
DenisDK2003V38P1JFINANCQUANTANAL	-0,738	0,543	0,190	0,336	0,012
CarterDA2003V38P33FINANCIALREV	-0,593	-0,346	0,707	0,069	-0,112
DharwadkarR2000V25P650ACADMANAGEREV	-0,575	0,774	-0,010	0,232	0,075
BoydBK1995V16P301STRATEGICMANAGEJ	-0,782	0,395	0,306	0,357	-0,036
ZonaF2007V15P852CORPGOV	-0,322	-0,386	0,859	-0,013	-0,016
BebchukLA2003V17P71JECONPERSPECT	0,964	-0,191	-0,145	0,033	0,022
HambrickDC1984V9P193ACADMANAGEREV	-0,737	0,435	0,361	0,358	-0,027
AndersonRC2004V37P315JACCOUNTECON	0,674	0,559	-0,404	-0,129	-0,208
BooneAL2007V85P66JFINANCECON	0,570	0,667	-0,399	-0,150	-0,194
MizruchiMS1996V22P271ANNUREVSOCIOL	-0,263	-0,541	0,787	-0,099	0,026

Reference	1	2	3	4	5
AndersonRC2004V49P209ADMINSCIQUART	-0,636	0,708	0,058	0,276	0,061
CongerJA1998V76P136HARVARDBUSREV	0,464	0,816	-0,277	-0,125	-0,140
AndersonRC2003V58P1301JFINANC	-0,071	0,940	-0,311	-0,063	0,002
DonaldsonL1991V16P49AUSTRJMANAGEMENT	0,190	0,906	-0,334	-0,131	-0,075
VafeasN2003V30P1043JBUSINESSFINANCEA	-0,467	0,826	0,169	0,244	0,060
VafeasN1999V53P113JFINANCECON	0,007	0,969	-0,223	-0,052	-0,006
ChanKC2008V16P16CORPGOV	0,895	0,230	-0,326	-0,039	-0,167
VanDBL2004V12P461CORPGOV	-0,174	0,962	-0,186	0,013	0,042
RindovaVP1999V36P953JMANAGESTUD	-0,304	0,746	0,516	0,260	0,023
ConyonMJ1998V41P146ACADMANAGEJ	0,879	-0,428	0,049	0,020	0,175
RahejaCG2005V40P283JFINANCQUANTANAL	0,338	0,846	-0,352	-0,151	-0,124
HuseM2005V16pS65BRITJMANAGE	0,115	-0,707	0,632	-0,179	0,209
KlapperLF2004V10P703JCORPFINANC	-0,179	0,945	-0,252	-0,010	0,036
KrollM2008V29P363STRATEGMANAGEJ	-0,477	0,849	-0,035	0,185	0,082
CadburyA1992REPORTCOMMITTEEFIN	0,833	-0,493	0,095	0,001	0,210
HuseM2005V16P65BRITJMANAGE	-0,314	-0,294	0,896	0,030	-0,016
WalshJP1990V15P421ACADMANAGEREV	-0,007	-0,621	0,751	-0,151	0,144
WanD2005V13P277CORPGOV	-0,558	0,559	0,511	0,322	-0,003
BhagatS2002V27P231JCORPLAW	0,954	0,059	-0,254	0,005	-0,104
KleinA1998V41P275JLAWECON	0,971	0,030	-0,200	0,019	-0,079
BebchukLA.2004PAYPERFORMANCEUNFU	0,944	0,069	-0,284	-0,006	-0,111
HermalinBE1988V19P589RANDJECON	-0,084	0,952	-0,274	-0,049	0,013
KimB2009V17P728CORPGOVOXFORD	0,495	-0,658	0,464	-0,110	0,292
WiersemaMF1992V35P91ACADMANAGEJ	-0,679	0,559	0,317	0,344	0,007
JacklingB2009V17P492CORPGOVOXFORD	-0,386	0,899	-0,110	0,121	0,079
MinichilliA2009V20P55BRITJMANAGE	0,224	-0,705	0,595	-0,169	0,245
HermalinBE1991V20P101FINANCMANAGE	0,798	0,404	-0,373	-0,087	-0,204
WestphalJD2003V48P361ADMINSCIQUART	-0,502	-0,427	0,741	0,005	-0,079
PettigrewA1995V48P845HUMRELAT	-0,216	-0,620	0,732	-0,136	0,061
WestphalJD2005V50P262ADMINSCIQUART	-0,391	0,742	0,452	0,275	0,026
ShivdasaniA1993V16P167JACCOUNTECON	0,440	0,772	-0,386	-0,160	-0,161
ShivdasaniA1999V54P1829JFINANC	0,864	0,352	-0,293	-0,054	-0,184
AjinkyaB2005V43P343JACCOUNTINGRES	0,914	-0,368	-0,024	0,026	0,130
ClaessensS2002V57P2741JFINANC	-0,552	0,795	-0,052	0,207	0,075
GabrielssonJ2004V34P11INTSTUDIESMANAGEME	0,181	-0,640	0,694	-0,151	0,214
RuigrokW2006V43P1201JMANAGESTUD	-0,724	0,323	0,491	0,346	-0,059
ZattoniA2008V16P1CORPGOV	-0,610	-0,092	0,752	0,187	-0,108
HeckmanJJ1979V47P153ECONOMETRICA	-0,348	0,909	-0,177	0,081	0,069
TerjesenS2009V17P320CORPGOVOXFORD	0,370	-0,694	0,523	-0,144	0,279
XieB2003V9P295JCORPFINANC	0,007	-0,703	0,659	-0,177	0,167
HartzellJC2003V58P2351JFINANC	0,972	-0,111	-0,175	0,031	-0,019
JohnK1998V22P371JBANKFINANC	0,543	0,707	-0,373	-0,149	-0,184
YoungMN2008V45P196JMANAGESTUD	-0,378	0,900	-0,135	0,108	0,077
HaunschildPR1993V38P564ADMINSCIQUART	0,079	-0,680	0,674	-0,174	0,191
KosnikRD1987V32P163ADMINSCIQUART	0,961	-0,239	-0,063	0,044	0,067

Reference	1	2	3	4	5
MinichilliA2007V11P5JMANAGGOV	0,489	-0,627	0,518	-0,105	0,283
JudgeWQ2008V34P765JMANAGE	0,120	0,915	-0,347	-0,123	-0,056
ZahraSA2004V41P885JMANAGESTUD	-0,495	0,828	0,066	0,226	0,074
AdamsRB2010V48P58JECONLIT	0,586	-0,669	0,325	-0,089	0,290
JohnsonRA1993V14P33STRATEGICMANAGEJ	-0,739	0,516	0,240	0,348	0,002
BaysingerB1990V15P72ACADMANAGEREV	-0,656	-0,278	0,670	0,119	-0,128
DonaldsonL1998V6P5CORPORATEGOVERNANCE	0,159	0,896	-0,372	-0,133	-0,073
JudgeWQ2010V18P258CORPGOV	0,772	-0,534	0,216	-0,017	0,252
SolomonJF2003V11P235CORPGOV	0,639	-0,635	0,301	-0,069	0,287
VillalongaB2006V80P385JFINANCECON	0,008	0,940	-0,315	-0,088	-0,018
ArthursJD2008V51P277ACADMANAGEJ	-0,627	0,724	0,016	0,257	0,063
JohnsonS2000V90P22AMECONREV	-0,285	0,927	-0,210	0,044	0,058
WilliamsKY1998V20P77RESORGANBEHAV	-0,509	-0,368	0,767	0,033	-0,087
FarrellKA2005V11P85JCORPFINANC	-0,482	-0,472	0,727	-0,018	-0,063
JacksonG2005V13P351CORPGOV	0,494	-0,699	0,396	-0,116	0,293
BrickleyJ1997V3P189JCORPFINANC	0,710	-0,603	0,221	-0,046	0,267
RavasiD2006V43P1671JMANAGESTUD	-0,576	-0,319	0,734	0,076	-0,111
AguileraRV2008V19P475ORGANSCI	-0,798	0,372	0,297	0,351	-0,042
BhagatS2008V14P257JCORPFINANC	0,868	0,276	-0,352	-0,055	-0,179
DailyCM1994V37P1603ACADMANAGEJ	0,265	0,854	-0,394	-0,151	-0,109
WeimerJ1999V7P152CORPORATEGOVERNANCE	0,969	-0,191	-0,106	0,042	0,034
FilatotchevI2002V23P941STRATEGICMANAGEJ	-0,510	0,827	-0,077	0,182	0,079
HampelR1998COMMITTEECORPORATE	0,968	-0,077	-0,211	0,021	-0,042
AguileraRV2004V25P415ORGANSTUD	-0,775	-0,024	0,548	0,261	-0,134
LynallMD2003V28P416ACADMANAGEREV	-0,656	0,347	0,573	0,329	-0,050
AguileraRV2009V17P376CORPGOV	-0,806	0,114	0,463	0,312	-0,111
WestphalJD2001V46P717ADMINSCIQUART	-0,762	0,291	0,445	0,350	-0,069
WestphalJD2001V22P1113STRATEGICMANAGEJ	-0,089	0,458	0,848	0,214	0,025
HealyPM2001V31P405JACCOUNTECON	0,801	-0,527	0,129	-0,011	0,229
DavisGF1994V39P141ADMINSCIQUART	-0,799	0,124	0,472	0,317	-0,110
KaramanouI2005V43P453JACCOUNTRES	0,868	-0,419	0,157	0,018	0,198
LaportaR1997V52P1131JFINANC	0,752	0,497	-0,353	-0,102	-0,209
PeasnellKV2005V32P1311JBUSFINANACCOUNT	-0,779	0,230	0,454	0,342	-0,085
WestphalJD1998V43P127ADMINSCIQUART	-0,649	0,661	0,181	0,314	0,042
HambrickDC2008V19P381ORGANSCI	-0,753	-0,001	0,579	0,266	-0,132
WestphalJD1998V43P511ADMINSCIQUART	-0,525	0,320	0,725	0,287	-0,038
MillarC2005V59P163JBUSETHICS	0,365	-0,716	0,493	-0,147	0,279
PfefferJ1973V18P349ADMINSCIQUART	-0,713	-0,089	0,638	0,221	-0,137
RuigrokW2007V15P546CORPGOV	-0,408	-0,498	0,756	-0,052	-0,037
DembA1992CORPORATEBOARDCONF	-0,783	0,029	0,527	0,283	-0,128
LelandHE1977V32P371JFINANC	0,096	0,934	-0,310	-0,108	-0,042
HarrisIC2004V41P775JMANAGESTUD	0,528	0,695	-0,412	-0,155	-0,185
MehranH1995V38P163JFINANCECON	0,937	0,125	-0,280	-0,009	-0,131
HaunschildPR1998V43P815ADMINSCIQUART	-0,379	-0,546	0,736	-0,075	-0,016
DavisGF2005V31P143ANNUREVSOCIOL	-0,703	-0,195	0,638	0,170	-0,138

Reference	1	2	3	4	5
DavisJH1997V22P20ACADMANAGEREV	-0,808	0,237	0,395	0,342	-0,082
SonnenfeldJA2002V80P106HARVARDBUSREV	-0,409	-0,460	0,780	-0,035	-0,044
KatzR1982V27P81ADMINSCIQUART	-0,696	0,611	0,164	0,323	0,033
FinkelsteinS1996STRATEGICLEADERSHIP	-0,743	-0,103	0,597	0,222	-0,140
AndersonRC2003V68P263JFINANCECON	-0,135	0,939	-0,296	-0,036	0,017
UseemM2006V14P2CORPGOVOXFORD	-0,662	-0,231	0,678	0,142	-0,134
PyeA2005V16P27BRITJMANAGE	0,321	-0,588	0,688	-0,117	0,235
OxelheimL2003V27P2369JBANKFINANC	0,930	-0,331	0,004	0,039	0,124
NadlerDA2004V82P102HARVARDBUSREV	-0,686	-0,059	0,672	0,224	-0,126
PettigrewA1998V7P197EUROPEANJWORKORG	0,204	-0,726	0,577	-0,173	0,239

Note: Cells with green background color show values over 0.7. Cells with values between 0.3 and 0.7 have yellow background color.

Appendix Table 7: Total Variance Explained. 2014 - 2017

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	40,594	43,185	43,185	40,594	43,185	43,185	39,16	41,66	41,66
2	39,074	41,568	84,753	39,074	41,568	84,753	27,645	29,41	71,07
3	10,761	11,448	96,201	10,761	11,448	96,201	22,309	23,733	94,802
4	1,303	1,386	97,587	1,303	1,386	97,587	2,505	2,665	97,468
5	1,199	1,276	98,863	1,199	1,276	98,863	1,311	1,395	98,863
6	0,199	0,212	99,075						
7	0,196	0,208	99,283						
8	0,135	0,143	99,426						
9	0,126	0,134	99,56						
10	0,071	0,076	99,635						
11	0,057	0,061	99,696						
12	0,048	0,051	99,746						
13	0,027	0,028	99,775						
14	0,026	0,028	99,803						
15	0,02	0,021	99,824						
16	0,019	0,02	99,845						
17	0,011	0,012	99,857						
18	0,011	0,011	99,868						
19	0,01	0,011	99,879						
20	0,009	0,01	99,888						
21	0,008	0,009	99,897						
22	0,008	0,008	99,905						
23	0,006	0,006	99,912						
24	0,005	0,005	99,917						
25	0,005	0,005	99,922						
26	0,004	0,005	99,927						
27	0,004	0,005	99,932						
28	0,004	0,004	99,936						
29	0,003	0,004	99,94						
30	0,003	0,003	99,943						
31	0,003	0,003	99,946						
32	0,003	0,003	99,949						
33	0,003	0,003	99,952						
34	0,003	0,003	99,954						
35	0,002	0,002	99,957						
36	0,002	0,002	99,959						
37	0,002	0,002	99,961						
38	0,002	0,002	99,963						
39	0,002	0,002	99,965						
40	0,002	0,002	99,967						
41	0,002	0,002	99,969						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
42	0,001	0,002	99,97						
43	0,001	0,001	99,972						
44	0,001	0,001	99,973						
45	0,001	0,001	99,974						
46	0,001	0,001	99,975						
47	0,001	0,001	99,977						
48	0,001	0,001	99,978						
49	0,001	0,001	99,979						
50	0,001	0,001	99,98						
51	0,001	0,001	99,981						
52	0,001	0,001	99,982						
53	0,001	0,001	99,982						
54	0,001	0,001	99,983						
55	0,001	0,001	99,984						
56	0,001	0,001	99,985						
57	0,001	0,001	99,986						
58	0,001	0,001	99,986						
59	0,001	0,001	99,987						
60	0,001	0,001	99,988						
61	0,001	0,001	99,988						
62	0,001	0,001	99,989						
63	0,001	0,001	99,99						
64	0,001	0,001	99,99						
65	0,001	0,001	99,991						
66	0,001	0,001	99,991						
67	0,001	0,001	99,992						
68	0	0,001	99,992						
69	0	0	99,993						
70	0	0	99,993						
71	0	0	99,994						
72	0	0	99,994						
73	0	0	99,995						
74	0	0	99,995						
75	0	0	99,996						
76	0	0	99,996						
77	0	0	99,996						
78	0	0	99,997						
79	0	0	99,997						
80	0	0	99,997						
81	0	0	99,998						
82	0	0	99,998						
83	0	0	99,998						
84	0	0	99,998						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
85	0	0	99,999						
86	0	0	99,999						
87	0	0	99,999						
88	0	0	99,999						
89	0	0	99,999						
90	0	0	100						
91	0	0	100						
92	0	0	100						
93	4,90E-05	5,21E-05	100						
94	1,37E-15	1,46E-15	100						

Appendix Table 8: PCA Components 2014 - 2017

Reference	1	2	3	4	5
JensenMC1976V3P305JFINANCECON	0,187	-0,360	0,904	0,001	-0,082
FamaEF1983V26P301JLAWECON	-0,164	-0,266	0,940	0,067	0,016
TerjesenS2009V17P320CORPGOVOXFORD	0,855	-0,333	0,338	0,060	-0,175
LaPortaR1998V106P1113JPOLITECON	0,480	0,166	0,825	0,198	-0,041
PfefferJ1978EXTERNALCONTROLORG	0,136	-0,490	0,847	-0,079	-0,092
ShleiferA1997V52P737JFINANC	-0,082	-0,584	0,790	-0,134	-0,029
JensenMC1993V48P831JFINANC	-0,228	-0,046	0,947	0,177	0,030
ZahraSA1989V15P291JMANAGE	0,201	-0,611	0,731	-0,147	-0,137
FaccioM2002V65P365JFINANCECON	0,565	-0,207	0,775	0,080	-0,124
ForbesDP1999V24P489ACADMANAGEREV	-0,509	0,683	0,391	0,320	-0,020
HillmanAJ2003V28P383ACADMANAGEREV	-0,635	-0,069	0,722	0,224	0,100
KleinA2002V33P375JACCOUNTECON	-0,198	0,229	0,903	0,265	0,022
GompersP2003V118P107QJECON	0,483	-0,567	0,616	-0,095	-0,210
AdamsRB2009V94P291JFINANCECON	0,599	0,694	-0,330	-0,041	0,198
CarterDA2003V38P33FINANCIALREV	0,367	0,858	-0,315	-0,058	0,134
KangH2007V15P194CORPGOV	0,384	0,811	-0,391	-0,093	0,150
TerjesenS2015V128P233JBUSETHICS	0,545	0,707	-0,388	-0,072	0,192
YermackD1996V40P185JFINANCECON	-0,336	0,358	0,802	0,305	0,027
BeasleyMS1996V71P443ACCOUNTREV	-0,820	0,459	0,064	0,315	-0,070
VillalongaB2006V80P385JFINANCECON	-0,423	0,873	-0,156	0,124	-0,098
FamaEF1980V88P288JPOLITECON	0,250	0,947	-0,142	0,036	0,077
HillmanAJ2002V28P747JMANAGE	0,824	0,464	-0,243	0,039	0,192
BusheeBJ1998V73P305ACCOUNTREV	-0,842	0,349	0,207	0,343	-0,018
YoungMN2008V45P196JMANAGESTUD	-0,443	0,842	-0,260	0,079	-0,115
JensenMC1986V76P323AMECONREV	-0,434	-0,509	0,727	-0,046	0,100
LaPortaR2000V58P3JFINANCECON	0,284	-0,573	0,735	-0,124	-0,159
AikenLS1991MULTIPLEREGRESSION	0,335	-0,543	0,739	-0,102	-0,167
MaugE1998V53P65JFINANC	-0,778	0,368	0,359	0,346	0,005
WalshJP1990V15P421ACADMANAGEREV	-0,043	-0,591	0,786	-0,140	-0,044
ErhardtNL2003V11P102CORPGOV	0,424	0,780	-0,408	-0,094	0,162
AguileraRV2003V28P447ACADMANAGEREV	0,756	-0,438	0,426	0,006	-0,211
FinkelsteinS1994V37P1079ACADMANAGEJ	-0,337	-0,558	0,742	-0,087	0,065
McnultyT2013V21P183CORPGOVOXFORD	0,987	0,013	-0,009	0,125	0,022
AndersonRC2003V58P1301JFINANC	0,914	-0,257	0,251	0,089	-0,136
ClaessensS2002V57P2741JFINANC	-0,261	0,890	-0,354	-0,015	-0,071
FamaEF1983V26P327JLAWECON	-0,107	0,909	-0,383	-0,062	-0,024
FeloA2003WORKINGPAPER	-0,861	0,375	0,060	0,319	-0,056
MacholdS2013V21P147CORPGOVOXFORD	-0,909	0,036	0,261	0,299	0,067
FerrisSP2003V58P1087JFINANC	-0,138	0,927	-0,332	-0,035	-0,035
JohnsonSG2013V39P232JMANAGE	-0,307	0,928	-0,017	0,162	-0,054
FichEM2006V61P689JFINANC	-0,106	0,949	-0,281	-0,011	-0,023
RechnerPL1991V12P155STRATEGICMANAGEJ	-0,614	0,738	0,011	0,244	-0,095
CarterDA2010V18P396CORPGOV	0,675	0,596	-0,365	-0,038	0,208

Reference	1	2	3	4	5
JohnsonJL1996V22P409JMANAGE	-0,258	-0,532	0,795	-0,089	0,041
BhagatS2008V14P257JCORPFINANC	-0,753	-0,250	0,555	0,171	0,149
LaPortaR2002V57P1147JFINANC	-0,389	-0,488	0,769	-0,044	0,087
HausmanJA1978V46P1251ECONOMETRICA	0,700	-0,387	0,558	0,018	-0,198
SinghV2004V12P479CORPGOV	0,756	0,518	-0,326	-0,006	0,207
GillanS2003V13P4JAPPLFINANCE	-0,893	0,152	0,246	0,330	0,036
LarckerDF2007V82P963ACCOUNTREV	-0,656	-0,354	0,635	0,092	0,148
LaPortaR1999V54P471JFINANC	0,918	-0,089	0,339	0,128	-0,087
TorchiaM2011V102P299JBUSETHICS	0,933	0,283	-0,121	0,100	0,130
BebchukL2009V22P783REVFINANCSTUD	-0,888	0,326	0,023	0,301	-0,050
HambrickDC1984V9P193ACADMANAGEREV	0,870	0,428	0,122	0,143	0,087
GroveH2011V19P418CORPGOVOXFORD	0,200	0,932	-0,274	-0,036	0,076
BellRG2014V57P301ACADMANAGEJ	-0,917	0,178	0,138	0,313	0,008
TerjesenS2008V83P55JBUSETHICS	0,955	-0,191	0,151	0,105	-0,091
HillmanAJ2000V37P235JMANAGESTUD	0,039	0,919	-0,373	-0,079	0,027
WestphalJD1999V42P7ACADMANAGEJ	-0,292	-0,383	0,870	0,011	0,051
KahnC1998V53P99JFINANC	-0,838	-0,088	0,445	0,262	0,121
SchulzeWS2001V12P99ORGANSCI	0,742	-0,166	0,616	0,101	-0,129
HillmanAJ2008V19P441ORGANSCI	-0,863	-0,076	0,392	0,269	0,114
HillmanAJ2007V50P941ACADMANAGEJ	0,839	0,415	-0,279	0,031	0,190
FreemanRE1984STRATEGICMANAGEMENT	-0,760	0,570	-0,108	0,245	-0,120
KangJK1995V38P29JFINANCECON	0,701	-0,442	0,507	-0,004	-0,216
ShivdasaniA1999V54P1829JFINANC	0,224	0,875	-0,395	-0,098	0,095
ShleiferA1986V94P461JPOLITECON	-0,752	-0,062	0,587	0,252	0,113
BrickleyJ1997V3P189JCORPFINANC	-0,798	-0,251	0,485	0,177	0,145
GarciacastroR2013V21P390CORPGOVOXFORD	-0,532	-0,483	0,675	-0,008	0,124
WeisbachMS1988V20P431JFINANCECON	0,640	0,727	0,113	0,137	0,102
DesenderKA2013V34P823STRATEGICMANAGEJ	0,972	-0,157	0,078	0,103	-0,060
XieB2003V9P295JCORPFINANC	-0,865	0,159	0,323	0,334	0,046
AdamsRB2015V23P77CORPGOVOXFORD	0,933	0,231	-0,202	0,077	0,134
DeAP2008V32P2570JBANKFINANC	0,840	-0,392	0,311	0,031	-0,180
AguileraRV2006V14P147CORPGOV	0,491	-0,584	0,593	-0,100	-0,209
DechowP1996V13P1CONTEMPACCOUNTRES	-0,719	0,619	-0,168	0,207	-0,129
DonaldsonL1991V16P49AUSTRJMANAGEMENT	-0,819	0,479	-0,073	0,269	-0,099
MeyerJW1977V83P340AMJSOCIOL	0,926	0,160	0,277	0,157	-0,002
DailyCM2003V28P371ACADMANAGEREV	-0,874	-0,116	0,369	0,248	0,115
DaltonDR1999V42P674ACADMANAGEJ	-0,586	0,740	-0,254	0,128	-0,132
DaltonDR1998V19P269STRATEGICMANAGEJ	0,963	0,158	-0,129	0,105	0,100
PeasnellKV2005V32P1311JBUSFINANACCOUNT	-0,670	0,685	-0,092	0,224	-0,121
PathanS2009V33P1340JBANKFINANC	-0,129	0,939	0,186	0,214	-0,006
ZattoniA2013V21P119CORPGOVOXFORD	0,984	0,048	0,057	0,135	0,016
PeasnellKV2000V32P415BRITACCOUNTREV	-0,092	-0,469	0,871	-0,062	-0,014
NielsenS2010V18P136CORPGOV	0,762	0,593	-0,161	0,052	0,174
AhernKR2012V127P137QJECON	0,987	-0,048	-0,026	0,107	0,004
ColesJL2008V87P329JFINANCECON	0,687	0,619	-0,305	-0,015	0,207

Reference	1	2	3	4	5
PostC2011V50P189BUSSOC	0,625	-0,505	0,540	-0,044	-0,222
DjankovS2008V88P430JFINANCECON	0,129	-0,639	0,724	-0,156	-0,113
AdamsRB2010V48P58JECONLIT	0,031	0,890	-0,432	-0,093	0,028
AguileraRV2008V19P475ORGANSCI	-0,642	-0,413	0,617	0,056	0,144
AhmedK2006V14P418CORPGOVOXFORD	-0,448	0,815	-0,327	0,054	-0,112
EisenhardtKM1989V14P57ACADMANAGEREV	0,973	0,104	-0,121	0,104	0,080

Note: Cells with green background color show values over 0.7. Cells with values between 0.3 and 0.7 have yellow background color.

CHAPTER 4

BOARD OF DIRECTORS AND CODES OF GOOD GOVERNANCE IN SPAIN: FRAMEWORK, VALIDITY AND EVOLUTION

ABSTRACT

Codes of Good Governance have been created in many countries, spreading best practices among a great number of firms. The topics they usually address are centered on the Board of Directors, and channeled their principles through recommendations. Prior to analyze possible implications on a firm level, it is necessary to study those provisions validating the existence I underlying constructs which may lead them to be considered as a sort of index for corporate governance. We focused our research in the case of Spain. In this work, we describe the main theoretical foundations behind codes of good governance, and the main characteristics of those that were applied to Spanish listed firms. We also match theories to principles and recommendations, and identify key concepts that are shown across different codes, which is particularly important so as to perform longitudinal analyses of Spanish listed firms. Finally, we analyze and validate the theoretical constructs supporting the recommendations in their benchmarking role via the degree of compliance for the period between 2007 and 2016. We found 'traditional' topics such as supervision, internal controls or board independence, but also found others like human capital or transparency in flow of information related issues, explaining a great proportion of the difference in compliance. We suggest that these topics are to be distinguishing among companies, beyond regulatory streams that frame and steer ordinary corporate governance issues.

KEYWORDS

Board of directors, corporate governance, codes of good governance, degree of compliance, human capital.

1. INTRODUCTION

Corporate governance has been the main topic of a great number of researches over the last decades. In the rise of corporate prosperity, just after the World War II, there was not such a concern for corporate governance (Cheffins, 2012), but for the last three decades it became a central topic in research literature. Initially conceived as a development of governing styles (Stoker, 1998) and the creation of a non-imposed structure that results from influence governing actors (Kooiman, 1993), this subject became a research subject that was approached from many angles: law, accounting, finance, strategy, etc.

The relatively slow path of maturity in this field for decades gave yield to the need of improving governance, fostered by increasing markets globalization, the demand across companies' stakeholders and the rising number of corporate scandals not only in America but also in Europe or Australia (Vuontisjärvi, 2013). Financial markets incumbents saw a need of improving it in order to avoid future troubles, asking for an enhanced supervision, control and protection of shareholders' rights. Soon in the aftermath of these events, regulation sharply increased, staring in the US (Chhaochharia & Yaniv Grinstein, 2007). Agency issues appeared to be at the core, and likely to be addressed in the first place, as a clear result of the separation between the ownership and control exercised by the management in the firm (Fama, 1980; Fama & Jensen, 1983), or referred as the main cause (Jensen, 2004). And the Board of Directors was there a key player in the conflict as the most relevant governance mechanism.

For almost three decades, a key tool for improving governance in organizations were the Codes of Good Governance. In the aim of providing a highest degree of transparency and avoiding negative governance issues, codes spread in most countries. The Cadbury Code, issued in UK in 1992 took the lead to subsequent codes in France (Vienot Report, 1995), the Netherlands (Peters Report, 1997), and Spain (Olivencia Report, 1998). The above-mentioned scandals lead to a peak in the issuing of codes across the world in 2002. The second peak was reached after the financial crisis, which led to numerous revisions and new issuances (Cuomo, Mallin, & Zattoni, 2016). Although there are authors that think of codes as a mere way to protect from governance (Carver, 2007), we give them some space due to the role they played, their diffusion and the spreading of concepts likely to be linked to good governance regardless their implementation.

Codes of good governance also played a key role in the evolution of the research. Although the lack of accomplishment or information on these matters was not under grave penalties in many countries, a significant number of companies started, and continued, providing information on corporate governance because of them. Market regulators adopted specific formats to show the information on corporate governance. The information codes triggered helped building indices of corporate governance. Issuers of Codes established principles of corporate governance and built recommendations based on them, where the Board was at the core.

Therefore, it is relevant to analyze them and, in our study, we set the focus on the case of Spain. The principles they were inspired on, the recommendations they established, the degree of detail, and the way they evolve over years are issues that are relevant for the study of corporate governance itself. Also, through the information they make available for research in the reports, they could frame discussion topics, and investigation directions, and set comparable points of study in further longitudinal analysis.

Spanish Codes have been studied from the ethical perspective of the Olivencia Report (Fernández- Fernández, 1999), looking at the effect of some recommendations (Pala-Laguna & Esteban-Salvador, 2016), or the impact of news on governance (Fernández-Rodríguez, Gómez-Ansón, & Cuervo-García, 2004; Utrero-Gonzalez & Callado-Munoz, 2016). The information provided by the companies in their annual reports on governance yielded more studies, e.g regarding remuneration (Baixauli-Soler & Sanchez-Marin, 2011, 2014; López-Iturriaga, García-Meca, & Tejerina-Gaite, 2015), size and independence (Villanueva-Villar, Rivo-López, & Lago-Peñas, 2016), ownership structure and board composition (Acero Fraile & Alcalde Fradejas, 2014), combining and indexing boards characteristics (García Lara, Osma, & Penalva, 2007), or including characteristics in an international context (De Andres, Azofra, & Lopez, 2005). To our knowledge, there is a gap on research of the framework and evolution of the Spanish Codes of Good Governance, focused in the Board of Directors, specially as regards to the degree of compliance of recommendations, and to what extent they channeled existing literature configuring constructs that may combine in a measure of governance. Therefore, we aim to fill that gap analyzing the codes issued in Spain in the last two decades, from the Olivencia Report to the last Code of Governance. We try to describe how the codes were organized, the theories embedded, their principles, their recommendations, and how they evolve as necessary steps prior to properly analyze the degree of compliance. Once this frame is set, we will validate whether the code recommendations compliance meet the intellectual constructs so as to be considered a benchmark, an index of corporate governance likely to be linked to performance in other studies. We chose the period of analysis, between 2007 and 2016, because it provides a continuous source of information. Consequently with changes performed in the code, we consider the three different sets of recommendations in that period, where the Board plays a central role.

This article is composed of four further sections. After this introduction, we review the literature on codes and corporate governance with this point of view, show the methodology we followed, describe how the Spanish Good Governance Code evolved, and, analyzing the evolution of compliance of recommendations in Spanish listed firms from 2007 to 2016, we validate the intellectual constructs to consider them as measures of governance. Finally, we conclude and show potential future lines of research based on our study.

2. LITERATURE REVIEW AND HYPOTHESES FORMULATION

According to scholars, practitioners, and lawmakers, codes of good governance are structured so as to improve governance of firms and also to serve as a legitimation (Zattoni & Cuomo, 2008) or as a formal demand (Werder, Talaulicar, & Kolat, 2005). Through a set of principles and norms, they aim to increase transparency and accountability (Fernández-Rodríguez et al., 2004). The codes were originally set as voluntary in nature, as opposed to hard regulation, and applied the 'comply or explain' principle (Haxhi & Aguilera, 2015). The rationale behind the principles is that a company must be allowed to have a certain degree of flexibility while keeping the goal of transparency (Cuomo et al., 2016). In this sense, Codes are supposed to complete other mechanisms such as legislation and markets when they fail to protect shareholders' rights (Aguilera & Cuervo-Cazurra, 2004). Following existing studies at the time, and sometimes skipping them (Romano, 2004), codes tried to address prevailing deficiencies and problems of governance. They usually set up a wide-ranging list of indications grouped on big topics such as the board (e.g. board composition), relationship to shareholders, disclosure and transparency, directors (e.g. appointment, dismissal, remuneration), or responsibility before stakeholders' interests (Barton, Coombes, & Chiu-Yin Wong, 2004; Gregory & Simmelkjaer, 2002). But, in certain occasions, there has been also criticism on the timing or their mandatory force they followed in their implementation (Romano, 2004). The origins of the first code go back to 1978 in the US, although it was not issued with that format. Just a few new codes were issued in the following decade. In 1992, The Cadbury Report was released and it triggered a fast growing movement on corporate governance codes adoption across many countries (Aguilera & Cuervo-Cazurra, 2004; Weil, Gotshal, & Manges, 2002). In fact, there were successive modifications and reforms in many of them, and different rationales behind their diffusion such as the national culture (Haxhi & Ees, 2010).

Almost all countries that issued codes addressed to all listed companies. However, there were some developed for specific types of companies (Continuum AG & Prager Dreifuss, 2008), financial institutions (The Monetary Authority of Singapore MAS, 2013) or NGOs (CGAI, 2008). Compliance adoption increased over time although firms differed in path and explanations (MacNeil & Li, 2006). In the UK, almost all the listed companies already complied with a great number of recommendations before 1999 (Weir & Laing, 2000).

The classification of the codes according to the issuer and the legal framework where they are developed has been relevant topic of research. The European Commission established seven categories: Governmental or quasi-governmental entities, Committees or commissions organized or appointed by governments; Stock exchange-related bodies; Hybrid committees related to both stock exchanges and business, industry, investor and/or academic associations; Business, industry and academic associations; Associations of directors and Various (Weil Gottshal and Manges Llp, 2002). Aguilera & Cuervo-Cazurra (2004) identify six categories: Stock Exchange, Government, Directors' Association, Managers' Association, Professional Association, and Investors Association. Each one has advantages and disadvantages in terms of pressure to adoption, isomorphism, and endorsement. In the case of Spain, Government and Managers' Association jointly elaborated the different codes but, as we will overview in a further section of this work, the government initiative led and special commission followed in the elaboration.

The legal tradition or system adds relevant features to codes. Two main traditions are often identified in building legal systems. The common-law system and civil-law system. The first system was adopted in the UK, the US, and other English-influenced countries. On the opposite, the civil-law system was adopted in the continental Europe. The system is linked to the purpose in pursuing compliance, that is, whereas companies under civil-law tended to legitimate their governance practices, common-law provides a more suitable space for obtaining more transparency and accountability (Zattoni & Cuomo, 2008). Protection to stakeholders and creditors drives a similar way (La Porta, Lopez‐de‐Silanes, Shleifer, & Vishny, 1998), pointing at diverse causes embedded in the legal tradition.

As regards to the main components of the codes (i.e. Board of Directors, Committees, General Meetings), all of them have been studied at the level the indicators and variables that their recommendations provide, under commonly used international theories, and following the principles showed at that time (Merendino, 2013). The theoretical framework is posed to be at the grounds of different typologies of codes we mentioned before and contributing to set the rationale of their provisions. Thus, variables like the functions, the composition, or the dimension of the board are addressed from different angles. Therefore, we will briefly overview some of this theories, such as the Agency Theory, the Stakeholders Theory, the Resource Dependence Theory, or the Stewardship Theory, and show integrative approaches as well.

Under the Agency Theory perspective (Berle & Means, 1932; Fama & Jensen, 1983; Jensen & Meckling, 1976; Mitnick, 1976; Ross, 1973), problems of compensation contracting (incentives) and institutions formed around agency may explain many of the issues. This theory approaches the extent to which managers acts in the interests of shareholders of the firm and do not use the information asymmetries to heir one convenience (Rediker & Seth, 1995). Accordingly, governance mechanisms aim to deal with the threat of takeover (Jensen, 1986; Shivdasani, 1993), the issue of monitoring (Demsetz & Lehn, 1985; Fama, 1980), the incentives (Jensen & Meckling, 1976).

In this context, the Board of Directors develops its role through monitoring, controlling and preventing manager interference that may cause shareholders loses. As managers gain the control in the firm, they may act to benefit only for themselves, and this conflict of interest should be face with control mechanisms (Dalton, Daily, Ellstrand, & Johnson, 1998). This monitoring control, also referred as “control role”, has been approached by many relevant and frequently quoted works (from the seminal, review and proactive visions) (Johnson, Daily, & Ellstrand, 1996; Mace, 1971; Pearce & Zahra, 1992; Zahra & Pearce II, 1989) and points directly to the board among his primary duties. In that sense, we may check how the vast majority of the recommendations and provisions provided by the code are clearly inspired by this theory. Codes use to dedicate a section to the Board and its organization where these topics appear everywhere, and many recommendations are drenched with this kind of control traits. Since they are at the origins of the creation of the codes, they are backed by regulators, and they are highly demanded by external mechanisms, they are supposed to be always met at a high level of compliance by all companies. As a result, they could not be considered as differential traits for indices. Therefore, pose the following hypothesis:

***H1**: Recommendations linked to Agency Theory are always met.*

If variance in the degree of compliance appears they would pave the way for further hypotheses considering different constructs as distinctive, suitable to be good measures of governance. In this sense, we should consider some factors that may frame their effect. Agency problems have led to develop mechanisms to monitor executives and align interests (Jensen & Meckling, 1976). But contracts derived from the principles that bring those mechanisms are affected by the institutional and regulatory context of corporate governance (La Porta, Lopez-De-Silanes, & Shleifer, 1999). Equity ownership concentration can accentuate the relationship between small and larger shareholders (Shleifer & Vishny, 1997; Villalonga & Amit, 2009), and trigger principal-principal issues (Hartzell & Starks, 2003; López-Iturriaga, García-Meca, & Tejerina-Gaite, 2015; Young, Peng, Ahlstrom, Bruton, & Jiang, 2008). Besides, it leads to a less active market for corporate control (Weimer & Pape, 1999). As a result, compensation, remuneration, and internal controls may appear as relevant elements to consider in the recommendations that must be complied by the firms under our scope.

In particular, since the ownership structure of Spanish listed firms is highly concentrated, with a short list of dominant shareholders (Acero Fraile & Alcalde Fradejas, 2014; Gutiérrez Urtiaga & Saez Lacave, 2012; Lorca, Sánchez-Ballesta, & García-Meca, 2011; Salas Fumás, 2002), it may lead to limit the powers of the Board for adjusting compensation (Baixauli-Soler & Sanchez-Marin, 2011), and introduce incentives that can reduce the effectiveness of monitoring and increase the possibility of firm's rent extraction (Baixauli-Soler & Sanchez-Marin, 2014). These issues may turn into a lack of compliance and, therefore, significant variance among listed firms. On the other hand, the absence of a relationship between performance and compensation has been a problem for long (Bebchuk, Cohen, & Ferrell, 2004), specially in Latin countries (Weimer & Pape, 1999). The appearance of variance in the degree of compliance of the related recommendations would provide strong support for validating the mentioned constructs, and consider those recommendations as a valid part of an index-like code. Therefore, we suggest the following hypothesis:

H2*: The degree of compliance of recommendations validates the existence of the Agency Theory constructs on compensation in Spanish Corporate Governance Codes.*

The Stakeholders Theory (ST) set a mission of facilitation and coordination for the Board of Directors, taking into account all that might have interests in the company and trying to balance them over time (Freeman, 1984, 2004). This is a descriptive theory where the corporation is a "constellation of cooperative and competitive interests possessing intrinsic value" (Donaldson & Preston, 1995). As an instrumental theory, it argues that it can prove successful in conventional performance terms. As a normative theory, implies the acceptance of the legitimate and intrinsic value of the interest of persons in their relationship with the corporation (Figure 3), which should be properly identified (Mitchell, Wood, & Agle, 1997). As a managerial theory recommends attitudes, structures and practices. In that sense, it may address some matters that also key for other theories and whose interaction might drive further research. Accordingly, boards role is posed to facilitate, coordinate and address all who might have interests in a certain company (Merendino, 2013). In this framework, codes follow an efficiency rationale in their diffusion, where stakeholders balance legitimation actors (Haxhi & Ees, 2010).

A mechanism that can serve both, Agency Theory (AT) and Stakeholders Theory (ST), is the implementation of internal controls (Lorca et al., 2011). At the same time, it is a significant constraint for companies the cost of its implementation as required by the codes (Sneller & Langendijk, 2007), that can be relatively high for small of medium companies. Although the benefit of compliance is meant to be higher than the cost associated to it in the long run (Rose, 2016), given the differences in firm size, it is foreseeable that we think that there will be significant differences in the degree of compliance of those related provision. Therefore, we formulate the following hypothesis:

H3*. The degree of compliance of recommendations validates the existence of AT and ST based constructs on internal controls in Spanish Corporate Governance Codes.*

The Resource Dependence Theory (RDT) is linked to the board function of provision of resources (Boyd, 1990). The resource is understood as "anything which could be thought of as a strength or weakness of a given firm" (Wernerfelt, 1984). This framework sets the board of director as a key piece in the ability of bringing all the resources the firm needs or is lacking. It is originally built on a view of the individual contributions to the board made by the directors it terms of supporting, problem solving and aid to the issues concerning the firm, and where director interlocks help to achieve this aims (Pfeffer & Salancik, 1978). Thus, four possible benefits could be identify: 1) the advise and counsel, 2) source of legitimacy, 3) channels for communication outside the firm, 4) referential access to external support. As a result, the view suggests that there is a reduction of the dependence to external contingencies, less uncertainty, and lower transactions costs (Williamson, 1984). In this context human capital is a key factor to outperform other companies (Acedo, Barroso, & Galan, 2006; Barney, 1991; Barney, 2001; Crook, Todd, Combs, Woehr, & Ketchen, 2011). RDT asserts that skills are path dependent, that is, likely to evolve over time (Coff, 1997; Grant, 1996; Penrose, 1959), as well as knowledge and experience. Besides, RDT suggest to distinguish to types of human capital: firm-specific (Kor & Mahoney, 2005) and general (Coff, 1997). This distinction is important for considering whether human capital market acts efficiently or not (Barney, 1986). Besides, RDT warns on the consequences of positive effects on profits: competition to appropriate a share of them shown by stakeholders may affect final outcomes for the firm (Coff, 1999; Crook et al., 2011).

As regard to corporate governance matters, human capital has been approached as the antecedent of board provision of resources (Hillman & Dalziel, 2003a). RDT has discussed terms like directors expertise, experience, knowledge, reputation or skills, that were originally included in that concept (Becker, 1964). As resource providers, directors give to the firm advice and counsel in strategy, access to information, a source of legitimacy, skills, experience and connections (Pfeffer & Salancik, 1978). Likewise, some authors studied the ties to external organizations, configuring a “sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Nahapiet & Ghoshal, 1998). To this extent, the board as a whole and the directors individually could properly fit in the provision of resources via their networking and social trait (Geletkanycz & Hambrick, 1997; Mizruchi & Stearns, 1994). Both, human and social capital, become the board capital, an antecedent of resources provision for the firm, and ultimately related to firm performance. Trying to understand what kind of skills are behind board human capital, directors have been classified according to this role in terms of their knowledge and previous background (Baysinger & Butler, 1985), providing thirteen categories that were grouped into three major components: executive, instrumental and monitoring. In our opinion, this approach dismisses most of the potential of expertise and knowledge by utilizing only a primary role. Directors’ classification was also made out of previous experience as CEO, director, university professor, or government officer (Jermias & Gani, 2014). Other possible approach combines some of them in skills sets (Adams, Akyol, & Verwijmeren, 2013).

In the context of board capital, the advising role is a relevant element to improve advising and getting resources (Sundaramurthy & Lewis, 2003). But besides advice and counsel, the link of board capital to the provision of legitimacy and reputation (Hambrick & D’Aveni, 1992) probed to turn into better performance for the companies (Certo, Covin, Daily, & Dalton, 2001).

Adding up these views on board capital we think that integrative approaches could lead to a better understanding of board functioning. Thus, we agree on integration or intended complementary of frameworks, where knowledge, skills or proactive traits are in place, could lead to more effective boards (De Andres & Santamaria, 2010).

Since the majority of the provisions are influenced by Agency issues, we expect that the codes do not show a significant number of recommendations related to human capital and, if so, they are approached from the mentioned theory. Despite this, the path dependence may cause differences in compliance due to the process of adaptation to provisions requests.

H4*: The degree of compliance of recommendations validates the existence of RDT based constructs on human capital in Spanish Corporate Governance Codes.*

The Stewardship Theory (Donaldson & Davis, 1991) (ST) points out that the Board may act as a facilitator, after being empowered, under an on-going organization where the coalition between owners and managers is kept, maximizing at the same time the organizational performance and the shareholder returns. This view counterbalances the Agency Theory which tends to handle managers behavior in a reductionist manner, by adding a pro-organizational model of man (Davis, Schoorman, & Donaldson, 1997). Thus, the interests of directors and managers do not necessarily collide (Muth & Donaldson, 1998) and the board may facilitate managers' tasks and empower them (Pugliese et al., 2009). Psychological factors, such as motivation, identification or and use of power, as well as situational factors such as management philosophy or culture, play a key role for the steward. Nevertheless, it lacks of necessary dynamics, as that derived from learning processes (Pastoriza & Arino, 2008). In that sense, it would be useful to perform some empirical research on the basis of active-reactive agent learning process in organizations (Pérez López, 1991), and in the context of corporate governance.

Since Stewardship Theory plays a secondary role, company may diverge in their degree of compliance in those related provisions. Therefore, we propose the following hypothesis:

H5*: The degree of compliance of recommendations validates the existence of ST based constructs in Spanish Corporate Governance Codes.*

Integrative visions of the above mentioned theories have also been developed. The agency theory and the resource dependence theory were linked to propose the relationship between board capital and both, monitoring and resource provision functions (Hillman & Dalziel, 2003b). Other research, integrates the same theories around the engagement in board different tasks (Pugliese, Minichilli, & Zattoni, 2014). Recent holistic proposals for framing corporate governance have been developed on the inclusion of some of the formerly explained theories (Young & Thyil, 2008).

The referred works in this literature review provide us a useful guidance to depict and analyze the way the Spanish Code of Governance evolved and showed the influence of different possible frameworks in its principles. The report issued by every listed company reflects the degree of compliance in each one of the recommendations. The result of this study, if positive, would set the basis of a further analysis of the impact of the degree of compliance, considered as an index of good governance, on firm performance.

3. METHODOLOGY

3.1. Empirical context: Spanish codes of good governance

There have been several codes in Spain throughout the last three decades: The Olivencia Code (embedded in the Olivencia Report), the Aldama Report, the Unified Code of Good Governance, the Unified Code of Good Governance (reformed) and the Code of Good Governance, which is the current one for Spanish firms. The evolution of these codes may help to understand the guiding principles and, for the aim of our research, to study the type of information that could be utilized, how it evolves, and to determine whether there are different periods of time that should be separately analyzed.

The Olivencia Report (1998-2002)

The first Code in Spain was issued in 1998. Although it was named 'The governance of listed companies', it was commonly referred as 'Informe Olivencia', taking the surname of the president of the group of people that issued the report. This group was configured as commission of experts. The profiles of its members shows a prevalence of law background, combined with large experience, both in state-owned and public companies (see Appendix Table 1).

It is noticeable that the group was called 'Special Commission for the study of a Listed Companies Board of Directors Ethic Code'. The Board was at the center of the study and it was initially framed into an ethics perspective. It is commonly understood that it "developed an approach to corporate governance which emphasized the responsibility of management and Boards of Directors to the company's shareholders" (Special Commission To Foster Transparency And Security In The Markets And In Listed Companies, 2003). This approach clearly fits into the framework of the theory of agency (Fama & Jensen, 1983; Jensen & Meckling, 1976), as it is referred as the main cause for the demand of reforming corporate governance in Spain (Comisión Especial para el Estudio de un Código Ético de los Consejos de Administración de las Sociedades, 1998). The report is composed of three sections: introduction, a report on the board of directors, and a good governance code.

The introduction section included the origin and aims of the study group, the influence of the demand for reforms, the nature and methods for the work and a description of the associated movement of reforms in Spain. In this section of the report we may infer the principles inspiring the Code out of a wide rationale: Balance of powers, transparency, information, and accountability. The report on the board of directors had twelve chapters. First, there is a study of the board of directors' mission, its supervisory function, its faculties and need of value creation for the shareholder. Then, the composition of the Board is analyzed, depicting the directors' types and duties, with special focus on the independent director, and the board size. Afterwards, the structure of the board is studied, exploring the President, the Secretary, and the Committees. Functioning of the board description comes before the chapters on appointment and renewal of directors, the board and the information, directors' remuneration, and loyalty duties. The last chapters refer to the board and different institutions (shareholders, markets, and audit firms) and the willfulness and publicity in the code adoption. All this chapters provide an extensive rationale for forthcoming recommendations based of the implicit principles that were asserted in the introduction. The last section of the report is called 'Good Governance Code' and includes a chapter on 'General Considerations' and a list of 23 recommendations (see Appendix Table 2).

As it may be checked, there is no sections or internal structuring for the recommendations but just a list of them. Besides, since the reasoning is not linked to each provision, is harder to frame the angle that should lead to meet the requirements. The degree of precision and the style of writing allow a broad margin for interpretation and meeting what they demand, giving to the principles and responsibility of the board a central role for managing them. The recommendations show pursuing of the balance of power and independence (2, 3, 5, 6, 7); the search for effectiveness in functioning through size (4), correct structuring (8), information flow and meeting preparation (9, 14), and meeting participation (10); the transparency in selection an renewal of the directors (11), delegation of vote (18), reliability of the information provided to the markets (19), unified criteria of reporting (20), explanation before the general meeting (22) and provision of corporate governance information in their annual reporting (22); the preservation of corporate reputation (12); the moderation and transparency in remuneration (15); loyalty duties (16, 17); and the independence of external auditors (21). As asserted before, the grounds of Agency Theory is backing most of the recommendations. It is true that, in the case of the information provided to the markets, it could be inferred some concern for stakeholders but it is circumstantial. In fact, it fits more in the need of link towards external mechanism of control.

The Aldama Report (2003-2006)

The Aldama Report was the also the result of a mandate given by the Spanish Government. This mandate was performed by a group of experts and public executive officers (see Appendix Table 3). The Special Commission was configured with two objectives: provide criteria and guidelines for corporate governance. The targeted companies where "companies which issue securities and instruments admitted to listing on organized markets in their relations with consultants, financial analysts and other companies, persons or entities which assist them or provide professional services to them", seeking to increase "transparency and security of financial markets" (Special Commission To Foster Transparency And Security In The Markets And In Listed Companies, 2003). These aims where set into a context of structural changes, a increasingly globalized economy, capital markets integration, and the trends of international markets, an keep appearing in the following codes.

The report strengthen the need of "the application of a coherent philosophy as regards regulation or coordination of the economy around three criteria or principles: effective rule of law, self-regulation by the markets as far as possible, and maximum transparency". This is code is aligned with the previous in this sense. Trying to know what the experts and the shareholder think about these aims, they found that they think that "the information which listed companies provide to the markets and their shareholders is grossly insufficient", especially when they refer to the Shareholders' Meeting. They "took it for granted that this lack of transparency conceals conflicts of interest and the use of inside information by executives and directors, to the detriment of the company. They expressed some interest in the idea of independent directors, but doubted that they would really be independent in practice". Therefore, fragmented and insufficient information, as well as the lack of awareness by shareholders triggered the elaboration of this new code.

The Report is composed of six sections. After the preamble, sections two and three face the problems in the application of the principles of transparency and the duty of loyalty. The following section approaches the governing bodies, that is, the shareholders' meeting, the board, the directors, the chairman, remuneration issues and the committees. Section five surely assumes the aftermath of corporate scandals when deals with 'Professional services providers', which where relevant players in a few cases. Finally, the last section make some reflections on the scope and application of the recommendations. This Code opens its recommendations, initially addressed to listed companies, to other companies regardless their presence in a secondary market. Besides it joints rationale and recommendations in four sections. On one hand, this clarifies the structure, but, in the other, it does not list the recommendations themselves (there are 26 chapters and subchapters across the four sections, sometimes called 'Other measures'), which make them harder to track and report.

It is remarkable that the text highlights that best law and codes are not enough in the aim of obtaining the good corporate governance. The relevant factor is, in this regard, the degree of professional competence and the ethical behavior in place. According to this view, directors and managers must look to the long-term corporate interest above their own. The ethical values are posed to be a condition to effectiveness, and exemplariness lead to the creation of a culture of good governance (Special Commission To Foster Transparency And Security In The Markets And In Listed Companies, 2003). Going beyond a mission that has to be fulfilled in a framework of law, this code distinguish between two levels of responsibilities the firm must pursue: the first is the company's long-term continuity, which implies making profits, complying with law, and avoiding unethical actions. In this context, side effects of the business activity, i.e. environmental or organizational restructuring issues, have to be addressed as well. The second level of responsibilities "entails positive actions with all the parties directly or indirectly involved with the company". This directly connects with stakeholder theory. Although is declared to be voluntary, since it varies from one country to another, it is clear a subject to pay attention in corporate governance. Despite this, as we will see further, only recently the code has included provision clearly focus on these matters.

The Unified Code (2007-2012)

The Unified Good Governance Code of Listed Companies (Unified Code) was approved by the Board of the CNMV (Securities and Markets Regulatory Agency in Spain) in 2006 following the demand of the Ministry of Economy (Comisión Nacional del Mercado de

Valores, 2006), asking for a 'single text with existing corporate governance recommendations' (ECO/3722/2003. Section 1, clause f.). A new commission of experts help writing the Unified Code. This is as slight but significant change. The experts switch their role to advising the regulatory agency, who plays a double role (issuer-supervisor) and centralizes the official reporting on corporate governance. Consequently, self-regulation principle was set aside in the elaboration of this version. As regards to the experts' profile, as in the last two occasions, the commission combined different ones: lawyers, Public executive Officers, Directors, and Corporate Governance Experts (see Appendix Table 4).

This version of the code followed the review of the Principles of Corporate Governance made by the OECD in 2004, and the promotion of good governance that the European Commission encouraged over the same period. It included some of their recommendations, aimed to establish a clearer concept of independent director, and expanded the functions of the audit, and nomination and remuneration and committees (Comisión Nacional del Mercado de Valores, 2005).

The first section of the code is called 'Core Principles' but immediately introduces a single subsection called 'Characteristics of the Code'. In this subsection, defines voluntariness subject to the principle of 'comply or explain', starting with a regulatory rationale. Other characteristic calls for respecting binding definitions made at the code (i.e. 'independent director'). Then, gives the power of evaluate the degree of compliance to the market, always under the abiding regulatory requests on information, and agencies monitoring and supervision. Finally, it addresses the recommendations to all listed companies, reckoning the burdens they might imply in small companies, and taking the 'freedom of decision and organizational autonomy' as guaranteed. Other principles may be found mentioned through the rationale that precedes each recommendation: balance of power and proportionality, board should pursue maximizing economic value over time in all its actions, adopt social responsibility principles, transparency, committees independence, publicity. The call for these principles-characteristics is usually framed by regulation, and there is scarce room for governance of companies themselves. This bent towards law may lead to the companies to adopt a 'defensive position' when dealing with reports on corporate governance, if not a formally one (Werder et al., 2005).

After the characterization of the code, 58 recommendations are defined and briefly explained (see Appendix Table 5). There is a first set of recommendations regarding the shareholding's meeting procedures and the way the Corporate Bylaws are set up. The second group gathers key recommendations on the board of directors such as the size, competences, functional structure, board meetings and gender diversity. The third set of items refers to directors, especially the selection, independence directors' assurance, disclosures and remuneration matters. Finally, the recommendations items deal with committees' issues. This structure remained for more than ten years and recently included slight changes in the details and the order of disclosure. As it may be easily notice, the majority of the recommendations could be framed under the role of monitoring and supervising that has been traditionally adopted by agency theory contributions. These would be the one regarding the board independence, mechanism of disclosure, information, CEO/Chairman duality, participation in other boards, and size. The items that can be analyzed under a resource dependence theory, helping to assess the board capital, are just a few. These items can be studied as matters of social capital.

We may notice that the recommendations introduce Corporate Social Responsibility policies under the powers of the board (Recommendations 7 and 8). Although there are no recommendation items explicitly devoted to the human capital of the board, we identify those who might qualify as that. Recommendation 14 requires to explain the nature of each director to foster transparency and avoid discriminant management of comparable interests amongst shareholders. That implies an explanation that should go beyond external and obvious observable characteristics. Recommendation 15 requires gender diversity in the board, and the rationale the code provides is based on demographic variables as well as confirmed experience of women in the business world for decades. Besides, aims to the process of selection and points to independent directors vacancies as a way to meet the recommendation. We excluded Recommendation 24 since the rationale for this recommendation refers to exceptional situations and controversial nature of a particular decision subject. Therefore, we do not consider it as human capital related, but information-channeling and procedural related. Recommendation 25 requires from the companies induction programs and refresher ones when they are convenient. This is related to build those necessary skills a director should have. We considered Recommendation 27 aligned with previous recommendations, since it points to the selection process and proposal of candidates steered by the Nominations Committee. Accordingly, Recommendations 42, 46 and 49 go in the same way but in the case of the committees, with specific remarks on the needed skills and knowledge. This list of recommendation was modified in 2013 so as to include further disclosure of several items.

Unified Governance Code (Reformed) (2013-2014)

In 2013, the Unified Governance Code was updated so as to reflect that some provisions have already been incorporated into legislation or, being needed in other countries do not apply to Spain (CNMV, 2013). The characterization or principles' setting remained as in the former version of the code. But the premises affected the recommendations, whose number diminished to 53 (Recommendations 11, 29, 35, 40, and 41 were removed from the code). The list of them, keeping the previous structure, is shown in Appendix Table 6.

As regard to the contents, this reform distinguished and identified principles inspiring each recommendation. Some of them were taking out or modified in its contents since they were incorporated in diverse regulation, such as the exclusive competences of the general meeting or the board of directors, the splitting of votes, the separate voting agreements, or the definition of different categories among directors. The recommendations removed dealt with the explanation on 'other external directors' category, rotation of independent directors, remuneration approval, general meeting vote on remuneration statement, and disclosure of individual remuneration. The Ministerial Order ECC/461/2013 requested an annual report on remuneration. This might explain the remuneration recommendations restructuring in the reformed code during this period. We suggest that this change, may lead to a misunderstanding of the degree of compliance, since it derives this topic to other reports and diminishes the expected contents in terms of corporate governance. As regards to human capital related recommendations (13, 14, 24, 26, 37, 41, and 49), they were kept in their previous definitions (numeration changed due to some mentioned eliminations of recommendations).

The Good Governance Code (2015-present)

The current Code of Good Governance was issued in 2015. The Spanish Government formed the 'Experts on Corporate Governance Committee'. The aim was twofold, to improve 'the efficiency and accountability of Spanish firms' governance and ensuring that national standards attain maximum levels of compliance with international good governance principles and practices'. The objectives were 'to ensure the proper functioning of the governing and administrative bodies of Spanish companies in order to maximize competitiveness, build trust and transparency for shareholders and domestic and foreign investors, improve internal control and corporate responsibility systems, and ensure the correct internal distribution of functions, duties and responsibilities under standards of maximum rigor and professionalism' (CNMV, 2015). By including this aims, it confirmed that codes try to spread practices and principles across countries.

The Good Governance Code introduced significant changes over the former codes. Firstly, it employed a new format that linked recommendations to the principles. Besides, some recommendations were omitted since they were included in legislation and now are compulsory. Corporate Social Responsibilities recommendations were included due to the increasing acknowledgement in many countries.

The Good Governance Code is based on 25 principles. They are grouped in three categories: general arrangements (1-5), Shareholders' General Meeting (6-8), and Board of Directors (9-25). The definition of each one of them and the match to the recommendations are shown in Appendix Table 7. The Good Governance Code contains 64 recommendations. The complete list and definition of the recommendations may be seen in the Appendix Table 8. This is a remarkable novelty in the Code. The current code includes new provisions so as to comply with the foresight vision of the first codes regarding the social responsibility. This code hosts new recommendations aimed to clarify remuneration issues.

In the Table 1 we visualize the matching between the principles and the theoretical approaches we summarized in the last section of this work, that is, the Agency Theory, the Stakeholders Theory, the Resource Dependence Theory and the Stewardship Theory. The matching is based on the description and aims of each one of the principles. In some cases, the orientation of the recommendations that followed the principles helped to properly qualify them under certain categories. This is relevant because same variables or similar provisions may take different directions depending on the given orientation of the theory that inspires the principle. For example, differing theories can make the size of the board set its goal towards opposite directions (reduced vs. numerous), or the composition of the board in terms of types of directors may aim to a majority of independent, or convey a balance of non-executive and executive (Merendino, 2013).

Table 1: Principles and theoretical frameworks

	Principle Number	Recommendations	Agency	Stakeholders	Resource Dependence	Stewardship
General Arrangements	1	1	x			
	2	2	x	x		
	3	3		x		
	4	4		x		
	5	5	x	x		
Shareholders' General	6	6, 7, 8	x	x		

Meeting	7	9, 10	x	x		
	8	11	x	x		
Board of Directors	9	12	x			
	10	13, 14	x		x	x
	11	15, 16, 17, 18, 19	x			
	12	20, 21, 22, 23, 24	x			
	13	25	x			
	14	26, 27, 28	x			
	15	29, 30, 31, 32	x	x	x	x
	16	33, 34	x			x
	17	35	x			x
	18	36	x			
	19	37, 38	x		x	
	20	39, 40, 41, 42, 43, 44	x	x	x	
	21	45, 46	x			
	22	47, 48, 49, 50, 51	x		x	
	23	52, 53	x	x		
	24	54, 55		x		
	25	56, 57, 58, 59, 60, 61, 62, 63,64	x			

The majority of the principles (80%) have a clear orientation from the Agency Theory framework. On the contrary, we weighted just two of them that might have the influence of the Stewardship Theory. Many principles may share complementary visions, by combining two or more grounding theories. In our opinion, this is important since it gives the chance for a further developing of recommendations, with changes they might require in the future. Thus, recommendations that might be settled for a long time could be improved in the aim of better firm governance. As we previously said, the current code includes some provision regarding the corporate social responsibility, and this clearly fits in the Stakeholders Theory. Strengthened principles regarding remuneration reinforce control and supervision functions framed in the Agency Theory. Board capital, embedding human and social capital, underlies in some principles. Despite their inclusion, the future research based on the information demanded in annual corporate governance reports may vary significantly. The recommendations that were built under these principles provide a narrow window for common variables. It is not the case for other recommendations, where indicators and thresholds are clearly defined.

It is interesting how the provision regarding the duality Chairman-CEO disappears and the rationale behind. The code recognizes that it has benefits, when it comes to exercise power, provide information, and coordinate, but it also points out the potential disadvantages of the concentration of the power in a single person. Divergences in international practice and, in the opinion of the issuers, the lack of empirical evidence lead not to demand the separation of the offices. It recommends that, in the case of concentration, it should be balanced. The measures go in line with the required vote majority for the chairman election, the abstaining position of the executive directors in that vote or the appointment of a lead director.

Report On Corporate Governance Obligation according to current law

The obligation of publishing and notifying as a significant event towards regulatory agencies of an Annual Corporate Governance Report is defined in the Capital Companies Act (Ley de Sociedades de Capital, herein CCA). This law was approved in 2010. The Securities Market Act, approved in 2015, extended the obligation to other issuers of listed securities.

CCA requires issuers to show their degree of compliance with recommendations of the code and, in case it is appropriate, to explain why they have not been fulfilled. The reports the companies make are published in Agency websites, calling them a valid source on information.

Recommendations Comparison

Once we summarized the codes issued in Spain in the last two decades, it is convenient to compare them for the purpose of our research. A table showing some of the characteristics previously reviewed is shown in Table 2.

Table 2: Codes Comparison. Some characteristics

	Olivencia	Aldama	Unified Code	Unified Code (Reformed)	Code of Good Governance
Denomination	Olivecia Report	Aldama Report	Unified Good Governance Code of Listed Companies	Código Unificado de buen gobierno de las sociedades cotizadas	Good Governance Code of Listed Companies
Denomination Type	Report-Code	Report-Code	Code	Code	Code
Years	1998 - 2002	2003 - 2006	2007 - 2012	2013 - 2014	2015 -
Number of Principles	4	3	10	10	25
Principles (explicit/implicit)	I	E	I	I	E
Principles linked to recommendations	N	N	N	N	Y
Principles	Self-regulation, Balance of powers, transparency, information, accountability	Effective rule of law, Self-regulation by the markets as far as possible, and maximum transparency	Comply or explain, voluntariness, markets (transparency), binding definitions, balance of power and proportionality, board should pursue maximizing economic value over time in all its actions, adopt social responsibility principles, transparency, committees independence, publicity.	Comply or explain, voluntariness, markets (transparency), binding definitions, balance of power and proportionality, board should pursue maximizing economic value over time in all its actions, adopt social responsibility principles, transparency, committees independence, publicity.	(See Appendix Table 6)
Sections of the Report-Code	introduction, a report on the board of directors, and a good governance code		Core principles, recommendations, Definitions, Appendix		
Sections of the recommendations	0	4	4	4	3 (Board of Directors has 6 subsections)
Number of Recommendations	23	Not Listed	58	53	64
Recommendations (explicit/implicit)	E	I	E	E	E
Recommendation follows explanation	N	N	Y	Y	Y
Reasons for elaboration	Need of CG	Fragmented and insufficient information, lack of shareholders awareness	Unify principles and recommendations	Adapt to regulatory changes	
Reporting Supervision	None	None	CNMV	CNMV	CNMV
Code issuer	Experts Group	Experts Group	CNMV	CNMV	CNMV
Code advisor	None	None	Experts Group	Experts Group	Experts Group
External events affecting	Markets Demand, Context	First big corporate scandals	OECD Principles Corporate Governance	Regulation adaption	CCA, other regulation

We will focus in the evolution of the recommendations that each one has proposed, in the period between 2007, when the Aldama just landed in the Spanish listed firms, and 2016, after two years of the implementation of the current code. During these years there is a continuity in listed clear recommendations, under analogous points for comparison. This is particularly useful so as to determine and structure variables and data for further studies.

We listed recommendation topics and checked their presence/absence from 2007 to 2016 in the reported information, according to the codes (See Appendix Table 9). We started listing those that were valid in 2007 and added new ones if they substantially deferred from the already counted. The table matches the recommendation item number of each topic in each code.

As regards to the frequencies, given that the first 58 listed topics prevailed during the first six years, they account for highest appearances across the time span. Amongst them, 21 topics are recommended in all years. They deal with corporate bylaws, societal interest, size of the board, independence of the board, gender diversity, chairman functions, director attendance, board evaluation, external advise, public information on directors, executive committee issues, audit committee issues (profiles of the members, supervision, reporting), control and risk policy, and profiles of the members of the audit committee. It is noticeable that, despite they kept names quite closely in all cases, thresholds and indicators scope changed in some of them (as to the issue of comparability they are not computable). These recurrent topics keep the same underlying theoretical approaches, where the agency theory prevails over others.

The current code introduces a group of provisions for the general meetings. The availability of technological infrastructure enables the company to give more information and do it with more transparency. Besides, it makes room to the corporate governance report.

The recommendations on Board and on Director individually are at the core of ever code. It is noticeable that the Spanish firms operate a one-tier board system in which all directors manage and supervise (In Germany, for instance, there is a two-tier board system). The one-tier structure has evolved along with a high ownership concentration, multiple director-manager roles, leading to a lack of independence and supervisory effectiveness (Baixauli-Soler & Sanchez-Marin, 2014). In this regard, the companies would lose an opportunity to balance the functions linked to the Agency Theory and the peril of concentrating to much power.

The requirements regarding gender diversity are across all the codes. Nevertheless, in the current formulation, the provisions aim to set a quota in a timeline horizon (supported also by legal requirements) and are linked to truly human capital topics, like experience, or skills. These topics were already in recommendations on the selection policy and in the committees' composition, but they were approached under a clear monitoring function. The enrichment of the data in the light of different theoretical backgrounds could give interesting opportunities for investigation. In our opinion, we expect to have more information in the coming years to analyze, with this kind of valuable material, issues regarding the board capital, human and social.

We notice that some provisions are set with a guidance range indicator (e.g. board size). This has to be taken into account in research, since it would presumably change the shape of the association to other indicators: the relevance would lose power while approaching the range, and be not significant within the established range. Indicators referring to quotas (e.g. gender diversity) should be treated differently. Besides, changes in the threshold of these indicators may lead to have a distinctive effect on firm performance measures.

The three provisions regarding the corporate social responsibility appear in the last code along with specific mention to the role of the lead director. CSR have been in place for many years, but the degree of disclosure increased following social demands. Special mention could be made to the reputation that appear more remarkably in the need of information when someone is under investigation in the court. Knowledge update training program is detailed and, at the same time connected with the recommendations linked to human capital. They should imply a previous definition of the desired skills for the board, and how the profiles of the directors contribute to it, and which are subject to formal or on-going learning. Some companies provide skill matrix based on different areas: strategy, policy development, financial performance, risk and compliance oversight, ITC, executive management, commercial experience, service delivery, product development, innovation, industry knowledge, community and stakeholder management, etc. There is also a new trend to include common personal attributes to all profiles at the board, such as integrity, constructiveness, commitment or collegiality. Other countries like Australia, where the recommendation 2.2 clearly points to the skills matrix as a tool, have decided to provide better instruments to evaluate not only compliance but also deeper impact of board capital in governance and firm performance (ASX Corporate Governance council, 2014). The guide on governance issue by the New York Stock Exchange similarly recommends it use (NYSE Governance Services, 2014).

Once we have reviewed the evolution of Spanish Good Governance Codes, and following the methodology we proposed, it is appropriate to have an outlook of the context and the general outcomes.

3.2. Data and methods

Once we overviewed research literature on codes, governance and the main theories supporting those fields, we show the following steps we will follow in the methodology we have designed.

As one of our objectives refers to the evolution of the Spanish codes of governance themselves, we set a first block of steps we denominated 'Frame'. Framing provides context to situations and problems, and serves to identify changes, some fixed elements, etc. Therefore, considering the previous intellectual background reviewed in the previous section, we identify and characterize the text of the codes, with special focus on recommendations. Then, we compare them. In some cases, we are able to identify changes in provisions, new types of disclosures that might be helpful for further analysis. Besides, since these tasks are performed across different periods of time, we can match recommendations among them. This is relevant and very important so as to perform longitudinal studies. Finally, we are able to cross-reference information that the code itself give us with the frameworks for corporate governance. That way we may follow topics such as human capital through the recommendations elaborated for that aim.

The second block of activities of our methodology focus on analyzing degree of compliance on Spanish listed firms. We should highlight that were are not studying indicators behind each recommendation (e.g. directors' ratios, women on board ratios) but whether they qualify as compliance of the intended recommendation or not. In this block, we start retrieving data on each Spanish listed company from CNMV public information regarding each recommendation, which turned to be 1,400 firm-year observations during the period we previously set (2007-2016). As the degree of compliance is a key element for testing hypotheses, we built it for each observation. Thus, in each case-recommendation, we computed compliance as 2, partial compliance as 1, and not compliance as 0. This way, we do not loose information on the progress of compliance, which might be relevant in cases of changes or reforms of certain recommendations. In the following step, we split the sample based on the periods the codes were in place, so as to give a detailed explanation of the degree of compliance in each one of them. Descriptive statistics give us general information, are used to test the first hypothesis, helping to answer some of our questions on the frequency of compliance, top ranked and low ranked recommendations, and serving as a context for the following step. Then, in order to test hypotheses 2 to 5, where we have to validate different constructs, we utilized two techniques. First, we performed exploratory factor analysis with Principal Components Analysis as extraction method in order to detect which factors might be acting behind the degree of compliance and, as we aimed, if they have to do with specific theoretical frameworks, such as the one we provided for human capital or those supporting remuneration or control. Since the elements are aggregated according to statistical properties, we are able to analyze the validity of the constructs based on previous literature by checking whether the loadings on the elements fit into a framework or topic. Analogous techniques have been already performed for construct validity of corporate governance indices (Black, de Carvalho, Khanna, Kim, & Yurtoglu, 2017). Thus, the loadings of components, through the variance explained, help us to answer the hypotheses where we try to check if they respond to the underlying grounding provided by existing literature, serving as a channel towards listed firms and helping to measure good governance. We decided to use Kaiser stopping rule to choose the number of factors with an eigenvalue over 1. Factor loadings with values over 0.7 were considered as a core contribution to the factor, whereas those below 0.3 were dismissed (Diez-Vial & Montoro-Sanchez, 2017). In this regard, it is expected that the components load mostly on the recommendations whose construct is being tested. Second, in order to check the reliability of the analysis, we obtained the Cronbach's Alpha of the whole set of recommendations and the group of provisions included in the process of testing the hypotheses, in each one of the periods (Larcker, Richardson, & Tuna, 2007; Ruiz, Esteban, & Gutiérrez, 2014; Zahra, Neubaum, & Huse, 2000). If a determined set of recommendations contribute to measure the same element of governance, they are supposed to generate a sensible high and positive Cronbach's Alpha (Black et al., 2017). Since there are three different sets of recommendations in the period of analyses, we performed the mentioned techniques for each one of them.

Finally, in the last block of activities of this methodology, we summarize our conclusions of the analysis and, under our humble point of view, we provide possible lines for future research.

4. RESULTS: COMPLIANCE OF RECOMMENDATIONS EVOLUTION AND VALIDITY OF CONSTRUCTS

Once we have framed and compared the different codes produced for Spanish listed companies, we may analyze how has been the evolution of the compliance of the recommendations. For that aim, we had two restrictions. The first, the availability of systematized data. Then limited the period span and we retrieved data on recommendations compliance of Spanish listed firms for 10 years, from 2007 to 2016. The second constraint was derived from the previous analyses. Given that there are three sets of recommendations during the years of study, in order to analyze compliance we should do it for each period of time. Then we established period 1, from 2007 to 2012, period 2, from 2013 to 2014, and period 3, from 2015 to 2016.

We detailed our aims in some questions: Are the recommendations suitable for the companies? Is there any recommendation that is not complied for any company? Are there recommendations that are complied by all? Which recommendations set at the top and at the bottom of the rank? What is the rationale behind this behavior? These questions will lead us to understand whether the issuer of the code has provided provisions that were proper to drive best practices of good governance.

Then we took data from degree of compliance of recommendations by company by year from the data provided by the companies and the CNMV from 2007 to 2016. We computed 2, when the recommendation was met; 1, when it was partially met; and 0 when it was not. This way we may also gather information from those who are in progress of complying. Our sample was composed of 1,459 firm-year registers, split in three periods (firm-observations): 2007-2012 (906), 2013-2014 (282) and 2015-2016 (271). For each period we obtained some descriptive statistics, as well as factors from analyzing the way the recommendations behave in order to know if they validate the underlying constructs that may pose them as factors for measuring good governance.

2007-2012

During this period, the vast majority of the recommendations are usually complied. There is just one recommendation (R02) where the provisions don't apply for the majority of the companies (88.28%). This means that the recommendations are plausible fitted for the cases of listed companies, even in the exceptions facilitated.

There are significant exceptions in recommendations 13 (mode =0) and 26 (mode =1). The first pints to the director independence issue and the second to the dedication. The average and standard deviation can be checked in Table 3.

Table 3: Compliance of Recommendations by period. Descriptive Statistics.

2007 - 2012			2013 - 2014			2015 - 2016		
Recommendation Number	Mean	Std. Deviation	Recommendation Number	Mean	Std. Deviation	Recommendation Number	Mean	Std. Deviation
1	1,84	0,54	1	1,90	0,43	1	1,87	0,49
2	1,40	0,83	2	1,26	0,99	2	1,22	1,00
3	1,60	0,74	3	1,64	0,72	3	1,65	0,68
4	1,76	0,65	4	1,87	0,49	4	1,57	0,68
5	1,90	0,37	5	1,97	0,22	5	1,72	0,63
6	1,82	0,57	6	1,90	0,43	6	1,30	0,75
7	1,99	0,15	7	2,00	0,00	7	0,64	0,94
8	1,69	0,52	8	1,78	0,46	8	1,98	0,14
9	1,68	0,73	9	1,69	0,72	9	1,99	0,12
10	1,78	0,55	10	1,83	0,50	10	1,88	0,41
11	1,59	0,81	11	1,54	0,84	11	1,78	0,63
12	1,43	0,90	12	1,18	0,98	12	2,00	0,00
13	0,97	1,00	13	1,87	0,44	13	1,87	0,50
14	1,82	0,48	14	1,40	0,78	14	1,41	0,75
15	1,11	0,87	15	1,92	0,32	15	1,91	0,36
16	1,89	0,33	16	1,45	0,82	16	1,63	0,78
17	1,19	0,88	17	1,83	0,43	17	1,43	0,90
18	1,74	0,50	18	1,91	0,36	18	1,74	0,49
19	1,92	0,33	19	1,89	0,36	19	1,94	0,28
20	1,91	0,31	20	1,97	0,24	20	1,95	0,27
21	1,99	0,14	21	1,65	0,67	21	1,99	0,17
22	1,53	0,71	22	1,97	0,23	22	1,96	0,27
23	1,98	0,19	23	1,90	0,43	23	1,99	0,10
24	1,85	0,53	24	1,72	0,61	24	1,92	0,36
25	1,67	0,66	25	1,34	0,68	25	1,50	0,59
26	1,17	0,73	26	1,84	0,53	26	1,74	0,52
27	1,72	0,66	27	1,68	0,54	27	1,84	0,42
28	1,53	0,65	28	1,81	0,58	28	2,00	0,00
29	1,30	0,95	29	1,86	0,51	29	1,99	0,17
30	1,79	0,58	30	1,85	0,50	30	1,87	0,49
31	1,63	0,77	31	1,96	0,26	31	1,96	0,24
32	1,75	0,60	32	1,81	0,50	32	1,93	0,34
33	1,89	0,40	33	1,62	0,77	33	1,93	0,31
34	1,73	0,57	34	1,86	0,51	34	1,53	0,67
35	1,59	0,74	35	1,81	0,59	35	1,98	0,21
36	1,44	0,90	36	1,90	0,44	36	1,61	0,63
37	1,84	0,54	37	1,44	0,69	37	1,37	0,69
38	1,82	0,57	38	1,65	0,76	38	1,84	0,41
39	1,97	0,25	39	1,49	0,67	39	1,87	0,38
40	1,03	0,85	40	1,84	0,55	40	1,66	0,69
41	1,01	0,86	41	1,90	0,43	41	1,81	0,55
42	1,32	0,71	42	1,62	0,79	42	1,74	0,50
43	1,59	0,81	43	1,59	0,79	43	1,99	0,12
44	1,40	0,67	44	1,89	0,38	44	1,95	0,31
45	1,74	0,68	45	1,78	0,48	45	1,90	0,39
46	1,98	0,21	46	1,89	0,46	46	1,73	0,64
47	1,57	0,83	47	1,86	0,46	47	1,82	0,43

2007 - 2012			2013 - 2014			2015 - 2016		
Recommendation Number	Mean	Std. Deviation	Recommendation Number	Mean	Std. Deviation	Recommendation Number	Mean	Std. Deviation
48	1,53	0,82	48	1,96	0,29	48	0,69	0,96
49	1,87	0,44	49	1,23	0,97	49	1,98	0,21
50	1,63	0,55	50	1,74	0,52	50	1,91	0,35
51	1,90	0,43	51	1,91	0,37	51	1,94	0,33
52	1,85	0,43	52	1,89	0,39	52	1,72	0,55
53	1,99	0,15	53	1,91	0,42	53	1,62	0,63
54	1,08	1,00				54	1,48	0,80
55	1,68	0,54				55	1,38	0,89
56	1,87	0,46				56	1,90	0,45
57	1,88	0,40				57	1,66	0,72
58	1,89	0,45				58	1,81	0,53
						59	1,73	0,68
						60	1,80	0,60
						61	1,26	0,92
						62	1,30	0,86
						63	1,11	0,95
						64	1,57	0,73

Frequencies in individual compliance, as well as in sets, could provide us with the basis for understanding the points in common in all companies, the elements that should be supervised due to their low level of achievement, and those that can be included under continuous monitoring. Looking at those that were mostly followed for the companies, the recommendations 7, 21, 53, 23, 46, 39, 19, 20, 05, and 51 ranked at the top. As a result, we may conclude that compliance is not linked to any group of provisions of the code, or any topic in particular.

Among the less complied recommendations, we must highlight the following:

a) The independence of the board of directors is the worst performer (R13, R29). In average, we should conclude that listed companies comply partially, that is they are in the process of including independent directors.

b) The remuneration recommendations qualify at the bottom of the compliance (R40, R41). There is a lack of transparency and disclosure of individual remuneration. Besides, this ‘black box’ is extended, or, we might say, originated by other fails in compliance as those regarding the nomination and remuneration committees (R54).

c) The third issue, points out to gender diversity directly (R15). Although there has been improvement, it is far from being properly suitable.

d) The fourth issue shows that dedication to governance is poorly explained (R26).

e) The fifth issue stresses the concentration of power in many listed companies in Spain, in terms of Chairmen adoption of executive roles. Despite this matter is always a point of controversy, we think that it should be studied along with controlling power at the board (R17).

Then, as regards to the first hypothesis we can't conclude that the agency theory related recommendations are always met since, at the same time the is a high degree of accomplishment and some provisions among significant poor performers. Therefore, H1 is only partially met.

Factor analysis of the recommendations compliance (see Tables 4 and 5) gave fourteen factors with an eigenvalue over 1. These factors represent 62.827% of the variance of the sample.

Table 4: Degree of compliance 07-12. Components and variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9,303	19,793	19,793	9,303	19,793	19,793
2	2,463	5,241	25,034	2,463	5,241	25,034
3	2,232	4,749	29,783	2,232	4,749	29,783
4	1,966	4,182	33,965	1,966	4,182	33,965
5	1,675	3,563	37,528	1,675	3,563	37,528
6	1,592	3,387	40,915	1,592	3,387	40,915
7	1,561	3,322	44,238	1,561	3,322	44,238
8	1,43	3,043	47,28	1,43	3,043	47,28
9	1,361	2,895	50,175	1,361	2,895	50,175
10	1,339	2,848	53,024	1,339	2,848	53,024
11	1,313	2,794	55,818	1,313	2,794	55,818
12	1,13	2,403	58,221	1,13	2,403	58,221
13	1,094	2,328	60,549	1,094	2,328	60,549
14	1,071	2,278	62,827	1,071	2,278	62,827
15	0,989	2,103	64,93			
16	0,964	2,052	66,982			
17	0,936	1,992	68,974			
18	0,809	1,722	70,696			
19	0,798	1,698	72,394			
20	0,779	1,656	74,051			
21	0,738	1,569	75,62			
22	0,734	1,563	77,183			
23	0,68	1,446	78,629			
24	0,67	1,425	80,054			
25	0,646	1,375	81,429			
26	0,631	1,342	82,771			
27	0,621	1,321	84,093			
28	0,588	1,251	85,344			
29	0,562	1,197	86,54			

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
30	0,532	1,132	87,673			
31	0,512	1,089	88,761			
32	0,497	1,057	89,818			
33	0,469	0,998	90,816			
34	0,452	0,962	91,778			
35	0,432	0,92	92,698			
36	0,418	0,889	93,588			
37	0,399	0,85	94,437			
38	0,386	0,821	95,258			
39	0,38	0,809	96,067			
40	0,329	0,699	96,766			
41	0,313	0,666	97,432			
42	0,3	0,638	98,07			
43	0,282	0,6	98,67			
44	0,236	0,502	99,172			
45	0,207	0,441	99,613			
46	0,097	0,207	99,82			
47	0,085	0,18	100			

Table 5: Degree of compliance 07-12. Components matrix

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CGGRN01	-0,029	-0,058	-0,036	-0,088	-0,127	-0,219	0,387	0,228	-0,061	0,462	0,254	0,205	0,146	0,155
CGGRN03	0,198	0,311	-0,057	0,408	-0,243	0,105	-0,007	-0,014	0,109	-0,093	-0,311	-0,046	0,398	-0,041
CGGRN04	0,317	-0,317	0,128	0,200	-0,168	0,114	-0,114	-0,330	0,241	0,165	0,199	-0,045	-0,174	0,198
CGGRN05	0,274	0,180	0,011	0,461	0,049	0,105	0,049	-0,107	0,075	0,385	-0,119	-0,190	-0,102	-0,036
CGGRN06	0,518	0,226	-0,124	0,331	-0,099	-0,003	0,002	-0,094	0,232	-0,044	0,003	0,059	0,037	-0,226
CGGRN07	0,270	0,359	0,198	-0,043	0,263	-0,018	0,166	0,139	0,545	0,066	-0,026	-0,068	-0,122	0,018
CGGRN08	0,498	0,037	0,168	-0,019	-0,093	-0,099	-0,084	-0,042	0,202	0,291	-0,139	-0,097	0,294	0,142
CGGRN09	0,111	0,027	0,064	0,008	0,122	-0,035	0,286	0,615	-0,001	0,047	-0,016	0,266	0,200	0,120
CGGRN10	0,495	-0,066	-0,193	0,246	0,006	-0,007	0,040	0,124	-0,125	-0,321	0,070	-0,127	0,081	0,137
CGGRN12	0,433	-0,363	-0,211	0,163	0,147	-0,131	0,072	0,113	0,060	-0,179	0,093	-0,140	0,059	0,155
CGGRN13	0,343	-0,402	-0,070	-0,007	0,427	0,156	-0,222	0,132	0,087	-0,033	-0,195	-0,091	0,044	0,073
CGGRN14	0,442	-0,247	-0,009	0,094	0,030	0,000	0,296	-0,233	0,007	-0,057	0,093	0,243	-0,069	-0,171
CGGRN15	0,392	-0,087	-0,077	0,229	-0,028	-0,017	0,070	-0,113	0,049	0,100	-0,038	0,311	0,101	0,282
CGGRN16	0,384	-0,206	0,143	0,204	0,070	0,386	0,173	0,036	-0,116	0,328	-0,160	-0,005	-0,107	-0,249
CGGRN18	0,634	-0,093	0,069	-0,286	0,092	-0,247	0,176	-0,078	0,088	0,071	0,007	-0,087	-0,100	-0,068
CGGRN19	0,190	-0,103	0,170	-0,171	-0,047	0,443	0,089	0,070	0,068	-0,130	0,340	-0,044	-0,040	-0,257
CGGRN20	0,179	-0,088	0,274	0,006	-0,014	0,400	0,369	0,012	0,121	0,005	0,188	0,048	0,231	-0,220
CGGRN22	0,568	-0,147	0,121	-0,162	0,139	0,150	-0,019	-0,151	-0,141	0,327	-0,048	0,057	-0,097	0,004
CGGRN23	0,319	-0,013	0,528	-0,281	-0,357	0,157	0,061	0,118	-0,065	-0,084	-0,027	0,055	-0,090	0,121
CGGRN24	0,422	-0,033	0,215	-0,246	-0,110	-0,013	-0,047	0,149	-0,085	-0,107	-0,433	0,087	-0,288	-0,149
CGGRN25	0,384	-0,021	0,066	0,201	-0,269	0,264	-0,074	0,365	-0,264	0,017	-0,166	0,060	-0,108	0,051
CGGRN26	0,550	-0,240	-0,117	0,007	-0,097	0,200	-0,083	-0,240	-0,025	-0,063	-0,071	0,095	0,068	0,053
CGGRN27	0,646	-0,296	0,114	-0,124	0,055	-0,353	-0,089	-0,005	-0,019	0,015	0,244	-0,003	-0,077	-0,141
CGGRN28	0,546	-0,099	-0,074	-0,011	-0,184	0,174	-0,176	-0,016	0,333	-0,077	0,118	0,131	-0,157	0,082
CGGRN29	0,281	-0,154	-0,045	0,150	-0,326	-0,177	0,231	0,283	-0,040	0,089	-0,051	-0,239	-0,326	0,183
CGGRN30	0,490	-0,159	-0,234	-0,018	-0,198	-0,014	0,216	-0,040	0,128	-0,264	0,017	0,032	0,117	0,178
CGGRN31	0,490	-0,229	-0,088	0,350	-0,101	-0,217	0,245	0,037	-0,084	-0,120	-0,103	-0,108	-0,235	0,003
CGGRN32	0,566	-0,001	-0,025	-0,132	-0,153	-0,080	0,111	-0,130	-0,007	-0,185	-0,089	0,320	-0,017	-0,070
CGGRN35	0,646	-0,021	-0,103	-0,137	-0,237	-0,153	-0,291	0,123	0,049	0,124	0,039	-0,113	0,134	-0,201
CGGRN36	0,514	0,097	-0,273	-0,293	-0,230	0,041	-0,027	0,023	0,165	-0,061	-0,199	-0,112	-0,017	0,068
CGGRN37	0,488	0,182	-0,158	-0,147	-0,030	-0,106	-0,103	0,398	0,227	-0,082	0,043	-0,144	0,027	-0,383
CGGRN40	0,535	-0,043	-0,177	-0,092	-0,141	-0,003	-0,151	0,038	0,135	0,282	-0,070	0,047	0,154	-0,028
CGGRN44	0,577	-0,339	0,007	-0,060	0,367	-0,180	-0,035	0,024	0,044	0,013	0,033	0,147	0,105	-0,012
CGGRN45	0,501	0,065	-0,188	-0,226	0,153	-0,192	0,221	-0,266	0,006	-0,078	-0,132	-0,078	0,101	-0,092

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CGGRN46	0,246	0,046	0,263	-0,119	0,044	0,324	0,275	-0,027	0,064	-0,281	0,183	-0,384	0,136	0,247
CGGRN47	0,446	0,308	-0,580	-0,185	0,096	0,237	-0,024	0,047	-0,233	0,126	0,242	-0,058	-0,090	0,089
CGGRN48	0,463	0,286	-0,597	-0,163	0,082	0,226	-0,036	0,039	-0,188	0,114	0,239	-0,013	-0,132	0,034
CGGRN49	0,399	0,451	0,118	-0,045	-0,032	-0,013	-0,110	-0,016	-0,078	-0,160	0,127	0,408	0,015	0,093
CGGRN50	0,545	0,285	-0,175	-0,044	0,014	0,212	0,029	-0,104	-0,168	0,054	-0,144	-0,012	0,063	0,087
CGGRN51	0,311	0,384	0,078	-0,121	0,256	0,004	0,218	-0,158	-0,028	-0,135	-0,324	0,121	-0,205	0,094
CGGRN52	0,452	0,047	0,106	-0,048	0,220	-0,097	0,327	-0,109	-0,396	0,027	-0,139	-0,224	0,238	-0,129
CGGRN53	0,216	0,438	0,153	0,057	0,409	0,014	0,022	0,103	0,266	0,064	0,030	-0,008	-0,206	0,228
CGGRN54	0,234	-0,441	0,044	0,014	0,402	0,253	-0,350	0,226	-0,035	-0,086	-0,160	0,105	0,083	0,102
CGGRN55	0,509	0,159	0,379	-0,086	-0,024	-0,081	-0,263	-0,035	-0,162	0,081	0,058	-0,104	0,186	0,106
CGGRN56	0,548	0,301	0,197	0,429	0,121	-0,101	-0,169	0,038	-0,082	-0,110	0,219	0,152	-0,024	-0,143
CGGRN57	0,559	0,168	0,441	-0,223	-0,106	-0,124	-0,212	-0,089	-0,178	0,018	0,110	-0,153	0,048	0,178
CGGRN58	0,574	0,160	0,241	0,461	0,112	-0,157	-0,128	0,032	-0,241	-0,102	0,235	-0,075	-0,080	-0,054

The first factor explains a significant proportion of the variance (over 19%) and points to the role played by the supervision and control committees (44, 45), circulation of relevant information in board functioning (32, 52) and board definitions (14) jointly with the criteria for selection (27). On one hand, traditional issues triggered by agency problems are addressed with those recommendations, where the search on control and supervision are key. The link to a clear human capital variable is aligned with the need of introducing control mechanisms trough directors selection and appointment.

The second factor relates to audit recommendations (47, 48, 50). Internal mechanisms of control and supervision are targeted in this case. The third factor joints remuneration functions, nomination functions and board powers (57, 55, 8), aiming at the articulation and balances of power across internal mechanisms of control. The fourth factor refers to the way the information flows and decision are made with the government principles of consulting and prudence, in particular for the case of the nomination and remuneration committees (56, 58) and risk management and control policies (49). The fifth factor regards to independence at the board in general (12, 13) and the composition of the committees in this respect (54, 44). As we mentioned, this is a 'traditional' element of discussion and study across literature and listed companies try to adapt to it, specially in the early stages of code implementation. But, if the situation persists, given the legal framework and the foreseeable bond to shareholders' interests protection, this provision is likely to be incorporated or, at least, reinforced through regulation.

The sixth factor relates to several topics on remuneration (35, 36, 37, 40). It is particularly relevant that these recommendations fail to be achieved, once the hardest period of the crisis occurred. Then, this factor, along with factor three and four, would provide support to confirm H2 in this period.

The seventh factor refers again to independence but, in this case, from the point of view of the rotation and removal of independent directors (29, 31), in what we may name 'test of independence'. The willing of keep the rationale behind the introduction of independent directors is put to the test in the case of renewal (excessive tenure could lead to loose of independence), and 'harmful for proprietary director' situations (where removal of directors could be the easiest way to steer the board towards an determined decision). The eighth factor is related to the precirculation and disclosure of information on dedication and particulars of directors (4, 28). The ninth factor is related to corporate interest treatment and audit qualifications before general meeting and employees (7, 51, 53). The tenth factor relates external advice, induction programs and information (23, 24, 25), targeting director's readiness to perform its role. Then, it would give some support to, at least, confirm partially H4.

The eleventh factor is related to board functioning in terms of proceedings and directors absence. The twelfth factor focuses on the functions of the chairman and the separation of voting, issues centered in the power allocation. The thirteenth factor is linked to the previous one, focusing on the general meeting powers. Finally, the fourteenth factor is led by the recommendation on corporate bylaws restrictions. Remuneration is clearly shown in factors 3, 4, and 6. Control in present mostly in factors 1, 2, 9, 12, 13, and 14; information in 4, 8 and 10. Gender diversity has a low weight in the factors which means that is not linked with the overall variance in the degree of compliance. This result, characterizing a pattern in the lack of compliance, would have been extremely dangerous for the purpose of corporate governance and equality in general.

We think that given the factors, companies that not comply are moved by the lack of transparency and disclosure in remuneration, and the insufficient balancing the powers in favor of their concentration.

2013-2014

In this two-year period, the recommendation 7 was the one complied by all registers of the sample. This recommendation was followed As in the previous period, a small number of recommendations showed a great number of missing information, because they were not applicable to them. That is the case of R2, 37, 36, 38, or 39. Executive committee is missing in some companies as well as variable remuneration, and therefore those recommendations were not pertinent for them (see Table 3).

Looking at the mean and the standard deviation, 64.15% of the recommendations have am average degree of compliance over 1.75 (where 2 is the maximum). Most of the recommendations at the top of the rank are grounded on Agency Theory (7, 5, 22, 31, 48, 15, 18, 51, 53). Two recommendations related to human capital also rank among the best (41, 26), showing a rising accomplishment of selection policies and setting the basis for gathering resourceful directors at the board.

As regards to the worst ranked according to the descriptive statistics, we may assert:

a) The independence of the board (12) poorly qualifies again.

b) Given the importance of risk policies and management, it is surprising the low rank of compliance in the related recommendation (49). In the same vein, it is also surprising the presence at the bottom of the supervision and control recommendation (39).

c) Gender diversity is still a low performer recommendation (14) .

As in the previous period, we found AT related recommendations both, at the top and at the bottom of the rank according to their mean of compliance. Therefore, we just can confirm partially H1.

Looking at the factors that made the difference in the degree of compliance in this period, we performed a factor analysis of the compliance of the recommendations. We obtained 12 factors, with eigenvalue over 1, that explain 70.43% of the variance. Since there were a high number of factors, the individual loadings were usually low (see Tables 6 and 7).

Table 6: Degree of compliance 13-14. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11,303	26,911	26,911	11,303	26,911	26,911	4,980	11,858	11,858
2	2,792	6,647	33,559	2,792	6,647	33,559	4,440	10,572	22,430
3	2,229	5,307	38,866	2,229	5,307	38,866	3,433	8,173	30,603
4	2,140	5,095	43,960	2,140	5,095	43,960	2,680	6,381	36,983
5	1,832	4,361	48,322	1,832	4,361	48,322	2,222	5,291	42,274
6	1,575	3,751	52,072	1,575	3,751	52,072	2,127	5,064	47,338
7	1,535	3,656	55,728	1,535	3,656	55,728	2,034	4,843	52,180
8	1,365	3,249	58,977	1,365	3,249	58,977	1,777	4,232	56,412
9	1,288	3,066	62,043	1,288	3,066	62,043	1,585	3,773	60,185
10	1,248	2,972	65,015	1,248	2,972	65,015	1,545	3,679	63,864
11	1,193	2,842	67,856	1,193	2,842	67,856	1,393	3,318	67,181
12	1,082	2,577	70,433	1,082	2,577	70,433	1,366	3,252	70,433
13	0,980	2,333	72,766						
14	0,946	2,253	75,019						
15	0,887	2,112	77,131						
16	0,830	1,975	79,106						
17	0,774	1,843	80,949						
18	0,690	1,642	82,591						
19	0,648	1,543	84,134						
20	0,612	1,457	85,591						
21	0,555	1,320	86,912						
22	0,531	1,264	88,175						
23	0,490	1,167	89,343						
24	0,478	1,137	90,480						
25	0,446	1,063	91,543						
26	0,395	0,940	92,482						
27	0,374	0,889	93,372						
28	0,367	0,875	94,247						
29	0,335	0,798	95,045						
30	0,300	0,715	95,760						
31	0,259	0,617	96,377						
32	0,253	0,603	96,980						
33	0,239	0,569	97,549						
34	0,210	0,499	98,048						
35	0,166	0,396	98,444						
36	0,157	0,375	98,819						

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
37	0,127	0,303	99,121						
38	0,109	0,260	99,381						
39	0,095	0,225	99,606						
40	0,069	0,165	99,771						
41	0,061	0,146	99,917						
42	0,035	0,083	100,000						

Table 7: Degree of compliance 13-14. Component Matrix

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12
D2CGCR01	0,026	-0,033	-0,071	-0,03	-0,092	-0,012	-0,155	0,095	0,133	0,06	0,087	0,79
D2CGCR03	-0,205	-0,064	0,378	0,173	0,099	-0,016	-0,105	-0,147	0,284	-0,033	-0,377	-0,283
D2CGCR04	0,091	0,005	0,044	0,076	0,004	0,056	0,105	0,869	-0,107	0,061	-0,019	0,123
D2CGCR05	0,045	0,074	0,108	0,03	0,312	-0,101	0,185	0,544	0,296	-0,418	-0,272	0,003
D2CGCR06	0,141	-0,011	-0,185	0,06	0,832	-0,082	0,041	0,104	0,091	0,106	-0,041	-0,163
D2CGCR08	0,137	-0,114	0,11	-0,044	0,041	0,111	0,05	0,015	0,766	0,044	0,132	0,188
D2CGCR09	0,013	0,149	0,036	0,055	0,149	-0,012	0,164	-0,114	0,156	-0,032	0,634	0,053
D2CGCR10	0,099	0,133	0,021	0,06	0,123	0,745	0,178	0,07	0,065	0,098	-0,037	0,127
D2CGCR11	0,012	0,123	0,049	0,088	0,015	0,669	0,12	-0,075	0,287	-0,054	0,071	-0,105
D2CGCR12	0,229	0,05	-0,044	0,031	0,052	0,093	0,722	0,216	0,047	0,128	0,107	-0,144
D2CGCR13	0,591	0,088	0,335	-0,076	-0,074	0,187	0,22	0,111	-0,116	0,008	0,098	-0,007
D2CGCR14	0,031	-0,007	0,055	0,205	0,09	0,274	-0,032	0,455	0,338	0,354	0,008	-0,021
D2CGCR15	0,21	0,559	0,37	0,147	-0,013	0,126	0,302	0,016	-0,026	-0,155	0,097	0,048
D2CGCR17	0,785	0,152	0,273	0,12	0,17	0,131	0,03	0,082	0,039	0,119	0,144	0,087
D2CGCR18	-0,025	0,523	0,334	0,021	0,291	0,032	0,104	-0,02	-0,212	0,39	-0,132	0,142
D2CGCR19	0,033	0,812	0,119	0,005	0,068	0,065	0,035	0,025	-0,066	0,123	0,054	0,036
D2CGCR21	0,565	-0,041	0,214	0,279	0,117	0,048	0,236	0,019	0,236	0,127	0,124	0,036
D2CGCR22	0,267	0,789	0,298	0,031	0,046	0,22	0,043	-0,066	-0,124	0,011	0,137	0,076
D2CGCR23	0,561	0,052	0,243	-0,007	0,445	0,294	0,073	-0,08	-0,196	-0,027	0,215	-0,04
D2CGCR24	0,036	0,14	0,193	0,276	0,242	0,158	0,364	0,047	0,048	-0,165	-0,166	0,482
D2CGCR25	0,293	0,238	-0,036	0,22	-0,017	0,106	0,223	0,095	0,045	0,476	-0,058	-0,098
D2CGCR26	0,683	0,254	0,302	0,01	-0,086	0,201	-0,025	0,182	0,124	0,144	0,146	-0,15
D2CGCR27	0,183	0,045	0,401	0,218	0,4	0,221	0,214	0,262	-0,058	0,053	0,094	0,134
D2CGCR28	0,298	0,3	0,099	0,418	0,104	0,253	0,079	0,241	0,067	-0,224	0,305	0,097
D2CGCR29	0,291	0,139	0,166	-0,027	0,019	0,639	-0,011	0,133	-0,152	0,03	-0,038	0,006
D2CGCR30	0,672	0,37	-0,005	0,118	0,054	0,1	-0,051	0,153	0,022	0,041	0,049	-0,111

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12
D2CGCR34	0,031	0,233	0,117	0,148	0,744	0,21	-0,001	0,001	-0,036	-0,086	0,191	0,083
D2CGCR39	0,431	-0,052	0,24	0,31	0,025	0,1	0,261	0,039	0,084	0,394	0,294	-0,085
D2CGCR40	0,609	0,192	0,092	0,124	0,057	0,066	0,151	-0,078	0,127	-0,011	-0,402	0,231
D2CGCR41	0,242	0,76	-0,012	0,087	0,156	0,059	-0,018	0,022	0,11	0,178	-0,036	-0,146
D2CGCR42	0,109	0,109	0,135	0,886	0,101	0,04	0,055	0,047	0,043	0,081	0,017	-0,039
D2CGCR43	0,145	0,039	0,156	0,891	0,054	0,018	0,029	0,104	-0,054	0,093	-0,005	0,028
D2CGCR44	0,642	0,187	0,082	0,103	0,12	-0,002	-0,038	-0,236	0,073	0,022	-0,284	0,118
D2CGCR45	0,151	0,284	0,095	0,449	0,372	0,078	0,19	-0,138	0,168	0,205	-0,111	0,11
D2CGCR46	0,205	0,339	0,3	0,126	0,111	-0,088	0,016	0,045	0,15	0,519	-0,085	0,189
D2CGCR47	0,629	0,479	0,052	0,195	0,064	-0,172	0,077	0,152	0,106	0,07	-0,153	0,082
D2CGCR48	0,302	0,81	0,223	0,104	-0,035	0,172	-0,036	0,011	0,045	-0,084	0,074	-0,005
D2CGCR49	-0,011	0,03	-0,004	0,071	0,038	0,128	0,871	-0,018	-0,001	0,011	0,078	0,014
D2CGCR50	0,21	0,287	0,482	0,195	-0,135	0,124	-0,022	-0,047	0,458	0,067	-0,082	-0,034
D2CGCR51	0,241	0,274	0,77	0,089	-0,006	0,134	-0,037	-0,085	0,099	0,074	0,031	-0,094
D2CGCR52	0,308	0,228	0,731	0,162	0,008	0,015	-0,012	0,133	0,078	0,29	0,044	0,137
D2CGCR53	0,293	0,236	0,777	0,151	0,031	0,047	0,01	0,125	0,051	-0,112	-0,044	-0,029

The first factor weights the transparency and the control supervised by the audit committee as well as those facts that might harm the company (linking risk control and PR), and the selection of new directors considering their experience and the balance within the board.
The second factor refers to the skills (41) and information (22, 47) of directors as well as the functioning of the board (18, 19). The flow of information in corporate governance is key, this factor is rising the need of a clear flow of information providing a certain skills' set to be able to process the information before taking any decision.
The third factor points to the nomination and remuneration committees (51, 52, 53). As in the previous period, remunerations and nomination issues are one of the main drivers of variance in degree of compliance. Then, we can confirm H2 for this period as well.
The fourth factor shows the weight of recommendations on internal controls and their supervision by the board structure (42, 43, 45, 39). Internal controls have played a key role in regulation and business practice in the aftermath of corporate scandals. The presence of this factor gives the support necessary to confirm H3.
The fifth shows the split vote (6) at the top, and it could be due to the changes made during that period but also appears jointly with other elements. External directors remuneration (34), the disclosure of director particulars, and the external advice, are connected with the lack of transparency and checkings with external parts. The sixth factor points to the functional structure of the board. The seventh factor is related to independence at the board. The eight factor weights the issues regarding the general meeting and the diversity. The ninth factor relates gender diversity to the powers of the board. The tenth factor has no significant loadings above 0.7 and the remaining point to committees' supervision. The eleventh factor has only one loading close to the threshold we establish a points directly to the recommendation on size. Lastly, the twelfth factor could be denominated by the corporate bylaws requirements.
Control and supervision are still originating the majority of the variance, as well as the issues regarding remuneration and the flow of information. Diversity finds a small place for explaining differences, whereas human capital variables are linked to control mechanisms.
Many of the factors have just a few high loadings, what leads to think that variance in the compliance is not due to a whole solid topic regarding corporate governance but just an specific issue. Besides, since most of the loadings of the recommendations are very spread

across factors, we suggest that combination of other current recommendations won't lead to further explanation of the degree of compliance.

2015-2016

During these two years, there were two recommendations that were met in all cases, 12 and 28. The first refers to the corporate interest. It is reasonable the lack of variance since the explanation of this recommendation includes that the company should follow obligations made by the laws. Any variance from full compliance of this, should trigger a major alarm in the markets, and multiple shareholders complaints. A great number of recommendations are mostly fulfilled by all companies. That is the case for recommendations on shareholder conditions to attend general meetings (9), or the seek of external advise (29). 54.68% of recommendations have an average degree of compliance over 1.75 (see Table 3).

Recommendations on remuneration issues (61, 62, 63, 64) are have a low average of compliance, showing again one of the biggest problems in the corporate governance of Spanish listed firms. Diversity, along with other human capital variables (14) is still in this period lacking of optimal compliance. The modification of this recommendation, broadening the scope may lead to a higher difficulty to meet and to create an opportunity for differentiation, following the contributions of the directors' profiles to the firm. CSR related recommendations are detailed in a new set for the case of this code (53, 54, 55) and they are far from the top of the degree of compliance. As in the case of human capital related variables and recommendations, it might set an item for differentiation of firms that could be perceived by the markets. Internal controls supervision (40, 52) have still room for improvement, and the should converge soon, due to their importance to anticipate, mitigate and handle risks.

The presence of important agency theory related recommendations among those with low average of degree of compliance lead us to say that the hypothesis H1 is partially confirmed.

As regards to the factors that might cause the variance in the (lack of) compliance amongst companies, we took the results from the factor analysis we performed for those years. We found 14 factors with an eigenvalue over 1, which explained 68.458% of the variance (see Tables 8 and 9).

Table 8: Degree of compliance 15-16. Total Variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6,346	15,865	15,865	6,346	15,865	15,865	3,684	9,211	9,211
2	3,150	7,875	23,741	3,150	7,875	23,741	3,214	8,036	17,247
3	2,195	5,487	29,228	2,195	5,487	29,228	2,310	5,776	23,023
4	2,024	5,060	34,288	2,024	5,060	34,288	2,254	5,635	28,658
5	1,960	4,901	39,189	1,960	4,901	39,189	1,972	4,929	33,587
6	1,697	4,243	43,432	1,697	4,243	43,432	1,925	4,813	38,400
7	1,538	3,844	47,276	1,538	3,844	47,276	1,764	4,410	42,810
8	1,470	3,676	50,952	1,470	3,676	50,952	1,579	3,948	46,758
9	1,349	3,372	54,324	1,349	3,372	54,324	1,549	3,871	50,630
10	1,212	3,030	57,353	1,212	3,030	57,353	1,504	3,760	54,389
11	1,205	3,013	60,367	1,205	3,013	60,367	1,498	3,745	58,135
12	1,153	2,883	63,250	1,153	2,883	63,250	1,496	3,741	61,876
13	1,050	2,626	65,876	1,050	2,626	65,876	1,398	3,496	65,372
14	1,033	2,582	68,458	1,033	2,582	68,458	1,235	3,086	68,458
15	0,943	2,357	70,815						
16	0,898	2,244	73,059						
17	0,868	2,169	75,228						
18	0,823	2,056	77,285						
19	0,757	1,893	79,178						
20	0,707	1,768	80,946						
21	0,690	1,726	82,672						
22	0,660	1,650	84,322						
23	0,624	1,560	85,882						
24	0,593	1,483	87,365						
25	0,556	1,389	88,754						
26	0,548	1,371	90,125						
27	0,503	1,259	91,383						
28	0,411	1,027	92,410						
29	0,379	0,949	93,359						
30	0,357	0,892	94,251						
31	0,325	0,813	95,064						
32	0,322	0,806	95,870						
33	0,312	0,780	96,651						
34	0,285	0,712	97,363						
35	0,257	0,644	98,007						
36	0,224	0,561	98,567						
37	0,209	0,523	99,090						
38	0,182	0,455	99,545						
39	0,136	0,339	99,885						
40	0,046	0,115	100,000						

Table 9: Degree of compliance 15-16. Component Matrix

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
D3CGCR01	0,099	-0,013	-0,083	-0,041	0,002	-0,038	0,129	0,076	-0,680	0,004	-0,007	-0,021	-0,073	-0,045
D3CGCR03	0,174	0,263	0,357	-0,139	0,171	0,054	0,321	0,320	0,094	0,119	0,007	-0,162	-0,064	-0,057
D3CGCR04	0,266	0,091	0,664	0,062	-0,032	-0,005	0,007	0,109	0,077	-0,033	0,085	-0,074	-0,121	-0,045
D3CGCR05	0,114	0,170	0,277	-0,102	-0,085	-0,099	0,096	0,009	0,391	0,579	-0,065	0,034	-0,026	-0,095
D3CGCR06	0,201	0,091	0,291	0,004	0,070	0,145	0,554	-0,210	0,247	-0,184	-0,173	0,211	0,089	0,069
D3CGCR07	0,182	0,030	0,356	0,079	0,125	0,050	-0,089	0,001	0,351	-0,427	-0,057	0,279	0,089	0,092
D3CGCR08	0,262	0,147	-0,164	-0,023	0,662	0,026	0,145	0,030	0,166	-0,143	0,038	-0,045	-0,151	-0,077
D3CGCR09	-0,021	0,827	0,111	0,004	-0,135	0,017	0,081	-0,082	-0,082	0,070	-0,013	-0,014	0,005	0,027
D3CGCR13	-0,039	0,128	-0,144	0,063	0,141	0,081	0,022	0,070	-0,046	0,645	0,026	0,071	0,043	0,035
D3CGCR14	0,205	0,174	0,657	0,041	-0,049	0,017	0,137	0,064	0,009	-0,061	0,095	0,067	-0,071	0,262
D3CGCR15	0,107	0,020	0,076	-0,002	0,236	-0,028	-0,131	-0,024	0,049	0,031	0,820	-0,016	0,020	0,113
D3CGCR16	0,144	0,229	0,279	0,011	-0,185	0,311	-0,141	-0,242	-0,461	-0,053	0,034	0,071	-0,028	-0,081
D3CGCR17	-0,051	-0,093	0,512	0,110	0,017	0,289	0,151	0,207	-0,007	0,070	0,017	0,109	0,339	-0,185
D3CGCR18	-0,013	0,128	0,260	0,103	-0,046	0,165	0,458	-0,208	-0,129	-0,074	0,548	0,154	-0,003	-0,096
D3CGCR21	-0,058	-0,024	0,028	-0,023	-0,013	0,014	-0,023	-0,028	0,031	-0,013	0,037	-0,013	-0,032	0,909
D3CGCR22	0,017	-0,020	0,077	0,000	-0,020	-0,161	0,055	-0,036	-0,087	0,068	-0,023	0,826	0,040	0,003
D3CGCR25	0,158	0,055	0,415	-0,053	-0,022	0,200	0,199	-0,118	0,418	-0,073	0,248	0,198	-0,172	-0,104
D3CGCR26	0,107	-0,043	-0,080	0,073	0,018	0,282	0,054	0,124	0,259	0,001	0,111	0,632	-0,155	-0,037
D3CGCR27	0,148	-0,005	0,036	0,014	0,037	0,070	0,763	0,135	-0,159	0,180	-0,005	0,020	-0,055	-0,007
D3CGCR29	0,132	-0,007	-0,131	-0,068	-0,053	0,092	-0,046	0,005	0,076	-0,006	0,014	-0,056	0,841	-0,013
D3CGCR31	-0,110	-0,013	0,051	0,047	-0,067	0,014	0,001	0,777	-0,053	0,019	-0,020	0,033	0,064	-0,018
D3CGCR32	0,360	-0,020	0,225	-0,055	0,169	0,196	0,031	0,583	-0,016	0,030	-0,101	0,023	-0,104	0,034
D3CGCR33	0,271	0,755	0,015	0,025	0,103	0,017	-0,006	0,188	-0,072	-0,028	0,298	-0,049	-0,072	0,038
D3CGCR35	0,018	0,868	0,024	0,029	0,046	0,002	0,009	-0,020	0,131	0,021	-0,099	-0,010	-0,014	-0,048
D3CGCR36	0,467	0,214	0,061	0,059	-0,063	-0,024	0,273	0,217	0,172	0,037	0,219	-0,005	0,240	0,396
D3CGCR39	0,070	0,049	0,043	0,077	0,175	0,765	-0,021	-0,082	0,025	0,046	0,048	0,003	0,228	0,000
D3CGCR40	0,737	-0,018	0,007	0,028	0,096	-0,041	0,125	-0,016	0,132	-0,077	0,148	0,125	0,042	-0,059

Recommendation	1	2	3	4	5	6	7	8	9	10	11	12	13	14
D3CGCR42	0,582	0,181	0,045	0,419	-0,094	0,226	0,014	0,210	0,023	-0,178	0,080	0,131	0,139	-0,054
D3CGCR43	0,042	0,032	0,061	0,159	0,854	0,167	-0,020	0,003	-0,072	0,194	0,195	0,029	0,052	0,026
D3CGCR45	0,574	-0,081	0,128	0,016	0,045	0,085	0,034	-0,144	-0,150	0,416	-0,071	0,051	-0,127	0,057
D3CGCR46	0,733	-0,030	0,152	0,156	0,068	0,050	-0,021	0,008	-0,066	0,105	0,058	-0,043	-0,126	-0,049
D3CGCR47	0,002	0,040	0,074	0,002	0,024	0,783	0,159	0,207	-0,007	0,013	-0,035	-0,031	-0,087	0,026
D3CGCR49	-0,024	0,742	0,118	0,140	0,470	0,126	-0,006	-0,052	-0,008	0,200	0,048	0,046	0,100	0,019
D3CGCR50	0,163	0,048	0,093	0,760	0,285	-0,058	-0,107	0,125	-0,130	-0,016	-0,027	0,049	-0,030	0,006
D3CGCR51	-0,062	0,461	0,086	0,697	0,303	-0,017	-0,065	-0,026	0,016	0,138	-0,067	-0,059	0,060	0,022
D3CGCR53	0,618	0,236	0,200	-0,040	0,029	0,077	0,055	0,059	-0,139	-0,015	-0,028	-0,071	0,220	-0,042
D3CGCR54	0,519	-0,025	0,320	0,130	0,148	-0,064	0,320	-0,125	-0,072	-0,171	-0,247	-0,051	0,300	0,152
D3CGCR55	0,534	0,099	0,200	0,155	0,140	-0,165	0,228	-0,049	-0,016	-0,259	-0,012	0,253	0,298	0,156
D3CGCR56	0,128	-0,091	-0,076	0,750	-0,221	0,308	0,138	-0,149	0,140	0,012	0,030	-0,022	-0,105	-0,021
D3CGCR57	0,295	-0,081	0,093	0,491	-0,129	-0,179	0,252	0,013	0,134	-0,120	0,294	0,198	0,012	-0,032

The first factor refers to internal controls (40,46), audit (42) and risk policies (45), and the overall supervision (53). Internal controls matters continue being a key fact in this period. Supervision recommendations spread its contents (53) and are likely to have a period for adapting to it. In the same vein, Corporate Social Responsibility have a relevant role in that supervision and should be clearly defined in policies and reporting with international methodology (54, 55). This factor provides support to confirm H3 and H5.

The second factor has a high presence of the 'endogenous recommendation': the need of inform on governance recommendations in every action or decision taken by the board (35). Although, as we mentioned, it ranks high in the degree of compliance, is linked to the disclosure of information before the general meetings (9) and before the board (33), and to two 'consulting' recommendations towards the chairman (49, 51). We suggest that the underlying concept here is the flow of information regarding board functioning.

The third factor implies the need of suitable (14), independent (17), and dedicated (25) directors. Diversity and skills are still a great reason for not complying, along with 'traditional issues' like the director independence. Based on this factor, we can confirm H4 for this period.

The fourth points to the remuneration committee functioning (50, 51) and the remuneration offers to directors (56, 57). Remuneration's matters still are driving lack of the disclosure and structuration. Changes made in the code in this period aiming to improve them, have led to more disclosure but higher demands of information. Then, it is one of the main reasons behind dissimilarities in the degree of compliance, confirming H2.

The fifth factor joins the power of the audit committee (43) with the responsibilities presenting company's accounts in the general meeting (8). Again, accountability before shareholder in general and the power the audit committee holds show the need of balancing powers using mechanisms beyond board internal caveats.

The sixth refers to human capital related recommendations in the nominations and remuneration committee (47) and audit committee (39). Knowledge, experience and skills center the attention in this case. We suggest that a convenient increase in the disclosure of this provision may drive new horizon for improving governance.

The seventh deals with the Directors' absence and delegation of vote (27) as well as the transparency and public disclosure at their websites on the information regarding various reports and the Directors' profile (06, 18). New requirements in the last reform of the code may certainly explain a deteriorated compliance temporarily. But we suggest that other reasons might be acting behind the scenes. Timing in reporting and profiling according to human capital variables design could be affecting their publicity.

The eight factor denotes the importance of agendas (31) and flows of information (32) in board normal functioning. The way of preparing, informing and dealing directly affects decision making and efficiency within a work group. And a board of directors is a significant one that needs much of those characteristics for governing effectively.

The ninth factor is mostly related with other provisions on the general meeting preparation (5,7). The tenth factor relates to the size of the board (13), which has been a subject of study for decades. The fact of being accomplished for the vast majority of the companies but not all them might be related to past board configuration, and should be understood as a process of reaching the required levels. The eleventh factor is related to the proportion of proprietary and independent directors (15). The issue of board independence is still a mainstream topic in corporate governance and listed companies are still struggling to cope with its demands. The twelfth points to preserve the reputation of the firm from circumstances originated by their directors (22) and the need of board meetings (26).

The thirteenth factor represents the advice availability that all directors should have (29). It is indirectly related to human capital variables, since this advice is supposed to be an accompaniment or supplement of the experience, knowledge and skills each director brings to the board once appointed. The absence of adequate channels may constrain the capacity of analyzing and taking decisions at the board. The fourteenth factor shows the importance of preserving the independence throughout the accorded tenure (21). This factor is quite linked to the eleventh in the need of confirming and establishing mechanism to secure the demanded level of independence within the firms. But, in this case, the vast majority of companies comply with it (for this reason, it only explains just a few fails in the sample)

This analysis suggests keeping the recommendations on internal controls, since they are still far from being accomplished and they are a key element for diverse reasons, specially for managing risks, ensuring information, and avoiding big threats on time. Public disclosure of remuneration and board functioning are still points to improve in the governance of the companies. Finally, given these factors, it is noticeable how human capital related recommendations explain 9,3% of the variance. That is, the degree of compliance of the human capital provisions is explaining a significant part of the ‘poor governance’ practices of the companies during this period of time.

We tested the reliability via the Cronbach's Alpha. The results shows us values over 0.8 for the entire code in every period of time. As for the values for the provisions recommendations related to the validation of the hypotheses that are included in the current analysis (remuneration, internal controls, Stewardship related, and human capital), although they vary from 0.545 to 0.821, they are right enough to be considered appropriated in terms of reliability for the purpose of this validation (Black et al., 2017).

Table 10: Cronbach's Alpha per code and recommendations group included in hypotheses

	2007 - 2012	2013 - 2014	2015 - 2016
Code	0,879	0,859	0,866
Remuneration	0,570-0,545	0,676	0,652
Internal Controls	0,845	0,841	0,718
Human Capital		0,737-0,555	0,464
Stewardship Theory			0,718-0,821

Factor comparison across periods

Control and supervision are the main factor during the period of our analysis, although internal controls have gained the most relevant position in the last two years. We suggest that this is due to the increasing preventive demands that are being established by the issuer, and accompanied by a tighter regulation. Claims on responsibilities can be mitigated through the implementation and monitoring of proper internal control mechanisms. Remuneration issues have a high presence, although they are losing importance in terms of the variance explained. Companies are converging in this respect. Human capital elements gain importance, pointing at a potential source of resources and advantages. Besides, gender diversity has been embedded in this context, giving an opportunity for different theoretical perspectives on the compliance of this particular issue and for the research based on detailed information companies might provide. Despite this, there is still a strong presence of Agency Theory envisioning. Information has two main roles: facilitator inside the board, improving functioning; and transparency channel towards other, setting a bond to control mechanisms both, inside and outside the firm. The provisions on General Meeting increase their relevance and, at the same time independence ones loose it. Board size is still a factor of variance but the analysis should be made along with the high average degree of compliance. Then, is still a matter of differentiation, but it is not a great concern in terms of compliance.

We summarize the results for the hypotheses we formulated and the comparison of the factors in Table 10. Although we initially thought that Agency Theory related recommendations were to be met by all firms, given the regulatory context and the legal system, we found significant elements that were unachieved. The usual temptation in this case, following some of codes' rationales, is to take those provisions to the regulatory side. And, as we said, this is not new in Spain. Remuneration and internal controls are a great source of dissimilarities specially in the last years. This 'traditional' issues, derived from Agency Theory, and are clear exponents of what can give into the 'legalization temptation'. Finally, human capital related recommendations are gaining presence, and the fact of being a big cause of variance among companies degree of compliance can be a valuable element for the markets.

Table 11: Hypotheses summary and factors comparison across years

Factors	2007-2012	2013-2014	2015-2016
1	Control and supervision through internal mechanisms, risk management and selection	Control and supervision through internal mechanisms, flow of information and selection	Internal controls and reporting (including CSR)
2	Control and supervision through audit	Information, directors skills and board functioning	Disclosure and flow of information in board functioning
3	Remuneration, nomination in the perspective of balance of powers	Nomination and remuneration Committees	Suitable, dedicated and independent directors
4	Remuneration, nomination in the perspective of flow of information	Supervision and Internal controls	Remuneration issues
5	Independence at the board and its committees	Accountability before GM	Balance of powers between Audit C and GM
6	Remuneration disclosures	Functional Structure of the Board	Human capital variables in committees composition
7	Test of independence	Independence at the Board	Public disclosure of information
8	Disclosure of information	Balancing powers through GM and diversity	Board functioning: agendas and information
9	Accountability before shareholders and employees	Balancing composition of the Board through diversity	GM preparation
10	Information sourcing and training (Director readiness)	Supervision through Committees	Board Size
11	board functioning	Board size	Board independence
12	Power allocation in chairman and GM	Corporate bylaws	Corporate reputation
13	GM powers		Information sourcing and training (Director readiness)
14	Corporate bylaws		Test of independence

Hypothesis	**2007-2012**	**2013-2014**	**2015-2016**
1	Partially	Partially	Partially
2	Yes	Yes	Yes
3	NA	Yes	Yes
4	NA	Partially	Yes
5	NA	NA	Yes

As in Black et al. (2017), PCA supports the idea of considering a broad set of constructs to capture components well. The analysis of the factors we made points to the main elements of differentiation, in terms of degree of compliance, when listed companies approach corporate governance compliance. They also help to validate the constructs the hypotheses formulated. This is a good starting point to see if the firm performance is affect by the degree of compliance, since they are likely to be considered as subindices of corporate governance.

5. CONCLUSIONS

Providing the intellectual framework, the principles and the goals across the all the codes in Spain, almost all variables that could be studied from the reported data coming from recommendations compliance are framed under the agency theory intellectual framework. This is consistent with the references employed by the vast majority of researches that have traditionally aimed to study topics.

In spite of this long track record of intellectual framing, new approaches have been included throughout these years. Thus, resource dependence theory, stakeholder theory and stewardship theory have applied to ground the basis of corporate governance research and practice.

The codes of good governance incorporated elements from these frameworks so as to build their principles and set the provision or recommendations they require to listed firms. Principles have increased in number over years and have been made explicitly linked to recommendations. We provided a matching the principles of the Spanish Code of Governance and the main theories that serve as intellectual framework for corporate governance. This matching shows us that the majority of principles could be enclosed in the agency theory. But, maybe because of the pressure of regulation, which assumes a part of the matters, or because of an increasing trend towards wider and improved corporate governance, there have been more room for other approaches recently. In that sense, we identified those principles that could be under the influence of other theoretical frameworks, such as the Stakeholders Theory, the Resource Dependence Theory and the Stewardship Theory. Some of the recently implemented recommendations can be framed under them, e.g. the incorporation of provisions regarding the corporate social responsibility. These approaches may open a window for further changes in recommendations that enrich the standards of corporate governance in listed firms.

Recent requests include a more detailed disclosure for the issues regarding remuneration, which was further analyzed along with other topics. The approach aims to provide a enhanced control and better supervision. The codes have evolved considering parallel regulation, dismissing some provisions, and incorporating new owns for the benefit of markets transparency, shareholders protection and accountability before community. Besides remuneration disclosure, more provisions regarding general meetings performance and the three recommendations on corporate social responsibility are a clear example.

While performing our study, we provide a very useful table to compare recommendations topics across different codes. This is quite relevant for the case of longitudinal studies of the mentioned recommendations and the subjects they ultimately refer to. We also depicted some of the comparable characteristics of the code as summary of some evolving topics.

We checked that the Agency Theory related recommendations are met by Spanish listed companies but not always nor in all the cases. The positive side of this is that they become a differentiation element. In fact, at the same time, we confirmed that remuneration provisions as well as internal controls are making a difference among firms. The analysis of the degree of compliance using PCA validate these constructs in the configuration of the different codes. The Cronbach's Alpha analysis confirmed the reliability of the degree of compliance of codes' recommendations in each period of time as a measure of overall governance, conversely to what it happens when considering indices for partial aspects of governance. The indicator for the case of each one of the hypotheses shows signs of the use of a smaller number of recommendations.

As a result of the analysis on the components behind the degree of compliance of the recommendations of the code we reached some other findings. First, in each period there is high number of factors explaining the variance. This has two sides. On one hand, it leads to think that there are no big groups of recommendations feeding one each other and showing great opposition to compliance, which is certainly positive for the purpose of the code. Besides, it helps to validate hypotheses we formulated on the validity of the formulation of the code as it reflects prior knowledge base constructs of existing research literature on the topic. On the other hand, it is hard to name the rationale upon those factors, which is negative so as to center an action plan to cope with those recommendations that failed to comply.

Internal controls are gaining presence but, under our view, are likely to be incorporated to legislation, specially in Spain, if the situation of deteriorated compliance persists. This would be aligned with the explanation on the legal systems and their relation to codes, widely discussed in research literature. But, until that happens to be, they may be considered a good differential measurement of governance.

As mentioned, Corporate Social Responsibility, have evolved towards a higher degree of disclosure on policies and implementation, and the lack of full compliance in last periods may suggest two causes: a) a need to adapt to new provisions or b) an absence of concrete and properly monitored action plan on this regard. The first cause is relatively easy to overcome in one or two periods, whereas the second takes more time and might last. Then, it would confirm that it can trigger differences among firms that could be perceived by the markets as distinctive.

Human capital related recommendations have a great proportion of the difference among companies' compliance in the last years. Following existing literature, despite the mentioned constrains of this kind of resources, are perceived at performance. We do not foresee the same behavior under the same premises. Companies will try to comply, at least formally, but the market will have to look at further disclosures to interpret advantages and profits coming out of a certain company's human capital variable. In this vein, current required disclosures, and likely future ones to come, can provide rich information repository for further analyses.

Traditional recommendations on independence are losing a differentiation trait since they are close to be present in all companies. Therefore, the validity for measurement of governance is likely to decrease in the future.

Remuneration issues are among the main drivers of disparities in compliance. The code issuer evolved the code so as to provide more information on this regard. In fact, as we mentioned, recent studies for the case of Spain revealed arguably behavior in the listed companies, what may suggest that the lack of compliance might be driven for those aiming to hide or avoiding to put remuneration, specially in the context of overall company performance. In this regard, this construct is valid for measure governance in the firm.

The double role of information leads to differences between companies. The flow of information facilitates a better functioning of the board, increasing its efficiency. On the other hand, the flow, and disclosure of information is essential for the best purpose of other mechanisms like the General Meeting, or the markets, or other stakeholders in general.

Finally, overall outcome from code compliance shows that 1) Spanish listed firms have made an effort in all the aspects, 2) they are still far from a complete accomplishment, 3) the recommendations pushed some changes in trends, 4) ownership and cultural context sets a quite influent frame.

We think that the codes are certainly playing a good role spreading good practices, and that role might have effects on performance when challenge companies in their compliance. The virtue, in our opinion, is to keep doing that over time. The results of compliance should reflect non-dangerous differences, that is, those that go beyond the protection of shareholders' interests. Accordingly, a great number of recommendations are likely to stay at the code though they are always (or almost always) met. In our opinion, the code issuer should push disclosure in those soft, hardly measurable elements. This would lead more to a better government than to a good code compliance. In this sense, codes would act as indices of corporate governance.

As a result of reviewing the Spanish Codes we may take different angles for the future research. Since a great number of recommendations are stated under the Agency Theory perspective, differential compliance will tend to rise under other views.

Although cross-sectional studies could be performed to analyze the impact of the variables on a given year, this kind of researches may lead to inconsistent outcomes or, at least, to misleading interpretations. On one hand, some relevant factors may be hidden, and in other hand corporate governance issues should consider time, and very often it is spread over the, by definition, short-term cross-sectional analysis. Then, a longitudinal study might be worthwhile. In that case, it would be necessary to consider comparable information and context. For that aim, the table we used to compare recommendations topics could useful for performing longitudinal analyses staged in three periods of time (2007-2012, 2013-2014, and 2015-2016).

These analyses we performed and their results could help to determine whether the degree of compliance of the provisions as a whole, and those referred to specific matters, are associated or not to the firm performance. The validation of different constructs underlying the recommendations makes them potential components of a good measure of governance. We make this remark, since we are not just pointing out to a few variables but considering a wider range of corporate governance compliance across periods.

Besides, since the study of human capital variables contained in codes of good governance provisions is partial, as it is shown by the Cronbach's Alpha in the potential limitation of capturing the underlying construct, it would be necessary to compute the data of every director in each one of the companies for elaborating further analyses. Data on training programs, concrete selection policies is still not available for study, but some human capital variables could be obtained from corporate governance reports that are produced by listed firms but they use to be unstructured and are embedded in wider purpose description.

Diversity concept is being approached in a wider way in the last version of the code, and included in human capital variables that could be highly resourceful to perform further researches. Other intellectual frameworks could easier support this perspective, such as Resource Dependence Theory.

The study of governance of family business non-listed companies under the later frameworks may lead to attractive conclusions. The use of family councils might provide some light to governance.

Despite many studies address corporate governance and board of directors in listed companies, it might be useful to broaden the scope to Spanish non-listed companies. The number, weight and presence of them in the economic structure could help to create a culture of good governance. Medium and big non-listed companies could benefit from these researches. For small companies, the problem of access to data would be greater in most cases due to associated costs and the lack of a proper framework for easily reporting this information. Nevertheless, the study of governance in technological startups could be interesting. The potential growth of these companies configures a good angle of study.

Although codes, recommendations, and report forms vary depending on the country, they all may have a common base of principles. Hence, it could be useful to compare those variables that are shared among different companies from various global areas and use validation of constructs techniques as employed in this article.

Figure 1: Hypotheses summary across years

	2007 - 2012	2013 - 2014	2015 - 2016
Recommendations linked to Agency Theory are always met	✓	✓	✓
The degree of compliance of recommendations validates the existence of the Agency Theory constructs on compensation in Spanish Corporate Governance Codes	✓	✓	✓
The degree of compliance of recommendations validates the existence of AT and ST based constructs on internal controls in Spanish Corporate Governance Codes	✓	✓	✓
The degree of compliance of recommendations validates the existence of RDT based constructs on human capital in Spanish Corporate Governance Codes		✓	✓
The degree of compliance of recommendations validates the existence of ST based constructs in Spanish Corporate Governance Codes			✓

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APPENDIX

Appendix Table 1: Olivencia Commission Composition

Chairman	Manuel Olivencia Ruiz	Professor of Law
Vice-Chairman	Luis Ramallo García	Former MP
Secretary	Antonio J. Alonso Ureba	Professor of Law
Members	Pedro Ballvé Lantero	Chairman Campofrío
	Eduardo Bueno Campos	Professor of Management. Central Bank of Spain Director
	José Mª López de Letona y Núñez del Pino	Former Central Bank of Spain Governor. Director
	Cándido Paz Ares	Professor of Law
	Víctor Pérez Díaz	Professor of Sociology, ASP Director
	Enrique Piñel López	AEB Counsel
	Jesús Platero Paz	

Appendix Table 2: List of Recommendations. Olivencia Code

Number	Recommendation
1	That the Board of Directors should expressively assume that its core mission is the general function of supervision, exercise without delegation the due responsibilities that it implies, and establish a catalog of matters reserved for its knowledge
2	That a reasonable number of independent directors joins the board, being their profile according to prestige and absence of links to the executive team and the significant shareholders
3	That the Board composition includes a broad majority of external directors, and the ratio independent to proprietary considers the relationship between significant ownership capital and the rest
4	That the Board adjusts its size to achieve a effective and participative functioning. As an starting point it could vary from five to fifteen members
5	That in case of Chairman-CEO at the company, the Board adopts necessary caveats to diminish the risks associated to the concentration of power in one person
6	That the Secretary takes a more relevant role, reinforcing its independence and stability, and highlighting his function of preserving legality in all board actions
7	That the executive committee, in case it exists, shows the same equilibrium between director types a in the Board, and that the relationship between the two organs has to be inspired by the principle of transparency, so as to the Board knows all discussed topics and decision taken in the Committee
8	That the Board compose a Control and Audit committee (only with external directors), for information and accounting control; an Nomination Committee, for selecting Directors and top executives; a Remuneration Committee, to determine and review remuneration policy; a Compliance Committee, to evaluate the governance system.
9	That the Board takes the necessary steps to secure availability of sufficient information, specifically elaborated and oriented to prepare board meetings, in advance, without any exception due to the nature or relevance of the information, except for the case of exceptional circumstances.
10	That the Board should meet with the necessary frequency to ensure the adequate functioning of its activities and comply its mission; that the Chairman should encourage

Number	Recommendation
	participation and free positioning of all directors; that the minutes should be carefully written; that the Board should be evaluated on the quality and efficiency of its deeds at least annually.
11	That the involvement of the Board in the selection and renewal of it members complies a formal and transparent procedure, from the reasoned proposal of the Nominations Committee
12	That the corporate bylaws includes the obligation of resignation for directors in the cases that may lead to affect negatively the board functioning or the company reputation
13	That the Board establishes a limit in the ages of the directors, that could be 65 years old for executive directors and the Chairman and more flexible for the rest
14	That it should be acknowledge the right to gather and obtain information and advise for the fulfilling of supervisory functions by any director, and that the adequate procedures to exercise this right should be implemented, including external advise in case of special circumstances
15	That the directors' remuneration policy (proposed, evaluated and reviewed by the Nominations Committee), meets the criteria of moderation, link to corporate performance, and individualized and detailed information
16	That the corporate bylaws specify the obligations coming from the diligence and loyalty of directors, specifically considering conflicts of interests, confidentiality, business opportunities and company's assets use.
17	That the Board promotes the adoption of measures to extend loyalty duties to significant shareholders, specifying caveats for special transactions between those and the company
18	That the Board should mediate measures to provide transparency to the delegation of vote mechanism, and to foster communication between the company and its shareholders, and with the institutional investors in particular
19	That the Board, beyond meeting law provisions, should provide quick, precise and reliable information to the markets, specially as regard to the ownership structure, to substantial modifications of governance rules, to related transactions and to treasury stock
20	That all financial reporting, besides de annual statements, should be elaborated with the same principles and practices, and verified by the Audit Committee
21	That the Board and the Audit Committee monitor situations that may risk the independence of external auditors, verifying the percentage of fees that their work implies for their revenue, and notifying professional services different from audit activities fees periodically.
22	That the Board strives to avoid qualifications in annual statements shown at the General Meeting, and, in case they exist, the Board and the external audit firm should clearly explain the contents and reach of them before the shareholders
23	That the Board includes corporate governance information in their annual reporting, providing reasonable explanation in case it doesn't meet the recommendations of this code

Appendix Table 3: Aldama Commission Composition

Chairman	Enrique de Aldama	CEOE Vice-Chairman and Director at Repsol
Vice-Chairman	Carlos Bustelo García del Real	Círculo de Empresarios
Secretary	José María Garrido	Professor of Law, CNMV Counsel
Members	Alberto Bercovitz	Professor of Law
	Jordi Canals	IESE Business School Dean, PhD in Economics
	Federico Durán	Professor of Law, Garrigues
	Alejandro Fernández De Araoz	Schröeder and Electrolux Chairman
	Antonio Hernández	Professor of Law. Repsol Vice-Chairman
	Juan Iranzo	Professor of Economics, Director at CEOE
	Cándido Paz Ares	Professor of Law, member of the Olivencia Special Commission
	Carlos Pérez De Bricio	CEPSA Chairman, CEOE Vice-Chairman
	Víctor Pérez Díaz	Professor of Sociology, ASP Director
	Miquel Roca Junyent	Lawyer, Spanish Constitution author, former MP
	Fernando Sánchez	Professor of Law
	Antonio Zoido	Madrid Stock Exchange Chairman

Appendix Table 4: Unified Code Commission Composition

Chairman	Manuel Conthe	CNMV Chairman, former Secretary at the Ministry of Finance, former World Bank Managing Director
Secretary	Javier R. Pellitero	CNMV Counsel
Members	Soledad Nuñez	Secretary at the Ministry of Economy
	Vicente Salas	Professor of Law
	Carmen Tejera	Director at the Ministry of Economy, State Lawyer, former secretary at two state owned company boards (EFE, GIF)
	Jesús M. Caínzos	Instituto de Consejeros Administradores, former BBVA Vice-Chairman
	José M. Garrido	Professor of Law, former CNMV Counsel, Garrigues Director, Foro Europeo de Gobierno Corporativo
	Enrique Piñel	AEB Counsel, Director at several Boards
	Cándido Paz Ares	Professor of Law, member of the Olivencia Special Commission, Uría
	Aldo Ocese	Instituto de Analistas Financieros
	José M. Gómez de Miguel	Bank of Spain representative, Head of Division (FIB)
	Joaquín de Fuentes	Head of Spanish State Lawyers. Former Director at Renfe and Telefonica Board of Directors
	Pilar Blanco	Managing Director at the Ministry of Justice. Professor of Law.
	Ana M. Llopis	Director at several Boards, former CEO at Open Bank, former MD at several companies.

Appendix Table 5: Unified Code Recommendation Item list

Area	Number	Recommendation
Bylaws and shareholders' meeting	1	Bylaw restrictions
	2	Listed companies from the same group
	3	General meeting powers
	4	Pre-circulation of general meeting proposals
	5	Separate voting
	6	Split votes
The Board of Directors	7	The corporate interest
	8	Board powers
	9	Size
	10	Functional structure
	11	Other external directors explained
	12	Ratio of proprietary to independent directors
	13	Sufficient number of independent directors
	14	Nature of directors explained
	15	Gender diversity
	16	Functions of chairman
	17	Chairman/CEO Duality
	18	The secretary
	19	Board proceedings
	20	Director absences
	21	Objection to proposals
	22	Regular evaluation
	23	Director information
	24	External advice
	25	New director induction courses
	26	Dedication
Directors	27	Director selection, appointment and renewal
	28	Disclosure of director particulars
	29	Rotation of independent directors
	30	Removal and resignation
	31	Removal of independent at the end of tenure
	32	Disclosure of circumstances harmful to the company's reputation
	33	Director opposition to proposals harmful to the corporate interest
	34	Reasons for resignation before end of tenure
	35	Remuneration approval and disclosure
	36	Delivery of shares, options or financial instruments solely to executives
	37	External directors remuneration
	38	Remuneration as % of earnings
	39	Technical controls on variable remuneration
	40	General meeting vote on remuneration statement
	41	Disclosure of individual remuneration
Committees	42	Executive committee membership
	43	Boards kept informed of executive committee business
	44	Supervision and control committee membership
	45	Internal codes of conduct overseen by supervision and control committees

Area	Number	Recommendation
	46	Audit committee skills and experience
	47	Audit committee oversight of internal audit function
	48	Head of internal audit reporting to audit committee
	49	Risk management and control policy
	50	Audit committee functions
	51	Any employee or manager able to call audit committee meeting
	52	Audit committee pre-report to board
	53	Annual accounts presented without qualifications
	54	Nomination and Remuneration committee membership
	55	Nomination committee functions
	56	Nomination committee consulted on matters concerning executive directors
	57	Remuneration committee functions
	58	Remuneration committee consulted on matters concerning executive directors and senior officers

Appendix Table 6: Unified Code Recommendations list (Reformed in 2013)

Number	Recommendation
1	Bylaw restrictions
2	Listed companies from the same group
3	General meeting powers
4	Pre-circulation of general meeting proposals
5	Separate voting
6	Split votes
7	The corporate interest
8	Board powers
9	Size
10	Functional structure
11	Ratio of proprietary to independent directors
12	Sufficient number of independent directors
13	Nature of directors explained
14	Gender diversity
15	Functions of chairman
16	Chairman/CEO
17	The secretary
18	Board proceedings
19	Director absences
20	Objection to proposals
21	Regular evaluation
22	Director information
23	External advice
24	New director induction courses
25	Dedication
26	Director selection, appointment and renewal
27	Disclosure of director particulars
28	Removal and resignation
29	Removal of independent at the end of tenure
30	Disclosure of circumstances harmful to the company's reputation
31	Director opposition to proposals harmful to the corporate interest
32	Reasons for resignation before end of tenure
33	Delivery of shares, options or financial instruments solely to executives
34	External directors remuneration
35	Remuneration as % of earnings
36	Technical controls on variable remuneration
37	Executive committee membership
38	Boards kept informed of executive committee business
39	Supervision and control committee membership
40	Internal codes of conduct overseen by supervision and control committees
41	Audit committee skills and experience
42	Audit committee oversight of internal audit function

Number	Recommendation
43	Head of internal audit reporting to audit committee
44	Risk management and control policy
45	Audit committee functions
46	Any employee or manager able to call audit committee meeting
47	Audit committee pre-report to board
48	Annual accounts presented without qualifications
49	Nomination and Remuneration committee membership
50	Nomination committee functions
51	Nomination committee consulted on matters concerning executive directors
52	Remuneration committee functions
53	Remuneration committee consulted on matters concerning executive directors and senior officers

Appendix Table 7: Spanish Good Governance Code Principles and Recommendations

Area	Number Principle	Principle	Number Recommendation
General Arrangements	1	In general, companies should avoid bylaw clauses whose underlying purpose is to hinder possible takeover bids	1
	2	When various listed companies belong to the same group, they should take appropriate steps to safeguard the legitimate interests of all interested parties and to resolve conflicts of interest should they arise	2
	3	Companies should give clear information to the general meeting concerning their degree of compliance with Good Governance Code recommendations	3
	4	Listed companies should maintain a publicly disclosed policy for communication and contacts with shareholders, institutional investors and proxy advisors	4
	5	Boards should make limited use of the delegated power to issue shares or convertible securities without pre-emptive subscription rights and inform shareholders appropriately about such use	5
Shareholders' General Meeting	6	The general meeting should be conducted according to principles of transparency and with appropriate information provided	6, 7, 8
	7	The company should aid shareholders in exercising their rights to attend and participate in general meetings in conditions of equality	9, 10
	8	The policy on general meeting attendance payments should be disclosed in full	11
Board of Directors	9	The board of directors will be directly responsible individually and collectively for steering the company and supervising its management, with the shared goal of promoting the corporate interest	12
	10	The board of directors should have the optimal size to facilitate its efficient functioning, the participation of all members and agile decision-making. Director selection policy should seek a balance of knowledge, experience and gender in the board's membership	13, 14
	11	The board of directors should have a balanced membership, with a large majority of non-executive directors and an appropriate mix of proprietary and independent directors, with the latter occupying, as a rule, at least half of board places	15, 16, 17, 18, 19
	12	The grounds for director removal or resignation should not impinge upon their freedom of judgment. They should protect the company's name and reputation, allow for changing circumstances and ensure independent directors a stable mandate as long as they retain their independent status and are not in breach of their duties	20, 21, 22, 23, 24
	13	Directors should allocate sufficient time to the company to discharge their responsibilities effectively and to gain a solid grasp of the company's business and the governance rules to which it is subject, taking part to this effect in induction and refresher courses organised by the company	25
	14	The board of directors should meet with the necessary frequency to properly perform its management and oversight functions with the attendance of all members or an ample majority.	26, 27, 28
	15	Directors should be equipped with sufficient information to operate effectively, and should be entitled to call on the company for any guidance they require	29, 30, 31, 32
	16	The chairman is responsible for the leadership and efficient running of the board. Where he or she is also a company executive, additional powers should be given to the lead independent director	33, 34

Area	Number Principle	Principle	Number Recommendation
	17	The work of the board secretary is to facilitate the efficient running of the board	35
	18	The board should periodically evaluate its overall performance and that of its members and committees. This evaluation should be externally facilitated at least every three years	36
	19	The executive committee, where one exists, should have a composition mirroring that of the board of directors, and keep the board regularly informed of its decisions	37, 38
	20	As well as its legally defined functions, the audit committee should be formed by a majority of independent directors. Its members, particularly the chair- man, should be appointed with regard to their knowledge and experience in accounting, auditing or risk management matters, while its terms of reference should reinforce its remit, independence and scope	39, 40, 41, 42, 43, 44
	21	The company should maintain a risk control and management function in the charge of an internal unit or department, supervised directly by the audit committee or, where appropriate, another dedicated board committee	45, 46
	22	As well as its legally defined functions, the nomination and remuneration committee, which in large cap companies should be split into two separate committees, should have a majority of independent members. Its members should be appointed with regard to their knowledge, skills and experience, while its terms of reference should reinforce its remit, independence and scope	47, 48, 49, 50, 51
	23	The membership and organisation of any committees established by the board under its powers of self-organisation should be similarly configured to those of mandatory committees	52, 53
	24	The company should deploy an appropriate corporate social responsibility pol- icy, as a non-delegable board power, and report transparently and in sufficient detail on its development, application and results	54, 55
	25	The remuneration of board members should suffice to attract and retain the right people and to sufficiently compensate them for the dedication, abilities and responsibilities that the post demands, but should not be so high as to compromise the independent judgment of non-executive directors. Remuneration policy should seek to further the corporate interest, while incorporating the necessary mechanisms to avoid excessive risk-taking or rewarding poor performance	56, 57, 58, 59, 60, 61, 62, 63,64

Appendix Table 8: Good Governance Code (2015) Recommendations Definitions. Source: CNMV

Number	Recommendation
1	The bylaws of listed companies should not place an upper limit on the votes that can be cast by a single shareholder, or impose other obstacles to the take- over of the company by means of share purchases on the market
2	When a dominant and subsidiary company are both listed, they should provide detailed disclosure on: a) The activity they engage in and any business dealings between them, as well as between the listed subsidiary and other group companies. b) The mechanisms in place to resolve possible conflicts of interest.
3	During the annual general meeting the chairman of the board should verbally inform shareholders in sufficient detail of the most relevant aspects of the company's corporate governance, supplementing the written information circulated in the annual corporate governance report. In particular: a) Changes taking place since the previous annual general meeting. b) The specific reasons for the company not following a given Good Governance Code recommendation, and any alternative procedures followed in its stead.
4	The company should draw up and implement a policy of communication and contacts with shareholders, institutional investors and proxy advisors that complies in full with market abuse regulations and accords equitable treatment to shareholders in the same position. This policy should be disclosed on the company's website, complete with de- tails of how it has been put into practice and the identities of the relevant interlocutors or those charged with its implementation.
5	The board of directors should not make a proposal to the general meeting for the delegation of powers to issue shares or convertible securities without pre-emptive subscription rights for an amount exceeding 20% of capital at the time of such delegation. When a board approves the issuance of shares or convertible securities without pre-emptive subscription rights, the company should immediately post a report on its website explaining the exclusion as envisaged in company legislation
6	Listed companies drawing up the following reports on a voluntary or compulsory basis should publish them on their website well in advance of the annual general meeting, even if their distribution is not obligatory: a) Report on auditor independence. b) Reviews of the operation of the audit committee and the nomination and remuneration committee. c) Audit committee report on third-party transactions. d) Report on corporate social responsibility policy.
7	The company should broadcast its general meetings live on the corporate website.
8	The audit committee should strive to ensure that the board of directors can present the company's accounts to the general meeting without limitations or qualifications in the auditor's report. In the exceptional case that qualifications exist, both the chairman of the audit committee and the auditors should give a clear account to shareholders of their scope and content.
9	The company should disclose its conditions and procedures for admitting share ownership, the right to attend general meetings and the exercise or delegation of voting rights, and display them permanently on its website. Such conditions and procedures should encourage shareholders to attend and exercise their rights and be applied in a non-discriminatory manner.
10	When an accredited shareholder exercises the right to supplement the agenda or submit new proposals prior to the general meeting, the company should: a) Immediately circulate the supplementary items and new proposals.

Number	Recommendation
	b) Disclose the model of attendance card or proxy appointment or remote voting form duly modified so that new agenda items and alternative proposals can be voted on in the same terms as those submitted by the board of directors. c) Put all these items or alternative proposals to the vote applying the same voting rules as for those submitted by the board of directors, with particular regard to presumptions or deductions about the direction of votes. d) After the general meeting, disclose the breakdown of votes on such supplementary items or alternative proposals.
11	In the event that a company plans to pay for attendance at the general meeting, it should first establish a general, long-term policy in this respect.
12	The Board of Directors should perform its duties with unity of purpose and independent judgment, according the same treatment to all shareholders in the same position. It should be guided at all times by the company's best interest, understood as the creation of a pro table business that promotes its sustainable success over time, while maximizing its economic value. In pursuing the corporate interest, it should not only abide by laws and regulations and conduct itself according to principles of good faith, ethics and respect for commonly accepted customs and good practices, but also strive to reconcile its own interests with the legitimate interests of its employees, suppliers, clients and other stakeholders, as well as with the impact of its activities on the broader community and the natural environment.
13	The board of directors should have an optimal size to promote its efficient functioning and maximise participation. The recommended range is accordingly between five and fifteen members.
14	The board of directors should approve a director selection policy that: a) Is concrete and verifiable; b) Ensures that appointment or re-election proposals are based on a prior analysis of the board's needs; and c) Favours a diversity of knowledge, experience and gender. The results of the prior analysis of board needs should be written up in the nomination committee's explanatory report, to be published when the general meeting is convened that will ratify the appointment and re-election of each director. The director selection policy should pursue the goal of having at least 30% of total board places occupied by women directors before the year 2020. The nomination committee should run an annual check on compliance with the director selection policy and set out its findings in the annual corporate governance report.
15	Proprietary and independent directors should constitute an ample majority on the board of directors, while the number of executive directors should be the minimum practical bearing in mind the complexity of the corporate group and the ownership interests they control.
16	The percentage of proprietary directors out of all non-executive directors should be no greater than the proportion between the ownership stake of the shareholders they represent and the remainder of the company's capital. This criterion can be relaxed: a) In large cap companies where few or no equity stakes attain the legal threshold for significant shareholdings. b) In companies with a plurality of shareholders represented on the board but not otherwise related.
17	Independent directors should be at least half of all board members. However, when the company does not have a large market capitalization, or when a large cap company has shareholders individually or concertedly controlling over 30 percent of capital, independent directors should occupy, at least, a third of board places.
18	Companies should disclose the following director particulars on their web- sites and keep them regularly updated: a) Background and professional experience.

Number	Recommendation
	b) Directorships held in other companies, listed or otherwise, and other paid activities they engage in, of whatever nature. c) Statement of the director class to which they belong, in the case of proprietary directors indicating the shareholder they represent or have links with. d) Dates of their first appointment as a board member and subsequent re-elections. e) Shares held in the company, and any options on the same.
19	Following verification by the nomination committee, the annual corporate governance report should disclose the reasons for the appointment of proprietary directors at the urging of shareholders controlling less than 3 percent of capital; and explain any rejection of a formal request for a board place from shareholders whose equity stake is equal to or greater than that of others applying successfully for a proprietary directorship.
20	Proprietary directors should resign when the shareholders they represent dispose of their ownership interest in its entirety. If such shareholders reduce their stakes, thereby losing some of their entitlement to proprietary directors, the latters' number should be reduced accordingly.
21	The board of directors should not propose the removal of independent directors before the expiry of their tenure as mandated by the bylaws, except where they find just cause, based on a proposal from the nomination committee. In particular, just cause will be presumed when directors take up new posts or responsibilities that prevent them allocating sufficient time to the work of a board member, or are in breach of their fiduciary duties or come under one of the disqualifying grounds for classification as independent enumerated in the applicable legislation. The removal of independent directors may also be proposed when a takeover bid, merger or similar corporate transaction alters the company's capital structure, provided the changes in board membership ensue from the proportionality criterion set out in recommendation 16.
22	Companies should establish rules obliging directors to disclose any circumstance that might harm the organization's name or reputation, tendering their resignation as the case may be, and, in particular, to inform the board of any criminal charges brought against them and the progress of any subsequent trial. The moment a director is indicted or tried for any of the offences stated in company legislation, the board of directors should open an investigation and, in light of the particular circumstances, decide whether or not he or she should be called on to resign. The board should give a reasoned account of all such determinations in the annual corporate governance report.
23	Directors should express their clear opposition when they feel a proposal submitted for the board's approval might damage the corporate interest. In particular, independents and other directors not subject to potential conflicts of interest should strenuously challenge any decision that could harm the interests of shareholders lacking board representation. When the board makes material or reiterated decisions about which a director has expressed serious reservations, then he or she must draw the pertinent conclusions. Directors resigning for such causes should set out their reasons in the letter referred to in the next recommendation. The terms of this recommendation also apply to the secretary of the board, even if he or she is not a director.
24	Directors who give up their place before their tenure expires, through resignation or otherwise, should state their reasons in a letter to be sent to all members of the board. Whether or not such resignation is disclosed as a material event, the motivating factors should be explained in the annual corporate governance report.
25	The nomination committee should ensure that non-executive directors have sufficient time available to discharge their responsibilities effectively. The board of directors regulations should lay down the maximum number of company boards on which directors can serve.
26	The board should meet with the necessary frequency to properly perform its functions, eight

Number	Recommendation
	times a year at least, in accordance with a calendar and agendas set at the start of the year, to which each director may propose the addition of initially unscheduled items.
27	Director absences should be kept to a strict minimum and quantified in the annual corporate governance report. In the event of absence, directors should delegate their powers of representation with the appropriate instructions.
28	When directors or the secretary express concerns about some proposal or, in the case of directors, about the company's performance, and such concerns are not resolved at the meeting, they should be recorded in the minute book if the person expressing them so requests.
29	The company should provide suitable channels for directors to obtain the advice they need to carry out their duties, extending if necessary to external assistance at the company's expense.
30	Regardless of the knowledge directors must possess to carry out their duties, they should also be offered refresher programmes when circumstances so advise.
31	The agendas of board meetings should clearly indicate on which points directors must arrive at a decision, so they can study the matter beforehand or gather together the material they need. For reasons of urgency, the chairman may wish to present decisions or resolutions for board approval that were not on the meeting agenda. In such exceptional circumstances, their inclusion will require the express prior consent, duly minuted, of the majority of directors present.
32	Directors should be regularly informed of movements in share ownership and of the views of major shareholders, investors and rating agencies on the company and its group.
33	The chairman, as the person charged with the efficient functioning of the board of directors, in addition to the functions assigned by law and the company's bylaws, should prepare and submit to the board a schedule of meeting dates and agendas; organize and coordinate regular evaluations of the board and, where appropriate, the company's chief executive officer; exercise leadership of the board and be accountable for its proper functioning; ensure that sufficient time is given to the discussion of strategic issues, and approve and review refresher courses for each director, when circumstances so advise.
34	When a lead independent director has been appointed, the bylaws or board of directors regulations should grant him or her the following powers over and above those conferred by law: chair the board of directors in the absence of the chairman or vice chairmen give voice to the concerns of non-executive directors; maintain contacts with investors and shareholders to hear their views and develop a balanced understanding of their concerns, especially those to do with the company's corporate governance; and coordinate the chairman's succession plan.
35	The board secretary should strive to ensure that the board's actions and decisions are informed by the governance recommendations of the Good Governance Code of relevance to the company.
36	The board in full should conduct an annual evaluation, adopting, where necessary, an action plan to correct weakness detected in: a) The quality and efficiency of the board's operation. b) The performance and membership of its committees. c) The diversity of board membership and competences. d) The performance of the chairman of the board of directors and the company's chief executive. e) The performance and contribution of individual directors, with particular attention to the chairmen of board committees. The evaluation of board committees should start from the reports they send the board of directors, while that of the board itself should start from the report of the nomination committee. Every three years, the board of directors should engage an external facilitator to aid in the

Number	Recommendation
	evaluation process. This facilitator's independence should be verified by the nomination committee. Any business dealings that the facilitator or members of its corporate group maintain with the company or members of its corporate group should be detailed in the annual corporate governance report. The process followed and areas evaluated should be detailed in the annual corporate governance report.
37	When an executive committee exists, its membership mix by director class should resemble that of the board. The secretary of the board should also act as secretary to the executive committee.
38	The board should be kept fully informed of the business transacted and decisions made by the executive committee. To this end, all board members should receive a copy of the committee's minutes.
39	All members of the audit committee, particularly its chairman, should be appointed with regard to their knowledge and experience in accounting, auditing and risk management matters. A majority of committee places should be held by independent directors.
40	Listed companies should have a unit in charge of the internal audit function, under the supervision of the audit committee, to monitor the effectiveness of reporting and control systems. This unit should report functionally to the board's non-executive chairman or the chairman of the audit committee.
41	The head of the unit handling the internal audit function should present an annual work programme to the audit committee, inform it directly of any incidents arising during its implementation and submit an activities report at the end of each year.
42	The audit committee should have the following functions over and above those legally assigned: 1. With respect to internal control and reporting systems: a) Monitor the preparation and the integrity of the financial information prepared on the company and, where appropriate, the group, checking for compliance with legal provisions, the accurate demarcation of the consolidation perimeter, and the correct application of accounting principles. b) Monitor the independence of the unit handling the internal audit function; propose the selection, appointment, re-election and removal of the head of the internal audit service; propose the service's budget; approve its priorities and work programmes, ensuring that it focuses primarily on the main risks the company is exposed to; receive regular report-backs on its activities; and verify that senior management are acting on the findings and recommendations of its reports. c) Establish and supervise a mechanism whereby staff can report, confidentially and, if appropriate and feasible, anonymously, any significant irregularities that they detect in the course of their du- ties, in particular financial or accounting irregularities. 2. With regard to the external auditor: a) Investigate the issues giving rise to the resignation of the external auditor, should this come about. b) Ensure that the remuneration of the external auditor does not com- promise its quality or independence. c) Ensure that the company notifies any change of external auditor to the CNMV as a material event, accompanied by a statement of any disagreements arising with the outgoing auditor and the reasons for the same. d) Ensure that the external auditor has a yearly meeting with the board in full to inform it of the work undertaken and developments in the company's risk and accounting positions. e) Ensure that the company and the external auditor adhere to cur- rent regulations on the provision of non-audit services, limits on the concentration of the auditor's business and other requirements concerning auditor independence.
43	The audit committee should be empowered to meet with any company employee or

Number	Recommendation
	manager, even ordering their appearance without the presence of another senior officer.
44	The audit committee should be informed of any fundamental changes or corporate transactions the company is planning, so the committee can analyse the operation and report to the board beforehand on its economic conditions and accounting impact and, when applicable, the exchange ratio proposed.
45	Risk control and management policy should identify at least: a) The different types of financial and non-financial risk the company is exposed to (including operational, technological, financial, legal, social, environmental, political and reputational risks), with the inclusion under financial or economic risks of contingent liabilities and other off- balance-sheet risks. b) The determination of the risk level the company sees as acceptable. c) The measures in place to mitigate the impact of identified risk events should they occur. d) The internal control and reporting systems to be used to control and manage the above risks, including contingent liabilities and off-balance- sheet risks.
46	Companies should establish a risk control and management function in the charge of one of the company's internal department or units and under the direct supervision of the audit committee or some other dedicated board committee. This function should be expressly charged with the following responsibilities: a) Ensure that risk control and management systems are functioning correctly and, specifically, that major risks the company is exposed to are correctly identified, managed and quantified. b) Participate actively in the preparation of risk strategies and in key decisions about their management. c) Ensure that risk control and management systems are mitigating risks effectively in the frame of the policy drawn up by the board of directors.
47	Appointees to the nomination and remuneration committee – or of the nomination committee and remuneration committee, if separately constituted – should have the right balance of knowledge, skills and experience for the functions they are called on to discharge. The majority of their members should be independent directors.
48	Large cap companies should operate separately constituted nomination and remuneration committees.
49	The nomination committee should consult with the company's chairman and chief executive, especially on matters relating to executive directors. When there are vacancies on the board, any director may approach the nomination committee to propose candidates that it might consider suitable.
50	The remuneration committee should operate independently and have the following functions in addition to those assigned by law: a) Propose to the board the standard conditions for senior officer contracts. b) Monitor compliance with the remuneration policy set by the company. c) Periodically review the remuneration policy for directors and senior officers, including share-based remuneration systems and their application, and ensure that their individual compensation is proportionate to the amounts paid to other directors and senior officers in the company. d) Ensure that conflicts of interest do not undermine the independence of any external advice the committee engages. e) Verify the information on director and senior officers' pay contained in corporate documents, including the annual directors' remuneration statement.
51	The remuneration committee should consult with the company's chairman and chief executive, especially on matters relating to executive directors and senior officers.
52	The terms of reference of supervision and control committees should be set out in the board of directors regulations and aligned with those governing legally mandatory board committees as specified in the preceding sets of recommendations. They should include at least the following terms:

Number	Recommendation
	a) Committees should be formed exclusively by non-executive directors, with a majority of independents. b) They should be chaired by independent directors. c) The board should appoint the members of such committees with regard to the knowledge, skills and experience of its directors and each committee's terms of reference; discuss their proposals and reports; and pro- vide report-backs on their activities and work at the first board plenary following each committee meeting. d) They may engage external advice, when they feel it necessary for the discharge of their functions. e) Meeting proceedings should be minuted and a copy made available to all board members.
53	The task of supervising compliance with corporate governance rules, internal codes of conduct and corporate social responsibility policy should be assigned to one board committee or split between several, which could be the audit committee, the nomination committee, the corporate social responsibility committee, where one exists, or a dedicated committee established ad hoc by the board under its powers of self-organization, with at the least the following functions: a) Monitor compliance with the company's internal codes of conduct and corporate governance rules. b) Oversee the communication and relations strategy with shareholders and investors, including small and medium-sized shareholders. c) Periodically evaluate the effectiveness of the company's corporate governance system, to confirm that it is fulfilling its mission to promote the corporate interest and catering, as appropriate, to the legitimate interests of remaining stakeholders. d) Review the company's corporate social responsibility policy, ensuring that it is geared to value creation. e) Monitor corporate social responsibility strategy and practices and assess compliance in their respect. f) Monitor and evaluate the company's interaction with its stakeholder groups. g) Evaluate all aspects of the non-financial risks the company is exposed to, including operational, technological, legal, social, environmental, political and reputational risks. h) Coordinate non-financial and diversity reporting processes in accordance with applicable legislation and international benchmarks.
54	The corporate social responsibility policy should state the principles or commitments the company will voluntarily adhere to in its dealings with stake- holder groups, specifying at least: a) The goals of its corporate social responsibility policy and the support instruments to be deployed. b) The corporate strategy with regard to sustainability, the environment and social issues. c) Concrete practices in matters relative to: shareholders, employees, clients, suppliers, social welfare issues, the environment, diversity, fiscal responsibility, respect for human rights and the prevention of illegal conducts. d) The methods or systems for monitoring the results of the practices referred to above, and identifying and managing related risks. e) The mechanisms for supervising non-financial risk, ethics and business conduct. f) Channels for stakeholder communication, participation and dialogue. g) Responsible communication practices that prevent the manipulation of information and protect the company's honour and integrity.
55	The company should report on corporate social responsibility developments in its directors' report or in a separate document, using an internationally accepted methodology.
56	Director remuneration should be sufficient to attract individuals with the desired pro le and compensate the commitment, abilities and responsibility that the post demands, but not so high as to compromise the independent judgment of non-executive directors.
57	Variable remuneration linked to the company and the director's performance, the award of

Number	Recommendation
	shares, options or any other right to acquire shares or to be remunerated on the basis of share price movements, and membership of long-term savings schemes such as pension plans should be confined to executive directors. The company may consider the share-based remuneration of non-executive directors provided they retain such shares until the end of their mandate. This condition, however, will not apply to shares that the director must dis- pose of to defray costs related to their acquisition.
58	In the case of variable awards, remuneration policies should include limits and technical safeguards to ensure they reflect the professional performance of the beneficiaries and not simply the general progress of the markets or the company's sector, or circumstances of that kind. In particular, variable remuneration items should meet the following conditions: a) Be subject to predetermined and measurable performance criteria that factor the risk assumed to obtain a given outcome. b) Promote the long-term sustainability of the company and include non-financial criteria that are relevant for the company's long-term value, such as compliance with its internal rules and procedures and its risk control and management policies. c) Be focused on achieving a balance between the delivery of short, medium and long-term objectives, such that performance-related pay re- wards ongoing achievement, maintained over sufficient time to appreciate its contribution to long-term value creation. This will ensure that performance measurement is not based solely on one-off, occasional or extraordinary events.
59	A major part of variable remuneration components should be deferred for a long enough period to ensure that predetermined performance criteria have effectively been met.
60	Remuneration linked to company earnings should bear in mind any qualifications stated in the external auditor's report that reduce their amount.
61	A major part of executive directors' variable remuneration should be linked to the award of shares or financial instruments whose value is linked to the share price.
62	Following the award of shares, share options or other rights on shares de- rived from the remuneration system, directors should not be allowed to transfer a number of shares equivalent to twice their annual fixed remuneration, or to exercise the share options or other rights on shares for at least three years after their award. The above condition will not apply to any shares that the director must dis- pose of to defray costs related to their acquisition.
63	Contractual arrangements should include provisions that permit the company to reclaim variable components of remuneration when payment was out of step with the director's actual performance or based on data subsequently found to be misstated.
64	Termination payments should not exceed a fixed amount equivalent to two years of the director's total annual remuneration and should not be paid until the company confirms that he or she has met the predetermined performance criteria.

Appendix Table 9: Corporate Governance Codes' Recommendations topics, equivalences by year

For each recommendation topic we show its recommendation number in each reporting year

N	Recommendation Topic	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	Corporate Bylaws voting limitations /restrictions	1	1	1	1	1	1	1	1	1	1
2	Listed companies in the same group disclosure	2	2	2	2	2	2	2	2	2	2
3	General Meeting powers	3	3	3	3	3	3	3	3		
4	Pre-circulation of general meetings proposals	4	4	4	4	4	4	4	4		
5	Separate voting	5	5	5	5	5	5	5	5		
6	Split votes	6	6	6	6	6	6	6	6		
7	Unity of purpose and independent judgment, good faith, ethics, good practices corporate interest and shareholders' interest reconciliation	7	7	7	7	7	7	7	7	12	12
8	Board powers	8	8	8	8	8	8	8	8		
9	Size	9	9	9	9	9	9	9	9	13	13
10	Functional structure	10	10	10	10	10	10	10	10		
11	Other external directors explained	11	11	11	11	11	11				
12	Ratio of proprietary to independent directors	12	12	12	12	12	12	11	11	15	15
13	Sufficient number of independent directors	13	13	13	13	13	13	12	12	17	17
14	Nature of directors explained	14	14	14	14	14	14	13	13		
15	Gender diversity	15	15	15	15	15	15	14	14	14	14
16	Chairman functions	16	16	16	16	16	16	15	15	33	33
17	Chairman-CEO	17	17	17	17	17	17	16	16		
18	The secretary	18	18	18	18	18	18	17	17		
19	Board proceedings	19	19	19	19	19	19	18	18		
20	Director absences	20	20	20	20	20	20	19	19	27	27
21	Objection to proposals	21	21	21	21	21	21	20	20		
22	Regular evaluation	22	22	22	22	22	22	21	21	36	36
23	Director information	23	23	23	23	23	23	22	22		
24	External advice	24	24	24	24	24	24	23	23	29	29
25	New director induction courses	25	25	25	25	25	25	24	24		
26	Dedication	26	26	26	26	26	26	25	25	25	
27	Director selection, appointment and renewal	27	27	27	27	27	27	26	26		
28	Public information on directors' background and experience, paid activities, other board seats, first appointment and re-election dates, shares held	28	28	28	28	28	28	27	27	18	18
29	Rotation of independent directors	29	29	29	29	29	29				
30	Removal and resignation	30	30	30	30	30	30	28	28		
31	Removal of independent at the end of tenure	31	31	31	31	31	31	29	29		
32	Disclosure of circumstances harmful to the company's reputation	32	32	32	32	32	32	30	30		
33	Director opposition to proposals harmful to the corporate interest	33	33	33	33	33	33	31	31	23	23
34	Reasons for resignation before end of tenure	34	34	34	34	34	34	32	32		
35	Remuneration approval and disclosure	35	35	35	35	35	35				

N	Recommendation Topic	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
36	Delivery of shares, options or financial instruments solely to executives	36	36	36	36	36	36				
37	External directors remuneration	37	37	37	37	37	37	34	34		
38	Remuneration as % of earnings	38	38	38	38	38	38	35	35		
39	Technical controls on variable remuneration	39	39	39	39	39	39	36	36		
40	General meeting vote on remuneration statement	40	40	40	40	40	40				
41	Disclosure of individual remuneration	41	41	41	41	41	41				
42	Executive committee membership	42	42	42	42	42	42	37	37	37	37
43	Boards kept informed of executive committee business	43	43	43	43	43	43	38	38	38	38
44	Supervision and control committee membership	44	44	44	44	44	44	39	39		
45	Internal codes of conduct overseen by supervision and control committees	45	45	45	45	45	45	40	40		
46	Audit committee skills and experience	46	46	46	46	46	46	41	41	39	39
47	Audit cttee. oversight of internal audit function	47	47	47	47	47	47	42	42	40	40
48	Head of internal audit reporting to audit committee	48	48	48	48	48	48	43	43	41	41
49	Risk management and control policy	49	49	49	49	49	49	44	44	45	45
50	Audit committee functions	50	50	50	50	50	50	45	45		
51	Any employee or manager able to call audit committee meeting	51	51	51	51	51	51	46	46		
52	Audit committee pre-report to board	52	52	52	52	52	52	47	47		
53	Annual accounts presented without qualifications	53	53	53	53	53	53	48	48		
54	Nom. & remun. cttee. membership	54	54	54	54	54	54	49	49	47	47
55	Nomination committee functions	55	55	55	55	55	55	50	50		
56	Nomination committee consulted on matters concerning executive directors	56	56	56	56	56	56	51	51	49	49
57	Remun. committee functions	57	57	57	57	57	57	52	52		
58	Remun. committee consulted on matters concerning executive directors and senior officers	58	58	58	58	58	58	53	53	51	51
59	Variable remuneration through shares, options, or other financial instruments should be confined to executive directors							33	33	57	57
60	Board duty of information at general meeting on corporate governance matters									3	3
61	Communication and contact to shareholders policy implementation and disclosure at company's website									4	4
62	Board limitation power of issuance of securities without pre-emptive subscription rights at 20%									5	5
63	Duty of publishing reports in the website in advance of the general meeting									6	6
64	Live web broadcasting of the general meeting at the company's website									7	7
65	Presentation of company's accounts without limitations or qualifications at the general meeting									8	8
66	Permanent disclosure of conditions									9	9

N	Recommendation Topic	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	and procedures for admitting share ownership, the right to attend general meetings and the exercise or delegation of voting rights at the website										
67	Duties of the company before the right of supplement the agenda or submit new proposals prior to the general meeting									10	10
68	Long-term policy for general meeting paid attendance									11	11
69	Director selection policy									14	14
70	Proportion between proprietary and non-executive directors									16	16
71	Disclosure of the reason for appointment proprietary director by shareholders controlling less than 3%									19	19
72	Proprietary directors resignation upon disposal of ownership									20	20
73	Not to propose removal of independent directors before the expiry of their mandate unless just cause									21	21
74	Criminal charges and trials information to the board and subsequent actions									22	22
75	Board meetings minimum: 8 a year									26	26
76	Recording in the minute book of not resolved concerns									28	28
77	Explanation of reasons for resignation before the tenure expires through letter to all directors									24	24
78	Offer of refresher knowledge program to directors									30	30
79	Agendas of board meetings clearly showing points of decision and given in advance									31	31
80	Information on movements in share ownership, views of major shareholders, investors and rating agencies should be given to directors regularly									32	32
81	Additional powers of lead independent director									34	34
82	The board secretary should strive to ensure that the board's actions and decisions are informed by the governance recommendations of the Good Governance Code of relevance to the company.									35	35
83	Additional functions of the audit committee									42	42
84	Comisión auditoría pueda convocar a cualquier empleado o directivo									43	43
85	Comisión auditoría tenga información sobre modificaciones estructurales o corporativas									44	44
86	Existencia función de control y gestión de riesgos									46	46

N	Recommendation Topic	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
87	Comisión de nombramientos y de retribuciones separadas									48	48
88	Funciones adicionales de la comisión retribuciones									50	50
89	Que las reglas de las comisiones de supervisión y control sean consistentes con las del resto de comisiones obligatorias									52	52
90	Supervisión cumplimiento reglas gob. corp., códigos internos conducta y política RSC									53	53
91	CSR policy contents									54	54
92	CSR information on management report or special report									55	55
93	Retribución adecuada pero que no comprometa independencia de los no ejecutivos									56	56
94	Variable remuneration linked to professional personal performance									58	58
95	Variable remuneration deferral									59	59
96	Remuneration linked to earnings should consider any qualifications made by the auditors									60	60
97	Major part of executive directors' variable remunerations linked to share price through shares or financial instruments									61	61
98	Limits to transmission of shares, share options or other rights derived from remuneration system									62	62
99	Claw-back clauses									63	63
100	Two year remuneration limit on termination payments upon met criteria									64	64

CHAPTER 5

CODES OF GOOD GOVERNANCE AND PERFORMANCE IN SPANISH LISTED FIRMS

ABSTRACT

Codes of good governance have been widely used in many countries to spread best practice in corporate governance. Codes used to provide a group of recommendations to check the compliance and the adoption of the corporate governance principles. Based on those recommendations, we analyze the relation between the degree of compliance and the performance in Spanish listed firms in period 2007-2016. We aim to enlighten whether the outcomes follow the effort made by firms in this respect, in a time span with three different sets of recommendations that were originated by successive code of good governance modifications, deepening in the relationship through the analysis of past compliance. We also found interesting results considering the size of the firms, and the degree of compliance of recommendations related to human capital, that may serve for future code developments as well as for companies governance policies.

KEYWORDS

Board, corporate governance, codes of good governance, degree of compliance, performance, human capital.

1. INTRODUCTION

The research on different topics of corporate governance has been increasing over the last decades. From an initial conception on baseline agreement on the meaning of governance referring to the development of governing styles (Stoker, 1998) and the creation of a non-imposed structure that results from influence governing actors (Kooiman, 1993), this subject became a research subject that was approached from many angles: law, accounting, finance, strategy, etc. In fact, many studies were published in journals like *Corporate Governance: An international Journal, Journal of Business Ethics, Journal of Corporate Finance*, *Journal of Financial Economics*, *Business Lawyer*, *Journal of Business Finance and Accounting*, *Strategic Management Journal*, *Academy of Management Journal*, *Journal of Business Research* or the *Journal of Management Studies*. Thus, the Web of Science main collection database gathers over 3,000 articles written on topics related to this specific field.

Corporate Governance was also developed in practice encompassing various roles that were mainly originated in the agency theory. Control and supervision have driven most of the boards' execution since their creation although other roles have been addressed by companies once the former ones were secured. Despite this, the need of improving governance was continuously fostered by the demands of companies' stakeholders and the rising number of corporate scandals (e.g. Enron, WorldCom, Tyco, HealthSouth, Fannie Mae, AIG, in the US; Parmalat, Swissair in Europe; or HIH Insurance in Australia).

On the scholars' side, a great number of studies tried to analyze the boards of directors, the differences that they might have, so as to link them to the way companies perform or fulfill expected roles. The differences that any researcher would like to observe are those related to the behavior. Since it is not easily approachable, the empirical work focused on differences that may be quantified out of external observations, and that might lead to link to underlying differences in terms of behavior (Adams, Hermalin, & Weisbach, 2010). In this context, a key tool for improving governance in organizations were the Codes of Good Governance. In the aim of providing a highest degree of transparency and avoiding negative governance issues, Codes were built in many countries channeling these demands across different companies on the same country, and sharing provisions with other globalized geographies. The Cadbury Code, issued in UK in 1992 took the lead to subsequent codes in France (Vienot Report, 1995), the Netherlands (Peters Report, 1997), and Spain (Olivencia Report, 1998).

But the above-mentioned scandals lead to a peak in the issuing of codes across the world in 2002. The second peak was reached after the financial crisis, which led to numerous revisions and new issuances (Cuomo, Mallin, & Zattoni, 2016). So, codes of good governance have also played a key role in the evolution of the research. The demand of information, though in many cases was voluntary, helped to obtain valuable information on corporate governance. In fact, companies' reports provided useful data that sourced researches on the field. Literature used the information like the one provided through these channels so as to study particular topics on corporate governance and, in some cases try to link them to performance, such as board size (Coles, Daniel, & Naveen, 2008; De Andres, Azofra, & Lopez, 2005; Eisenberg, Sundgren, & Wells, 1998; Yermack, 1996a), composition (Carter, Simkins, & Simpson, 2003; Erhardt, Werbel, & Shrader, 2003; Hermalin & Weisbach, 2003; Pearce & Zahra, 1992) or ownership structure (La Porta, Lopez-De-Silanes, & Shleifer, 1999; Thomsen & Pedersen, 2000). In some cases the authors even claim to analyze the whole code or corporate governance, but they just focus in a subset of recommendations or variables (Bebchuk, Cohen, & Ferrell, 2004; Bhagat & Bolton, 2008; Black, de Carvalho, Khanna, Kim, & Yurtoglu, 2017; Gompers, Ishii, & Metrick, 2003; Shaukat & Trojanowski, 2018). To our knowledge, there is no research that consider the whole set of provisions, considering partial compliance, for the case of Spain, and taking into account different Codes over time. Therefore, it is worthwhile to understand whether the degree of compliance shown in the information provided by the code has an impact on firm performance.

We analyzed corporate governance compliance data from Spanish listed firms aiming to know whether the variables that were introduced trough corporate governance codes were actually effective in terms of firm performance [and the other objectives set for the code]. In this respect, we took the information regarding the compliance of each corporate governance recommendation. The companies were analyzed over an interesting period. The Aldama report configured a restructured recommendation set in 2006, and we take the data from the following year to 2016. Ten years of firm observations that covered three different sets of recommendations were established during that time. We found a positive relationship between the degree of compliance of recommendations and the firm performance. Besides, the positioning within the level of compliance and the size of the firms have a key role in this link, whereas past performances and human capital recommendations did not lead to conclusive statements.

This article is composed of four further sections. After this introduction, in the following section, we review the literature on codes and corporate governance compliance. Afterwards, we briefly describe how the Spanish Good Governance Code evolved as previous and necessary step to formulate the hypotheses. Then, we describe the methodology we used to carry out the analysis. Subsequently, we show the results we obtained and, finally, we point out the conclusions and future lines of research on this topic.

2. THEORETICAL FRAMEWORK

2.1 Literature review

According to scholars and legislators, codes of good governance are structured so as to improve governance of firms through a set of recommendations. Following existing studies at the time, codes tried to address prevailing deficiencies and problems of governance, and have the objective of improving accountability and governance as a whole. They usually set up a wide-ranging list of indications on topics such as the board (e.g. board composition), relationship to shareholders, disclosure and transparency, directors (e.g. appointment, dismissal, remuneration). Codes are supposed to complete other mechanisms such as legislation and markets when they fail to protect shareholders' rights (Aguilera & Cuervo-Cazurra, 2004).

The origins of the first code go back to 1978 in the US, although it was not issued with that shape. Just a few new codes were issued in the following decade. In 1992, The Cadbury Report was released and it triggered a fast growing movement on corporate governance codes adoption across many countries.

Codes were voluntary by definition, structured in a non-binding way, using widely the 'comply or explain' principle (Haxhi & Aguilera, 2015), so as to allow listed companies a suitable market oriented environment that have traditionally tended to respond to recommendations. Almost all countries that issued codes addressed to all listed companies. However, there were some developed for specific types of companies, financial institutions or NGOs.

Compliance adoption increased over time although firms differed in path and explanations (MacNeil & Li, 2006). For instance, although in the UK almost all the listed companies complied with recommendations before 1999 (Weir & Laing, 2000), they were studied over the following changes in the code (Pass, 2006).

Some authors classify codes according to the issuer (Aguilera & Cuervo-Cazurra, 2004) identify six categories: (a) Stock Exchange, (b) Government, (c) Directors' Association, (d) Managers' Association, (e) Professional Association, (f) Investors Association. Each one has advantages and disadvantages in terms of pressure to adoption, isomorphism, and endorsement. In the case of Spain, Government and Managers' Association elaborated different codes.

Legal tradition adds relevant features to codes. Two main traditions are often identified in building legal systems. The common-law system and civil-law system. The first system was adopted in the UK, the US, and other English-influenced countries. On the opposite, the civil-law system was adopted in the continental Europe. We think that when the code becomes government-steered recommendations become covered legal request. When Government Code follows the one set up by Managers' there is a faster adoption amongst requested firms and differential impact is diminished. This would be a motive that supports the lack of impact on performance once a certain level of compliance is reached.

The study of different topics related to codes is spread for the case of many countries. The case for Portuguese firms was analyzed (Alves & Mendes, 2004), using as units of analysis all the recommendations and sets and subsets of recommendations, in a dichotomous classification of compliance. They found positive association between the degree of compliance and the return, from 1998 to 2001.

The reaction of the stock market to the introduction of best practices codes was studied for the case of Spanish listed firms (Fernández-Rodríguez, Gómez-Ansón, & Cuervo-García, 2004). As the title pointed out, the work focused on the short-term effect. They utilized the CNMV (Comisión Nacional del Mercado de Valores) as a valid source of data of listed firms over a period of three years. They found positive association between announcement of adoption of recommendations in the Olivencia Code of Best practice and abnormal returns in the financial markets. Earnings manipulation and code effectiveness was also studied from a survey of Spanish listed companies, finding positive effects of the existence and composition of the nominations committee (Osma & Noguer, 2007).

The level of compliance was also studied in the case of German companies. Whereas some focused in a set of recommendations (Werder, Talaulicar, & Kolat, 2005), others aimed to the whole list (Goncharov, Werner, & Zimmermann, 2006). The former pointed out the role of the company size and help to support the idea of the importance of soft law as a proper way to spread best practices amongst firms. The later used deviations from the year median as a way to value the degree of compliance in each recommendation. (Talaulicar &

Werder, 2008) and made also an interesting contribution trying to find patterns of code recommendation observance in those 24 recommendations that were considered critical (with a level of compliance under 80%). This characterization may help supporting a grouping in the level of compliance.

A cross-section study for Danish listed firms (Rose, 2016). This study found a positive relationship between ROE/ROA and Danish firm total corporate governance 'comply or explain' disclosure scores. For this goal, the author suggested four categories to classify compliance: complies, complies poorly, explains and explains poorly.

In the case of UK, besides the already mentioned works, a longitudinal study was made for the case of UK listed firms from 1999 to 2008 (Shaukat & Trojanowski, 2018). In this work, they found a positive association between the board governance index construct they made and the operational performance of the firms. And Italian firms were studied from 2000 to 2008, checking the relationship between seven variables and corporate performance (Abatecola, Caputo, Mari, & Poggesi, 2012).

Through these studies, researches usually tried to relate a subset of variables that were at the code recommendations to the performance of the company and, to our knowledge, there were no variations in the number of considered when performing a longitudinal analysis.

Other way of approach the issue was performed through indices. The construction of indexes has been established as a way to analyze this type of relationship. Thus, the majority of the authors build indexes on the basis of some provisions obtained from the demanded recommendations at the codes. The utilization of indices as an object of study has been also approached. A constructed Governance Index to proxy the level of shareholders rights and link it to equity prices in several investment strategies and found a positive relationship was developed (Gompers et al., 2003). This index was built from governance characteristics from 1,000 firms in the US compiled by the Investor Responsibility Research Center (it is noticeable that the aim of this institution against takeover defenses bias the racking items in favor of defensive tactics-related items).

There had also been researches that had argued against existence of a consistent relation between the governance indexes and the corporate performance, setting the environment and context of each firm as the main factors to determine the most effective governance (Bhagat & Bolton, 2008). Although there were other angles to study this topic, it is remarkable how authors deferred trying to agree on whether the degree of compliance in positively related to operating performance (measured by Return on Assets). Thus, while

Bauer, Guenster and Otten (2004) found it negatively associated, others revisited the relationship (Bauwhede, 2009), with opposite outcomes. Since the Codes recommendations deal with different types of functions and aspects, gravitating around the central role of the board of directors, it could be discussed whether the recommendations included in codes can be equally weighted or not for the purpose of the index construction. We agreed with those in favor (Bebchuk, Cohen, & Ferrell, 2009; Gompers et al., 2003; Shaukat & Trojanowski, 2018), mainly because we are treating the factor as a whole.

2.2. Hypotheses

Given the existing literature research, this article aims to understand and deepen in the research gap on the relationship between the degree of compliance and the firm performance. On one hand, financial performance is relatively easy to measure through different variables. But the relationship with the degree of compliance and performance has not been sufficiently explained, because, in most cases and providing the changes over a wide period of time, the whole set of recommendations was not considered and applied to a single market, and the degree of compliance skipped the partial compliance status. Besides, we want to elaborate in the implications of that relationship through the analysis of the past degree of compliance, the degree of compliance in those recommendations that are related to human capital and the relative size of the firms..

Although there is a discussion on whether codes should eventually become laws, there is a consensus on taking the compliance of several disclosures stated at the codes as a sign for the markets, for the investors, that impacts firms' performance. Investor tolerance might mitigate some non-compliance (MacNeil & Li, 2006), but the fact of reporting such a case to regulators is always relevant and may lead to immediate effect in valuation, financing, even without an actual fine or investigation. The issue, then, is whether degree of compliance of code's recommendations becomes beneficial for the company in the long run, despite the costs associate to compliance disclosure, which might be diminished through improving internal control systems (Sneller & Langendijk, 2007). This proposition goes beyond considering just a group or subset of recommendations (Alves & Mendes, 2004; Bebchuk et al., 2009; Karpoff, Schonlau, & Wehrly, 2017) and, at the same time, it takes from previous researches the foundations of the relationship between some provisions and firm performance. Studies gave a positive sign to that relationship. Thus, the first hypothesis, and starting point of our research, gravitates around the possible association between the firm performance and the degree of compliance of the recommendations provided in the code. Therefore we propose our first hypothesis:

***H1**: The degree of compliance of the recommendations of the code is positively associated with the firm performance of the Spanish listed firms*.

Some authors found a lagged effect in a number of elements such as board composition (Baysinger & Butler, 1985). Considering the lag effect, it might also help to prevent endogeneity (Shaukat & Trojanowski, 2018). We think that, since almost all recommendations aim to provide the markets with right information through transparency and disclosure, they are published during the financial year. Some of the amendments and corrections are also required to be communicated immediately to the regulation agency in Spain (CNMV), who can take immediate action to ensure its values: publish the issue at the website, suspend the trading of the company in stock markets, etc. Therefore, the foreseen perception of accomplishment is mainly derived from current actions and past degree of compliance does not imply a positive association with financial performance in the present, and if it happens it will be not significant, leading to inconclusive effects. Thus, we formulate the hypothesis

***H2**: The degree of compliance of past years does not have significant relationship with the performance of the firms.*

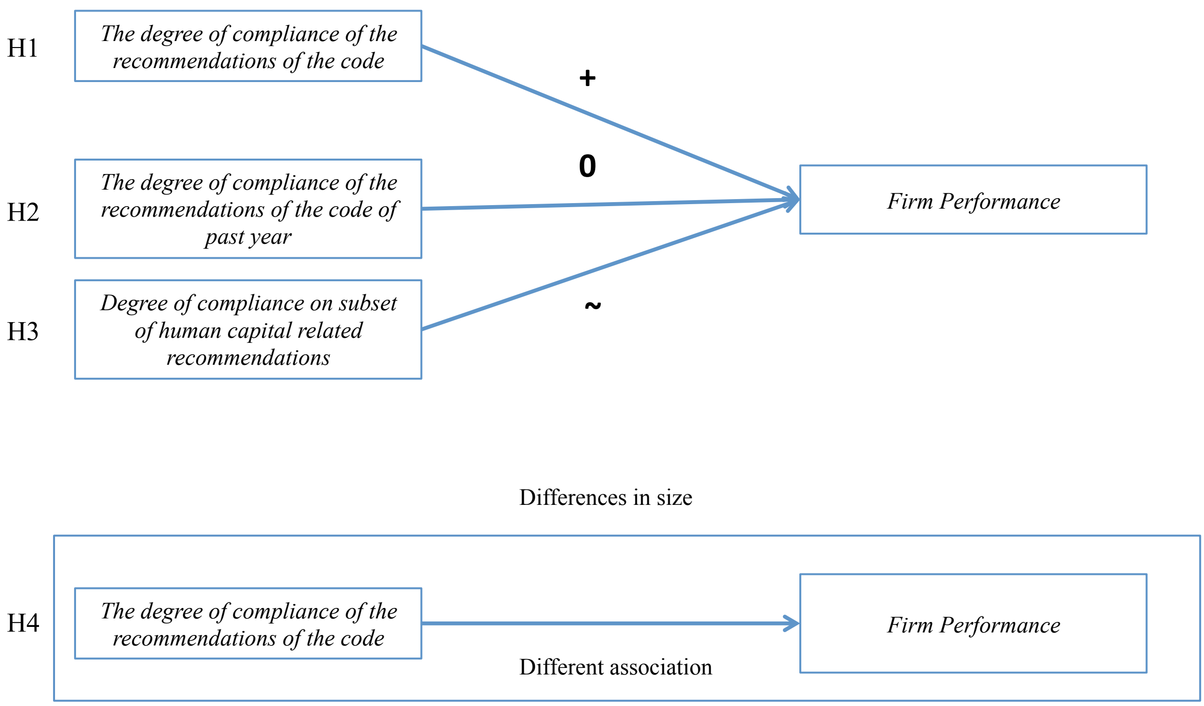
Considering a broad concept of governance and giving to the Board a relevant role, Human Capital must be considered in order to fulfill the potential responsibilities towards stakeholders (McIntyre, Murphy, & Mitchell, 2007), to create shared leadership (Vandewaerde, Voordeckers, Lambrechts, & Bammens, 2011), and to become a key factor in board composition in its relationship with firm outcomes (Johnson, Schnatterly, & Hill, 2013). Eventually, Human Capital has been related to firm performance among firms with homogeneous growth options (Coles et al., 2008). Diversity has been also study under this perspective (Singh, Terjesen, & Vinnicombe, 2008). But, since the recommendations are primary based on the principles we analyzed, human capital related premises are mainly aimed to comply before the eyes of investor protection. Therefore, there are no profound details on those provisions that are usually required to set the company to a ‘comply’ or ‘partially comply’ score. This is more noticeable once, for instance, diversity is embedded among other requirements as a targeted quota, or trainings programs could qualify if they are just offered, etc. Skills at committees is a different case, but, to our knowledge, there is a lack of matrix skills in almost any listed company in Spain. Therefore, although it would be a differential element to be perceived by investors and to be shown in the overall outcomes, we do not expect that a subset of recommendations on human capital could have a significant relationship with the firm value, and formulate the following hypothesis.

***H3**: Degree of compliance on subset of human capital related recommendations do not have a positive relationship with firm performance*

It's been already mentioned that disclosure and explaining has a cost for the firms (Sneller & Langendijk, 2007). Besides, the lack of resources may lead to smaller companies to postpone their duties in recommendations. In these cases, any variation is going to be reckoned in terms of performance, providing the size (big vs. small) a role in the relationship. Besides, it's been suggested that some provisions are detrimental for smaller companies (Chhaochharia & Grinstein, 2007). Firm size has been pointed out as one of the main factors in terms of compliance for the case of US firms (Khemakhem & Dicko, 2013), having a significant effect on firm performance (Van Essen, Engelen, & Carney, 2013). Therefore, we suggest the following hypothesis:

***H4**: Difference in size of the firms lead to different type of association between the degree of compliance and the firm performance of the firms.*

Figure 1: Summary of Hypotheses



3. METHODOLOGY

3.1. Empirical context

Our empirical context is Spain. So, in this section we briefly depict the recent Spanish Code of Good Governance history so as to be able to frame the principles, recommendations and their changes that were established. There have been several codes in Spain throughout the last three decades. We may highlight these: The Olivencia Code (embedded in the Olivencia Report), the Aldama Report, the Unified Code of Good Governance, the Unified Code of Good Governance (reformed) and the Code of Good Governance, which is the current one for Spanish firms. The evolution of these codes their guiding principles and, for the aim of our research, their contents and the different recommendations they propose should be considered.

The Olivencia Report

The first Code in Spain was issued in 1998. The Board was at the center of the study and it was initially framed into an ethics perspective. It is commonly understood that it "developed an approach to corporate governance which emphasized the responsibility of management and Boards of Directors to the company's shareholders" (Special Commission To Foster Transparency And Security In The Markets And In Listed Companies, 2003). This approach clearly fits into the framework of the theory of agency (Fama & Jensen, 1983; Jensen & Meckling, 1976). The report is composed of three sections: introduction, a report on the board of directors, and a good governance code. The report on the board of directors had twelve chapters. First, there is a study of the Board of Directors mission, its supervisory function, its faculties and need of value creation for the shareholder. Then, the composition of the Board is analyzed, depicting the directors' types, with special focus on the independent director, and the board size. Afterwards, the structure of the board is studied, exploring the President, the Secretary, and the Committees. There is a subsequent chapter that studies how the boards work, in terms of organizing, preparation, and developing the meetings, how they should be reflected in minutes, and the performance evaluation.

The Aldama Report

The Aldama Report was the result of a mandate given by the Spanish Government. The goals of this code were set into a context of structural changes, a increasingly globalized economy, capital markets integration, and the trends of international markets, an keep appearing in the following codes. It highlighted three main criteria: effective rule of law, transparency and self-regulation by the markets (Special Commission To Foster Transparency And Security In The Markets And In Listed Companies, 2003). New emphasis was posed on Shareholders' Meeting.

The Unified Code

The Unified Good Governance Code of Listed Companies (Unified Code) was approved by the Board of the CNMV (Securities and Markets Regulatory Agency in Spain) in 2006 following recommendations of the Ministry of Economy (Comisión Nacional del Mercado de Valores, 2006). This version of the code followed the review of the Principles of Corporate Governance made by the OECD in 2004, and the promotion of good governance that the European Commission encouraged over the same period. It included some of their recommendations, aimed to establish a clearer concept of independent director; it expanded the functions of the audit, and nomination and remuneration and committees (Comisión Nacional del Mercado de Valores, 2005).

The Spanish Unified Code was depicted in 58 recommendations. There is a first set of recommendations regarding the shareholding's meeting procedures and the way the Corporate Bylaws are set up. The second group gathers key recommendations on the board of directors such as the size, competences, functional structure, board meetings and gender diversity. The third set of items refers to directors, especially the selection, independence directors' assurance, disclosures and remuneration matters. Finally, the recommendations items deal with committees' issues. This structure remained for more than ten years and recently included slight changes in the details and the order of disclosure. As it may be easily notice, the majority of the recommendations could be framed under the role of monitoring and supervising that has been traditionally adopted by agency theory contributions. The items that can be analyzed under a resource dependence theory, helping to assess the board capital, are just a few. These would be the one regarding the CEO/Chairman duality, participation in other boards, and, secondarily, the size. These items can be studied as matters of social capital. There are no recommendation items explicitly devoted to the human capital of the board.

In 2013, the Unified Governance Code was updated so as to reflect changes in legislation that were related to several recommendations. This change resulted in changes in the number and definition of the recommendations.

The Good Governance Code (2015)

The current Code of Good Governance was issued in 2015. The Spanish Government formed the 'Experts on Corporate Governance Committee'. The aim was twofold, to improve 'the efficiency and accountability of Spanish firms' governance and ensuring that national standards attain maximum levels of compliance with international good governance principles and practices'. The objectives were 'to ensure the proper functioning of the governing and administrative bodies of Spanish companies in order to maximize competitiveness, build trust and transparency for shareholders and domestic and foreign investors, improve internal control and corporate responsibility systems, and ensure the correct internal distribution of functions, duties and responsibilities under standards of maximum rigor and professionalism' (CNMV, 2015). By including this aims, it confirmed that codes try to spread practices and principles across countries.

The Good Governance Code introduced significant changes over the former codes. Firstly, it employed a new format that linked recommendations to the principles. Besides, some recommendations were omitted since they were included in legislation and now are compulsory. Corporate Social Responsibilities recommendations were included due to the increasing acknowledgement in many countries. The Good Governance Code is based on 25 principles. They are grouped in three categories: general arrangements (1-5), Shareholders' General Meeting (6-8), and Board of Directors (9-25). As we previously mentioned, recommendations were linked to the established principles. The Good Governance Code contains 64 recommendations.

Report On Corporate Governance Obligation according to current law

We liked to briefly reckon the report on Corporate Governance Issues obligation under current law. For the goals of this study, this is relevant for two reasons: it provides legitimacy to the data obtained and it frames the recommendation compliance. The obligation of publishing and notifying as a significant event towards regulatory agencies of an Annual Corporate Governance Report is defined in the Capital Companies Act (Ley de Sociedades de Capital, herein CCA). This law was approved in 2010. The Securities Market Act, approved in 2015, extended the obligation to other issuers of listed securities.

CCA requires issuers to show their degree of compliance with recommendations of the code and, in case it is appropriate, to explain why they have not been fulfilled.

3.2. Data collection

Accordingly with what we found in the analysis of the literature and the Spanish good governance codes we retrieved data from different sources. Companies' Corporate Governance Data was obtained from Companies Corporate Governance Report for each year of the study, from the Corporate Governance Report of Entities with Securities Admitted to Trading on Regulated Markets (Comisión Nacional del Mercado de Valores, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016). We also retrieved data of corporate governance variables, board variables and financial performance from the CNMV agency (Spanish SEC), official reports on corporate governance available both at CNMV and companies websites, and the SABI database. We selected data from companies covering the period from 2007 to 2016. We utilized 1,139 firm-year observations in our research. Since companies varied during this period in listing, reporting and scope, they configured an unbalanced panel of data. The distribution of the sample based on the industry (NACE classification) may be checked in Table 1. Companies belong to a great variety of industries (16). Although they are unevenly distributed in each one, we ensure the best degree of representativeness amongst listed firms.

Table 1: Distribution of companies by industry and year

Industry	Total	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
B – Energy Mining	30	3	3	3	3	3	3	3	3	3	3
C - Manufacturing	395	39	39	39	41	41	41	40	40	41	34
D – Energy Electricity Gas	71	7	7	7	7	7	7	7	7	8	7
E – Water, waste management	10	1	1	1	1	1	1	1	1	1	1
F - Construction	71	7	7	7	8	8	8	7	7	6	6
G – Wholesale and Retail	42	4	4	4	4	4	4	5	5	4	4
H - Transportation	2									1	1
I - Host	23	2	2	2	3	3	3	2	2	2	2
J - ITC	76	7	7	7	8	8	8	7	7	9	8
K – Banking and Insurance	147	14	14	14	15	15	15	16	16	15	13

L – Real Estate	148	14	14	14	16	16	16	17	17	15	9
M – Tech Sci Prof Serv	25	2	2	2	2	2	2	3	3	3	4
N – Admin Aux Services	20	2	2	2	2	2	2	2	2	2	2
Q - Health	12	1	1	1	1	1	1	1	1	2	2
R – Entertainment Art	10	1	1	1	1	1	1	1	1	1	1
S – Other Services	35	2	2	2	2	2	2	6	6	6	5
Total firm-observations	1139										

The use of different sources of information is helpful but it also raises several issues regarding how to combine all data to suit the aims of the research. We dealt with to kinds of issues. There where format issues that we managed to systematize with the help of some simple coding and software. We also had issues regarding the consistency of the contents. Thus, we use the above-mentioned sources to double-check data, and eliminate some inconsistencies.

After the data preparation, we created a database so as to include data from different sources, combine them and obtain files that allowed a further analysis. The database we created has corporate governance and financial information of the Spanish listed firms. We entered all variables comprising company corporate governance compliance data from 2007 to 2016. We also fed the database with financial data for the same period. Then, we loaded that information into SPSS for additional treatment. Finally, we proceeded to analyze the outcomes of the results we obtained. In order to test our model, we used regression analysis. This method requires identifying a variable in terms (as a function of) some other variables.

3.3. Measurement

Dependent variable

There are different approaches to measure firm performance. The multidimensional nature of the firm makes any type of measurement of performance a limited one, and, as a result, it could be addressed in different ways (Dalton, Daily, Ellstrand, & Johnson, 1998; Keats, 1988). Accordingly, operational performance and organizational performance have been distinguished (Combs, Russell Crook, & Shook, 2005), and the use of financial performance has been built based on accounting measures (e.g. Return on Assets, Return on Equity, Return on Invested Capital) or based on market performance (e.g. Market-to-book value, Tobin's Q, stock performance, shareholders return) (Post & Byron, 2015). While accounting-based measures were assumed to be aiming to past success, market-based ones were more focused on the future, the expectations and growth opportunities on the groundings of present data (Hillman, 2005; Keats, 1988; Keats & Hitt, 1988). We decided to use a market-based measure. Some authors refer to different versions of Tobin's Q ratio (Agrawal & Knoeber, 1996; Bhagat, Black, Bhagat, & Black, 1999; Brainerd & Tobin, 1977; Lindenberg & Ross, 1981; Tobin, 1967; Weir, Laing, & Mcknight, 2002; Yermack, 1996b). But accuracy and precision measurement of Tobin's Q has been under discussion for long (Barnhart, Rosenstein, & Marr, 1994; Whited & Erickson, 2006), and, since the use of data from debt would distort and make hard to adapt observations from the banking and insurance industries, and in periods where regulation requested specific thresholds in related indicators, we decided to use the market-to-book ratio as measure for firm performance (FV) (Ararat, Aksu, & Tansel Cetin, 2015; Barnhart et al., 1994; Black et al., 2017; Brush, Bromiley, & Hendrickx, 2000; Carpenter & Sanders, 2004; De Andres et al., 2005; Francoeur, Labelle, & Sinclair-desgagné, 2008). This ratio is defined as the market value of equity divided into the book value of equity, and, consequently, it does not take into account firm's debt.

Independent variables

To check the degree of compliance, we use a variable (DC). To build this variable, we consider the compliance in each recommendation. The degree of compliance is built upon the full set of recommendations issued at each period of time for the years of our research.

There is a discussion on how many categories should be used so as to show whether a company complies: two, representing comply or not comply (Abatecola et al., 2012; Alves & Mendes, 2004; Bebchuk et al., 2009; Gompers et al., 2003; Shaukat & Trojanowski, 2018); three, including partial compliance (Akkermans et al., 2007); four, including poorly comply, explains well, and poorly explains (Rose, 2016). The possibility of weighting recommendations based of experts criteria was also performed for the case of Pakistani firms (Tariq & Abbas, 2013). We decided to establish three for our research. We keep 2 in the case of compliance, 1 for the case of partial compliance and 0 for those who do not comply. This keeps more information on the value of the progress that would be lost otherwise. This decision is derived from the classification items established by the regulatory agency in Spain. In the annual reports, companies are required to fill de information so as to fit only in one of three possibilities: comply, partially comply, not comply (with some exception for the recommendations where the ‘not apply’ category could be adopted). Since this is the classification that is communicated to the markets, we took it as a reference for our investigation.

Then, we add the punctuation of each recommendation. We equally weighted each one following existing research, which gives the power of building the degree of compliance to what is considered as a key and relevant issue for corporate governance, that is the recommendation. Since the number of recommendations is different across the years, we weighted the sum of punctuation by the total number of recommendations in that period (58, in the period 2007-2012; 53, in the period 2013-2014; 64, in the period 2015-2016). That way, potential values of the variable would range from 0, in the case of not compliance at all, to 2, for the case or full compliance of all recommendations. Then, we standardized each period subtotal to mean 0 and standard deviation 1. Finally, we added standardized subtotals and, again, standardized the result to mean 0 and standard deviation 1 in the variable we used in the model. Literature on this regard fail to adopt the whole set of recommendations. In all referred cases and word, a construct was made up for the goals of the research, with some exceptions like (Pass, 2006). This is interesting when you are trying to find potential causes of performance within corporate governance items. But, reversely, do not consider whether the market is valuing what is considered the benchmark and reference as a whole, and that is shown through a set of recommendations in the code.

Data on some particular recommendations is missing, normally because the suggestions the code is aiming do not apply to that particular case. Whereas setting that recommendation to 0 would punish the degree for that observation, and setting to 2 is complicated to base and might overestimate compliance, we computed for these cases the average of non-missing values. That way we do not loose information and add firm-year observations to the sample of our study (Black et al., 2017).

For the purpose of validating the hypothesis we formulated in H2, we also created a lagged variable of the degree of compliance (DC-1). Following the mentioned works of Gompers, Black and others, we created a subset of recommendations for those related to human capital (DCHC). We checked the rationale and principles behind each recommendations in every period so as to select those that were related to topics like skills, experience or training. Since they varied from one period to other, we computed them by period to come up with the final variable. The weight and criteria we followed is the same as the one we established for the overall set of recommendations.

In our study, we took size variable (SIZE), that was proxied by the sales of the companies, given its potential role (Andres, Azofra, & Lopez, 2005). For the validation of the hypothesis that gives this variable a main role in the relationship with firm performance, we also separated the size into groups based on deciles so as to perceive different behaviors in each one of them (Francoeur, Labelle, & Sinclair-Desgagné, 2008; Murphy, 1999; O'Connell & Cramer, 2010).

As regard to the human capital, we created a variable that includes the degree of compliance of those recommendations related to the topic. We measured it analogously to the measurement of the overall degree of compliance.

Control variables

Regarding the control variables, literature often proposes industry, firm debt and country as the most relevant. The operational performance measured by the return on assets (ROA) has been included in some models as a control variable because it has a potential impact in the dependent variable (Carter et al., 2003; Rodríguez-Domínguez, García-Sánchez, & Gallego-Álvarez, 2012; Villanueva-Villar, Rivo-López, & Lago-Peñas, 2016). As a measure of efficiency of management, it shows how well the resources of the company (their assets) are handled to generate a certain level of profit, turning into higher equity value (Andres et al., 2005). Some authors give ROA a mediator role in relation to firm performance. In order to check, and follow dismiss the possibility of a mediator role of ROA, we performed the model without founding the relationship of that variable significant (See appendix tables for that analysis).

Some research works use the level of debt or leverage or other debt related variable to meet some works that pointed out its relationship with the managerial control and decision. Since the companies in the finance industry do not have a proper equivalent to reflect exactly in the same way that concept (the use of capital ratios or their transformation could be problematic and embed hidden relationship to regulation), we decided not to use that variable and keep financial firms in the sample. Due to the time span of our research, we include some years in a context of deep financial crisis. In those years, changes in regulation ad markets necessities demanded recapitalization of the firms, which was especially significant in financial companies. Finally, given that we focused our research in Spanish listed companies, we did not use country control variables

Besides, we created dummy variables for the years of the study (2007 to 2016) and the different industries of the firms, based on NACE classification.

4. RESULTS

We performed OLS on six models so as to test the hypotheses we previously formulated. The first four models (A, B, C, and D) were defined for the first two hypotheses. Model A included control variables. Model B included degree of compliance (DC) as independent variable. Model C included past degree of compliance (DC-1), and Model D included DC and DC-1 for the purpose of the second hypothesis. Model E was designed to test hypothesis 3 and included the degree of compliance of human capital recommendations (DCHC) as independent variable. Finally, Model F was created to test the last hypothesis. In all multiple regression models we introduced dummy variables for years and industries, and the operational performance (ROA). The descriptive statistics and correlations of the variables are shown in Table 2. The correlation matrix is a necessary step when performing OLS so as to check possible multicolinearity. In our study, the coefficient for ROA, although it is high, it is not so relevant to avoid considering it. It happens the same for the case of the size. In both cases is below 0.5. Therefore, the model could be suitable for our objectives. Correlation matrix of this model only shows outstanding correlation between de degree of compliance and the same variable for the past year, and for the case of human capital degree of compliance analogously. This is foreseeable since companies do not change dramatically their compliance from one year to other. There are provisions whose difficulty of compliance is focused in the first time and once they have been implemented there is a sort of inertia. That is the case of those regarding procedures (e.g. for general meetings) or reached ratios (where it is relatively easy to keep complying).

Table 2: Descriptive and Correlations statistics

		Mean	Std	1	2	3	4	5	6	7	8	9	10
1	Y2008	0,103	0,304	1	-0,116**	-0,116**	-0,122**	-0,117**	-0,118**	-0,122**	-0,130**	-0,122**	0,022
2	Y2009	0,105	0,306	-0,116**	1	-0,117**	-0,123**	-0,118**	-0,119**	-0,123**	-0,131**	-0,123**	0,021
3	Y2010	0,105	0,306	-0,116**	-0,117**	1	-0,123**	-0,118**	-0,119**	-0,123**	-0,131**	-0,123**	0,021
4	Y2011	0,115	0,320	-0,122**	-0,123**	-0,123**	1	-0,124**	-0,126**	-0,130**	-0,139**	-0,129**	-0,011
5	Y2012	0,106	0,308	-0,117**	-0,118**	-0,118**	-0,124**	1	-0,120**	-0,124**	-0,132**	-0,123**	-0,006
6	Y2013	0,109	0,311	-0,118**	-0,119**	-0,119**	-0,126**	-0,120**	1	-0,126**	-0,134**	-0,125**	-0,007
7	Y2014	0,115	0,320	-0,122**	-0,123**	-0,123**	-0,130**	-0,124**	-0,126**	1	-0,139**	-0,129**	-0,011
8	Y2015	0,129	0,335	-0,130**	-0,131**	-0,131**	-0,139**	-0,132**	-0,134**	-0,139**	1	-0,138**	-0,017
9	Y2016	0,114	0,318	-0,122**	-0,123**	-0,123**	-0,129**	-0,123**	-0,125**	-0,129**	-0,138**	1	-0,010
10	B Energy Mining	0,029	0,166	0,022	0,021	0,021	-0,011	-0,006	-0,007	-0,011	-0,017	-0,010	1
11	C Manufacturing	0,414	0,493	0,005	0,028	0,037	-0,002	0,015	-0,001	-0,019	-0,027	-0,033	-0,144**
12	D - Energy Electricity Gas	0,076	0,265	0,004	0,002	0,002	-0,007	0,001	-0,001	-0,007	-0,003	0,010	-0,049
13	E - Water waste Air	0,012	0,110	0,003	0,002	0,002	-0,001	0,002	0,001	-0,001	-0,006	-0,001	-0,019
14	F Construction	0,087	0,282	0,006	0,005	0,021	0,009	0,019	0,001	-0,006	-0,032	-0,020	-0,053
15	G Retail and Wholesale	0,034	0,181	0,010	0,010	-0,015	0,003	0,009	0,007	0,003	-0,027	0,004	-0,032
16	H Transportation	0,003	0,052	-0,018	-0,018	-0,018	-0,019	-0,018	-0,018	-0,019	0,058	0,063	-0,009
17	I Host	0,023	0,150	0,007	0,007	0,007	0,001	0,006	-0,025	0,001	-0,005	0,002	-0,026
18	J ITC	0,064	0,245	0,003	-0,017	0,002	-0,007	0,000	-0,002	-0,007	0,016	0,011	-0,045
19	K Finance	0,105	0,306	-0,087*	-0,088*	-0,088*	0,029	0,012	0,080*	0,057	0,041	0,031	-0,058
20	L Real Estate	0,060	0,237	0,065	0,045	-0,011	-0,001	-0,049	-0,033	0,017	0,006	-0,036	-0,043
21	M Sci Tech Pro	0,026	0,159	-0,027	-0,028	0,000	-0,005	0,000	-0,002	0,022	0,014	0,022	-0,028
22	N Admin Aux	0,019	0,137	0,018	0,017	0,017	0,012	-0,016	-0,017	-0,019	0,006	-0,019	-0,024
23	Q Health	0,015	0,121	-0,005	-0,005	-0,005	-0,009	-0,006	-0,007	-0,009	0,019	0,026	-0,021
24	R Entertrainment Art	0,008	0,090	0,019	0,018	0,018	0,015	0,018	-0,032	-0,033	-0,035	0,015	-0,016
25	S Other Services	0,027	0,163	-0,002	-0,002	-0,002	-0,034	-0,030	-0,031	-0,008	0,060	0,045	-0,029
26	ROA	4,204	9,857	0,021	-0,035	0,015	-0,025	-0,070	-0,056	0,036	0,047	0,062	0,006
27	DC	0,200	0,855	-0,108**	-0,083*	-0,053	0,062	0,099**	0,026	0,042	-0,030	0,039	0,008
28	DC-1	0,155	0,876	-0,156**	-0,085*	-0,057	0,011	0,083*	0,115**	0,028	0,051	0,001	-0,001
29	DCHC	0,194	0,898	-0,070	-0,044	-0,011	0,043	0,078*	0,027	0,009	-0,040	0,007	0,022

Table 2: Descriptive and Correlations statistics (cont)

		Mean	Std	11	12	13	14	15	16	17	18	19	20
1	Y2008	0,103	0,304	0,005	0,004	0,003	0,006	0,010	-0,018	0,007	0,003	-0,087*	0,065
2	Y2009	0,105	0,306	0,028	0,002	0,002	0,005	0,010	-0,018	0,007	-0,017	-0,088*	0,045
3	Y2010	0,105	0,306	0,037	0,002	0,002	0,021	-0,015	-0,018	0,007	0,002	-0,088*	-0,011
4	Y2011	0,115	0,320	-0,002	-0,007	-0,001	0,009	0,003	-0,019	0,001	-0,007	0,029	-0,001
5	Y2012	0,106	0,308	0,015	0,001	0,002	0,019	0,009	-0,018	0,006	0,000	0,012	-0,049
6	Y2013	0,109	0,311	-0,001	-0,001	0,001	0,001	0,007	-0,018	-0,025	-0,002	0,080*	-0,033
7	Y2014	0,115	0,320	-0,019	-0,007	-0,001	-0,006	0,003	-0,019	0,001	-0,007	0,057	0,017
8	Y2015	0,129	0,335	-0,027	-0,003	-0,006	-0,032	-0,027	0,058	-0,005	0,016	0,041	0,006
9	Y2016	0,114	0,318	-0,033	0,010	-0,001	-0,020	0,004	0,063	0,002	0,011	0,031	-0,036
10	B Energy Mining	0,029	0,166	-0,144**	-0,049	-0,019	-0,053	-0,032	-0,009	-0,026	-0,045	-0,058	-0,043
11	C Manufacturing	0,414	0,493	1	-0,241**	-0,093*	-0,259**	-0,157**	-0,044	-0,129**	-0,219**	-0,287**	-0,212**
12	D - Energy Electricity Gas	0,076	0,265	-0,241**	1	-0,032	-0,088*	-0,054	-0,015	-0,044	-0,075*	-0,098**	-0,072*
13	E - Water waste Air	0,012	0,110	-0,093*	-0,032	1	-0,034	-0,021	-0,006	-0,017	-0,029	-0,038	-0,028
14	F Construction	0,087	0,282	-0,259**	-0,088*	-0,034	1	-0,058	-0,016	-0,047	-0,080*	-0,105**	-0,078*
15	G Retail and Wholesale	0,034	0,181	-0,157**	-0,054	-0,021	-0,058	1	-0,010	-0,029	-0,049	-0,064	-0,047
16	H Transportation	0,003	0,052	-0,044	-0,015	-0,006	-0,016	-0,010	1	-0,008	-0,014	-0,018	-0,013
17	I Host	0,023	0,150	-0,129**	-0,044	-0,017	-0,047	-0,029	-0,008	1	-0,040	-0,052	-0,039
18	J ITC	0,064	0,245	-0,219**	-0,075*	-0,029	-0,080*	-0,049	-0,014	-0,040	1	-0,089*	-0,066
19	K Finance	0,105	0,306	-0,287**	-0,098**	-0,038	-0,105**	-0,064	-0,018	-0,052	-0,089*	1	-0,086*
20	L Real Estate	0,060	0,237	-0,212**	-0,072*	-0,028	-0,078*	-0,047	-0,013	-0,039	-0,066	-0,086*	1
21	M Sci Tech Pro	0,026	0,159	-0,137**	-0,047	-0,018	-0,050	-0,030	-0,008	-0,025	-0,042	-0,056	-0,041
22	N Admin Aux	0,019	0,137	-0,117**	-0,040	-0,015	-0,043	-0,026	-0,007	-0,021	-0,036	-0,048	-0,035
23	Q Health	0,015	0,121	-0,103**	-0,035	-0,014	-0,038	-0,023	-0,006	-0,019	-0,032	-0,042	-0,031
24	R Entertrainment Art	0,008	0,090	-0,076*	-0,026	-0,010	-0,028	-0,017	-0,005	-0,014	-0,024	-0,031	-0,023
25	S Other Services	0,027	0,163	-0,140**	-0,048	-0,019	-0,052	-0,031	-0,009	-0,026	-0,044	-0,057	-0,042
26	ROA	4,204	9,857	0,081*	0,040	-0,023	-0,107**	0,002	0,020	-0,034	0,092*	-0,091*	-0,103**
27	DC	0,200	0,855	-0,191**	0,098**	0,094*	-0,002	-0,102**	-0,066	-0,049	0,087*	0,265**	-0,167**
28	DC-1	0,155	0,876	-0,191**	0,097**	0,098**	0,008	-0,132**	-0,045	-0,046	0,087*	0,248**	-0,168**
29	DCHC	0,194	0,898	-0,160**	0,101**	0,024	0,010	0,036	-0,007	0,018	-0,010	0,204**	-0,212**
30	SIZE	13,565	2,527	-0,272**	0,248**	0,002	0,271**	-0,050	0,033	-0,018	0,144**	0,166**	-0,304**
31	FV	0,330	0,933	-0,074*	0,037	-0,042	-0,036	0,084*	0,055	-0,085*	0,239**	-0,073*	-0,052

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

DC=Degree of compliance; DC-1 = Degree of Compliance t-1; DCHC = Degree of Compliance HC recommendations; FV = Firm performance

Table 2: Descriptive and Correlations statistics (cont)

		Mean	Std	21	22	23	24	25	26	27	28	29	30	31
1	Y2008	0,103	0,304	-0,027	0,018	-0,005	0,019	-0,002	0,021	-0,108**	-0,156**	-0,070	-0,039	0,034
2	Y2009	0,105	0,306	-0,028	0,017	-0,005	0,018	-0,002	-0,035	-0,083*	-0,085*	-0,044	-0,057	0,047
3	Y2010	0,105	0,306	0,000	0,017	-0,005	0,018	-0,002	0,015	-0,053	-0,057	-0,011	-0,039	-0,029
4	Y2011	0,115	0,320	-0,005	0,012	-0,009	0,015	-0,034	-0,025	0,062	0,011	0,043	0,045	-0,084*
5	Y2012	0,106	0,308	0,000	-0,016	-0,006	0,018	-0,030	-0,070	0,099**	0,083*	0,078*	0,064	-0,113**
6	Y2013	0,109	0,311	-0,002	-0,017	-0,007	-0,032	-0,031	-0,056	0,026	0,115**	0,027	0,042	0,013
7	Y2014	0,115	0,320	0,022	-0,019	-0,009	-0,033	-0,008	0,036	0,042	0,028	0,009	0,020	-0,001
8	Y2015	0,129	0,335	0,014	0,006	0,019	-0,035	0,060	0,047	-0,030	0,051	-0,040	-0,030	0,047
9	Y2016	0,114	0,318	0,022	-0,019	0,026	0,015	0,045	0,062	0,039	0,001	0,007	-0,008	0,083*
10	B Energy Mining	0,029	0,166	-0,028	-0,024	-0,021	-0,016	-0,029	0,006	0,008	-0,001	0,022	0,163**	-0,018
11	C Manufacturing	0,414	0,493	-0,137**	-0,117**	-0,103**	-0,076*	-0,140**	0,081*	-0,191**	-0,191**	-0,160**	-0,272**	-0,074*
12	D - Energy Electricity Gas	0,076	0,265	-0,047	-0,040	-0,035	-0,026	-0,048	0,040	0,098**	0,097**	0,101**	0,248**	0,037
13	E - Water waste Air	0,012	0,110	-0,018	-0,015	-0,014	-0,010	-0,019	-0,023	0,094*	0,098**	0,024	0,002	-0,042
14	F Construction	0,087	0,282	-0,050	-0,043	-0,038	-0,028	-0,052	-0,107**	-0,002	0,008	0,010	0,271**	-0,036
15	G Retail and Wholesale	0,034	0,181	-0,030	-0,026	-0,023	-0,017	-0,031	0,002	-0,102**	-0,132**	0,036	-0,050	0,084*
16	H Transportation	0,003	0,052	-0,008	-0,007	-0,006	-0,005	-0,009	0,020	-0,066	-0,045	-0,007	0,033	0,055
17	I Host	0,023	0,150	-0,025	-0,021	-0,019	-0,014	-0,026	-0,034	-0,049	-0,046	0,018	-0,018	-0,085*
18	J ITC	0,064	0,245	-0,042	-0,036	-0,032	-0,024	-0,044	0,092*	0,087*	0,087*	-0,010	0,144**	0,239**
19	K Finance	0,105	0,306	-0,056	-0,048	-0,042	-0,031	-0,057	-0,091*	0,265**	0,248**	0,204**	0,166**	-0,073*
20	L Real Estate	0,060	0,237	-0,041	-0,035	-0,031	-0,023	-0,042	-0,103**	-0,167**	-0,168**	-0,212**	-0,304**	-0,052
21	M Sci Tech Pro	0,026	0,159	1	-0,023	-0,020	-0,015	-0,027	-0,084*	0,030	0,062	0,001	-0,010	-0,099**
22	N Admin Aux	0,019	0,137	-0,023	1	-0,017	-0,013	-0,023	0,006	0,040	0,041	0,107**	0,006	0,105**
23	Q Health	0,015	0,121	-0,020	-0,017	1	-0,011	-0,021	0,251**	0,098**	0,107**	0,043	-0,097**	0,198**
24	R Entertrainment Art	0,008	0,090	-0,015	-0,013	-0,011	1	-0,015	-0,031	0,031	0,069	0,037	-0,021	0,031
25	S Other Services	0,027	0,163	-0,027	-0,023	-0,021	-0,015	1	-0,003	-0,008	-0,018	0,007	-0,154**	-0,061
26	ROA	4,204	9,857	-0,084*	0,006	0,251**	-0,031	-0,003	1	-0,018	-0,059	-0,014	0,059	0,390**
27	DC	0,200	0,855	0,030	0,040	0,098**	0,031	-0,008	-0,018	1	0,849**	0,668**	0,375**	0,140**
28	DC-1	0,155	0,876	0,062	0,041	0,107**	0,069	-0,018	-0,059	0,849**	1	0,562**	0,356**	0,110**
29	DCHC	0,194	0,898	0,001	0,107**	0,043	0,037	0,007	-0,014	0,668**	0,562**	1	0,256**	0,020
30	SIZE	13,565	2,527	-0,010	0,006	-0,097**	-0,021	-0,154**	0,059	0,375**	0,356**	0,256**	1	0,090*
31	FV	0,330	0,933	-0,099**	0,105**	0,198**	0,031	-0,061	0,390**	0,140**	0,110**	0,02	0,090*	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

DC=Degree of compliance; DC-1 = Degree of Compliance t-1; DCHC = Degree of Compliance HC recommendations; FV = Firm performance

In the case of the first hypothesis we included the degree of compliance (DC), making the firm value (FV) depend on them.. We run the OLS model and, first of all, obtained the descriptive statistics (Table 3, models A and B). Dummy variables (in the case of the year and the industry) were omitted to avoid dummy trap.

Table 3: Models A, B, C, D, E, F Summary

	Models. Dependent variable: FV					
	A	B	C	D	E	F
Y2008	-0,094*	-0,1*	0,011	-0,003	-0,095	-0,101*
Y2009	-0,074*	-0,083*	0,026	0,016	-0,076	-0,076
Y2010	-0,151**	-0,163**	-0,060	-0,07	-0,153**	-0,155**
Y2011	-0,173**	-0,2**	-0,089*	-0,108**	-0,176**	-0,207**
Y2012	-0,182**	-0,213**	-0,11**	-0,126**	-0,185**	-0,219**
Y2013	-0,079*	-0,099*	-0,002	-0,001	-0,082	-0,107*
Y2014	-0,112**	-0,137**	-0,026	-0,04	-0,115**	-0,144**
Y2015	-0,087*	-0,103*			-0,089*	-0,11*
Y2016	-0,061	-0,084*	0,032	0,016	-0,063	-0,089*
C Manufacturing	-0,021	0,001	0,020	0,027	-0,017	0,021
D - Energy Electricity Gas	0,044	0,032	0,039	0,039	0,043	0,036
E - Water waste Air	-0,023	-0,037	-0,035	-0,036	-0,023	-0,032
F Construction	0,027	0,031	0,036	0,04	0,027	0,033
G Retail and Wholesale	0,076	0,094	0,121**	0,122	0,076	0,101
H Transportation	0,04	0,05	0,055	0,06	0,040	0,051
I Host	-0,055	-0,045	-0,046	-0,042	-0,055	-0,041
J ITC	0,19**	0,178**	0,21**	-0,042**	0,191**	0,186**
K Finance	-0,058	-0,081	-0,057	-0,064	-0,059	-0,042
L Real Estate	-0,013	0,013	0,030	0,035	-0,009	0,028
M Sci Tech Pro	-0,049	-0,051	-0,058	-0,054	-0,049	-0,045
N Admin Aux	0,095*	0,088*	0,111**	-0,054**	0,094*	0,094*
Q Health	0,115**	0,098**	0,107**	0,111**	0,114**	0,108**
R Entertainment Art	0,044	0,041	0,043	0,049	0,044	0,045
S Other Services	-0,102*	-0,097*	-0,044	-0,044**	-0,102*	-0,087*
ROA	0,311**	0,319**	0,328**	0,323**	0,312**	0,322**
DC		0,165**		0,174**		0,144**
DC-1			0,153**	0,006		
DCHC					0,019	
SIZE						0,034
R	0,521	0,542	0,534	0,541	0,521	0,541
R^2	0,271	0,293	0,285	0,293	0,271	0,293
DW		2,161	2,162	2,162	2,138	2,133

DC = Degree of Compliance; DC-1= Degree of compliance t-1; DCHC = Degree of compliance of Human Capital related recommendations. SIZE = Size of the firm proxied by sales; DW = Durbin – Watson. ** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.

In the following step we observed that the model has an explanatory power of 0.293 at acceptable values of the Durbin-Watson statistic (2.161). It is worth to reckon here that DW is around 2 in all models. This fact along with VIFs and correlations, and supported by literature would prevent us from considering endogeneity problems in them. The second thing we notice in the model summary is that the introduction of the degree of compliance variable is significant (0.000), and enriches the model (0.022 in R Square change). Therefore, we may conclude that we build a model that might explain the association between the variables at a relevant explanatory level (See models A, B summary in Table 3)

Return on Assets (ROA) has a clear and positive effect on firm performance (0,319**), which is consequent with the groundings suggesting its introduction as a control variable. That way, we confirm that operating efficiency positively affects the performance of Spanish listed firms. The degree of compliance measured by the variable of our model (DC) is positive (0.144) and significant (0.000). Therefore, we can confirm the first hypothesis (H1). There is a positive association between the degree of compliance, measured by the recommendations that are fulfilled, and the firm value in Spanish listed firms during the period 2007-2016.

As regard to the second hypothesis, we created a lagged variable for past degrees of compliance of the firm (DC-1) and modified the model, defining models C and D in Table 3. Model D includes both, present and past degree of compliance. The modified model do not implies positive changes in the explanatory power of the previous model. Besides, the Durbin-Watson statistic shows a concerning value under 1 (see model C and D summary in Table 3). These two elements serve as starting reasons for questioning the effect of the introduction of the variable representing the past degree of compliance of the company. The coefficients of the model led us to highlight two relevant elements. First, the degree of compliance still positively affects firm value (0.174) and is significant (0.005), improving figures from the previous model. The degree of compliance of the past year (DC-1) offers an extremely weak relationship (0.006) and it is entirely not significant (0.922). Besides, in this case, there is a great increase in VIF, pointing to a multicolianearity problem. As for just this model, we can’t conclude that, as we asserted, past degrees of compliance have a posterior effect given the market and regulators dynamics. Nevertheless, we analyzed the model including only past degree of compliance (Model C) and it brought us a complete different result. The relationship was in this case positive (0.153) and significant (0.000), being the Durbin Watson indicator (2.162). A recent past degree of compliance might be driving an inertia that lead to consider either that one or the current, since there would be slight changes on it. The values of the coefficients would suggest that that situation favours the current degree of compliance. As a result we can't conclude that the hypothesis H2 is confirmed as stated.

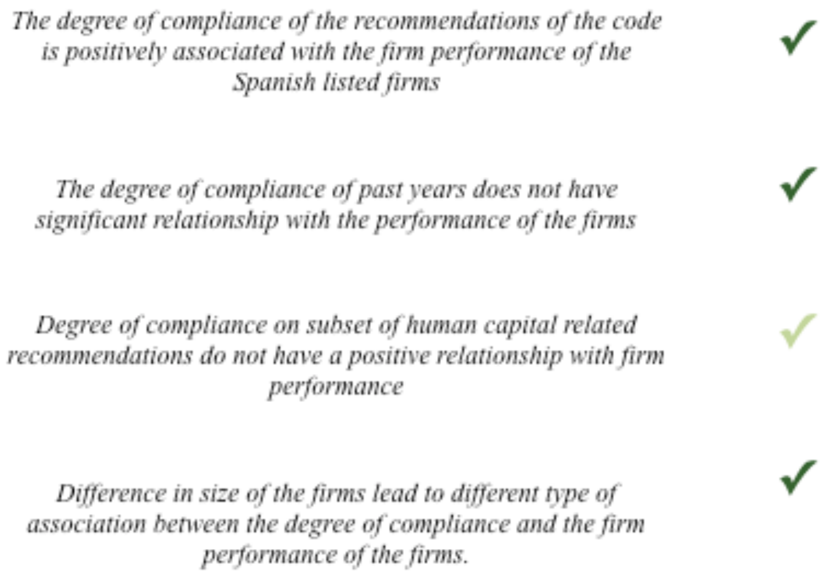
In order to verify the third hypothesis, we designed a new model (Model E in Table 3) and created a variable to test the impact of the degree of compliance of human capital related recommendations (DCHC). These recommendations, while referring to skills, experience, etc., were reported in a certain degree of compliance in the codes. We run the model and found that that variable did not add explanatory power to the initial model (R^2=0.521). Besides, the coefficient for the variable (0.019) was not significant (0.557) . Therefore, we can confirm the hypothesis H3, since the significance level prevent us from reaching a conclusion on the particular. We suggest that the lack of detail in the requested items in human capital related provisions makes easy to waive difficulties in comply with that recommendations. It might be reasonable that a certain degree of further disclosure on the topics linked to human capital could be harmful for the strategy of the companies, but they should balance the upsides of the transparency that investors demand at the stocks markets, and the caring for the interest of other stakeholders.

In order to test whether given different sizes of the companies the relationship between degree of compliance and firm value changes, we classified firm-year observations in deciles (1 to 10). Then we run the regression only for cumulative segments of size of the companies. We found that as the size of the companies increases: a) the explanatory power decreases, b) the positive effect is maintained, c) the positive effect declines as the considered companies embed greater sizes in the first half of the them, and d) significance of the coefficients keeps at high level in any case (Table 4). Therefore, we confirm the fourth hypothesis we formulated on the size (H4).

Table 4: Summary of changes in R square, Coefficients, and Significance depending on Size's cumulative decile

		Cumulative Deciles									
		1	2	3	4	5	6	7	8	9	10
Y2008	0,095	0,087	-0,002	0,011	0,004	-0,034	-0,046	-0,061	-0,079	-0,095*	-0,101
Y2009	0,018	-0,013	-0,049	-0,036	-0,003	-0,049	-0,029	-0,032	-0,050	-0,071	-0,075
Y2010	-0,041	-0,076	-0,150	-0,097	-0,071	-0,095	-0,083	-0,104	-0,125**	-0,146**	-0,155**
Y2011	-0,031	-0,010	-0,021	-0,095	-0,080	-0,166	-0,144	-0,167**	-0,195**	-0,196**	-0,206**
Y2012	-0,072	-0,051	-0,212*	-0,158*	-0,109	-0,172**	-0,15**	-0,159**	-0,185**	-0,217**	-0,218**
Y2013	0,023	0,058	0,000	-0,043	-0,006	-0,088	-0,064	-0,078	-0,080	-0,105*	-0,106**
Y2014	-0,104	-0,075	-0,088	-0,076	-0,049	-0,114	-0,101	-0,127*	-0,126**	-0,137**	-0,143**
Y2015	-0,170	-0,049	-0,021	0,036	0,036	-0,038	-0,051	-0,082	-0,086	-0,097*	-0,109**
Y2016	-0,027	0,082	0,038	0,058	0,086	0,008	-0,019	-0,052	-0,063	-0,072	-0,089**
C Manufacturing					1,138**	1,256**	1,299**	1,378**	-0,160	-0,232	0,001
D - Energy Electricity Gas					0,139*	0,178**	0,171**	0,609**	0,029	-0,009	0,034
E - Water waste Air							0,357**	0,345**	-0,073	-0,09*	-0,036
F Construction			-0,051	-0,043	0,28**	0,275**	0,251**	0,239**	-0,051	-0,094	0,032
G Retail and Wholesale	0,394**	0,445**	0,366**	0,148*	0,584**	0,605**	0,573**	0,54**	-0,053	-0,020	0,094
H Transportation									0,039	0,028	0,051
I Host	-0,106	-0,060	-0,103	-0,089	0,162*	0,159*	0,136*	0,446**	-0,103	-0,12*	-0,046
J ITC					0,254**	0,367**	0,695**	0,795**	0,133	0,083	0,181**
K Finance	-0,219	-0,259*	-0,233**	-0,040	0,409**	0,726**	0,673**	0,698**	-0,054	-0,153*	-0,049
L Real Estate	0,228	0,192	0,053	0,100	0,916**	0,902**	0,852**	0,846**	-0,075	-0,111	0,012
M Sci Tech Pro			-0,109	-0,050	0,355**	0,363**	0,377**	0,433**	-0,008	-0,129*	-0,050
N Admin Aux	-0,006	-0,082	-0,137	0,012	0,35**	0,361**	0,346**	0,333**	0,040	0,027	0,089**
Q Health				0,314**	0,742**	0,713**	0,61**	0,562**	0,085	0,055	0,099**
R Entertainment Art				-0,008	0,269**	0,263**	0,272**	0,306**	0,017	0,001	0,041
S Other Services	-0,466**	-0,345**	-0,358**	-0,28**	0,375**	0,394**	0,369**	0,355**	-0,204**	-0,18**	-0,097**
ROA	0,054	0,017	-0,061	-0,056	0,045	0,080	0,239**	0,311**	0,315**	0,296**	0,325**
DC		0,486**	0,409**	0,333*	0,236**	0,179**	0,171**	0,088*	0,12**	0,148**	0,152**
R	0,718	0,834	0,68	0,631	0,604	0,564	0,571	0,591	0,562	0,539	0,541
R^2	0,515	0,696	0,463	0,398	0,364	0,319	0,326	0,349	0,316	0,291	0,292

Figure 2: Summary of Tested Hypotheses



5. CONCLUSIONS

We analyzed the relationship between firm performance and the degree of compliance of code of governance recommendations for Spanish listed firms. We obtained data of companies from 2007 to 2016. We set up a group o models to test the hypotheses and use multiple regression models with several adaptions to cope with diverse issues we faced in our investigation.

We could confirm that, although through low levels of contribution, the degree of compliance is positively associated with the firm performance of the Spanish firms in the period of our study. But this type of relationship has some characteristics. It is controlled by usual variables like the operational performance, measured by the ROA, the industry and the years of study. ROA has a positive and significant effect in all cases. As a consequence, we may conclude three things: a) degree of compliance is providing an positive effect on Spanish listed companies; b) since this study covers different period of time and different codes, successive changes in recommendations are effective in keeping that positive relationship, and support the idea behind the role of the codes spreading suitable ways of facing relevant topics on corporate governance, among which a significant part is focus on the board; and c) considering this fact along with the descriptive results of the degree of compliance, we may suggest that they have reached a remarkable level, although there is room for improvement. Consequently, we think that codes issuers should keep the track of reforming recommendations in a continuous process, embracing new provisions and disclosures for the good purpose of governance. This will imply new research explorations.

As regards to past levels of compliance, our research confirms that we can't take their values into account along with the present ones, due to the lack of significance. Market and regulatory dynamics seems to be bringing the impact to current period of time. We remind that we are dealing with recommendations of the codes and not with government of organizations as a whole. If government were analyzed, lagged values turning into long-term effects could be expected, given that the nature of the topic. The positive link between past levels of compliance and firm performance considered alone might point to be closely interchangeable with present values, which may suggest that it could be a sort of inertia that leans on recent degree of compliance but rather favours the current ones.

We tested that there were differences in the association depending on the size of the firm. With few exceptions, the impact on firm value shows a decreasing trend as the size of the considered companies increases. Our suggestion is that the rationale behind is the following: when a company is small, the market is more sensible to notice good governed companies, what will turn into diminishing risks and counterbalancing traditional issues linked to small size companies when are listed. Conversely, as the company is bigger, good governance is still considered and valued, but some other variables have an effect on the company's firm value, providing nuances that can blur the overall effect.

We also found the lack of statistical significance in subsets of recommendations regarding human capital. The importance of this topic, widely supported in research literature, meets a easy way of showing compliance. In this context, going beyond what is required by regulation or by provisions in codes could build relevant groundings for long-term government of the firm. Also, this is quite interesting in terms of markets, need of detailed demands of information at disclosures, future performance and future role of the code as a useful tool to spread best practices and to achieve its core principles.

Despite many studies address corporate governance and board of directors in listed companies, it might be useful to broaden the scope to Spanish non-listed companies. The number, weight and presence of them in the economic structure could help to create a culture of good governance. Medium and big non-listed companies could benefit from these researches. For small companies the problem of access to data would be greater in most cases. Nevertheless, setting the focus on the study of governance in technological startups could be interesting. The potential growth of these companies configures a good angle of study and research might find suitable sources of information to feed the analysis.

It will be interesting to check whether the relationship shape change over years and reaches a stable level when approaching the highest values of the degree of compliance. This could be provide a sign of the sensibility of the markets. It could also give the opportunity of making improvements in the governance mechanisms in the recommendations, or as a way to ground long-term government of the firm.

Our analysis has the advantage of considering the degree across different codes, but it would be also interesting to replicate the analysis we made for the case of each period time associated to the presence of a certain code.

Although codes, recommendations, and report forms vary dependent on the country, they all may have a common base of principles. Hence, it could be useful to compare those variables that are shared among different companies from various countries or global areas, paying attention to the evolution the codes experience during a wide time span.

Since the study of human capital variables contained in codes of good governance is limited, it would be necessary to compute the data of every director of each one of the companies through this angle. Human capital variables could be obtained from corporate governance reports that are issue by listed firms but they use to be unstructured and are embedded in wider purpose description.

Diversity concept could be approached in a wider way, and included in human capital variables. Other intellectual frameworks could easier support this perspective, such as resource dependence. This kind of research might provide differential advantages for the firm based on a board composition centered in the person, and working a governing group.

The study of governance of family business non-listed companies under the later frameworks may lead to attractive conclusions. Some specific traits of that type of companies, such as the use of family councils or the presence of protocols, might provide some light to governance processes and mechanisms of other firms. Strategic vision, succession, management of family members in business are topics addressed with a different angle that allowed those firms to adapt, evolve, and, eventually, survive for generations.

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CHAPTER 6

CONCLUSIONS

The Introduction Chapter of this Thesis set the general objective and depicted four specific objectives whose development has been completed in four different chapters, structured in article-shaped format. Therefore, in this chapter we summarize the conclusions that were denoted throughout the respective sections of the previous chapters, in the way they serve to the purpose and the objectives we address.

The first of the specific objectives aimed to analyze the studies on Boards of Directors that shape the existing intellectual framework. Through our study, we described, analyzed and mapped the research on the topic realized up to 2017 in 3,021 research articles. We identified several stages over this period of time, that were triggered or influenced by major events like the issuing of the Cadbury Report, the spreading of Codes of Governance, or the impulse of Regulators and International Organizations and the incorporation of new journals to the study of the topic. Thus, we took these periods for our analyses: up to 1991, from 1993 to 2005, and 2006 onwards. Contributions on the first period would show the initial grounding of the topic. The second one would deploy in parallel to the codes progressive implementation in many countries, the raising interest on corporate governance, and also fostered by worldwide known corporate scandals. In the third period, contributions are built upon the previous seeding and grounding stages, spreading the analyses related to the board to a broader range of topics as a sign of maturity.

We confirmed the multidisciplinary interest from the point of view of the editors, since the board of directors has been addressed in journals of several scientific disciplines, and that includes management or finance, but also accounting ethics, psychology, law or sociology. Despite the number of published works, 41 of these journals concentrate 52% of the total. Distribution of articles is consistent with the variety of approaches and the presumed evolution of the studies they gather.

As in other research arenas, although there are a great number of contributors, only a few of them recurrently produced studies over time. Similarly, a small group of them concentrates the citation count. That is the case of Dalton, Westphal, Daily, Zajac, or Zahra amongst others. Nevertheless, is remarkable the way this group is consistently referred across the literature. These conform a true nuclear set of knowledge or reference point for the topic.

Across the quoted references we may note the main theories help providing the building blocks for their approaches. Despite the use of the Institutional Theory or the Resource Dependent theory, framed the investigation of some of the articles, the Agency Theory constitutes the core intellectual framework for many works on the board of directors, as it was confirmed through the analysis of the components of cited references. We mapped a geographical distribution of researches where US, UK-Commonwealth, Continental Europe and Asia group investigations, and US research institutions are highly represented.

Journals have been co-cited mostly based on close research arenas. We may identify four big groups. The first one groups business and management journals, the second pivots around finance, the third is centered in accounting, and the fourth on law studies. Corporate Governance and Ethics journals serve as a bridge among different areas.

The analysis of the abstracts and the keywords provides some facts. Regarding the topics related to the board of directors, gender diversity in all its forms is at the top of the ranks. Although it relatively recent in the literature it is clearly a trending issue for research. Board structure, CEO compensation and duality, and firm performance are commonly approached to check different hypotheses as well, and confirmed the prevalence of Agency Theory approaches (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976).

As regards to the cited references, we provided two analyses: First, the overall picture, and second, the study of each period. As for the first, principal component analysis of 250 top ranked co-cited references provides a clear picture of the intellectual framework and is consistent with the topics and angles detected in the process of our methodology. This way, we found five main factors that build most of the research on board of directors: the Agency Theory (Eisenhardt, 1989; Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976), main topics based on that (CEO duality, ownership structure, boards' independence, compensation) (Hermalin & Weisbach, 1998, 2003; Klein, 2002; La Porta, Lopez ‐ de ‐ Silanes, Shleifer, & Vishny, 1999; Morck, Shleifer, & Vishny, 1988; Murphy, 1999; Weisbach, 1988; Westphal, 1998), diversity (setting the focus on gender)

(Bear, Rahman, & Post, 2010; Carter, Simkins, & Simpson, 2003; Goodstein, Gautam, & Boeker, 1994; Hillman, Shropshire, & Cannella, 2007; Miller & del Carmen Triana, 2009; Torchia, Calabrò, & Huse, 2011), resource dependence views (Boyd, 1990; Hillman, Cannella, & Paetzold, 2000), strategy and other angles on composition (Baysinger & Hoskisson, 1990; Bebchuk & Cohen, 2005; Certo, 2003; Daily & Dalton, 1994; Mallette & Fowler, 1992), and other theoretical perspectives (Bebchuk, Fried, & Walker, 2002; Davis, Schoorman, & Donaldson, 1997; Demsetz & Lehn, 1985; Judge & Zeithaml, 1992; Lynall, Golden, & Hillman, 2003). The majority of the references were originated in the second stage of publications, configuring it period of consolidation of groundings and topics. Despite the prevalence of Agency related matters, there is also room for new or integrative approaches (Zahra & Pearce II, 1989). Thus, stewardship, institutional, or resource dependence models provide are drawn in this context, supporting a number of articles. The detail provided by performing the analysis in the different periods of time supports the idea of a maturation process in the literature, and confirms the previous findings. The first period is characterized by early foundations of the discipline of corporate governance, where it is reckoned the separation of ownership and control, in the context of so-called 'modern organizations' (Berle & Means, 1932; Stone, 1976), being directors at the core of the research agenda. The Agency Theory gives the Board a central role solving the conflicts described at that time (Fama, 1980; Herman, 1981; Jensen & Meckling, 1976; Mizruchi, 1983; Pfeffer, 1973). Some of the issues raised are developed during the second stage under a similar basis (Brown, 1976; Mace, 1976; Pfeffer, 1972; Vance, 1983; Zald, 1969). Thus, board composition, independence, ownership structure, etc. (Baysinger & Butler, 1985; Baysinger & Hoskisson, 1990; Hermalin & Weisbach, 1991), combine in configuring a solid basis of references for the second period. Finally, the third period shows that maturation in the topic comes through a broadening in the intellectual perspective, including integrative ways for different theories (Hillman et al., 2000; Hillman & Dalziel, 2003), and the addressing of new subtopics such as diversity (Carter et al., 2003; Erhardt, Werbel, & Shrader, 2003). Human capital related topics, although at a slight approximation, have a new vision, but they are still under a huge influence of Agency Theory.

The Codes of Governance have an underlying presence in the research. First, they triggered interest, investigation. Second, the indicators and recommendations gathered by the reporting of most of them are very often studied in the articles, and, reversely, may impact on their evolution. That is the case of CEO duality, independence, or compensation, among others.

Although the study of the influence of human capital in boards has been pursued under different aspects, it is still very limited in terms of the number of articles, themes or subtopics (e.g. experience categorization, missing government skills). Considering human capital at the board would lead to link it to the training of the board, recently at the spot of the lack of proper response to disruptive changes in business models o market configuration. Finally is remarkable the lack of core and relevant presence of ethical frameworks and topics.

The second specific objective aimed to analyze the studies on Board of Directors, carrying out this same analysis for the journal that has a greater presence in the field. As we noticed in the second chapter, the leading contributor was the Journal Corporate Governance An International Review. Then, we utilized the bibliometrics techniques for mapping and analyzing the research on the topic from 2000 to 2017, over 190 articles that were published in that journal.

The frequency of publications shows that the topic is relevant and constant element amongst the articles published in that period in the journal. We identified three different periods: 2000-2004, 2005-2011 and 2012-2017. Different number of articles, issues, and length evolved accordingly to the expressed goals of the different editors-in-chief in every stage. Thus, it is noticeable the growth, maturation, and consolidation of the produced literature. The combination of these elements positively affected the impact of the journal according to different rankings, and the overall amount of contributions on the topic.

Geographical origins and collaboration among research organizations show a prevalence of European affiliations in a context of a high degree of institutional diversity. The field of Corporate Governance always demands a growing collaboration among diverse countries and institutions. There is a need of spreading knowledge and practice, and also different cultures, societal and legal backgrounds give the opportunity of face issues in a different way. Besides, that kind of collaboration, especially when it is international, leads to matters that are focused on governance beyond local regulation.

The analysis of the 377 unique contributors give as a first rationale for the intellectual framework they built. As in other journals, a small group of authors account for a significant number of articles, although it is wide enough not to be considered as endogamic. The variety of authors is also supported by a ratio unique authors to total authors that it is close to 1. Besides, the mapping and analysis of co-authorship shows, at same time, several nodes of collaboration and a diverse community of authors. Both, the analysis of the impact through Hirch index and the number of citations of their articles in this sample shows the need of supporting traditional agency issue, like board independence or ownership structure, as well as diversity approaches. In that sense, the analysis of the keywords agrees with these statements, confirms a rising role of codes and indices, and shows recent evolution of research towards disclosure, family firms, or shareholder activisms. In spite of this, we found a lack of presence of board capital and ethics related studies.

Although the study of the influence of human capital in boards has been pursued under different aspects, it is still very limited in terms of the number of articles, themes or subtopics. Thus, the factor analysis of the top ranked references shows that it's been mentioned but at a relatively low relevant level. Nevertheless, the relevant presence in the components suggests strong foundation and an open range of theoretical frameworks that support new researches related to this topic.

The analysis of the components provides us with the main grounds the articles used in aims. We identify five great factors that were mapped and analyzed. The first factor focuses on the relationship between the board and the strategy (Forbes & Milliken, 1999a; Golden & Zajac, 2001; McNulty & Pettigrew, 1999; Rindova, 1999), and the impact of diversity (Bilimoria & Piderit, 1994; Conyon & Mallin, 1997; Farrell & Hersch, 2005; Van der Walt, Ingley, Shergill, & Townsend, 2006; Westphal & Milton, 2000). The second factor contents foundation for board composition researches (Baysinger & Butler, 1985; Baysinger & Hoskisson, 1990; Bhagat, Black, Bhagat, & Black, 1999; Boone, Casares Field, Karpoff, & Raheja, 2007; Hermalin & Weisbach, 1991). The third factor gives support for ownership structure matters (Baysinger, Kosnik, & Turk, 1991; Rafael La Porta, Lopez-De-Silanes, & Shleifer, 1999; McConnell & Servaes, 1990; Morck et al., 1988; Thomsen & Pedersen, 2000). We suggest that the fourth factor is set to be a bridge trying to introduce other theories, such as the stewardship theory, and new angles on board and characteristics, such as experience or tenure (Hermalin & Weisbach, 1988; Kesner, 1988; Kroll, Walters, & Wright, 2008; Vafeas, 2003). The fifth factor focuses on the family firms as regards to the composition (Anderson & Reeb, 2004; Claessens, Djankov, & Lang, 2000; Faccio & Lang, 2002; Belén Villalonga & Amit, 2009) or ownership structure (Demsetz & Lehn, 1985; Filatotchev & Bishop, 2002; Yeh, 2005), or their impact on firm value. The construction of a corporate governance index out of the provision so as to check the impact on equity prices (Gompers, Ishii, & Metrick, 2003) as well as other works, is congruent with the analysis on keywords we made. Governance indices play a key role as for the governance matters, spreading practices, getting information based on recommendations, fostering transparency, accountability and giving signals to investors and markets in general. In this sense, Gompers work has been referred in further researches.

Given the analysis of the factors, we think that the theoretical foundation of the works has a deep root in Agency Theory framework and issues but, at the same time, it is open to new theories, such as the Resource Dependence or the Stewardship Theory. Likewise, the presence of studies aiming to strategy topics provides a wider scope to the field. In this sense, we think that it sets new tracks, far from the original law or financial oriented researches. Accordingly with this rationale, the journal ranks high in the indices in those arenas. Regarding the topics, we think that they are diverse and wider in scope, if we compare with the overall published articles, and set a mark in the most relevant ones: composition, structure, diversity, family ownership, board capital, etc. The foundation for diversity studies grows over time and it reaches a prevalent position in the last of the periods we analyzed.

The analysis we performed draws an evolution of the mentioned pillars of knowledge across the different stages of time. In the first period of time, ownership and control issues (Boyd, 1994; Cotter, Shivdasani, & Zenner, 1997; Ezzamel & Watson, 1993; Gedajlovic & Shapiro, 1998; Gomez-Mejia & Wiseman, 1997; Greenbury, 1995; Holderness & Sheehan, 1988; Shivdasani, 1993; Shleifer & Vishny, 1986), the Agency Theory (Dalton, Daily, Ellstrand, & Johnson, 1998; Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976; J. L. Johnson, Daily, & Ellstrand, 1996) and strategy (Forbes & Milliken, 1999a; Lorsch, 1989; McNulty & Pettigrew, 1999; Tricker, 1994; Zahra & Pearce II, 1990), and the Resource Dependence Theory (Hillman & Dalziel, 2003; Pfeffer & Salancik, 1978a) and issues on corporate governance including board capital (Kesner, 1988; Pennings, 1980; Pettigrew & McNulty, 1995), diversity (Burke, 1997; Carter et al., 2003; Goodstein et al., 1994; Milliken & Martins, 1996; Westphal & Milton, 2000) and board composition (Barnhart, Rosenstein, & Marr, 1994; Bathala & Rao, 1995; Baysinger & Butler, 1985; Beasley, 1996; Hermalin & Weisbach, 1988; Kosnik, 1987; Pfeffer, 1972) configure the main components. The second period embraces three main factors: board composition and remuneration (Bebchuk & Fried, 2003; Bebchuk & Fried, 2004; Conyon & Peck, 1998; Core, Holthausen, & Larcker, 1999; Hartzell & Starks, 2003; Hermalin & Weisbach, 1991; Mehran, 1995; Yermack, 2004); board composition and ownership structure (Anderson, Mansi, & Reeb, 2003; Anderson & Reeb, 2003, 2004; Claessens, Djankov, Fan, & Lang, 2002; Claessens et al., 2000; Shleifer & Vishny, 1986; Belen Villalonga & Amit, 2006); RDT, behavior and strategy at the board (Forbes & Milliken, 1999b; Gabrielsson & Huse, 2005; Gabrielsson & Winlund, 2000; Golden & Zajac, 2001; Huse, 2005; Judge & Zeithaml, 1992; McNulty & Pettigrew, 1999; Pfeffer & Salancik, 1978b). The last period gathers three main factors: Diversity (Renée B. Adams, de Haan, Terjesen, & van Ees, 2015; Ahern & Dittmar, 2012; Hillman et al., 2007; Nielsen & Huse, 2010; Singh & Vinnicombe, 2004; Terjesen, Sealy, & Val, 2009; Terjesen & Singh, 2008; Torchia et al., 2011), effectiveness in monitoring and diversity (Renée B Adams & Ferreira, 2009; Carter et al., 2003; Erhardt et al., 2003; Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006; Kang, Cheng, & Gray, 2007; Terjesen, Aguilera, & Lorenz, 2015), and a theoretical backbone (Fama & Jensen, 1983; Hillman & Dalziel, 2003; Jensen & Meckling, 1976; Pfeffer & Salancik, 1978a; Zahra & Pearce II, 1989) linked to the investor protection (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2008; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002; La Porta, Lopez‐de‐Silanes, Shleifer, & Vishny, 1998; Shleifer & Vishny, 1997).

The Board of Directors is a central element in Corporate Governance and it should be faced taking into account different perspectives, studying various topics, and relating to other disciplines that might enlighten that reality. We think that the kind of coverage CGIR built conveys to a leading position amongst other journals.

Once we reviewed the existing literature on the topic of the Board of Directors we were more suitable to continue to the following step, addressing the third specific objective we proposed. Now that we identified relevant contributions, theoretical frameworks and issues related to the topic, we may verify the evolution and how the codes in Spain have channeled key issues of the corporate governance, mostly focused on the Board, towards listed firms, and via the degree of compliance, with special attention to those that may refer to human capital.

Providing the intellectual framework, the principles and the goals across the all the codes in Spain, almost all variables that could be studied from the reported data coming from recommendations compliance are framed under the agency theory intellectual framework. This is consistent with the references employed by the vast majority of researches that have traditionally aimed to study topics.

In spite of this long track record of intellectual framing, new approaches have been included throughout these years. Thus, resource dependence theory, stakeholder theory and stewardship theory have applied to ground the basis of corporate governance research and practice.

The codes of good governance incorporated elements from these frameworks so as to build their principles and set the provision or recommendations they require to listed firms. Principles have increased in number over years and have been made explicitly linked to recommendations. We provided a matching the principles of the Spanish Code of Governance and the main theories that serve as intellectual framework for corporate governance. This matching shows us that the majority of principles could be enclosed in the agency theory. But, maybe because of the pressure of regulation, which assumes a part of the matters, or because of an increasing trend towards wider and improved corporate governance, there have been more room for other approaches recently. In that sense, we identified those principles that could be under the influence of other theoretical frameworks, such as the Stakeholders Theory, the Resource Dependence Theory and the Stewardship Theory. Some of the recently implemented recommendations can be framed under them, e.g. the incorporation of provisions regarding the corporate social responsibility. These approaches may open a window for further changes in recommendations that enrich the standards of corporate governance in listed firms.

Recent reporting requests include a more detailed disclosure for the issues regarding remuneration, which was further analyzed along with other topics. The approach aims to provide a enhanced control and better supervision. The codes have evolved considering parallel regulation, dismissing some provisions, and incorporating new owns for the benefit of markets transparency, shareholders protection and accountability before community. Besides remuneration disclosure, more provisions regarding general meetings performance and the three recommendations on corporate social responsibility are a clear example.

While performing our study, we provide a very useful table to compare recommendations topics across different codes. This is quite relevant for the case of longitudinal studies of the mentioned recommendations and the subjects they ultimately refer to. We also depicted some of the comparable characteristics of the code as summary of some evolving topics.

We confirmed that Agency Theory related recommendations are highly met by Spanish listed companies. But, at the same time, we also confirmed that remuneration provisions as well as internal controls are making a difference among firms and show lasting concerns in this key elements of corporate government of the firms. The analysis of the degree of compliance using PCA validate these constructs in the configuration of the different codes.

The Cronbach's Alpha analysis confirmed the reliability of the degree of compliance of codes' recommendations in each period of time as a measure of overall governance, conversely to what it happens when considering indices for partial aspects of governance. The indicator for the case of each one of the hypotheses shows signs of the use of a smaller number of recommendations.

As a result of the analysis on the components behind the degree of compliance of the recommendations of the codes we reached some findings. First, in each period there is a high number of factors explaining the variance. This has two sides. On one hand, it leads two think that there is no big groups of recommendations feeding one each other and showing great opposition to compliance, which is certainly positive for the purpose of the code. Besides, it helps to validate hypotheses we formulated on the validity of the formulation of the code as it reflects prior knowledge base constructs of existing research literature on the topic. On the other hand, it is hard to name the rationale upon those factors, which is negative so as to center an action plan to cope with those recommendations that failed to comply in a certain group of companies. In this regard, internal control are gaining presence but, under our view, are likely to be incorporated to legislation, specially in Spain, if the situation of deteriorated compliance persists. This would be aligned with the explanation on the legal systems and their relation to codes, widely discussed in research literature. In the meantime, until that happens to be, they may be considered a good differential measurement of governance.

As it was mentioned before, Corporate Social Responsibility have evolved towards a higher degree of disclosure on policies and implementation, and the lack of full compliance in last periods may suggest two causes: a) a need to adapt to new provisions or b) an absence of concrete and properly monitored action plan on this regard. The first cause is relatively easy to overcome in one or two periods, whereas the second takes more time and might last. Then, it would confirm that it can trigger differences among firms that could be perceived by the markets as distinctive. Human capital related recommendations have a great proportion of the difference among companies' compliance in the last period of time. Following existing literature, despite the mentioned constrains of this kind of resources, are perceived at performance. We do not foresee the same behavior under the same premises. Companies will try to comply, at least formally, but the market will have to look at further disclosures to interpret advantages and profits coming out of a certain company's human capital variable. In this vein, current required disclosures, and likely future ones to come, can provide rich information repository for further analyses.

Recommendations on traditional topics based on the Agency Theory (Fama, 1980; Jensen & Meckling, 1976) provide different outcomes. While independence is losing its differentiation trait, since they are close to be present in all companies, issues on remuneration (Baixauli-Soler & Sanchez-Marin, 2011, 2014; Lucian Bebchuk, Cohen, & Ferrell, 2004; Weimer & Pape, 1999) are among the main drivers behind code's compliance. Agency Theory and Stakeholders Theory give grounding for the presence of internal controls (Donaldson & Preston, 1995; Robert Eduard Freeman, 1984; Robert Edward Freeman, 2004; Haxhi & Ees, 2010; Lorca, Sánchez-ballesta, & García-meca, 2011; Mitchell, Wood, & Agle, 1997; Sneller & Langendijk, 2007), which played a relevant role across different periods of our study. Human capital is present in codes and appears as a key element, specially in the last period of the study, and aims to a greater influence in various areas such as strategic resources sourcing, reputation, better performance or effectiveness (Adams, Akyol, & Verwijmeren, 2013; Certo, Covin, Daily, & Dalton, 2001; de Andres & Santamaria, 2010; Hambrick & D'Aveni, 1992; Sundaramurthy & Lewis, 2003). In this vein, the need of suitable, independent, and dedicated directors, that facilitate the board dynamics in a learning process which helps organizations, contributes decisively and is reflected in codes' compliance (Davis et al., 1997; Donaldson & Davis, 1991; Muth & Donaldson, 1998; Pastoriza & Arino, 2008; Pérez López, 1991; Pugliese et al., 2009). The code issuer evolved the code so as to provide more information on this regard. In fact, as we mentioned, recent studies for the case of Spain revealed arguably behavior in the listed companies, what may suggest that the lack of compliance might be driven for those aiming to hide or avoiding to put remuneration, specially in the context of overall company performance. In this regard, these constructs are valid for measure governance in the firm.

We suggested that the double role of information leads to differences between companies. The flow of information facilitates a better functioning of the board, increasing its efficiency. On the other hand, the flow, and disclosure of information is essential for the best purpose of other mechanisms like the General Meeting, or the markets, or other stakeholders in general .

Finally, overall outcome from code compliance shows that 1) Spanish listed firms have made an effort in all the aspects, 2) they are still far from a complete accomplishment, 3) the recommendations pushed some changes in trends, 4) ownership and cultural context sets a quite influent frame.

We think that the codes are certainly playing a relevant role, disseminating practices, challenging companies in the pursuing of a better governance setting. The validation of the constructs based on the information provided by the degree of compliance, helps to consider them as a good measure of corporate governance. This is a convenient step in order to study potential effects on performance, as we make in the last one of the chapters. The virtue, in our opinion, is to keep doing that over time. The results of compliance should reflect non-dangerous differences, that is, those that go beyond the protection of shareholders' interests. Accordingly, a great number of recommendations are likely to stay at the code though they are always (or almost always) met. In our opinion, the code issuer should push disclosure in those soft, hardly measurable elements. This would lead more to a better government than to a good code compliance. In this sense, codes would act as indices of corporate governance.

The validation of different constructs underlying the recommendations makes them potential components of a good measure of governance. We make this remark, since we are not just pointing out to a few variables but considering a wider range of corporate governance compliance across periods.

The last of the specific objectives linked the previous findings of chapter 4 to the firm performance. Once we validated the constructs in the last chapter, we analyzed the impact of the degree of compliance in the recommendations of good governance on the performance of companies, and tried to determine whether those related to human capital have an effect on it, in the case of Spanish listed firms. The results gave us a positive and significant relationship and that led us to confirm the degree of compliance is positively associated with the firm performance of the Spanish firms in the period of our study, going beyond considering just a subset of recommendations and diminishing the costs associated to compliance disclosure (Alves & Mendes, 2004; Lucian Bebchuk, Cohen, & Ferrell, 2009; Gompers et al., 2003; Karpoff, Schonlau, & Wehrly, 2017; Shaukat & Trojanowski, 2018; Sneller & Langendijk, 2007; Vander Bauwhede & Willekens, 2008). This outcome considered the Return on Assets, the industry and the years of study as control variables. ROA has a positive and significant effect in across all time span. As a consequence, we may conclude three things: a) degree of compliance is providing an positive effect on Spanish listed companies; b) since this study covers different period of time and different codes, successive changes in recommendations are effective in keeping that positive relationship, and support the idea behind the role of the codes spreading suitable ways of facing relevant topics on corporate governance, among which a significant part is focus on the board; and c) considering this fact along with the descriptive results of the degree of compliance, we may suggest that they have reached a remarkable level, although there is room for improvement. Accordingly, we think that codes issuers should keep the idiosyncrasy in the approach followed for reforming recommendations, aiming to build a continuous process, embracing new provisions and disclosures for the good purpose of spreading the best practices that might have a positive impact on the governance of the firms.

As regards to past levels of compliance, our research confirms that we can’t take their values into account along with the present ones, due to the lack of significance. Market and regulatory dynamics seems to be weighting the impact to current period of time. We remind that we are dealing with recommendations of the codes and not with government of organizations as a whole. If government were analyzed, lagged values turning into long-term effects could be expected, given that the nature of the topic. The positive link between past levels of compliance and firm performance considered alone might point to be closely interchangeable with present values, which may suggest that it could be a sort of inertia that leans on recent degree of compliance but rather prefers the current ones.

We tested that there were differences in the association depending on the size of the firm. With few exceptions, the impact on firm value shows a decreasing trend as the size of the considered companies increases. We suggested that the rationale behind is the following: when a company is small, the market is more sensible to notice good governed companies, what will turn into diminishing risks and counterbalancing traditional issues linked to small size companies when are listed. Conversely, as the company is bigger, good governance is still considered and valued, but some other variables have an effect on the company’s firm value, providing nuances that can blur the overall effect (Chhaochharia & Grinstein, 2007; Khemakhem & Dicko, 2013; Van Essen, Engelen, & Carney, 2013).

We also found the lack of statistical significance in subsets of recommendations regarding human capital. The importance of this topic, widely supported in research literature (Coles, Daniel, & Naveen, 2008; S. G. Johnson, Schnatterly, & Hill, 2013; McIntyre, Murphy, & Mitchell, 2007; Singh, Terjesen, & Vinnicombe, 2008; Vandewaerde, Voordeckers, Lambrechts, & Bammens, 2011), meets a easy way of showing compliance in the recommendations. In this context, going beyond what is required by regulation or by provisions in codes could build relevant groundings for long-term government of the firm and gain envision and advantages for competing. Also, this is quite interesting in terms of markets, need of detailed demands of information at disclosures, future performance and future role of the code as a useful tool to spread best practices and to achieve its core principles.

A landscape for future research

We hope that this study will be helpful for forthcoming investigation works. Therefore, we proposed potential questions, topics and angles that can take part of this work as an starting point for investigation. Hence, we summarize those we mentioned in the corresponding section of each one of the chapters.

As for the chapter 2, the mapping of the intellectual structure and quantitative study of the topic we made has some implications for future research. Besides being a good starting point to cover gaps and new angles of investigation, it provides the necessary weight to perform further meta-analyses. For the practice of corporate governance, this study gives ideas to incorporate in the work of board of directors, considering the main and relevant empirical works that influence the research, codes and regulation.

Our contribution provides a solid basis to perform a meta-analysis on the board of directors since it delivers a deeper understanding of the qualified contributions identified that shaped the investigation over the years. As the main angles and approaches to the analysis of the board have been identified throughout this article, the gaps and the lack of deep understanding from other points of view, and some topics related for further research appear clearer for scholars. Amongst them we may identify some related to human capital and codes relationship, or human capital and the board, diversity human capital. Experience, knowledge, tenure, skills have already been approached but there are perspectives still low developed. We also would like to mention training, combined with digital strategies or ethics as themes to be included. We reckon the difficulties to obtain information suitable for research in issues regarding actual inside board dynamics, their relation to market and nonmarket strategy definition or selection-evaluation processes relationship, but we think that it would be worthwhile as to analyze and improve government of organizations beyond their corporate governance.

Likewise in most researches of this kind, our techniques did not link the references to places where they were mentioned within the articles (i.e. introduction, methodology, results). Although their position within the articles could drive a deeper understanding, we pointed to the use of an accurate natural language processing software so as to analyze the actual meaning in a sample of articles as big as ours, while reducing the level of subjectivity. Despite that, this sort of study could be approached when performing a meta-analysis of a reduced, meaningful number of articles. Finally, we reckon that it may be interesting to analyze the role and characteristics of the published works in leading journals, considering their impact on the evolution of the research topic. We performed that task for the most relevant one in order to frame the groundings of its importance, and to offer a pattern for developing new angles or approaches to the topic while keeping a significant level of contributions.

Derived from the results, discussion and results from chapter 2, our work shows a quantitative basis to assert the relevance of works, authors and topics in the literature on board of directors, which is a proper starting point to quote researches in any literature review and meta-analysis on the topic. At the same time, this study shows the less studied subjects or points of view, serving as a way to identify future lines of investigation.

Although we studied the topic of board of directors in the journal that contributes the most, it would be appropriate to apply the same type of analysis to other top journals on this field, and compare the results to improve the research. This angle would show how different journals are approaching the topic and the way they are impacting and configuring the intellectual framework as top performers in the arena.

A meta-analysis on the board of directors would have a solid basis in these studies since it would explain and explore the qualified contributions that shaped the investigation over the years and were quantitatively identified using bibliometric techniques. Besides, as the main angles and approaches to the analysis of the board have been identified throughout this article, the gaps and the lack of deep understanding from other points of view or topics related for further research appear clearer for scholars. Amongst them we may identify some related to human capital and codes relationship, or human capital and the board, which, in our opinion, are underrepresented in research studies. As a relevant element of the board capital, it should be studied more in depth.

Similarly to the proposed research for the case of the whole set of contributions, our study could be utilized when performing a meta-analysis of a reduced, meaningful number of articles.

The results and conclusions we obtained in the fourth chapter open a varied set of questions and topics to be referred. Since a great number of recommendations are stated under the Agency Theory perspective, differential compliance will tend to rise under other views.

As for the periods of time for the analyses, although cross-sectional studies could be performed to analyze the impact of the variables on a given year, this kind of researches may lead to inconsistent outcomes or, at least, to misleading interpretations. On one hand, some relevant factors may be hidden, and in other hand corporate governance issues should consider time, and very often it is spread over the, by definition, short-term cross-sectional analysis. Then, a longitudinal study might be worthwhile. In that case, it would be necessary to consider comparable information and context. For that aim, the table we used to compare recommendations topics could useful for performing longitudinal analyses staged in three periods of time (2007-2012, 2013-2014, and 2015-2016).

These analyses could help to determine whether the degree of compliance of the provisions as a whole, and those referred to specific matters, are associated or not to the firm performance. We make this remark, since we are not just pointing out to a few variables but considering a wider concept or corporate compliance.

Deepening on the contents and the provisions, since the study of human capital variables contained in codes of good governance provisions is limited, it would be necessary to compute the data of every director in each one of the companies through this angle. Data on training programs, concrete selection policies is still not available for study, but some human capital variables could be obtained from corporate governance reports that are issue by listed firms but they use to be unstructured and are embedded in wider purpose description. Diversity concept is being approached in a wider way in the last version of the code, and included in human capital variables. This situation could be highly resourceful to perform further researches. Other intellectual frameworks could easier support this perspective, such as Resource Dependence Theory.

The study of governance of family business non-listed companies under the later frameworks may lead to attractive conclusions. Thus, i.e. the use of family councils in these firms might provide some light to governance in other firms' typologies.

Despite many studies address corporate governance and board of directors in listed companies, it might be useful to broaden the scope to Spanish non-listed companies. The number, weight and presence of them in the economic structure could help to create a culture of good governance. Medium and big non-listed companies could benefit from these researches. For small companies, the problem of access to data would be greater in most cases due to associated costs and the lack of a proper framework for easily reporting this information. Nevertheless, the study of governance in technological startups could be interesting. The potential growth of these companies configures a good angle of study.

Although codes, recommendations, and report forms vary dependent on the country, they all may have a common base of principles. Hence, it could be useful to compare those variables that are shared among different companies from various global areas and use validation of constructs techniques as employed in this article.

The outcomes of our research in chapter 5, in response to the fourth specific objective, might lead to different researches as well. Firstly, it might be useful to broaden the scope to Spanish non-listed companies. The number, weight and presence of them in the economic structure are relevant in countries like Spain, and, as a result, it could help creating a culture of good governance. Medium and big non-listed companies could benefit from these researches. The issue of data availability could be initially skipped by setting the focus on the study of governance in technological startups could be interesting. The potential growth of these companies configures a good angle of study and research might find suitable sources of information to feed the analysis. Secondly, it will be interesting to check whether the relationship shape changes over years and reaches a stable level when approaching the highest values of the degree of compliance. This could provide a sign of the sensibility of the markets and pave the way for making improvements in the governance mechanisms through the recommendations, or serve as a way to establish long-term envision and government of the firm. Besides, it could be useful to compare those variables that are shared among different companies from various countries or global areas, paying attention to the evolution the codes and considering that they all may have a common base of principles and benchmarked practices of good governance.

As for the topics related, since the scope and depth of human capital variables contained in codes of good governance is limited, it would be necessary to compute the data of every director of each one of the companies through this angle. Human capital variables could be obtained from corporate governance reports that are issue by listed firms but they use to be unstructured and are embedded in wider purpose description. Diversity, a concept with high levels of presence in research literature, could be approached in a wider way, and, for instance, be included along with human capital variables. Other intellectual frameworks could easier support this perspective, such as the Resource Dependence Theory. This kind of research might provide differential advantages for the firm based on a board composition centered in the person, and working a governing group.

The study of governance of family business non-listed companies under the later frameworks may lead to attractive conclusions. Some specific traits of that type of

companies, such as the use of family councils or the presence of protocols, might provide some light to governance processes and mechanisms of other firms. Strategic vision, succession, management of family members in business are topics addressed with a different angle that allowed those firms to adapt, evolve, and, eventually, survive for generations.
Consequently, we expressed some potential directions in this regard and we will try to accomplish them within our future research.

The study of Corporate Governance as a discipline gave a central role to the Board of Directors. Throughout this work we humbly contributed to map the structure of the intellectual framework behind the research literature, the basis for obtaining relevance in the investigation of the topic. On these grounds, we analyzed how codes serve as an instrument to channel the main angles, perspectives and issues to the Spanish listed firms for a long period of time. The spreading of the practices, showing the foundation on several intellectual frameworks and the need and the need of addressing key issues that are primarily focused on the board, have a positive impact on the firms' performance. Then we can conclude that we addressed the general objective of this Thesis, and we properly answered to the research question that were at the origin of its conception.

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