

BIBLIOMETRIC ANALYSIS ON INVESTOR PROTECTION

ANÁLISIS BIBLIOMÉTRICO SOBRE LA PROTECCIÓN DEL INVERSOR

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Abstract:

This paper maps the evolution and current state of research on Investor Protection through a bibliometric analysis and systematic literature review. The methodology is based on the articles included in the Web of Science database, using SciMAT bibliometric software. Within the main findings, this study reveals the greater importance of Investor Protection research in the past. Investor Protection has been focused on shareholders as the main type of investor, not considering other types of investors or even financial consumers more generally. Investor Protection research has evolved from legal and corporate aspects to include other factors that are configured as new references for the investors. Until now, there is only mention of corporate governance, lacking academic research about environmental and social factors linking to the 2030 agenda for sustainable development. The results of this study show the need for research about financial consumer protection, including not only corporate governance, but also environmental and social factors. The practical implications of this paper might serve to show new future research lines in order to evaluate the situation of the financial consumer in a broad sense and to improve regulations in order to preserve it.

Keywords: Bibliometrics, Web-of-Science, Investor-Protection, Ownership-structure, Regulation.

JEL Codes: G19, G28.

Resumen:

Este artículo analiza la evolución y el estado de la investigación sobre la protección del inversor a través de un análisis bibliométrico y una revisión sistemática de la literatura. La metodología se basa en los artículos incluidos en la base de datos de Web of Science, utilizando el software bibliométrico SciMAT. Dentro de las principales conclusiones, este estudio revela la creciente importancia de la investigación sobre la protección del inversor en los últimos años, centrándose en los accionistas como figura principal, sin considerar otros tipos de inversores o incluso consumidores financieros, en general. La investigación sobre la protección del inversor ha evolucionado desde aspectos legales y corporativos a otros factores que se configuran como nuevas referencias para los inversores. Hasta el momento, los estudios se centran principalmente en temas de gobierno corporativo, sin abordar otros factores ambientales y sociales vinculados a la agenda 2030 para el desarrollo sostenible. Los resultados de este estudio muestran la necesidad de investigar sobre la protección del consumidor financiero en general, incluyendo además del gobierno corporativo, los factores medioambientales y sociales. Con respecto a las implicaciones prácticas, este trabajo podría servir para mostrar nuevas líneas de investigación

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futuras con el fin de evaluar la situación del consumidor financiero en un sentido amplio y mejorar las regulaciones para preservarlo.

Palabras clave: Bibliometría, Web-of-Science, Protección-del-inversor, Estructura-de-propiedad, Regulación.

Clasificación JEL: G19, G28.

1. INTRODUCTION

Investor Protection (IP), particularly in the sense of minority shareholder protection, has been one of the most hotly debated Corporate Finance topics in academia. The ramifications of which in multiple concepts are very wide ranging, not only in corporate governance but also other questions such as ownership (structure, concentration, type, family, etc.), firm value, earnings, dividends, takeovers, etc. However, the IP concept is also related to other financial consumers such as bondholders, bank customers, etc. This means that any decision the financial consumer takes it will take with all information about financial product or assets. It is possible to undertake a conceptual analysis of how IP has evolved from the most important papers written during the last years and what is the situation. More sophisticated and complex Corporate Finance has been developed and authorities are more worried about IP, especially after the 2008 financial crisis. Therefore, different mechanisms have been developed for the protection of financial consumers such as regulations, governance, disclosure, compliance requirements, etc. (Aiyer, 2016). A high level of IP implies more valuable and reliable financial markets (La Porta *et al.*, 1997) in contrast to unprotective countries. And this positive effect on financial markets also has a positive influence in the real economy because of enhanced savings and, therefore, increased real investments (Beck *et al.*, 2000). This evidence shows how important this topic is, especially after the 2008 crisis.

Therefore, using a bibliometric study could identify the main themes and information on the dynamic of investor protection as a key topic for authorities, academics, and practitioners. Even to determine several questions such as: how the IP knowledge base has been formed, what are its strengths and weaknesses, which topics could be its knowledge base, etc. This type of method is a quantitative tool that permits an orderly and systematic review of existing literature on a selected topic. It assesses the scholarly quality and productivity of the research developed by scientists (Moed *et al.*, 1995). This technique structures the science trying to identify sub-fields and research topics, and relate to each other. In the field of bibliometric, there are two approaches: performance analysis and science mapping (Noyons *et al.*, 1999). The former gives information about the citation-based impact on the scientific production of different scientific actors, while science mapping permits visualization of how the knowledge is structured and its evolution and dynamical aspects. (Morris and Van der Veer Martens, 2008).

Bibliometric studies have been done in Finance and Economics of Finance research as a whole topic (Schäffer *et al.*, 2011; Correa i Domènech *et al.*, 2009; Calma, 2017; de Faria *et al.*, 2015). The rest of bibliometric papers discuss specific but diverse topics such as: the financial crisis (Chang and Ho, 2010), financial risks (Chun-Hao and Jian-Min, 2012; Silva *et al.*, 2017; Prado *et al.*, 2016), venture capital (Cornelius and Persson, 2006; Cancino *et al.*, 2018), high frequency trading (Chou *et al.*, 2016), behavioral finance and financial and managerial decision making (Costa *et al.*, 2017), business portfolio restructuring (Sánchez-Riofrío *et al.*, 2015) and dividend policy (Pinto *et al.*, 2019). Another focus is by sector such as financial research applied to tourism (Jiménez-Caballero and Polo Molina, 2017). Also,

bibliometric studies have been done about citations and productivity of Finance research (Fatt, Ujum and Ratnavelu, 2010; Haddad *et al.*, 2014; Chung and Cox, 1990; and Dragos *et al.*, 2014) and Finance journals impacts factors (Borokhovich *et al.*, 2000; Amat and Oliveras, 2011; Esen, Tunahan, and Takil, 2016; Siciliano, 2017; Vahdat and Martins, 2016; and Haley, 2014). To our best knowledge, no bibliometric study has yet been done on IP research, so this gap is trying to be filled.

This paper presents a longitudinal science mapping analysis of the whole investor protection research field from its origins and tries to disclose the field's structure and its evolution. It shows the questions with the highest interest, as well as potential themes for future research. The present research analyses the evolution of IP research between 1958 and 2017 in the journals registered in Web of Science (WoS). The science mapping analysis was performed using the Science Mapping Analysis Software Tool (SciMAT) (Cobo *et al.*, 2012). The workflow in a science mapping analysis has several steps: data retrieval, preprocessing, network extraction, normalization, mapping analysis, and visualization. When this process is finished, the analyst interprets and draws conclusions from the results.

This article is organized as follows. The second section describes the data and methodology used in this study. The third section gives the results obtained through performance analysis and science mapping. Finally, the last section draws some conclusions and limitations.

2. DATA AND METHODOLOGY

In this study, data were obtained from the Web of Science (WoS) of Clarivate Analytics, which gives direct access to the Social Science Citation Index (SCCI), one of the three mayor index databases (Moral-Muñoz *et al.*, 2020). This bibliographic database offers the most prestigious and high impact research journals. The search was conducted in English through the concept of "investor protection". The term used for the query in WoS was the following: TS=("invest* protection"). It was decided to use "invest*" in order to give the different possibilities of the concept. The articles selected were all in languages and limited to publications dated from 1958 until 2017 year end. This sample was formed by articles, books, book chapters, and reviews. The raw data includes 1.097 documents and their citations. These data are "certificated knowledge" because it has been reviewed by fellow researchers (Ramos-Rodríguez and Ruíz-Navarro, 2004).

Plain text obtained from the raw data of WoS was entered into SciMAT to build the "knowledge base" for the science mapping analysis. The data basis is treated and cleaned to improve data quality. Some meaningless keywords are established such as "stop words", that is to say, words with the exact paper of the topic (*investor protection*), with a very broad meaning of the topic (*corporate governance*) and words with general meaning (e.g. *information, determinants*, etc.). These words were removed. So, 3.142 keywords were used in this study.

Periods

Next, using the period manager of SciMAT, the periods of the longitudinal analysis were established. A longitudinal analysis allows the conceptual, social or intellectual evolution of the field to be found (Price & Gürsey, 1975). In order to avoid data smoothness, the whole period was divided into three consecutive periods: 1958-2002, 2003-2010 and 2011-2017. The periods don't have the same time span in order to establish periods with a meaning. The first period was the widest, but with the lowest number of articles (51 papers) because in the early years the production was very low. The year 2002 was decided because The Public Company

Accounting Reform and Investor Protection Act (better known as the Sarbanes-Oxley Act) enters into force in the US this year. The act was enacted to improve quality and transparency of financial reporting for public companies as a response to an accounting scandal in major companies such as Enron and WorldCom. It was an improvement of regulation of investor protection related to public companies. So, it was decided to establish a second period between 2003 and 2010 with the result of 356 documents. This period was selected taking into account the effect of the US Sarbanes-Oxley Act and EU Directive 2004/39/EC, the Markets in Financial Instruments Directive (MiFID) that was adopted in 2004 and became applicable in 2007. The objective of MiFID was to reinforce and to harmonize investor protection rules (Haas, 2007). The third period was fixed between 2011 and 2017 resulting in 690 documents. Again, this period was selected because Dodd-Frank Wall Street Reform and Consumer Protection Act entered into force in the US in 2010 expected to make major changes in securities enforcement and regulation and to improve investor protection. And, in the case of the EU, because the Directive 2014/65/EU Markets in Financial Instruments (better known as MiFID II) and Regulation (EU) No 600/2014 Markets in Financial Instruments (MIFIR) were adopted, although they have been applied since 2018.

Therefore, a strategic diagram categorizes the clusters detected in a network (Callon *et al.*, 1991). It was provided for each period and shows spheres whose volume is proportional to the citations achieved by each cluster. With that been said, the number of documents associated with each topic associated with IP determines the size of the spheres. Also, corresponding citations are given in brackets.

Two types of bibliometric methods were used. In the first phase, a co-occurrence analysis of keywords was accomplished establishing a co-occurrence relationship between two units of analysis (documents, authors, most cited articles, etc.) In the second phase, a clustering or grouping algorithm was applied to the network, ensuring the different topics that make up the research field was obtained, as well as the keywords that internally configure the different clusters.

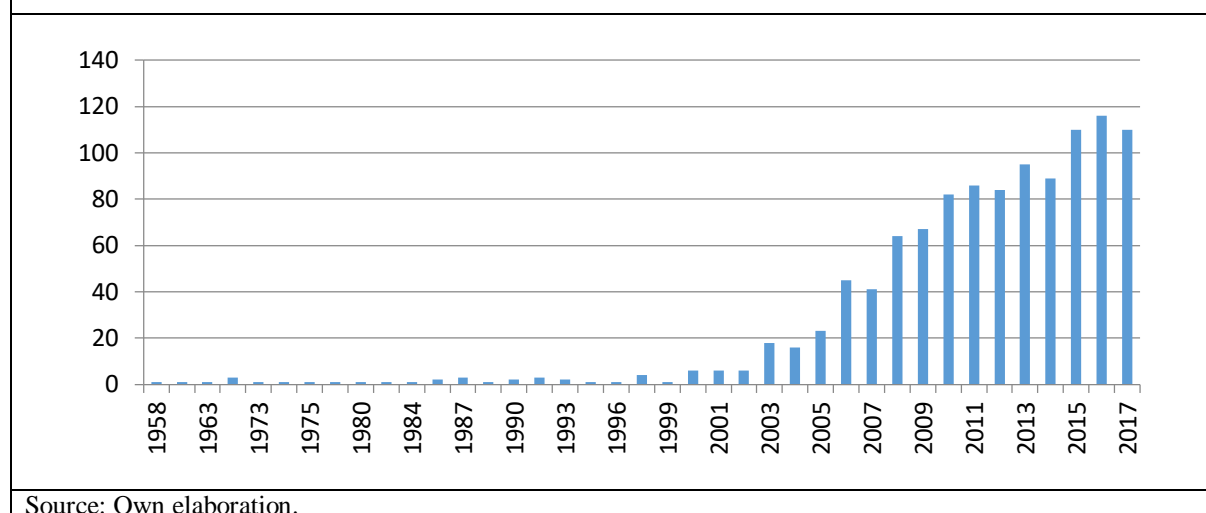
Summarizing, there were 51 articles in the first period, 356 in the second and 690 in the third. The first period has a greater number of years compared to the other periods of time. It was decided in the light of the recommendations of Cobo *et al.* (2012), because (i) the production was very low in the early years and of science mapping analysis requires more or less a homogeneous volume of documents from each period, (ii) three periods are in according with the standard in previous studies of science mapping analysis in order to do an interpretation of thematic areas in a correct way, and (iii) the court dates of 2002 and 2010 were chosen because both are keys years for the financial markets as above mentioned arguments.

3. RESULTS AND ANALYSIS

Evaluation and analysis of scientific output and production

Firstly, the descriptive character from the analysis of study IP is presented. This section starts with the volume of documents published year after year in (figure 1). The total publications were 1,097 articles. The first one was Jennings (1958) and during decades there were just a few publications, just 4.65 per cent of the total until 2002. From 2003, an increasing trend in the number of publications is appreciated reaching 32 per cent of the total publications till 2010. The average number of documents from 2011 is 63 per cent. We highlight the year 2016 with the highest number of documents 116.

FIGURE 1. DOCUMENTS RETRIEVED BY YEAR.



Authors with the highest number of registered publications are shown in table 1. The analysis identifies that there is no coincidence between authors with more documents and the most cited authors. Andrei Shleifer from the Department of Economics at Harvard University (Cambridge) obtained the highest number of citations (6,811) within nine publications.

TABLE 1. AUTHOR'S PRODUCTION AND PERFORMANCE.

Authors with more documents			Authors with more references		
Authors	Number of Doc.	Numer of citations	Authors	Number of Doc.	Number of citations
Guedhami, O.	16	581	Shleifer, A	9	6811
Boubakri, N.	13	538	La Porta, R	6	5496
Stulz, Rene M.	11	2265	Lopez-De-Silanes	6	5496
Shleifer, A	9	6811	Leuz, C	7	2845
Hail, Luzi	8	1399	Vishny, R	2	2723
Deloof, Marc	8	53	Stulz, Rene M.	11	2265
Volpin, P	8	1062	Djankov, S	3	1841
Saffar, Walid	7	310	Wysocki, PD	3	1441
Leuz, C	7	2845	Hail, Luzi	8	1399
Garcia-Sanchez, IM	7	60	Nanda, D	1	1292
La Porta, R	6	5496	Volpin, P	8	1062
Lopez-De-Silanes	6	5496	Karolyi, GA	4	1051

Source: Own elaboration.

The analysis of the most cited papers following the h-index criteria (the articles of the total number of articles of the subject that have at least h citations) is shown in Table 2 with the journal that was published. It is important to highlight the article that obtained 1,555 citations, the maximum is “Investor protection and corporate governance” by La Porta, Lopez-de-Silanes, Shleifer & Vishny (2000). This paper assesses the first time the effectiveness of the laws for IP and its relation with corporate governance, a topic which will be the center of future research.

TABLE 2. PAPERS MOST CITED.

Title of the Article	Authors	Journal	Year	Citations
Investor protection and corporate governance	La Porta, R, Lopez-De-Silanes, F, Shleifer, A, Vishny, R	Journal of Financial Economics	2000	1555
Earnings management and investor protection: an international comparison	Leuz, C, Nanda, D, Wysocki, PD	Journal of Financial Economics	2003	1292
Investor protection and corporate valuation	La Porta, R, Lopez-De-Silanes, F, Shleifer, A, Vishny, R	Journal of Finance	2002	1168
The law and economics of self-dealing	Djankov, S, La Porta, R, Lopez-De-Silanes, F, Shleifer, A	Journal of Financial Economics	2008	883
The economic consequences of legal origins	La Porta, R, Lopez-De-Silanes, F, Shleifer, A	Journal of Economic Literature	2008	805

Source: Own elaboration.

Table 3 summaries the journals with more publications related to IP. It has identified 296 journals in total and Corporate Governance-An International Review is the one with the highest number of publications, 5.2 per cent of the total. Again, it shows that corporate governance is the predominant theme.

TABLE 3. CORE JOURNALS.

Journals	Impact factor (2018 JCR)	Number of articles retrieved	%
Corporate Governance - An International Review	2,753*	58	5.2
Journal of Corporate Finance	2,349	53	4.8
Journal of Banking & Finance	2,205	50	4.6
Journal of Financial Economics	4,693	46	4,2
Journal of Business Ethics	3,796	27	2,5
Journal of Business Finance & Accounting	1,562	26	2,4
Accounting Review	4,562	21	1,9

(*) 2010

Source: Own elaboration.

The production by country was elaborated on counting the documents by authors depending on their affiliation (table 4). The publications are located in 66 different countries. Globally, the USA, China, and England are the countries with more documents published.

TABLE 4. MOST PRODUCTIVE COUNTRIES.

Country	Nº of Doc.
USA	626
China	253
England	141
Canada	130
Spain	110
Australia	93
Taiwan	90

Source: Own elaboration.

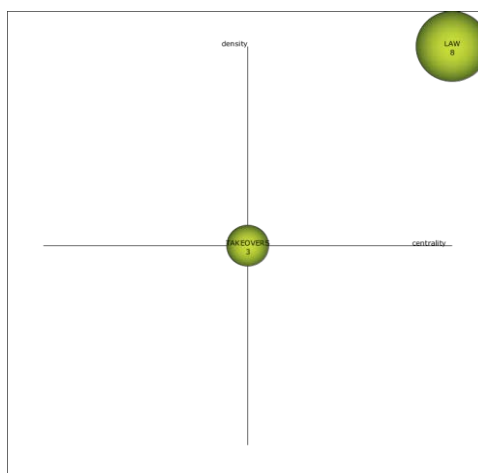
Building and analysis of scientific maps

After obtaining the results, the second step is to visualize the conceptual clusters and analyze the most highlighted themes in IP. The performance measures of the themes for the correspondent period are given in tables 5, 6 and 7, including the number of documents, the number of and the h-index rate of the documents.

First period (1958-2002)

Analyzing the strategic diagram presented in figure 2, and the performance measures included in Table 5, during Period 1, the field of study IP was centered on two themes. *Law*, as the motor theme, obtains the largest number of documents, h-index rates, and many citations. According to the situation, during this period the articles are focused on legal aspects as a first mechanism of protection with direct regulatory control. In general, the main lines are related to *ownership*, *Finance*, *firms*, and *growth*. Early paper focused on the relationship between legal framework, corporate governance, and IP. The second theme for this period is *takeovers* located just in the center of the diagram, configuring as a potential motor theme. It is related to *Ownership-Structure*, *Directors* and *Market-Valuation*, themes that will be researched in the second period. In this period there were very few documents and, therefore, there are few issues. This means that the discipline was growing during the first period and it was not structured.

**FIGURE 2. STRATEGIC DIAGRAM FOR THE PERIOD 1958-2002.
BASED ON THE NUMBER OF PUBLISHED DOCUMENTS.**



Source: Own elaboration.

TABLE 5. PERFORMANCE MEASURES OF THEMES IN THE (1958-2002).

Name	N° of docs.	h-index	N° of citations
<i>Law</i>	8	7	3405
<i>Takeovers</i>	3	3	507

Source: Own elaboration.

Second period (2003-2010)

According to figure 3 and table 6, in Period 2, IP pivots with a higher number of themes in comparison to the first period. In total there are 19 new themes. There are 356 articles published during this period. The reason for this increase was the number of papers increased three-fold, showing growing interest in the issue. Another cause can be the evolution of the publishing cycle conversion through Internet (Thelwall, 2008)

There are 10 major themes. As motor themes appear: *ownership-structure*, *business-groups*, *cross-listings*, and *incentives*; furthermore as basic themes: *markets* as the most significant, *financial-development*, *earnings-management*, *cost*, and *capital-structure*. It must be highlighted *ownership-structure* as a remarkable theme, followed by *markets* and *business groups*. Two first themes are in line with La Porta *et al.* (2000), those who indicate they are two of the three broad areas in which IP has been shown to matter.

Ownership-structure is a remarkable theme because it has the highest rates of h-index impact, 40 and number of citations, 7,772. It is the most important and developed research theme of IP during this period. It is mainly related to papers that research about *corporate governance*, *firm-value*, *firm-performance* and *agency costs*, some of them as consequences of the structure of ownership of the companies. It is a key mechanism of corporate governance which has implications for the minority shareholders protection (La Porta *et al.* 1999). Other aspects related to *ownership-structure* are *board composition* and *family-firms*. These themes are also researched because of their role of the different groups with power in the companies.

Business Groups get the third-best h-index, 26, and achieve more than three thousand citations in 31 documents. This topic has generated a wide literature that has researched on

diversification strategies and the performance implications of group affiliation (e.g. see literature review in Colli and Colpan, 2016). It is related to others such as *ownership, profitability or tunneling*, but especially with *emerging-markets* because business groups have been the dominant forms of large enterprises and have led the internationalization processes of their economies (La Porta *et al.*, 1999). Inside this cluster, there are two strong relationships to be highlighted. The first one is between the themes *expropriation, ownership, tunneling and related-party-transactions*, and the second one is between *profitability and internal-capital-markets*.

Markets, although it is a basic theme, its cross-sectional nature led to gain the second position regarding all three results rates (6,278 h-index 32 in 54 documents) and it is related mainly with *Finance* (the majority of studies focus on stock markets), and much less *corporate-control, corporate-ownership and operating-performance*, among others.

In addition three different themes stand out for the number of citations (over 2,500 citations) and h-index (over 20): *earnings-management, financial-development and cross-listing*. *Earnings-management* is related to *disclosure, quality and accounting-earnings*. *Financial-development* is related to *law, growth, institutions and political-economy*. Finally, *cross-listing* are related to *firms, private-benefits* and with a strong relationship with the *United-States*.

Also *incentives* achieve good performance scores in the period of time with 1,175 citations and an h-index of 14. This theme is more related to *accounting-conservatism, earning forecasts and earnings-quality*.

In the emerging or declining quadrant there are four themes for this period. *Integration* gets the lowest number of citations and the lowest impact rate (3) sharing this mark with *CEO* and *securities-regulation*, while *state* gets 4 h-index rate.

Whereas in the isolated or highly developed quadrant, there are several themes: *liquidity, cross-country-analysis* and *CEO-turnover*. All themes get a low impact rate apart of *liquidity* that achieves h-index 7.

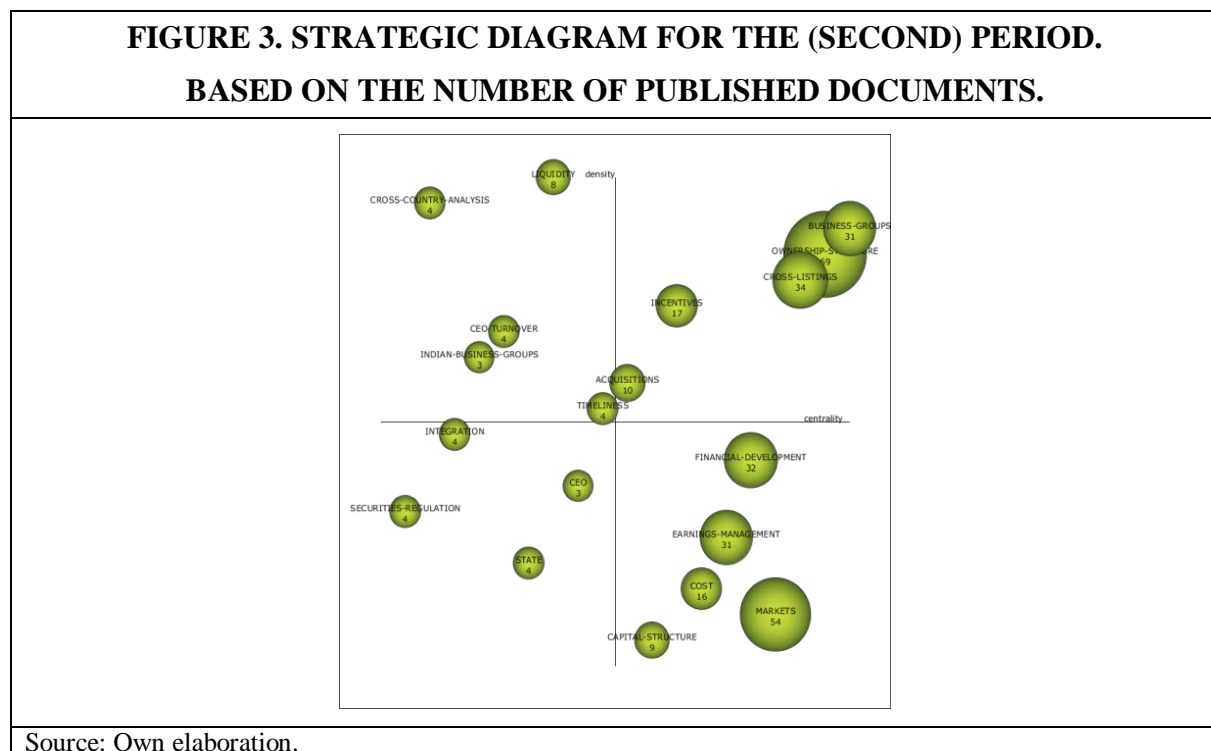


TABLE 6. PERFORMANCE OF THEMES IN THE (SECOND PERIOD).

Name	Nº of docs.	h-index	Nº of citations
<i>Ownership-Structure</i>	69	40	7,772
<i>Markets</i>	54	32	6,278
<i>Earnings-Management</i>	31	23	4,537
<i>Financial-Development</i>	32	21	3,915
<i>Business-Groups</i>	31	26	3,026
<i>Cross-Listings</i>	34	20	2,554
<i>Incentives</i>	17	14	1,175
<i>Cost</i>	16	10	960
<i>Indian-Business-Groups</i>	3	3	433
<i>State</i>	4	4	425
<i>Cross-Country-Analysis</i>	4	4	389
<i>Acquisitions</i>	10	8	328
<i>CEO-Turnover</i>	4	4	245
<i>CEO</i>	3	3	240
<i>Liquidity</i>	8	7	230
<i>Capital-Structure</i>	9	6	152
<i>Timeliness</i>	4	4	138
<i>Securities-Regulation</i>	4	3	135
<i>Integration</i>	4	3	34

Source: Own elaboration.

Third period (2011-2017)

In this period the field of study IP pivots in total to 22 themes with respect to performance measures Table 7. There is a greater diversification of topics and keywords, mainly caused by the maturation of the theme (Giraud and Autissier, 2013). According to the strategic diagram shown in figure 4, in Period 3 there are 11 major themes as motor and basic. Motors themes are: *ownership-structure*, *firm-value*, *governance*, *institutions*, *cross-border-alliances* and *M&As*, and *dividends*. Basics themes are: *ownership*, *economic-consequences*, *quality*, *enforcement* and *stock-returns*.

Only one theme from the previous period appears in Period 2: *ownership-structure*. In this period, it is again the leading theme, being consolidated as a motor theme. It achieves the highest marks in terms of number of citations (1,243), impact with a (20 h-index) and number of documents (146). Although comparing both periods, there is a downward trend in the results of the values obtained. In more than double of documents in period 3, the number of citations gained are just 16 per cent of those obtained in period 2. This could have happened because it is a theme that is losing interest from the scientific community, as well as because it could be an out dated theme. This theme is related again and with greater importance with *agency-costs*, *firm-performance*, and *family-firm*. But *earnings-management* appears as a new and most important research topic of all, showing connections with almost all themes. *Business-Groups* are linked, but it is not so relevant.

The second most important theme is *ownership*. It appears as a basic and transversal theme, getting 954 citations in 135 documents with an impact of 16 h-index. It is related within others with *firms, finance, law, and valuation*.

The other two relevant motor themes are *firm-value* and *governance*. The two obtain similar greater impact rates. The first one is mainly related to themes such as: *markets, emerging-markets, United-States* and *large-shareholders* while *governance* is related principally to *Corporate-Social-Responsibility* and to a lesser extent: *disclosure, impact, investment, and companies*.

Other themes of interest as a basic theme that achieve good performance indices are *institution, quality* and *economic-consequences*.

In the emerging quadrant, there are five themes for this period: *audit-quality, private-benefits, ultimate-ownership, Sarbanes-Oxley-Act* and *panel-data*. All of them obtain low h-index impact and low citation rates. Highlighting *private-benefits* with 110 citations in 8 documents with an h-index of 5; this theme is related to *segmentation* and *voting-rights*. As well as *panel-data* with 70 citations in 8 documents, this theme is related to *model* and *cash-flows*.

Lastly, five highly developed and isolated themes were detected: *Initial-Public-Offerings, home-bias, capital-management, operating-performance, and audit-committee*, appear in the upper-left quadrant, arise within this period. The last one gets the lowest rates with 26 numbers of citations in 5 documents and an h-index of 3.

**FIGURE 4. STRATEGIC DIAGRAM FOR THE (THIRD) PERIOD.
 BASED ON THE NUMBER OF PUBLISHED DOCUMENTS.**

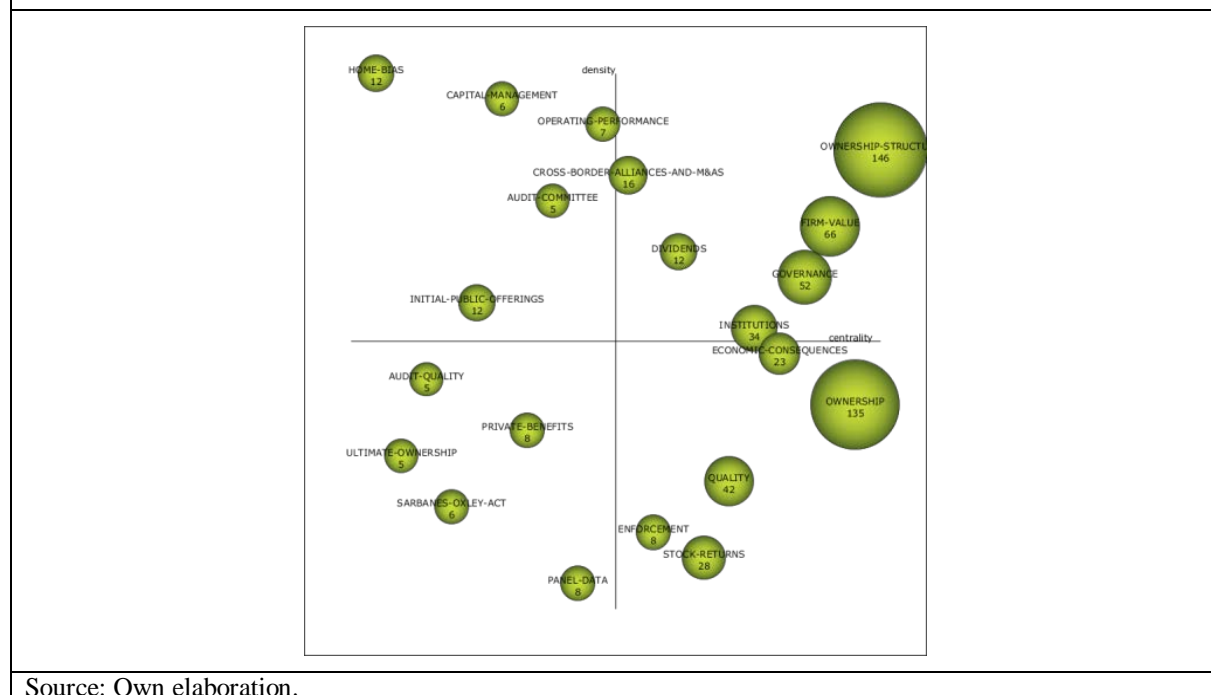


TABLE 7. PERFORMANCE OF THEMES IN THE (THIRD PERIOD).

Name	N° of docs.	h-index	N° of citations
<i>Ownership-Structure</i>	146	20	1,243
<i>Ownership</i>	135	16	954
<i>Firm-Value</i>	66	13	737
<i>Governance</i>	52	13	766
<i>Institutions</i>	34	11	402
<i>Rconomic-Consequences</i>	23	10	312
<i>Quality</i>	42	10	415
<i>Stock>Returns</i>	28	7	190
<i>Cross-Border-Alliances-and-M&AS</i>	16	7	177
<i>Initial-Public-Offerings</i>	12	6	88
<i>Home-Bias</i>	12	5	64
<i>Dividends</i>	12	5	84
<i>Enforcement</i>	8	5	126
<i>Private-Benefits</i>	8	5	110
<i>Audit-Quality</i>	5	4	31
<i>Sarbanes-Oxley-Act</i>	6	4	52
<i>Capital-Management</i>	6	3	77
<i>Operating-Performance</i>	7	3	33
<i>Ultimate-Ownership</i>	5	3	81
<i>Audit-Committee</i>	5	3	26
<i>Panel-Data</i>	8	3	70

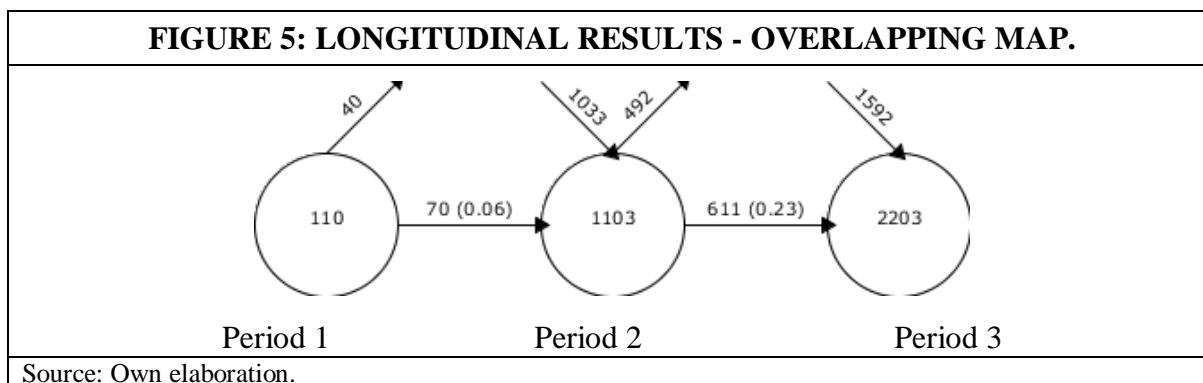
Source: Own elaboration.

Overlapping

Finally, figure 5 shows the evolution of the keywords representing the overlapping of the elements existing between the three periods. This means the different measures of the relationship of the different detected clusters through the different periods. To show, in a graphical way, the stability across the different subperiods, a picture similar to that presented in Price and Gürsey (1975) is used.

The three consecutive periods are shown through its stability measures. The circles represent the keywords associated with each period, the number of keywords incremented drastically along the time period, 110 in Period 1, 1103 in Period 2 and 2,203 in Period 3. The horizontal arrow represents the number of keywords shared between two periods (70) for periods 1 and 2, and (611) for the period 2 and 3. The Similarity Index between them is shown in parentheses (0.06) and (0.23). This means that the field of study is consolidating its terminology. Many words repeating in the following periods means that they are consolidating and the theme is well structured.

The evolution shows that there are more similarities in the last two periods compared to the first two. The upper input arrow represents the new elements found in Period 2, 1033 and 1592 for Period 3. The upper output arrow represents the keywords that are present in Period 1 but not in Period 2, (40), and (492) presented in Period 2 but not in Period 3.



Thematic Evolution

The thematic evolution of the field of study IP is shown in Figure 6. SciMAT produces a map in which it can detect the lines of research considering keywords and their evolution. The three periods are represented in the three columns of spheres, where the main thematic areas are represented. The elements shown to the left correspond with Period 1 (1958-2002), in the middle there is Period 2 (2003-2010) and those to the right correspond with Period 3 (2011-2017).

The connections between themes and periods are represented with a continuous line or with the dotted line. The continuous lines mean that the linked themes share the same name. The explanation is considering both having the same name or one of the themes' name as part of the other one. On the other hand, a dotted line means that the name of the theme is not shared between them but they share other elements. The inclusion index is proportionally drawn with the thickness of the line and the number of published documents is represented also proportional to the size of the sphere.

It has been observed during the evolution in the analysis of the central thematic area IP that the proliferation of themes has been increasing within the periods; from 2 themes in Period 1 to 19 in Period 2 of which 8 are the most prominent that have continuity from the main origin issue in period 1 and 4 are new issues. From the period 2 to 3, 21 issues arise, of which 5 are the ones that gain the most prominence due to the convergence of the issues raised in period 2.

From Period 1, *Takeovers* evolve into *Ownership-Structure* and *Acquisitions*. While *Law* as a motor theme converges with a thematic nexus into *Business-groups* and *Cross-listings* remaining as a motor themes and *Incentives* appears as new motor theme. Meanwhile *Financial development*, *Markets*, *Cost and Earnings-managements* appears from *Law* as as basic themes and *Capital-structure* appears a new basic theme. Finally, new themes appear such as *Incentives* as motor theme and *CEO* as an emerging theme.

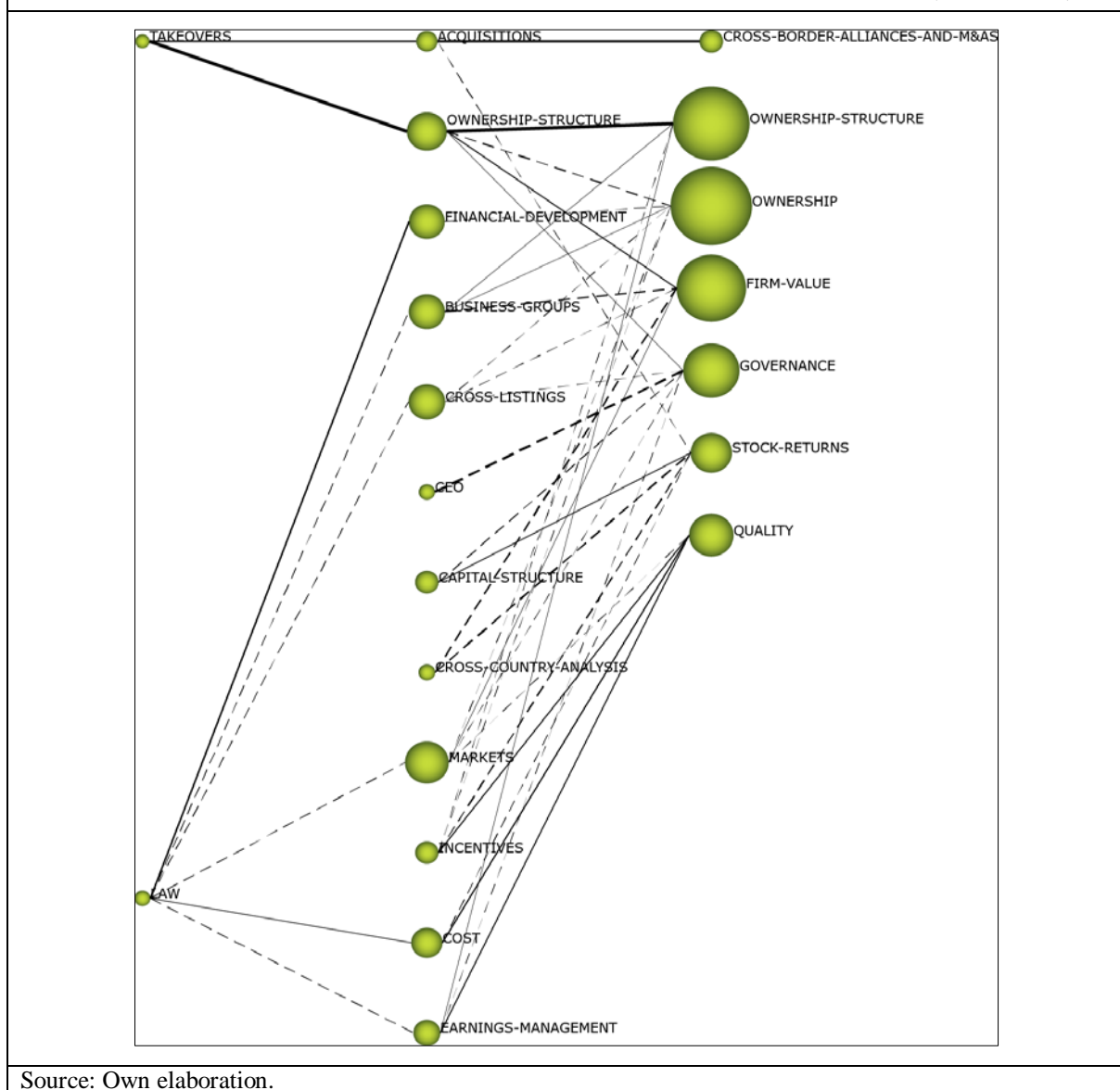
The research carried out by IP in the last years (Period 3) is vertebrated by four themes: *Ownership-Structure*, *Ownership*, *Firm-Value* and *Governance*. *Ownership-Structure* gets the best performance indicators and it evolves from the same theme, and from *Earnings-Management*. *Ownership* evolves from *Ownership-Structure*, *Earning-Management*, and *Business-Groups* having a thematic nexus; and *Incentives* with a dotted line meaning that they

share some keywords. *Firm-Value* consolidated as motor theme in the Period 3 evolving from the themes *Ownership-Structure* and *Markets*, sharing some thematic nexus between them; and keywords with *Business Groups*, *Cross Listing* and *Cross-Country-Analysis*. Finally, *Governance* also consolidated as motor theme evolved from *Ownership-Structure* and *Cross-Listing*; as well as *Capital-Structure* and *CEO* (two new themes appears in the period 2) which those with are sharing keywords.

There is just one theme *Ownership-Structure* that appears in the last two periods, highlighting its relevance due to its consolidation as a motor theme. In fact, it could be considered as one of the most important topics, especially in the second period due to its impact rates and its number of citations. During Period 3 this theme is entrenched, it gets more documents, but reduces the number of citations and even though it reaches the highest impact rate, is half of the rate of the previous period (from 40 to 20). The theme evolves in Period 3 into the same theme. This evidence reveals that *Ownership-structure* is a key theme because it determines the degree of power inside investors. In general, there is a high concentration in the ownership-structure for several reasons. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) argue that shareholders need to have control to avoid being expropriated by the managers. Also, managers and controlling shareholders need to protect themselves from outside attacks. But even, in many cases, ownership concentration is a tool to divert resources from the companies against the interest of outside investors (minority shareholders and creditors). This last topic has been the subject of heated debate from earliest years because has an impact on different questions of the companies. It can be seen from the other point of view, La Porta et al. (1998) consider that ownership concentration can become a substitute for legal protection because shareholders are interested in receiving returns on their investment.

Markets have become the second most important basic theme in Period 2 due to its high rates. Its evolution from Period 2 to Period 3 is explained through the different lines that connect the themes. The literature shows that the market does not care about the firm's investor protection practices (e.g. Cheung, Dang, Jiang, Lu, & Tan, 2018). In this case there is a thematic nexus between *Markets* and *Firm-Value*, represented with a solid line. As well as the themes linked with dotted lines such as *Ownership* and *Quality*.

FIGURE 6. THEMATIC EVOLUTION OF PI RESEARCH FIELD (1958-2017)



Source: Own elaboration.

In the whole thematic area, there are (in the last two periods) themes that are not linked to any others. This may be because they might be considered a recent topic or new, or because there are not well described as keywords. This is the case with topics that are very isolated such as *CEO-Turnover* or *Liquidity* in Period 2 as well as *Audit-Quality* in Period 3 arising as an emergent theme. The theme *Integration* evolves from Period 2, to the theme *Home-Bias* in Period 3. This theme goes then from an emerging concept to a isolated theme. The thickest line connects *Earning-Management* from Period 2 evolving into *Audit-Committee*, in Period 3, being proportional to the inclusion index.

In summary, IP focuses on one clear theme that is *ownership-structure and ownership* as a legal aspect maintains its importance over time, but there are other themes that appear in Period 3 with a different focus. It is the case of *firm value*, *governance (both motor themes)*, *stock returns* and *quality* that come from several themes researched during Period 2 and it has created new research lines related with new concerns in the companies world.

4. CONCLUSIONS

The main findings of this research are that interest in this field of study is increasing, especially in the last decade. Shleifer, La Porta and Lopez-De-Silanes are the authors with the most references (more than 5,000 citations), being USA, China and England the most productive countries. Corporate Governance-An International Review, Journal of Corporate Finance and Journal of Banking & Finance are the journals with more publications related to IP.

There is wide academic literature, but has two shortcomings. First, IP research has been focused on shareholders as the main figure as an investor centered in questions of *ownership-structure* of the companies, especially, listed companies on stock markets. This means that protection of other kinds of investors such as bondholders or financial consumers in general, have not been researched enough in the academic literature. The malpractice committed in the commercialization of financial assets and products during the 2008 financial crisis requires research in the academic field and to develop more regulations by authorities to preserve the consumer financial protection in a broad sense. Second, IP research has evolved from legal aspects and corporate operations in Period 1 and 2 to other factors in Period 3 such as *governance, firm value, stock returns* and *quality* that are configured as new references for the investors. These concepts bring in a synthetic way of mixing several themes researched in Period 2 such as *financial development, business groups, cross-listings, CEO, capital structure, cross-country analysis*, etc. (see figure 6). Now there is only to mention in corporate governance, lacking academic research about environmental and social factors linked to sustainability. These factors are being increasingly incorporated into companies and it will be considered by IP research in the near future.

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