How Much Was Written about Control Monitoring? Review of ScienceDirect Publications, Year 2014 - 2018

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Abstract: *Control monitoring is a very important tool that is used for setting up and evaluating the progress of accounting, administrative and financial nature. It contributes to the effectiveness and efficiency of business operations and to the achievement of goals. In addition, it reduces risks and prevents accounting principles and standards from being fulfilled. Given its importance we will analyze articles that deal with internal monitoring during the period of 2014-2018 from the ScienceDirect database, we worked with variables such as: titles, authors, journals, approaches, areas, methodologies, among others. Areas are defined as the place or space in which rules, laws, regulations, procedures, etc. are applied. The results showed that the most representative area, 59%, is of the specific application, which refers to the practical application of one type of company. It was also determined that the most used method to collect information from articles were the primary sources such as: questionnaires, interviews, and surveys, 39%. It was clear that 33% were of the male gender. In conclusion, the highest percentage of research and applications, according to the ScienceDirect database, is done in Mexico*

Keywords: Bibliometric analysis, internal monitoring, scientific publishing, ScienceDirect

1. Introduction

Bibliometrics comes from the necessity to create a tool capable of managing the lack of control of publications which show efficient and high-quality information in ways that enrich the knowledge of the reader and serve as a basis for future scientific articles [1]. As a result, the first bibliometric reviews appear as conclusive in the XVIII century [2].

Pritchard defines bibliometrics as the application of mathematical methods and statistics of books and other means of communication [3]. Among these methods we can find bibliometric indicators such as Impact factor, Immediacy Index, cited, citing half-life [4]. These indicators will allow us to determine the performance of scientific publications as well as the selection and consumption to measure, contrast and to objectify the scientific production.

Internal control has been recognized as an essential and vital process within a company's activity and in auditing [5]. Among its objectives to bring out the effectiveness and efficiency of operations; The Reliability of financial information; compliance with standards, obligations; and safeguard assets

In this time, internal control has been formalized in a document called COSO, which covers the main guidelines so that the control system has the correct implementation, management, and control in order to provide corporate security such as the detection of events that prevent the fulfillment of the objective [7].

COSO defines internal control as a process implemented by the board of directors, the main administration, and other personnel, designed to provide reasonable assurance in relation to the fulfillment of the organization's objectives [6]. According to COSO I, internal control is structured by five components such as: the control environment, control activities (policies and procedures), risk assessment, information, communication and the monitoring or supervision, these components can be implemented in the different organizations depending on the different operational administrative characteristics and size.

Therefore, internal control is important and necessary because it contributes to the management and security of the accounting system it detects irregularities and errors. It minimizes risks and it prevents accounting principles and standards from being violated, thus helping to optimize business operations [9].

From this idea this investigation arose which aims to carry out a literary review about internal control in the database of ScienceDirect to analyze and review academic publications from the years 2014 – 2018. Also, between the studied variables such as the title, authors, journals, and approach, among others to contribute to the academic development.

Information-Gathering Instrument
The documents used comes from the ScienceDirect database. This database was founded in 1999, it possesses a collection of over 10 million articles that come from thousands of books and more than 2500 magazines published by associated printers and a group of publishers like Elsevier which is considered the biggest one in the world [10].

The search was limited to the words "control interno", in Spanish, of which 239 articles were obtained. From this result, a sample of 49 articles was extracted, from which a

matrix was created that included the variables title, authors, journal, among others. Based on the collected sample, a descriptive analysis was carried out through the determination of variables obtained through a critical and detailed reading of each of the articles. Within the determined variables there is the scope: Specific Application, General Application and Theoretical Study. Approach (table 1) and methodology (table 2) applied to the different academic publications.

Table 1: Approach

Approach	Description
Bibliometrics of scientific journals	They are articles that refer to bibliometric indicators.
Business diversification	It focuses on growth and expansion strategies that will make it possible to determine the appropriate moment in which a sector or organization can begin to offer new products or enter new markets.
Business Intelligence	It consists of the factor analysis of variables such as: personal, social, and work skills to determine the influence of these job skills.
Business Management	It analyzes and evaluates the company, administration, accounting, and financial systems to make decisions.
Credit Access	It focuses on the use of the logit model that allow the calculation of variables to determine the factors that limit access to bank financing.
Democratic and Economic Growth	It measures the sources of economic growth, the influence of politics, culture, the actions, and decisions of the State in economic development.
Economic politics	It consists of the literary review of public programs that stimulate innovation based on economic politics that ensure business development.
Financial Structure of SMes	It analyzes the effects of capital succession and debt on future generations.
Growth of Banking	Its purpose is to verify internal and external factors that intervene in the growth and development of banking.
ICT and business performance	It assesses the relationship between availability, use of ICT and organizational product performance.
Intangible Assets	It categorizes the intangible assets, by measuring them and giving importance when making decisions.
Internal control between departments	It focuses on the study of policies, rules and regulations that verify the relationship between various departments or surroundings of the company.
Internal Control Evaluation	It focuses on various methods to evaluate internal control, such as the creation of indexes, questionnaires, interviews, among others.
International financial risk	It is the use of different methods such as: exchange rate, foreign trade and financial risk indicators which allows the analysis of operational risks related to financial transactions.
International Trade	It focuses on the use of Born Global, International New Ventures, among others. It allows the study and analysis of theoretical perspectives on international growth and expansion.
Knowledge management	It analyzes the effects caused by hiring former employees of international companies on national (local) companies, as well as the capacity, faculty absorption and the way in which knowledge is gained.
Management of the Accounting System	It focuses on applying interviews, surveys, questionnaires, factor analysis and blueprints that will allow evaluating job performance caused using a management accounting system.
Organization Competitiveness	It consists in the study of variables such as: coverage, size, sector, HR, among others, to enhance organizational competitiveness through internal control.
Organizational culture and innovation	It measures the link between the organizational culture and variable to enhance business competitiveness.
Organizational culture and sustainability	It measures the influence of organizational culture on Corporate sustainability.
Organizational Performance	It focuses on the use of methods such as: productivity and financial indicators that evaluate the productivity of companies.
Quality of banking service	It analyzes the clients' appraisal about the quality of the services received by the banking sector.
Strategic and innovation management	It studies the proper characteristics of the organization, the environment, and the sector in which it operates.
Strategic management of ICT	It focuses on the technological causes the take-up of e-commerce.
Unemployment and Economy	It focuses on various methods such as: competing values, econometric analysis, among others that contribute to the analysis of unemployment in the economy.
Work environment and organizational culture	It assesses the relationship between the work environment, organizational culture, and internal control.
Work environment and Performance	It validates the relationship of various departments, organizational environments, and their job performance relation.

Finally, the description of the methodology is shown, among the ones we have are the following:

Table 2: Methodology

Method	Description
Bayesian networks	They analyze the cause-effect of a event, the cause-effect model takes into consideration the opinion and judgments of experts, analysts and specialists.
Camel model	It is a rating system that measures and analyzes capital, asset quality, administration, profitability, and liquidity through the application of financial ratios.

Correlational research	It is a statistical research method that determines the degree of the connection that exists between two or more variables through tools such as: factor analysis, study of events, regressions, among others.
CVM3	The Competing Values Model determines the relation and importance of the organizational culture and climate.
Delphi method	It is a method based on interviews, questionnaires, among others that allow obtaining opinions from different experts.
Exchange indicators	These items have a methodology of applying foreign exchange and foreign trade indicators.
Literature Review	They are articles that get information through the theoretical review of scientific research.
Logit model	It is a model that compares the probabilities of explanatory alternatives which allows measuring the prediction of an event occurring.
Map of competitiveness	It allows you to know about the perception of organizational performance in its internal dimensions.
Multi-criteria Analysis	It compares alternatives according to hierarchical criteria, thus allowing to know the most relevant criterion.
Narrative analysis	They are articles that obtain information through speeches characterized by presenting a sequence of events located in each time and space.
Primary sources	This item obtains information through surveys, interviews, questionnaires, magazines, and financial statements.
Qualitative Research	It is a research method that investigates, evaluates, and weighs information obtained through resources such as surveys, interviews, tests, among others.
Secondary Sources	These items obtained information through academic documents such as books, scientific journal articles, books, etc.
SERVQUAL model	It is a model based on the use of a questionnaire and the Likert scale, this model covers five parameters such as: security, reliability, empathy, responsiveness, and tangible elements.

Lastly, an analysis of variables was applied, which consists of measuring the dependency or independence relation between two nominal qualitative variables or factors [11].

2. Results

The research findings are presented in two groups: 1) Descriptive analysis, 2) Analysis of the relationship between variables.
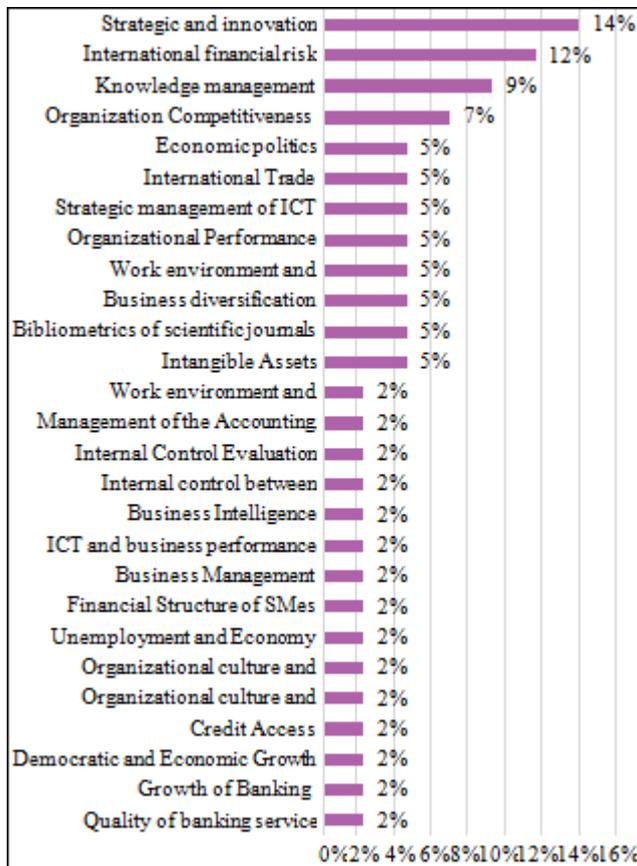
1) Descriptive analysis

Figure 1: Approach

Figure 1 shows the different approaches applied in the academic articles. It is noteworthy that the most representative group, 12% are the ones that have an approach related with "Strategic and Innovation Management" that studies the internal and external characteristics of an organization as well as the importance of innovation for business integrity. It is then followed, 10%, by articles related to the "International Financial Risk" approach. Where different methods are applied such as: Foreign exchange, foreign trade, and financial risk indicators to determine the appropriate level of solvency of being in financial risk. Next, 8%, is found with the determined approach about the analysis of "Knowledge Management" which occurs through interviews, questionnaires that evaluate absorption capacity and the way knowledge is acquired.
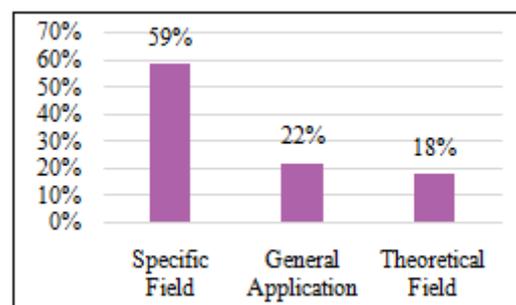

Figure 2: Academic Field Publication

According to Figure 2, 59% have a specific field of application, which refers to specific applications that act in one type of company or media such as, SMEs, industrial sector, service sector, among others. This shows that most authors choose a specific point for their analysis. 22% of the articles are of general application, which consists of the use of a variety of applications which can act in any sector that it is within. Just 18% of the articles correspond to a theoretical field that refer to the search for specific information in databases such as: Scopus, ScienceDirect, among others.
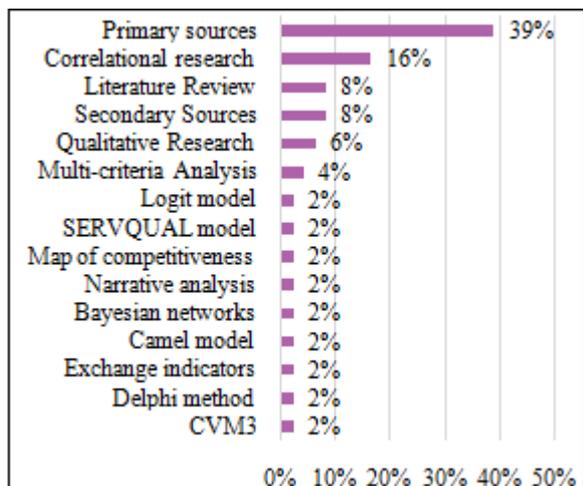
Gráfico 3: Metodología de las publicaciones académicas

The analysis shows, Figure 3, that the most used tool for data collection, with 39%, is based on "Primary Sources" method by which items get information through surveys, interviews, questionnaires, and financial statements [12]. The second most used tool for data collection is given through "Correlational Research" with 16%, this method applies instruments such as: the study of events, Pearson's correlation coefficient, which allow to determine the degree of relationship that exists between two or more variables[13].

Furthermore, it can be observed that other tools preferred by researchers are the "Literary Review" and "Secondary Sources" methods with an 8% for both cases. Information is obtained through books, scientific documents, among others. The only difference is that the literary review studies the information and it synthesizes it according to its importance and relevance while secondary sources contain primary synthesized information.[12].
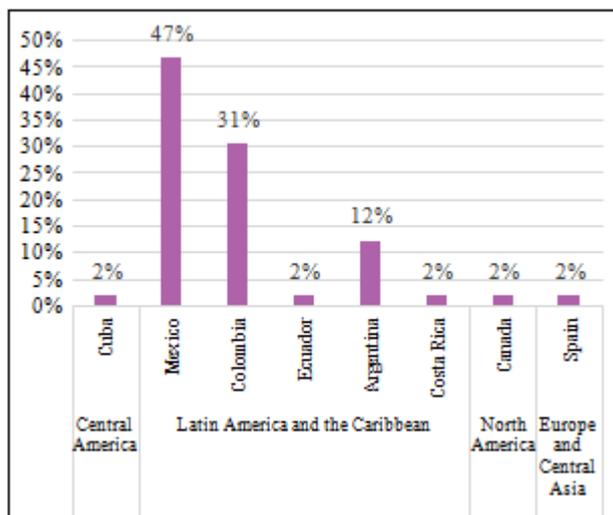
2) Relations between variables

Figure 4: Continent and Country of Paper

When analyzing the total of articles studied according to their continent of origin, Figure 4, that is to say, the place where it was applied, it can be that 94% belong to Latin America and the Caribbean, where Mexico and Colombia

stand out. The least representative countries in terms of scientific publications are Ecuador and Costa Rica.

The continents of Central America, North America, Europe, and Central Asia are the least representative continents in terms of the preparation of articles since together they barely achieve 6% of all academic publications.

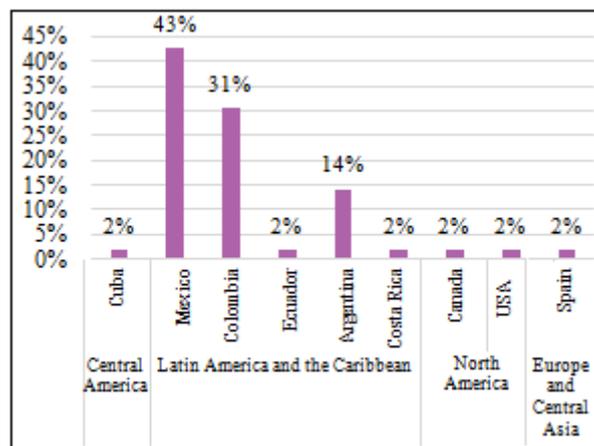**Figure 5:** Continent and Country of the first author

Figure 5 shows that the first authors come from Latin America and the Caribbean, specifically from three countries: Mexico, Colombia, and Argentina. This shows that they are the most prepared countries and the most aware about the importance of academic publications.
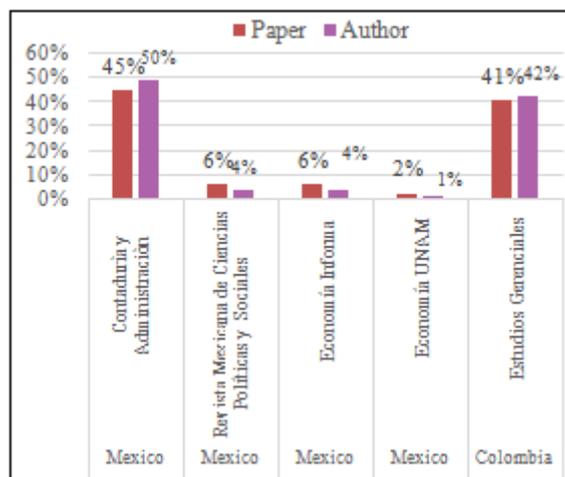

Figure 6: Continent, Countries, Authors, and Journals

Figure 6 shows 5 journals that belong to Latin America and the Caribbean and we can also see that four come originally from Mexico and one from Colombia.

On the other hand, we can see that the journals with the highest published articles are Contaduríay Adminsitración with 45% (journal of the National Autonomous University of Mexico Followed by the journal of EstudiosGerenciales, with 41%.
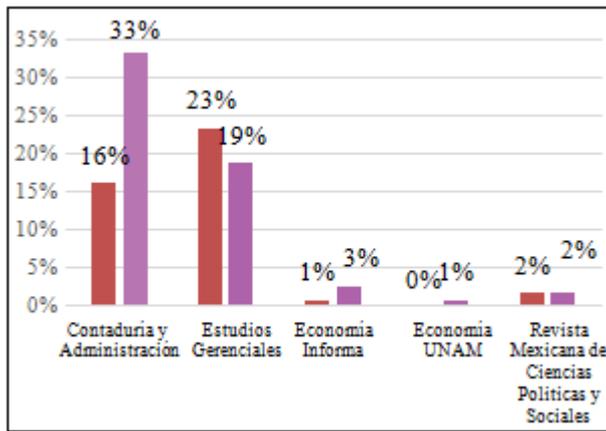
Figure 7: Female and Male Authors of Journals

Figure 7 shows that 49% of the authors have written for the Contaduría y Administración journal, where male authors have contributed a little more than female authors. The journal of EstudiosGerencialesovers 42% of the authors in which most part the authors are female.

This information makes it possible with a total of 58%, to show that male authors are the ones who make more publications.

3. Conclusions

According to the articles analyzed, we can see that 12% have an approach referred to "Strategic Management and Innovation", which has the purpose to create and implement strategies that will guarantee the survival, development, and growth of the organization through internal control.

The "Specific Application" was also determined as the most relevant area with a total of 59% that refer to a specific application in a type of company or medium such as: SMEs, industrial sector, textile industry, among others.
Regarding its methodology of action applied by different articles, it was shown that 39% of the authors chose to get their data from primary sources such as surveys, questionnaires, interviews, which allow them to get updated accurate information but above all, generate important information in a short amount of time with few resources at hand.

The largest number of articles come from Latin America and the Caribbean, among which those of the Mexican origin stand out with 47% and 43% of the first authors are also of the Mexican origin.

Based on the results obtained from the bibliometric analysis, male authors are the ones who make the most publications in the journals of Contaduría y Administración. More than 33% of the male authors partake in publishing these articles.

These results provide support for students and researchers for more sophisticated studies on internal control and as a guide for determining which journal they would like to send their research. In addition, it offers the possibility of obtaining reliable and trustworthy data making the search for information easier and strengthening the readers knowledge.

References

[1] G. Gonzáles y V. Agulló, «Bibliometría. Fundamentos teóricos, aplicaciones y metodologíapara el análisis de la literatura científico-médica,» *Redalyc,* p. 2, 2012.

[2] M. Blázquez, «Historia de la Ciencia de la Documentación,» 2012. Available: http://mblazquez.es/wp-content/uploads/ebook-mbo-historia-ciencia-documentacion.pdf.

[3] H. Canales y M. Mesa, «Bibliometría, Informetría, Cienciometría: Su Etimología y Alcance Conceptual,» 2002.Available: http://www.bibliociencias.cu/gsdl/collect/eventos/import/Bibliometria%20Informetria%20Cienciometria.pdf.

[4] M. Dávila, R. Guzmán, H. Arroyo, D. Piñeres, Barranco y C. Carlos, «Bibliometría: conceptos y utilidades para el estudio médico y la formación profesional,» *Salud Uninorte,* 2009.

[5] G. Rivas, «Modelos contemporáneos de control interno. Fundamentos teóricos,» *redalyc,* p. 117, 2011.

[6] S. Mantilla, Auditoría del control interno, Bogotá: ECOE EDICIONES, 2013, p. 15.

[7] S. Albert, «Fraude Interno,» 19 02 2016.Available: https://fraudeinterno.wordpress.com/2016/02/19/coso-gestion-de-riesgos/.

[8] E. Ladino, Control interno : Informe COSO., El Cid Editor, 2009, p. 6.

[9] J. Ramón, «El control interno en las empresas privadas,» 13 Febrero 2014.Available: https://revistasinvestigacion.unmsm.edu.pe/index.php/quipu/article/view/5476/4711.

[10] R. Cañedo, R. Rodríguez y M. Marilis, «Scopus: la mayor base de datos de literatura científica arbitrada al alcance de los países subdesarrollados,» 2010.Available: http://scielo.sld.cu/pdf/aci/v21n3/aci02310.pdf.

[11] L. Pedro, Metodología de la investigación social cuantitativa, vol. 8, Barcelona: Bellaterra (Cerdanyola del Vallés), 2015, p. 26.

[12] M. Cabrera, «Introducción a las Fuentes de Información,» 2020.Available: https://riunet.upv.es/bitstream/handle/10251/7580/introduccion%20a%20las%20fuentes%20de%20informaci%c3%83%c2%b3n.pdf?sequence=1&isAllowed=y.

[13] R. Marroquín, «Metodología de la Investigación,» 2020.Available: http://200.48.31.93/Titulacion/2013/exposicion/SESION-4-METODOLOGIA%20DE%20LA%20INVESTIGACION.pdf.

[14] J. Navarro, «Definición ABC,» diciembre 2008.Available: https://www.definicionabc.com/ciencia/metodologia.php.

[15] F. Ucha, «Definición ABC,» Julio 2012.Available: https://www.definicionabc.com/general/ambito.php.

[16] F. Ucha, «Definición ABC,» mayo 2009.Available: https://www.definicionabc.com/general/enfoque.php.

[17] L. Restrepo y G. Julián, «De Pearson a Spearman,» *Revista Colombiana de Ciencias Pecuarias,* 2007.

[18] S. P. D. S. Pita Fernández, «Fisterra,» 30 03 2001.Available:

https://www.fisterra.com/formacion/metodologia-investigacion/relacion-entre-variables-cuantitativas/.

[19] M. Mancilla y M. Saavedra, «El gobierno corporativo y el comité de auditoría en el marco de la responsabilidad social empresarial,» *Contaduría y Administración,* p. 21, 2015.

[20] D. Lind, W. Marchal y S. Wathen, Estadística aplicada a los negocios y la economía, México: McGraw-Hill Interamericana, 2015.

[21] D. Camps, «Limitaciones de los indicadores bibliométricos en la evaluación de la actividad científica biomédica,» *Colombia Médica,* p. 75, 2008.