BIBLIOMETRIC STUDY OF THE SCIENTIFIC PRODUCTION ON INFORMATION TECHNOLOGY GOVERNANCE

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ABSTRACT

Information Technology (IT) has been evidenced in the literature as a distinguishing factor, not only from the perspective of competitiveness, but also within the field of organizational performance. This way, the alignment of IT with the business strategy becomes necessary given its potential to add value to the corporate businesses. This alignment occurs by means of the analysis of conceptions, best practices, and regulations which make up the Information Technology Governance (ITG). However, although governance and information technology are frequent terms in the relevant literature, the construct technology information governance is relatively unknown to several researchers, even to those who work in the area of information technology. Therefore, a descriptive bibliometric study on information technology governance was performed, referring to the period 2003-2013, aiming at presenting the main arguments dealt with and the evolution of the research on the theme.

KEYWORDS: Corporate Governance, Information Technology, Cobit, ITIL, Bibliometrics.

1. INTRODUÇÃO

Although the use of the term IT governance is very incipient, there is no consensus on its introduction into the relevant literature (De Haes & Van Grembergen, 2005).

In the academic and professional literature, the articles citing IT governance as part of the title appeared as of 1999, such as in *"Arrangements for information technology governance: A theory of multiple contingencies"* of Sambamurphy and Zmud (1999), and *"The Balanced Scorecard and IT Governance Information"* of Grembergen (2000). In 2003, *Gartner Technology Research* introduced the term *"Improving IT Governance"* for the first time in its "Top-Ten" priorities in the management of CIO's, classified at the time in third place.

In general, it may be considered that the term "IT Governance" appeared in the late nineties, being given a highlighted focus between 2001 and 2002, after the financial frauds occurred mainly in the USA. Since then, articles, dissertations, and theses on the theme have been sporadically found, but this literature, however, is concentrated in a relatively small group of researchers and still lacks an approach of potential and necessary topics.

While Fernandes and Abreu (2012) indicate management transparency as the main motivator of IT governance, therefore adopting a more inclusive and social view, the *IT Governance Institute* (ITGI) assumes a different perspective based on the corporate business, upon regarding the information technology governance as geared towards the alignment and delivery of value from the IT area to the business, the correct allocation and measurement of the resources involved, and the mitigation of risks in IT.

The analysis of IT governance has been gaining importance when we consider the increase in the efforts made by companies as well as the consequent attempt to evaluate them in the formation of the corporative result. To measure the value of Information Technology (IT) and how the investments in this area have had an impact on the organization has been the target of studies and concerns by researchers and executives throughout the years (Matlin, 1979; Crowston & Treacy, 1986; Dehning, Dow & Stratopoulos, 2004).

In fact, there are several methods which have been developed in the search for a trustworthy metrics for the evaluation of the benefits of the investments in information technology. Curiously, while part of the recent researches show that the investments in information technology are worth making and provide the organizations with competitive advantages (Becker, Lunardi & Macada, 2003), other authors defend the idea that the investment in IT do not being competitive advantages, but only prevent the organization from being in a competitively disadvantageous position (Strassman, 1990; Carr, 2003).

This diversity of results in the identification and evaluation of the impact on the investments on IT in the organizations is explained by Lunardi (2008), due basically to the belief of CEO's *(Chief Executive Officers)* in the essential nature of the investment in IT, regardless of the possibility of measuring its return; to the fact that the IT infrastructure is part of the organization, being part of all its processes and activities; and, finally, to the gap in the identification and understanding of the costs, benefits, and risks which involve the different information technologies employed, which directly results in the difficulty of evaluation of the return associated with their use.

In spite of the difficulties presented, the adoption of the information technologies cannot be ignored and the evaluation of the return on these investments has to be taken into account, once, although there is no consensus on the generation of value originated from investments in the area, companies all over the world destine bulky investments in information technology. Therefore, the evaluation of the reflection of the Information Technology Governance (ITG) in the organizations would greatly depend on the efforts of research, a reality which seems, however, distant from teaching institutions and researchers in Brazil.

This way, this bibliometric study is aimed at the analysis of the research on information technology governance in the last decade, so as to present information on the main research arguments dealt with, the main teaching institutions engaged in the analysis of the relevant arguments, and the main researchers in the area.

2. THEORETICAL FRAMEWORK

While the conceptions of corporate governance and information technology are substantially disseminated and consolidated in the relevant literature, the construct information technology governance is still in a relatively incipient stage.

Although there is no consensus, it may be considered that the term was firstly used in the literature of information systems by Henderson and Venkatraman (1993), in which IT governance was used to describe how IT measured the business relations through a computerized system.

Sambamurthy and Zmud (1999) define IT Governance as an implementation of structure and architecture related to IT to respond to the needs of the environment and to the organizational strategic decisions. In Korac-Kakabadse and and Kakabadse (2001), IT Governance is based on the structure of relations and processes, in order to develop, direct, and control the IT resources, so as to achieve the objectives of the organization, through contributions which add value, balancing risks versus return on the IT resources and processes.

Weill and Ross (2004) defined IT governance as the set of instruments geared towards the specification of the rights of decision and responsibility, used to encourage proper behaviors in the employment of information technology.

The *IT Governance Institute* (2007) contributes to the conception of IT governance when it considers it the responsibility of the high management in the leadership and management of the organizational structures and processes which ensure that the corporative IT supports the strategies and objectives of the organization.
Based on ISO/IEC 38.500, Braga (2009) evidences the evaluation, the direction, and the monitoring as the three basic pillars of IT Governance (ITG), which would be based on the principles of responsibility, strategy, acquisition, performance, compliance, and human procedures.

Notably, after the initial definitions of IT governance essentially based on structures to develop, manage, and control the IT resources, there were more inclusive conceptions also involving processes and mechanisms of relation, as well as specific responsibilities for different types of stakeholders.

Although the relevant literature presents several definitions based on different perspectives, the sharing of common basic elements has been observed, which subsequently contributed to the development of standards, driving mechanisms, and models.

Based on an Australian standard (AS8015), ISSO *(International Organization for Standardization)* published in 2007 the ISO/IEC 29382 – Corporate Governance of Information and Communication Technology, renamed as 2008 as NBR ISO/IEC 38500 (Fernandes & Abreu, 2012).

ISO/IEC 38500:2008 constitutes an official standard which applies to the management of the decision-making processes related to the services of information and communication used by an organization, in which six principles are defined: 1) to establish responsibilities; 2) to plan in order to better support the organization; 3) to make valid acquisitions; 4) to ensure the performance when necessary; 5) to ensure the compliance with the rules; and 6) to ensure the respect for the human factors (Itgiuk, 2003).

**2.1 Driving Mechanisms of Information Technology Governance**

A company which chooses to adopt Information Technology Governance must, firstly, align its guidelines with the objectives it intends to achieve with the application of IT Governance. This is due to the fact that, within the area of ITG, there are several models, best practices, and frameworks which together form different business strategic alignments, thus becoming the proper combination of these components in accordance with the objectives of the IT Governance.

The relevant literature presents the focus, the principles, and the processes of the main ITG models, which evolved a lot due to projects developed by standardization agencies, independent groups, institutes, and organizations engaged in the correct utilization and application of IT, such as ISO *(International Standardization Organization)*, ISACA *(Information Systems Audit and Control Association)*, ITGI *(IT Governance Institute)*, and, in Brazil, ABNT *(Brazilian Association of Technical Standards)*.

While some models of IT Governance are highlighted for their extent and higher adherence to the needs of businesses, others are more specific.

Lunardi (2008) developed a research in 101 companies which followed principles of Information Technology Governance (ITG), which indicated the use of the following driving mechanisms of the ITG projects:

Figure 1 – Driving mechanisms of IT Governance
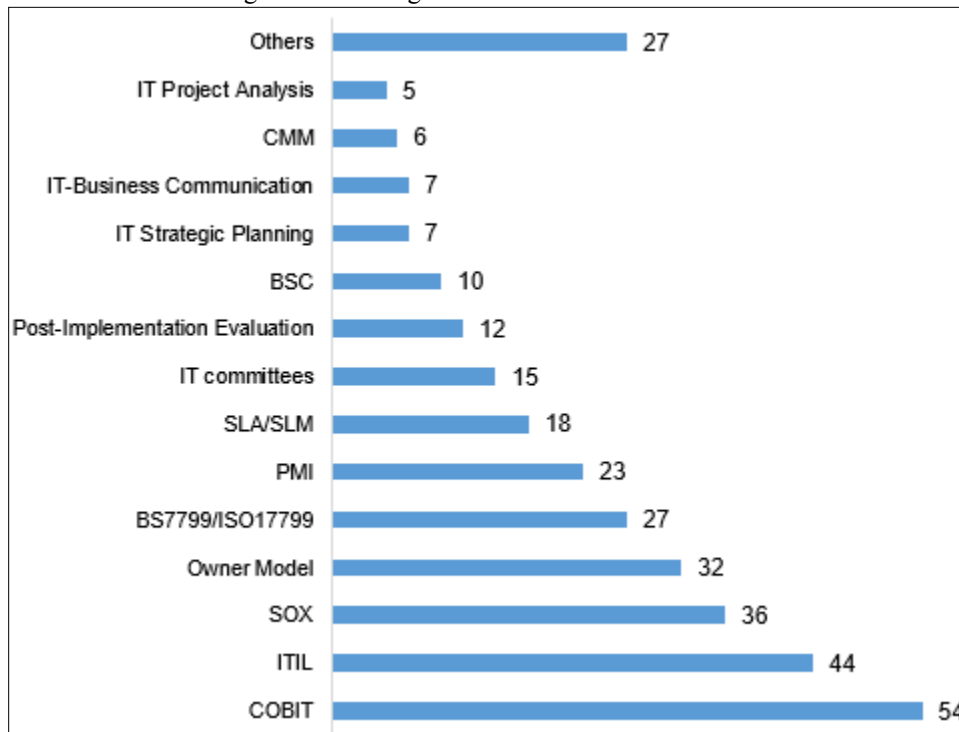
Source: Lunardi (2008, p. 101)

Picture 1 indicates that the main drivers of IT Governance are especially based on COBIT and ITIL, which are presented below.

2.1.1 COBIT - Control Objectives for Information and related Technology

COBIT was conceived in 1996 by ISACF *(Information Systems Audit and Control Foundation)*, an entity related to ISACA, with the purpose of creating a guideline for IT management focused on the control and analysis of the information systems. Originally based on the control objectives of ISAFC, with time it was improved with new techniques and international standards (Gonçalves, 2011).

Currently, COBIT is in its fifth version, which is divided into five volumes; the first documents the five principles of COBIT; the second honors the processes which define the new model of references; the third documents the best practices for its implementation; and fourth approaches actions related to the security of information; and the fifth volume is the basis for the evaluation of the business processes in relation to the information technology governance (ISACA, 2013).

The structure or framework of COBIT was developed to fulfill the needs of control of the organization in relation to IT Governance, based on characteristics such as business requirements, guidelines for the application of processes, intense use of control mechanisms, and analysis of the performance indicators (Fernandes & Abreu, 2012).

COBIT informs how the IT processes should provide the necessary information for the organization to achieve its business strategic objectives, being defined by 34 high level control objectives grouped in four pillars (Vieira, 2007): a) planning and organization, which covers strategies and tactics, and seeks to identity how to contribute to a better organization of the organizational objectives; b) acquisition and implementation, accomplished in the identification, development, acquisition, and implementation of IT solutions to be integrated to the business process; c) delivery and support, which deals with the delivery of services requested by the business, provided by the traditional transactions with safety, aspects of continuity and training; and, d) monitoring, which refers to the need for regular evaluation of all the processing to ensure the quality of the controls requested.

COBIT framework identifies which of the seven information criteria (effectiveness, efficiency, confidentiality, integrity, availability, fidelity, and trustworthiness) and which IT resources (people, applications, technology, infrastructure, and data) are important for the IT processes to support the business objectives (Gonçalves, 2011).

COBIT seeks to align these elements with the strategy of the organization and with the requirements of the environment. The business requirements related to information, quality, trustworthiness, and security consist of:

- Effectiveness: accurate information within the proper period and in the proper shape and format.
- Efficiency: provision of the information in a more productive and economical manner.
- Compliance: provision of the laws, agreements, and regulations.
- Trustworthiness: accurate and proper information to the managers for the decision-making and accounting of finances and compliance.
- Confidentiality: protection of the information and unauthorized accesses.
- Integrity: complete, accurate, and validated information in accordance with the values and expectations of the business.
- Availability: information available to the business when requested, now and in the future.

In summary, COBIT's framework intends to equalize, by means of its control objectives, the organizational strategy and the information technology:

Figure 2 – Framework COBIT
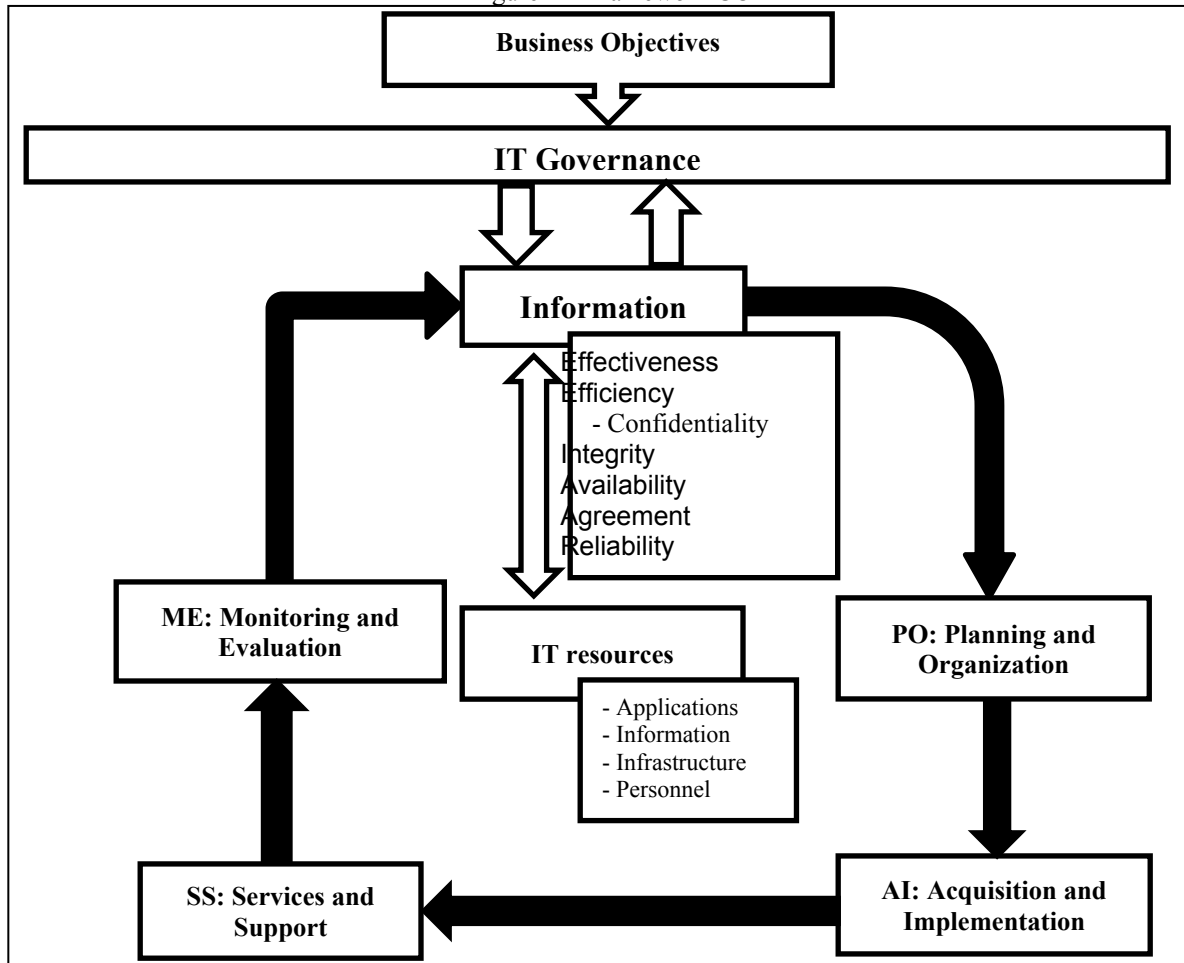
Source: ISACA (2013, p. 32).

Vetter (2006) presents the detailed COBIT framework with its 34 integral processes related to the four essential pillars, which enable an inclusive view of what is required from the IT area in its activities to achieve the business objectives and to mitigate the risks, making use of the IT resources, people, systems, installations, and data.

Figure 3 – Framework COBIT detailed
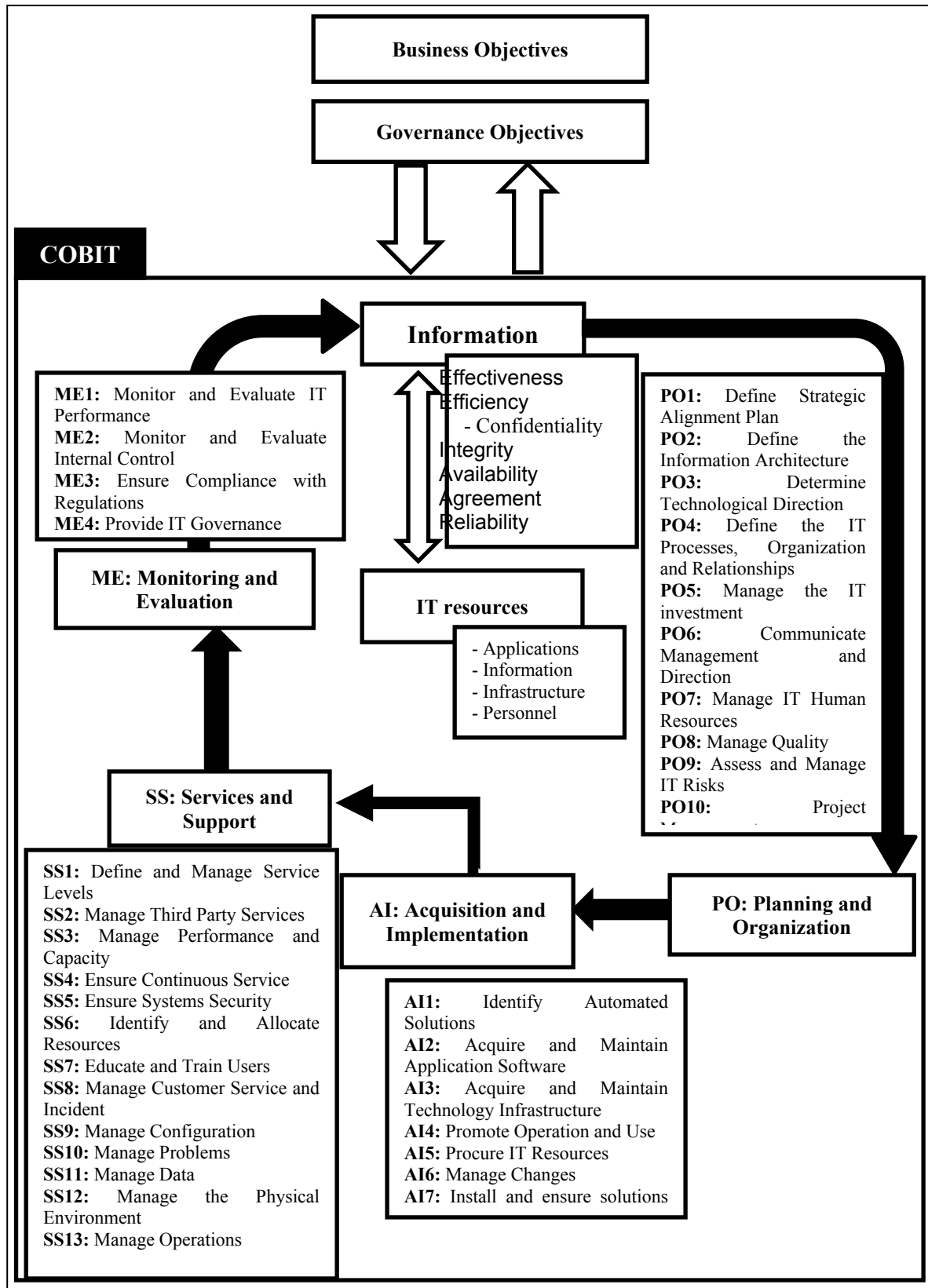
Source: Vetter, 2006 p. 14.

Notably, the IT area increasingly supports and leverages the businesses of the companies and structures the IT processes, having as its reference the COBIT framework, in response to the requirements from the shareholders, from the market, and from the legislation in terms of good IT governance practices (Vieira, 2007).

2.1.2 ITIL – Information Technology Infrastructure Library

ITIL *(Information Technology Infrastructure Library)* is a reference for management of IT processes which is highly used in several countries (ITSMF, 2007).

The model was developed by CCTA *(Central Computer and Telecommunications Agency)* in the late 80's, in response to the British government's need, for it was not satisfied with the level of quality of the IT services provided to it. This way, a set of best practices was developed for the management of the use of IT resources, independently from the providers of technologies and applicable to any type of organization. In 2001, CCTA was incorporated to OGC *(Office of Government Commerce),* which is currently responsible for the evolution of ITIL (Fernandes & Abreu, 2012).

The focus of the model consists in describing the required processes to manage the IT infrastructure efficiently and efficaciously, so as to ensure the levels of service mutually agreed with the internal and external clients.

The ITIL standards are documents in approximately 40 books, including the description of the main processes and the recommendations of the best IT practices (ITSMF, 2007).

Following the concept of framework, ITIL has a set of practices of management of IT services, following a life-cycle logic. Its adoption aims at taking an organization to a level of maturity and quality which enables the efficacious and efficient use of its strategic assets (Fernandes & Abreu, 2012).

The ITIL standards describe the systematic use of processes for the management of IT services. This way, the methodology would help the company to have a more efficient management of the infrastructure and of the services rendered; a higher control in the processes and fewer risks involved; the elimination of redundant tasks; a clear and transparent definition of functions and responsibilities; a better quality in the service provided; flexibility in the management of change; possibility of measuring the quality; a reduction in the costs with IT; an increase in the satisfaction of the client or user; more agile answers and processes; a quicker and more guided communication; a clearer and more systematic IT; and the optimization of consistent and interconnected processes.

Companies which adopted ITIL (such as HP, Siemens, and IBM) consider the potential of generation of value of IT to the businesses of the company by means of the adjustment of processes.

3. METHODOLOGY

This descriptive study was destined to the analysis of the publications on information technology governance. For that, the data collection occurred by means of electronic searches in the main Brazilian and international databases, in addition to searches in digital libraries and sites of the main publishers.

Based on the main terms related to IT Governance found by Lunardi (2008), the search was conducted with the following keywords: *Governança de Tecnologia da Informação,* Information Technology Governance, COBIT, ITIL, ISO 17799, PMI, ISO 38500, and NBR 38500:2009.

Table 1 presents the research bases employed in the identification of the terms related to IT governance, and it must be observed that not all of them were useful.

Table 1 – Research bases

Title	URL
.periodicos. CAPES	http://www.periodicos.capes.gov.br/
b-on – Biblioteca do Conhecimento Online	http://www.b-on.pt/

Title	URL
EBSCO – Electronic Journal Services	http://ejournals.ebsco.com/
Emerald	http://www.emeraldinsight.com/
Google Acadêmico	http://scholar.google.com.br/
Google *Scholar*	http://scholar.google.com/
IEEE Xplore *Digital Library*	http://ieeexplore.ieee.org/Xplore/home.jsp
InformaWorld	http://www.tandfonline.com
ISI *Web of Knowledge*	http://portal.isiknowledge.com/
JSTOR	http://www.jstor.org/
LusOpenEdition	http://lusopenedition.org/
MIS Quarterly	http://www.misq.org/
SciELO – *Scientific Electronic Library Online*	http://www.scielo.org/php/index.php
Wiley – *Online Library*	http://onlinelibrary.wiley.com/

Source: Prepared by the authors.

The keywords referred to were initially searched in the titles of works, and subsequently in the abstracts and complete texts. Upon identifying the use of some of the terms, we proceeded to the collection of information related to the country of publication; year of publication; teaching institution of the work; geographical region of the institution, in the specific case of Brazil; authors of the work; and type of work.

The collected data were treated and presented by means of descriptive statistics, tables and graphs, containing the absolute frequencies, relative frequencies, means, and variations of the quantities used in the analysis and interpretation of the results.

4. PRESENTATION AND ANALYSIS OF RESULTS

This work began with the selection of the main scientific databases which stored publications and their respective metadata. Subsequently, we proceeded to the search for the keywords related to information technology governance, in titles, abstracts, and complete texts.

The investigated databases resulted in a total of 602 scientific documents, including articles, dissertations, theses, and monographs. As a result Table 2 was obtained.

Table 2 – Scientific databases X Total of publications

Scientific databases	Total publications
.periodicos. CAPES	183
b-On	47
CAPES - Banco de Teses	71
DOMÍNIO PÚBLICO	1
EBSCO	18
Google	7
IEEEXPLORE	279
Grand Total	**602**

Source: Data collected from the research.

The biggest part of the results derive from the research base IEEEXPLORE, related to the non-for-profit organization IEEE *(Institute of Electrical and Electronic Engineers)*. Table 3 presents the ratio of the quantity of publications per keyword and per type of work, in which it can be realized that around 42% of the publications were found by means of the term "*IT Governance*" and only 12.79% by means of the term translated into Portuguese, showing the vast majority of publications in English.

Table 3 - Ratio of Types of documents x Keywords

Keywords	Article	Dissertation	Book	Monograph	Thesis	Total
COBIT	67					67
Governança de Tecnologia da Informação	4	67	1	1	4	77
Governança de TI	3	3	7	1	1	15
Information Technology Governance	1					1
ISO 38500	4					4
IT	11		1			12
IT Governance	250		2			252
ITIL	141	1	1			143
Sarbanes-Oxley	30					30
TI	3		5			8
VAL IT	4	1				5
Grand Total	**508**	**71**	**17**	**2**	**5**	**602**

Source: Data collected from the research.

With the purpose of verifying the participation of the Brazilian researchers in the collected sample, the same data were filtered so as to list only the documents produced by researchers in Brazil. As a result Table 4 was obtained.

Table 4 – Total of publications per Brazilian researchers

Keywords	Total publications
COBIT (*Control Objectives for Information and related Technology*)	4
Governança de Tecnologia da Informação	76
Governança de TI	15
IT Governance	10
ITIL (*Information Technology Infrastructure Library*)	9
Sarbanes-Oxley	3
TI (*Tecnologia da Informação*)	6
VAL IT (*Value for IT*)	1
Grand Total	**122**

Source: Data collected from the research.

Table 5 shows that the great majority (57.38%) of the publications made by Brazilians in the field of ITG are dissertations, differently from the foreign publications, in which the great majority refers to articles.

Table 5 – Brazilian publications X Document type

Type of Document	Total
Article	33
Dissertation	70
Book	13
Monograph	2
Thesis	4
Grand Total	122

Source: Data collected research.

Table 6 presents the main sources of publications of articles found in the field of information technology governance.

Table 6 – Number of articles per source of publication

Source of publication	Total
ACM	4
Cengage Learning, Inc.	35
Center for Information Systems Research	1
Communications of the ACM	1
Directory of Open Access Journals (DOAJ)	36
ELSEVIER	73
Emerald Management eJournals	21
ERIC (U.S. Dept. of Education)	1
Financial Executive	1
FindLaw	1
Fundación Dialnet	3
Harvard Business Review	1
Human Systems Management	1
IBGC	1
IDC	1
IEEE Conference Publications	284
IEEE Journals & Magazines	1
IEEE Publishing	1
Inderscience Journals	2
India Review	1
Information Systems Management	2
Internal Auditor	3
ISACA	4
ITGI	1
ITGIUK	1
ITSMF	1
John Wiley & Sons, Inc.	4
Journal of Information Systems	8
MIS Quarterly	1
Nature Publishing Group	4
Palgrave-journals	1
Project Management Journal	1
Project MUSE	1
Repositório Científico de Acesso Aberto de Portugal	7
SAGE Publications	1
SciELO Brazil	3
SciVerse ScienceDirect Journals	35
SERPRO	1
SPELL	3
Springer Science & Business Media B.V.	9
STI	1
TCU	2

Source of publication	Total
Web of Science	16
World Scientific Publishing Co.	1
Grand Total	**511**

Source: Data collected from the research.

Among the sources of research analyzed, IEEE Conference Publications was the one which received more publications related to the field of Information Technology Governance. It is believed that this expressive number was due especially to the position of IEEE has the main responsibility for the standardizations occurred in the field of ITG in the last decades.

Other three sources are highlighted: SciVerse ScienceDirect Journal, DOAJ, and Cengage Learning Inc. SciVerse is part of Elsevier, one of the biggest companies responsible for the publication of scientific material in the world. The Directory of Open Access Journals (DOAJ) is maintained by the University of Lund in Sweden, where over one million and a half journals from over 120 countries are indexed and available for consultation. Cengage Learning Inc. is one of the biggest publishers in the area of arts, sciences, businesses, economics, engineering, and computer science.

Table 7 summarizes the publications made in the main sources, distributed by year, in which we can observe a higher production of articles in the area being made as of 2010, which can indicate a higher interest in the area as of this year, partially due to the publication of frameworks, best practices, and tools in Information Technology Governance in the three-year period of 2008-2010.

Table 7 – Number of articles/year from the main sources of publication

Source of publication	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cengage Learning, Inc.	3	3	2	1	6	2	3	9	4
Directory of Open Access Journals (DOAJ)	1		2	3	3	7	10	6	4
Emerald Management eJournals	2	1		1		1	7	8	
IEEE Conference Publications	5	18	24	29	30	56	49	45	10
SciVerse ScienceDirect Journals	2	3	4	4	2	6	4	6	1
Springer Science & Business Media B.V.	2				2	3	2	4	1
Web of Science	1		2	3	3	7	10	6	4
Total	**15**	**25**	**32**	**38**	**43**	**75**	**75**	**78**	**20**

Source: Data collected from the research

The identified works are found in around 265 different journals, distributed in the aforementioned sources, and the highlight was the System Sciences, annual conference whose main organizer is the IEEE. Graph 1 presents the 5 (five) journals with the highest number of publications.

Chart 1 - Main journals
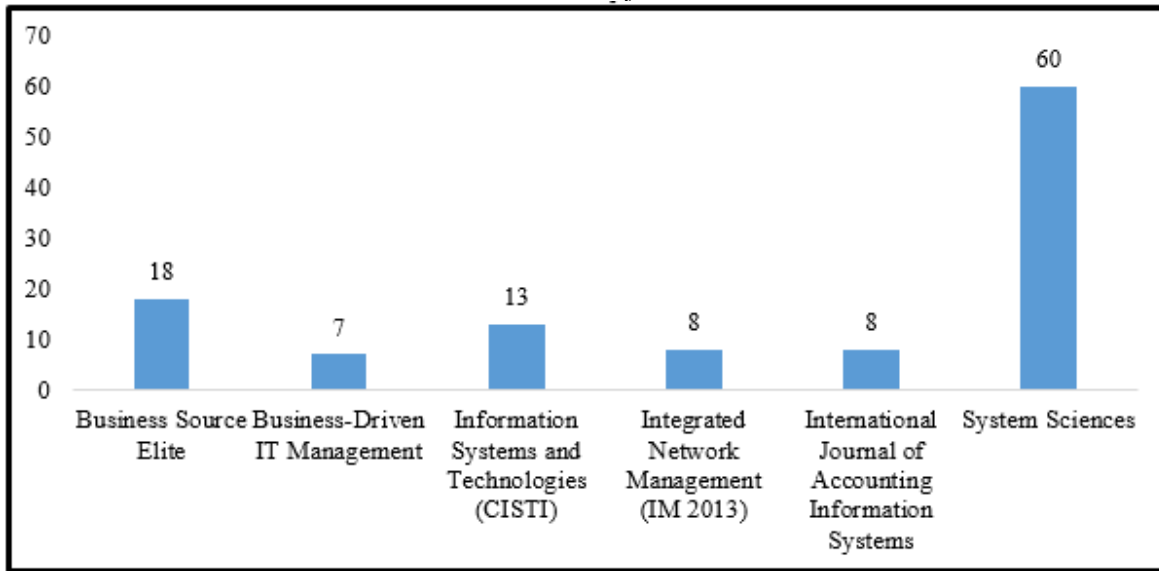
Source: Data collected from the research.

Table 8 presents the main Brazilian journals with publication on information technology governance. The small number of publications should be highlighted.

Table 8 – Brazilian journals

Brazilian journals	Total publications
Brazilian Journal of Information Science	1
Magazine Accounting & Finance	1
Rege: Management Magazine	1
Systems & Management	1
ScieELO Brazil	1
RBGN: Journal of Business Management	2
Electronic Journal of Information Systems	2
Journal of Business Management	1
Total	**8**

Source: Data collected from the research

The relatively reduced number of publications in Brazilian journals led us to investigate the quantity of publications in the field of information technology governance based on the nationality of the researchers (Table 9).

Table 9 – Publications distributed by the countries of the researchers

Country	Total publications	Percentage (%)
South Africa	7	1,16%
Germany	31	5,15%
Saudi Arabia	4	0,66%
Australia	31	5,15%
Austria	8	1,33%
Belgium	12	1,99%
Bosnia	6	1,00%
Brazil	122	20,27%

Country	Total publications	Percentage (%)
Canada	11	1,83%
China	46	7,64%
South Korea	5	0,83%
Croatia	2	0,33%
United Arab Emirates	1	0,17%
Spain	11	1,83%
USA	142	23,59%
Finland	7	1,16%
France	5	0,83%
Netherlands	15	2,49%
Hungary	1	0,17%
India	5	0,83%
Indonesia	7	1,16%
England	12	1,99%
Iran	17	2,82%
Italy	1	0,17%
Japan	6	1,00%
Jordan	2	0,33%
Luxembourg	3	0,50%
Malaysia	24	3,99%
Morocco	6	1,00%
Mexico	1	0,17%
Norway	3	0,50%
Oman	1	0,17%
Pakistan	2	0,33%
Portugal	22	3,65%
Romania	2	0,33%
Serbia	4	0,66%
Slovenia	1	0,17%
SriLanka	1	0,17%
Sweden	12	1,99%
Switzerland	9	1,50%
Taiwan	3	0,50%
Tanzania	1	0,17%
Turkey	4	0,66%
Uruguay	1	0,17%
Grand Total	**602**	**100,00%**

Source: Data collected from the research

Table 9 shows the North-American prevalence (23.59%), Brazil in second place (20.27%), and Chine in third (7.64%), in the ranking of publications on IT governance.

The fact that the United States is the country with the biggest number of publications is highly understandable, given the traditional volume of publications in practically all areas of knowledge, and the great motivating factor deriving from the financial scandals occurred in the beginning of the last decade, which would result in specific rules and legislation directly related to the area of information technology governance.
Picture 4 presents the publications according to the nationality of the authors.

Figure 4 – Distribution of the publications throughout the world

Source: Data collected from the research.

With the purpose of presenting the most prolific researchers in the field of Information Technology Governance (ITG), Table 10 was developed.

Table 10 – Most prolific researchers in ITG

Author	Total publications	Country	Educational institution
Sahibudin, Shamsul Bin	11	Malaysia	UTM - University Technology of Malaysia
Silva, Miguel Mira da	10	Portugal	IST - Superior Technical Institute of Lisbon
Van Grembergen, Wim Van	9	Belgium	University of Antwerp - Institute for Informatics
De Haes, Steven	7	Belgium	University of Antwerp - Institute for Informatics
Ayat, Masarat	7	Malaysia	UTM - University Technology of Malaysia
Sharifi, Mohammad	7	Malaysia	UTM - University Technology of Malaysia
Bartolini, Claudio	6	Italy	University of Ferrara
Wilkin, Carla L.	6	Australia	Monash -University of Business and Economics
Luciano, Edimara Mezzomo	6	Brazil	PUC-RS - Pontifical Catholic University of Rio Grande do Sul
Lunardi, Guilherme Lerch	6	Brazil	UFRGS - Federal University of Rio Grande do Sul
Pereira, Ruben F. de Sousa	6	Portugal	IST - Superior Technical Institute of Lisbon
Green, Peter	5	Australia	University of Queensland
Tanovic, Anel	5	Bosnia	University of Sarajevo

Debreceny, Roger S.	5	USA	University of Hawaii
Jantti, Marko	5	Finland	University of the West of Finland – Kuopio
Nassiri, R.	5	Iran	Islamic Azad University - Tehran
Petersen, Ryan R.	5	Netherlands	Tilburg University
Shabgahi, G. L.	5	Iran	Islamic Azad University – Tehran
Bahsani, Samir	5	Morocco	University of Settat – Morocco
Himi, Abdelaali	5	Morocco	University of Settat – Morocco
Semma, Alami	5	Morocco	University of Settat – Morocco

Source: Data collected from the research.

The identified works resulted in a total of 909 authors, distributed in several countries. The most prolific foreign researcher in the area is Shamsul Bin Sahibudin, from the Technological University of Malaysia, followed by Miguel Mira da Silva, from the Technical Higher Institute of Lisbon. In Brazil, researchers Edimara Mezzomo Luciano and Guilherme Lerch Lunardi appear in highlight.

5. FINAL COMMENTS

This work was destined to analyze the scientific production on information technology governance. The investigation of the keywords in the seven scientific databases analyzed, during the period 2003-2013, resulted in 602 documents, among articles, dissertations, theses, and monographs.

As of the years 2001/2002, we could observe a substantial increase in the interest and consequently in the number of publications related to information technology governance, which currently is an area of research which is consolidated, relevant, and with an expressive potential.

Among the 265 identified journals which published themes related to corporate governance, System Sciences (annual conference whose main organizer is IEEE) was highlighted, with 60 publications. The Brazilian production proved very reduced, 10 publications in total distributed in 8 journals, a gap which could be better explored by people interested in information technology governance.

When considering the distribution of publication in countries, the USA is highlighted, with 23.59% of the total of publications, followed by Brazil with 20.27%, and China with 7.64%. The fact that the United States is the country with the biggest number of publications is highly understandable, given the traditional volume of publications in practically all areas of knowledge, and the great motivating factor deriving from the financial scandals occurred in the beginning of the last decade, which would result in specific rules and legislation directly related to the area of information technology governance.

Curiously, the expressive production presented by Brazilian authors is in contrast with the reduced number of publication in national journals, which highlights the need for bigger efforts geared towards the increase in the potential of the theme as an argument of research in the country.

Notably, Malaysia, Portugal, Belgium, and Morocco were the countries which presented the most productive researchers in the field of ITG, demonstrating the diffusion of the interest in the argument in several countries.

Finally, we should highlight the maintenance of a higher level of publications as of 2010, demonstrating the higher relevance given to information technology governance as an agenda of research, and this relevance tends to be maintained, given the rhythm of increase in the use of information technology in practice and in business and the evolution of the importance of governance within the complex context of the big corporations.

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