

## Accounting Sciences theses: an analysis of their dissemination

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**ABSTRACT:** When a thesis is defended it moves to the condition of scientific literature, serving as a source of knowledge to other authors, thus, playing their role in the construction process and scientific development. The purpose of this study was to find evidences to allow assessing the degree of dissemination of doctoral theses in Accounting (defended in Brazil up to 12/31/2006), in the production of new knowledge. An empirical-analytical approach was used by employing bibliographic and documental research, as well as bibliometric analysis. References to doctoral theses of all articles in proceedings of USP Controllershship and Accounting Conferences from 2001 to 2007 were analyzed and catalogued. Most referenced theses belong to the 90s, suggesting that a study cannot be automatically considered old or old-fashioned. Findings show a low number of quotes of theses in general (on average, 2.62% of total citations of all research materials).

**Keywords:** Theses, accounting sciences, bibliometrics, references.

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## 1. INTRODUCTION

**A**ccounting Graduate Programs have multiplied since 2005. According to Capes<sup>i</sup> data, there are now 16 accredited Graduate Programs in Brazil, which confer a master's degree with focus on Accounting, Controllership, Controllership and Accounting and Accounting Sciences. Three of them were accredited in 2007.

During this same year the second doctorate program in the country was created, after nearly 30 years of hegemony of the College of Economics, Business Administration and Accounting of the University of São Paulo (FEA/USP). The number of theses presented in the recent past (2000 to 2006) represents over 50% of total 165 theses produced in Accounting.

A thesis represents the cornerstone of a doctoral program (BOWEN, 2004). Its conclusion, consequent defense and acceptance are closely associated with bestowing the doctoral degree. It represents and expresses acquired skills and the author's knowledge for research development, the researcher's expertise in a certain area of study and the original contribution to the field of knowledge. Appropriate rigor must be demonstrated in the development of a scientific investigation, literature review, application of appropriate methods and empirical analyses, as well as the defense, result analysis and implication under detailed examination of a committee of experts (BOWEN, 2004). When a thesis is defended, it moves to the condition of scientific literature, serving as a source of knowledge to other scholars. Its importance is that new ideas and findings are not limited to their holders only, they are widely disseminated, playing, so, the role assigned to them in the construction and development of science (CUNHA, 2007).

In this case, this paper is guided by the following question: **to what extent are Accounting doctoral theses being cited by other scientific papers?**

The purpose of this study is to find evidence that will allow assessing the degree of dissemination of Accounting doctoral theses, in the generation of new knowledge. In order to reach this goal, an empirical-analytical approach is adopted by employing bibliographic and documental research, as well as bibliometric analysis. Under this perspective, this research is warranted, given the importance of scientific publication in both Brazilian and international context. This is one of the parameters used by Capes when evaluating graduate programs and contribution of scholars to scientific advance, focusing on publishing records. According to

Okubo (1997), the essence of scientific research is the generation of knowledge, with scientific literature being its expression. Publishing the results of a study is mandatory for scholars, and being cited is a fundamental reason. The new knowledge has to be transformed into information that is made available to the academic community, serving to bring researchers up to date (OKUBO, 1997). Rey (1978, p. 4) highlights that “production of scientific information and its communication form part of a complex system, which operation is essential to the development of scientific knowledge.”

## 2. THEORETICAL PLATFORMS

Tague-Sutcliffe (1992, p. 1) clarifies that bibliometrics, as well as scientometrics, are areas contained in a general field of study called informetrics. The terms are defined by the author:

Informetrics is the study of qualitative information aspects in any form, not just records or bibliographies, referring to any social group, and not only of scientists. Thus, it looks at the quantitative aspects of informal or well-spoken communication, as well as recorded, and the needs and uses of information of the disadvantaged, not just the intellectual elite. It can incorporate, utilize and extend the many information evaluation studies that lie outside the boundaries of both bibliometrics and scientometrics<sup>ii</sup>.

Bibliometrics is the study of quantitative aspects of production, dissemination and use of recorded information. It develops mathematical models and measures for these processes and then uses the models and measure for prediction and decision-making<sup>iii</sup>.

Scientometrics is the study of quantitative aspects of science as a discipline or economic activity. [...] It involves quantitative studies of scientific activities, including among others, publication, and so overlaps bibliometrics to some extent<sup>iv</sup>.

Macias-Chapula (1998, p. 135) established a typology defining and ranking the three areas (Chart 1).

| Typology        | Bibliometrics                                                                         | Scientometrics                                                                                                                           | Informetrics                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Object of Study | Books, documents, magazines, articles, authors, users                                 | Disciplines, subject, area, fields                                                                                                       | Words, documents, databases                                                                                              |
| Variables       | Number of loans (circulation) and quotations, frequency and length of sentences, etc. | Factors that differentiate sub-disciplines. Magazines, authors, documents. How scientists communicate.                                   | It differs from scientometrics in the purpose of variables: for example, measuring recovery, relevance, renovation, etc. |
| Methods         | Ranking, frequency, distribution                                                      | Set and correspondence analysis                                                                                                          | Vector-space model, Boolean recovery models, probabilistic models; processing language,                                  |
| Objective       | To allocate resources, time, money, etc.                                              | To identify domains of interest. Where subjects are concentrated. To understand how and how much scientists communicate with each other. | To improve recovery efficiency                                                                                           |

**CHART 1: TYPOLOGY FOR DEFINITION AND BIBLIOMETRICS, SCIENTOMETRICS AND INFORMETRICS RANKING**

Source: Macias-Chapula, 1998, p. 135.

Okubo (1997) defined bibliometrics as a tool whereby the state of science and technology can be observed as general production of scientific literature. The term became generic for a wide range of metrics and specific indicators, having the purpose of measuring scientific and technological production.

He emphasizes that scientific activity indicators are, now, in the center of the debate about the connection between advances in science and technology and social and economic progress (OKUBO, 1997).

According to Macias-Chapula (1998), bibliometrics studies aspects of generation, dissemination and use of recorded information that can be quantified. Bibliometric and scientometric indicators have become essential in everything that refers to science (MACIAS-CHAPULA, 1998).

Okubo (1997) translates the usefulness of the study of indicators emphasizing that bibliometric approaches are based on the notion that the essence of scientific research is the production of knowledge, while scientific literature is the manifestation of this knowledge.

Bibliometric analysis uses several parameters, such as scientific articles, co-authorships, patents and quotations. They are called bibliometric indicators and constitute a way to assess the state of science (CUNHA, 2007). Okubo (1997) presented quantitative indicators of known science and technology activities, in other words, the main bibliometric indicators.

Chart 2 contains a summary of the main uses and limitations of such indicators. It is observed that they all have some kind of limitation. It would be most appropriate to use bibliometric indicators accompanied by other evaluation methods.

Within bibliometric approach, three names have stood up with the creation of specific laws for scientific production analysis. They have been used in several researches and with different purposes. Chen *et al.* (1994) mention the best-known bibliometric distribution laws that bear the names of the investigators who have created them: Lotka's Law, Zipf's Law and Bradford's Law.

Tague-Sutcliffe (1992) clarifies that the names of these investigators became identified with particular phenomena and inherent to the laws: Lotka with the author's productivity, Zipf with the frequency of words and Bradford with the productivity of journals .

| Indicator                   | Definition                                                                                                                                                                                                            | Usefulness                                                                                                                                                                                                                                             | Limitations                                                                                                                                                                                                                                            |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of papers            | It reflects scientific production measured by the number of articles, books, reports, etc.                                                                                                                            | Paper counting provide an approximate, simplified initial measure of the amount of papers produced by scientists, countries, countries, institutions, etc.                                                                                             | It does not measure the amount of papers, even if selectivity of newspapers is considered; it does not show the role played by each co-author when the paper presents co-authorship                                                                    |
| Number of quotations        | They may be considered as a measure of the impact of quoted articles, as well as their usefulness and timeliness. It is presumed that a paper has a certain quality to provide an impact on the scientific community. | Basically then can be divided into two groups: (1) to highlight a novelty contained in an article; (2) to know and show respect to a previous work.                                                                                                    | Tendency of authors to quote in papers produced by their own scientific community and authors who are "fashionable"; self-quotations.                                                                                                                  |
| Number of co-authors        | It indicates cooperation at national or international level,.                                                                                                                                                         | It identifies cooperation via paper. It can measure the volume of work produced by groups of scientists at institutional or individual, national or international level. It is a parameter to measure the growth (or decline) of cooperative research. | Affiliation utilization by the researcher's workplace. Counting method diversity. Depending on the approach, the result is different. An institution can keep all merit for a paper or it can appear to be, erroneously, an international cooperation. |
| Number of patents           | It measures the results of funds invested in research. It can be considered a creativity indicator.                                                                                                                   | Counting patents can locate an invention and assign the role of each invention in the development of new techniques. It is a measure of technological capacity and innovation of nations, firms, etc.                                                  | The quality of patents is not necessarily of the same level and not all have the same significance in terms of technological innovation and economic promise.                                                                                          |
| Number of patent quotations | It measures the impact of technology.                                                                                                                                                                                 | As a science and technology indicator. It is a form of describing the state-of-the-art, in other words, what has already been done in similar fields related to innovation and significance of proposed invention.                                     | Issues related to the reasons that have led to quoting a certain patent not related to its scientific importance.                                                                                                                                      |

**CHART 2: MAIN BIBLIOMETRIC INDICATORS**

Source: based on Okubo (1997, p. 24-27)

These laws were defined as follows: (1) Lotka's Law, or Reverse Square Law, points out to the measurement of authors' productivity, through a size-frequency distribution model of several authors analyzed in a set of documents; (2) Zipf's Law, also known as the Law of Minimum Effort, consists of measuring the appearance frequency of words in several texts, generating an ordered list of terms of a certain discipline or subject; (3) Bradford's Law, or Law of Scattering, through measuring productivity of journals, establishes the core and scattering areas over a certain subject in the same set of journals (TAGUE-SUTCLIFFE, 1992).

Studies using bibliometrics in distinct area of knowledge are frequent. Bricker (1989), Chung *et al.* (1992), Shields (1997), Riccio *et al.* (1999), Frezatti and Borba (2000), Martins e Moriki (2003), Caldas and Tinoco (2004), Mendonça *et al.* (2004), Cardoso *et al.* (2004), Santana (2004) and Martins e Silva (2005), Mendonça Neto *et al.* (2006), Magalhães (2006), Igarashi *et al.* (2007), Macedo *et al.* (2007) and Chan *et al.* (2007) developed papers using bibliometric indicators in Accounting.

Bricker (1989) inferred a disciplinary research structure by using cluster and content analysis. Data used in the research were the main articles and bibliographies of six (6) accounting journals in the period from 1983 to 1986. 428 articles and 10,938 quotations were analyzed. Most quotations were relatively recent, suggesting that Accounting, as well as basic sciences, tries to accumulate knowledge. Only about 3% of the quotations referred to documents published before 1950; over 90% of them were documents published after 1959, being that 82% after 1969.

The study showed that some accounting research areas are relatively well integrated, among them, “Financial,” encompassing “Positive Accounting” research, “Market Based” and “Time Series.” A low degree of integration was found in “Bankruptcy Forecast” and “Result Theory.” Some areas became isolated from a main structure, such as, for example, “Taxes” and “Academic Accounting Studies.” It was verified, further, that studied accounting journals varied in the magnitude of covered topics. Articles from the Journal of Accounting Research and The Accounting Review were represented in a large number of groups, whereas articles from Accounting, Organizations and Society and the Journal of Accounting and Economics were more specialized.

Chung *et al.* (1992) examined whether there was any irregularity in publication patterns among accounting researchers. Results revealed strong bibliometric regularity in accounting literature. They verified, among other things, that the origin of the most productive authors’ doctoral degree was concentrated in seven American programs that, altogether, conferred degrees to over one-third (1/3) of the most productive academicians, indicating strong institutional dominance and evidencing that these programs provided a favorable educational environment to scholarly production. Current affiliation of the most productive scholars, in turn, showed to be less concentrated. These seven universities that conferred degrees to the most productive authors in the past, now concentrated only eight of the 102 most productive contributors.

Shields (1997) reviewed the state of research in management accounting evidenced by 152 articles published by Americans from 1990 to 1996 in six leading journals: *Accounting, Organizations and Society*; *The Accounting Review*; *Contemporary Accounting Research*; *Journal of Accounting and Economics*; *Journal of Accounting Research*; and *Journal of Management Accounting Research*. The most frequent topic observed by Shields (1997), among analyzed articles, was the one dealing with management control systems, with 85 of the articles dedicated to it, followed by cost accounting with 24. Regarding the environment, 70 articles represented studies in the scenario of one industry or a single activity, most in production area (57); 18 articles did not present a base theory and those with a base theory sought it in three main social sciences: Economics (75), Psychology (12) and Sociology (7); regarding research methods used, the most frequent ones were analytical researches, employed in 49 articles.

Riccio *et al.* (1999) studied the characteristics and distribution of academic production of thesis and dissertations in Brazilian master's and doctoral Accounting programs, from 1962 to 1999.

A total of 386 reports deposited at FEA/USP, Pontifical Catholic University of São Paulo (PUC/SP), Getúlio Vargas Foundation (FGV) and State University of Rio de Janeiro (UERJ) were analyzed. Some findings were: finance accounting accounts for 18% of the total (the greatest part of them produced between 1985 and 1990); international accounting has been growing since 1988, but has not gone past 4%; management accounting dominates (21%) and education had its peak between 1988 and 1990, reducing since then. Regarding the business area, banks occupy 28%, the public sector 13%, agriculture 10% and small businesses and services occupy the fifth most studied area, with 7% each.

Frezatti and Borba (2000) have sought to identify characteristics of some of the main trends observed by scholarly journals published in English with accounting topics. They found out the prevalence of journals published in the USA and the United Kingdom, with specialized publishing houses and educational institutions as supporters: about 53% of the sample have international approach in dealing with themes and acceptance of authors; the largest publication distribution was located between one and four times a year and general accounting corresponds to the main focus.

Martins and Moriki (2003) analyzed bibliographic references of 48 theses and dissertations presented in 2000 in Controllershship Graduate Programs of FEA/USP and FEA/PUC-SP. They found a large scattering in references, rendering identification of any

representative group difficult; conservative posture of authors, focusing on books, with rare quotation of periodicals, proceedings and workshops. They concluded that the largest part of scholarly production in the area has doubtful quality.

Caldas and Tinoco (2004) analyzed 290 articles of the Human Resources area published from 1991 to 2000 in the annals of the National Association of Business Graduate Programs Meeting (ENANPAD) to assess the establishment, origin and interrelation pattern of all quotations, authors and institutions that published and were quoted. Their analysis covered bibliometric patterns of 5,814 quotations, 342 authors from 51 institutions. The findings were of a high rate of self-quotation and endogeny, with a great incidence of quotation from journals, newspapers and foreign non-academic authors.

Mendonça Neto *et al.* (2004) analyzed distribution, methodological characteristics, thematic evolution and productivity of scientific publication authors in accounting from 1990 to 2003, in top-ranked domestic journals (ranked A, by –Capes). Sixty articles on accounting were identified, out of a total of 2,037 published. Half (51%) of published articles in Accounting are from the State of São Paulo, being USP the institution with the largest number of publications. Bibliometric analysis was performed using Lotka's law.

Cardoso *et al.* (2004) drafted a profile of the research in cost accounting in the scope of ENANPAD accounting and management control track, from 1998 to 2003. A total of 170 accepted articles were reviewed and 32 specific cost accounting articles were selected. They verified that the largest number of cost accounting papers were presented in 2001, and the prevailing theme in the articles was Activity Based Costing (ABC) and its applications (50% of them). Leading production institutions were Federal University of Rio de Janeiro (UFRJ) and Federal University of Pernambuco (UFPE), with 5 papers each. The State of São Paulo, however, was leading it, presenting 29% of articles.

The prevailing authorship form was of two authors (53%), and the most used data collection method (27%) was models and applications. Empirical nature papers, directly related to some sector, represented 62% of the total. With respect to bibliography, 64% of quotations referred to books and 56% were of international origin.

Santana (2004) has analyzed, under the bibliometrics approach, research in Social Accounting in the country, by mapping it out according to authors, topics and references used, from 1990 to 2003. Thirty dissertations, two doctoral theses, one associate professorship

thesis (habilitation), one hundred and forty four articles originating from periodicals and seventy-nine articles originating from meeting and proceedings were analyzed.

The author verified that in relation to authors, five with the greatest number of articles stood out. As far as references used were concerned, it was verified that there was almost no presence of sociology-related sources. He highlighted the small amount of works in other languages. In the references used by the most published authors, one master's dissertation defended in 1984, about Social Balance, and one associate Professorship thesis of 1999, about Value Added Demonstration (DVA), almost always appeared.

Martins and Silva (2005) has analyzed the theoretical platform used by authors of articles approved in the 3<sup>rd</sup> and 4<sup>th</sup> USP Conference of Controllershship and Accounting held in 2003 and 2004. The study involved 221 articles and 3,795 bibliographic references from the Conference website. Findings were related to the variability of papers of the same nature, mainly national books. National or in international classics were not distinguished and the authors' approach revealed to be conservative and conventional. In analyzed bibliographies, the authors verified low inquiry to periodicals and electronic addresses and lack of proceedings. They concluded that, despite the efforts, a hard core of theoretical references for Accounting Sciences, cannot be characterized.

Mendonça Neto *et al.* (2006) had analyzed the temporal scientific research evolution in Accounting in Brazil by analyzing the adoption of normative and positive approaches as research paradigms. Accounting papers published in the proceedings of the National Association of Business Graduate Programs Meetings (Enanpad), held from 1981 to 2005 were analyzed. The results evidenced the growing prevalence of the positive approach and little utilization of both approaches.

Magalhães (2006) raised, characterized and analyzed sources of information used in construction of doctoral thesis presented at the Accounting Graduate Program of FEA/USP, from 2002 to 2005. Forty-eight doctoral theses were evaluated and 5737 bibliographic references categorized. Results emphasized books as the most referenced documents, being that the 5 most quoted authors were connected to FEA/USP itself. The most referenced fields of knowledge were Administration, Accounting, Economics, Research Methods and Law. In the scope of Accounting, the most quoted sources are related to theory, costs, management and finance areas.

Macedo *et al.* (2007) have mapped and analyzed the use of Data Envelope Analysis (DEA) in Accounting and Business Administration studies. They searched websites of Brazilian events and journals (ranked in CAPES/Qualis system such as National and International A), between 1998 and 2006. Results revealed that use of Data Envelope Analysis is, still, in embryonic phase.

Chan *et al.* (2007) have analyzed the relation between thematic areas and the nature of theoretical platforms of articles from the proceedings of the 3<sup>rd</sup> USP Controllershship and Accounting Conference. One hundred and one articles distributed over 5 tracks were analyzed. Findings evidenced the prevalence of normative studies in Applied Accounting thematic area for external users, the proximity of discussions conveyed in periodicals and proceedings and theoretical framework used, using Credit and Capital and Controllershship and Management Accounting Finance Markets, in addition to the prevalence of bibliographic references and electronic addresses in Accounting Research and Teaching area.

Igarashi *et al.* (2007) investigated scientific production on evaluation, evaluation in the context of education and graduate program evaluation, from 1974 to 2007. The data source was articles indexed by the Scientific Electronic Library Online (SCIELO). A total of 973 papers addressing the term “evaluation” were analyzed, along with 97 dealing with evaluation in the context of education and 12 about graduate program evaluation. The main findings were: Public Health Books and Public Health Review were the journals with the highest incidence of the term evaluation; Education & Society was the journal that published most about the education evaluation; and, a low number of publications in the graduate program area.

With technological advances, quantitative analyses come across new fields of performance. These are studies that are developed over content and structures of homepages in the World Wide Web (WEB). Application of informetric methods to the WEB is called webometrics and it is a another measurement manner also oriented toward evaluating science and information flows (ALMIND and INGWERSEN, 1997; WORMELL, 1998; VANTI, 2002; BUFREM; PRATES, 2005)

Almind and Ingwersen (1997), who introduced application of informetric methods to the WEB, emphasized that there are important classifications that may be established from the page type that allow, among other things, measuring the weight of public and private sectors on the WEB (this task is facilitated when domain names are “.edu” and “.com”).

But, there is still a long path to go. Measuring the effects of production in Accounting is a task that is just beginning and should gather the attention of accounting scientists in the next decades. It is correct to assume that, if graduate programs have been multiplying in the past years, it will certainly positively influence research in this area. The effect of education is expected to be observed by others than the degree-holders. Mainly, when it is analyzed from the standpoint that if benefits only had an effect on the individual who receives them, there would be few reasons for public concerns with education dissemination expenses.

### **3 METHODOLOGICAL APPROACHES**

According to the purposes of this study, we adopted an empirical-analytical approach by employing bibliographic and documental research to generate the theoretical table and bibliometric analysis for selected indicators. Bibliometric analysis was used to measure dissemination of science, specifically researches produced by Brazilian Accounting doctoral degree holders. The purpose of bibliometric techniques is to measure scientific and technological research production (OKUBO, 1997). The number of times they were referenced in papers presented in the 7 years of USP Controllershship and Accounting Conference (2001-2007) was used as a basis, according to Macias-Chapula (1998) classification. This event is ranked by Capes Qualis system as “National event A.”

All references of articles contained in proceedings were surveyed and analyzed, seeking to identify and highlight doctoral theses presented at the Accounting Graduate Program of FEA/USP. In this analysis, as well as in others of same nature, reference is understood not as the quotation over the text, but rather its insertion in the reference section, or any other name or expression by which it is called (MARTINS and MORIKI, 2003; CALDAS and TINOCO, 2004). The search was oriented by the consideration of all authors of Brazilian Accounting theses presented up to December 31<sup>st</sup>, 2006: a total of 165. The search was undertaken on the website kept by the event organizers, where summaries and complete papers may be accessed.

In order to proceed with the search for a given year, theses presented up to the immediately preceding year were considered. Thus, in proceedings of 2001 USP Conference, references to theses presented up to 2000 were considered, in 2002; the thesis defended up to 2001, and so on. A single case where the thesis was referenced in an article approved in the Conference of the same year of its defense was observed. In this case, the author of the article was the same as of the thesis and the quotation was not considered. In order to meet the

purposes of this research, the references of the 700 articles contained in the proceedings of 7 USP Conferences from 2001 to 2007 were consulted.

#### 4 ANALYSIS OF RESULTS

Table 1 shows the number of articles contained in proceedings of each year, theses defended up to the year prior to the event and the number of authors referenced in every Conferences.

The 165 theses presented at the Accounting Graduate Program of FEA/USP up to 2006 were referenced 229 times in the 700 articles part of the proceedings of the 7 years of the Conference. The most referenced thesis was presented in 1990 and accounted for 12.6% of all quotations, or 29 times. The theses ranked from second to fifth are, respectively, from 2001 with 19 times, 1973 (16), 1998 (15) and 2002 (12). Most of the theses (60%) were never referenced at all, during this 7-year period. Of the 66 that were quoted, 2 were presented in the 1970s, 8 in the 1980s, 21 in the 1990s and 35 in the 2000s. The theses presented in the 1960s were not referenced. There were 18 references to 2 thesis of the 1970s, 16 references to 8 of the 1980, 92 references to 21 of the 1990 and 103 references to the 35 of the 2000s. This corresponds to an average of 9 references per thesis of the 1970s, 2 references per thesis of the 1980s, 4.38 per thesis of the 1990s and 2.94 per thesis of the 2000s (Table 1).

**Table 1: Articles, theses and references per event – 2001-2007**

| Year of Event | Number of Articles | Number of Presented Theses | Number of References to Theses | Total References |
|---------------|--------------------|----------------------------|--------------------------------|------------------|
| 2001          | 74                 | 97                         | 24                             | 1,127            |
| 2002          | 70                 | 111                        | 14                             | 1,107            |
| 2003          | 86                 | 124                        | 31                             | 1,783            |
| 2004          | 100                | 135                        | 30                             | 2,012            |
| 2005          | 100                | 142                        | 33                             | 2,152            |
| 2006          | 150                | 159                        | 47                             | 3,247            |
| 2007          | 120                | 165                        | 50                             | 3,065            |
| <b>Total</b>  | <b>700</b>         | <b>933</b>                 | <b>229</b>                     | <b>14,493</b>    |

Source: Research data

In the 1<sup>st</sup> event, occurred in 2001, there were 24 references to thesis presented up to 2000, out of a total of 1,127 references. However, only 12 of the 97 authors were referenced (less than 13%) The author with the highest frequency in quotations presented his thesis 1990 and was referenced 7 times, accounting for nearly 30% of the total. In 2002, when the event was still labeled “USP Accounting Seminar,” references were limited to 14, in a universe represented by 111 theses up to 2001, with 1,107 references.

A number of 12 authors were referenced this year, with the highest frequency (3 quotations) pertaining to the same author who was, also, the most referenced in the previous event. In the third year, already with the new name “USP Controllershship and Accounting Conference,” there were 31 references to the 124 thesis presented up to 2002, in a universe represented by 1,783 references.

The same thesis, which in the previous events was the most quoted, repeated the performance with 5 references, accounting for over 16% of quotation total. The same occurred in the 2004 event, 5 quotations of 30 occurred (nearly 17%). In 2005 and 2006 the most referenced author had presented his thesis in 2001.

There were 7 quotations of the 33 in 2005 (out of a total of 2,152), accounting for 21.2% and 5 quotations of the 47 in 2006 (total of 3,247 references), a percentage close to 11%. In 2007, two authors shared the first place in quotations, with 4 each, accounting for 8% of them. The most quoted author in the events of 2001, 2002, 2003 and 2004 and another with presentation occurred in 2002 (Table 1).

When analyzing references contained in all articles and the number of references to theses (of any line of inquiry) a very low percentage to this reference type is perceived. In the entire analyzed period, total quotation to any doctoral theses accounted for 2.62% of the number of references used by the authors. The 2003 event was the one that concentrated the highest percentage of consultations to theses: 3.03%. On the other hand, if the analysis is concentrated in a comparison between the number of theses referenced, in general, and those of doctoral degrees in Accounting, a high incidence of the latter is perceived, reaching a percentage over 60%, on average.

The least representative percentage occurred in 2004 (52.6%) and the most representative in 2001 (75%). Martins and Silva (2005) had already evidenced this reality when they analyzed the events occurred in 2003 and 2004.

Since references to Accounting theses account for the great majority of quoted thesis, a possible explanation to such shy figures could be the fact that in order to consult them, physical access to FEA/USP library would be necessary, because, less than 10% of them are available in the digital library of theses and dissertations maintained by the University of São Paulo. Other explanations could be limitations of article authors and a suspicion concerning the low contribution that these sources would give to the articles (Table 2)

**Table 2: Total references, references to theses and references to theses in Accounting at USP Conferences – 2001-2007**

| Year of Event | Number of Articles | Total References | Total References to Theses |      | Total References to Accounting Sciences Theses |      |
|---------------|--------------------|------------------|----------------------------|------|------------------------------------------------|------|
| 2001          | 74                 | 1127             | 32                         | 2.84 | 24                                             | 75.0 |
| 2002          | 70                 | 1107             | 19                         | 1.72 | 14                                             | 73.7 |
| 2003          | 86                 | 1783             | 54                         | 3.03 | 31                                             | 57.4 |
| 2004          | 100                | 2012             | 57                         | 2.83 | 30                                             | 52.6 |
| 2005          | 100                | 2152             | 55                         | 2.56 | 33                                             | 60.0 |
| 2006          | 150                | 3247             | 79                         | 2.43 | 47                                             | 59.5 |
| 2007          | 120                | 3065             | 83                         | 2.71 | 50                                             | 60.2 |
| Total         | 700                | 14493            | 379                        | 2.62 | 229                                            | 60.4 |

Source: Research data

Evaluation of articles distributed across several topics presents some remarks. In the first two years of the event, topics covered 5 categories, 3 of which were rephrased and renamed as of the third year. In 2007 emerging topics division no longer existed and actuarial division was inserted. It is perceived (Table 3) that, in 2001, the topic that occurred in the greatest number of references to theses was Controllershship, with 14 quotations (5 of them of the same author) in 30 articles, accounting to almost one quotation every two articles. In the following year, 3 topics shared the largest number of references to theses presented at the Accounting Graduate Program of FEA/USP, 4 references each: Accounting Education and Research, Emerging Topics, and Cost and Management Accounting.

In 2003, the largest numbers of references to theses were found in Controllershship and Management Accounting and Emerging Topics articles: 9 in each. In the first topic there were 4 references to the same author, a thesis presented in 1990, and in the second 3, a thesis presented in 1998. Controllershship and Management Accounting were the topic with the largest number of references, in 2004: 11 references of distinct theses, followed by Accounting for External Users and Emerging Topics: with 7 references each. Accounting for External Users topic was first placed in 2005.

There were 13 in 18 articles, an average of 0.72 per articles, the best in all the years of the event. A thesis presented in 2001 was the top-referenced with 3 quotations. In 2006 Controllershship and Management Accounting topic goes back to the first place with 20 quotations in 39 articles.

Three theses were the most references, referring to 1990, 1999 and 2002. Finally, in 2007, 20 references occurred to the thesis in 44 articles of Accounting for External Users, 2002 being the year of presentation of the most referenced thesis, 3 times.

**Table 3: Total articles, and references to theses in Accounting at USP Conferences – thematic area - 2001-2007**

| Topics                                     | 2001       |            | 2002       |            | 2003       |            | 2004       |            | 2005       |            | 2006       |            | 2007       |            |
|--------------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                            | Quantities |            | Quantities |            | Quantities |            | Quantities |            | Quantities |            | Quantities |            | Quantities |            |
|                                            | Articles   | References |
| Accounting and external users              |            |            |            |            | 17         | 8          | 16         | 7          | 18         | 13         | 32         | 9          | 44         | 21         |
| Controllershship and Management Accounting |            |            |            |            | 27         | 9          | 25         | 11         | 23         | 3          | 39         | 20         | 40         | 17         |
| Credit and Capital Financial Markets       |            |            |            |            | 11         | 3          | 29         | 4          | 23         | 4          | 28         | 4          | 20         | 6          |
| Education and research in accounting       | 7          | 0          | 7          | 4          | 11         | 2          | 5          | 1          | 2          | 2          | 14         | 4          | 14         | 4          |
| Emerging topics                            | 15         | 5          | 15         | 4          | 20         | 9          | 25         | 7          | 34         | 11         | 37         | 10         |            |            |
| Controllershship                           | 30         | 14         | 10         | 0          |            |            |            |            |            |            |            |            |            |            |
| Management Accounting                      | 8          | 1          | 12         | 2          |            |            |            |            |            |            |            |            |            |            |
| Management Cost Accounting                 | 14         | 4          | 26         | 4          |            |            |            |            |            |            |            |            |            |            |
| Actuary                                    |            |            |            |            |            |            |            |            |            |            |            |            | 2          | 2          |
| Totals                                     | 74         | 24         | 70         | 14         | 86         | 31         | 100        | 30         | 100        | 33         | 150        | 47         | 120        | 50         |

Source: Research data

Another point to highlight by observing Table 3 is that in the 2004 and 2005 events, the largest number of references did not occur in topics with larger numbers of articles. However, in 2001, 2006 and 2007, the largest number of references to Accounting theses occurred within the topics bearing the largest number of articles.

## 5 CONCLUSION

Findings can be considered relevant and representative of references to accounting theses from FEA/USP, within the established time-frame for this study (up to 2006). This is due to the fact that USP Accounting and Controllershship Conference is the largest and most qualified Brazilian event in this area, since its creation in 2001.

In order to reach the proposed goal of finding evidence that allow evaluating the degree of dissemination of doctoral theses in Accounting in the production of new knowledge, all the 14,493 references listed in the 700 articles in event proceedings, in its 7 years of existence were consulted. It was verified that of the 165 theses presented up to 2006, less than one half was referenced in some of the analyzed articles.

Of those, the bulk was presented in 2000. However, when the number of quotations per decade is assessed, it is perceived that in the 1970s, the 2 referenced theses had, on

average, 9 references each, the highest average observed in all analyzed periods. It was observed that the most referenced thesis in the period belongs to the 1990s, which leads us to conclude that a research cannot be automatically considered old or old-fashioned; because this thesis was the most quoted in events occurred in 2001, 2002, 2003, and 2004 and shared the first place in 2007.

The low number of quotations to theses in general was also perceived. They account for, on average, 2.62% of total quotations to all research materials. However, when the analysis focuses on existing relation between the total number of referenced theses and theses generated at FEA/USP, it is verified that they are very significant. On average, 60% of quotations to theses are those covered by this research, namely, doctoral degrees in Accounting. A firm evidence, that cannot be disregarded, is that the authors, even though timidly, have been searching other areas of knowledge to support their studies.

It becomes necessary to highlight that many doctoral theses are transformed into books and/or articles after their presentation. Thus, a suggestion for continuing this research would be surveying which of these theses have been published in a book or article form, so that a new analysis could be developed aiming at the dissemination of knowledge generated by them.

Efforts to disclose characteristics of Accounting scholars have been constant and growing. This paper represents one of them. However, new incursions are required, because, as known, scholarly research represents the basis for scientific development.

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<sup>i</sup> Consultation made on 07/04/2007.

<sup>ii</sup> “*Informetrics is the study of the quantitative aspects of information in any form, not just records or bibliographies, and in any social group, not just scientists. Thus it looks at the quantitative aspects of informal or spoken communication, as well as recorded, and of information needs and uses of the disadvantaged, not just the intellectual elite. It can incorporate, utilize, and extend the many studies of the measurement of information that lie outside the boundaries of both bibliometrics and scientometrics.*”

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iii “ *Bibliometrics is the study of the quantitative aspects of the production, dissemination, and use of recorded information. It develops mathematical models and measures for these processes and then uses the models and measures for prediction and decision making.*”

iv “*Scientometrics is the study of the quantitative aspects of science as a discipline or economic activity. [...] It involves quantitative studies of scientific activities, including, among others, publication, and so overlaps bibliometrics to some extent.*”